



**A Self-Concept Measure of Personality Growth:
Self-Concept Maturity (SCM). Development, Validation, and Age Effects**

by

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A thesis submitted in partial fulfilment
of the requirements for the degree of

**Doctor of Philosophy
in Psychology**

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Date of Defense: May 18, 2006

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Abstract

Empirical instruments for measuring personality growth are scarce. This is not only due to the lack of a common definition of the construct; measures of personality growth always have to deal with the problem of social desirability, and thus, cannot rely on straightforward self-report. Hence, a primary goal of this work was to develop a measure to assess levels of personality growth in an indirect way, and to validate this measure with regard to inventories of adjustment, intelligence, self- and life reflection, life events as well as other measures of personality growth using an age-heterogeneous sample. As a theoretical background for the construction of a personality growth measure, literature on the self-concept as well as on personality growth was reviewed. Five self-concept facets were identified as theoretically meaningful indicators of personality growth. It was hypothesized that only by combining these five facets one could arrive at an appropriate operationalization of personality growth. That is, a profile of the five self-concept facets was established that should serve as a prototype of a mature personality as reflected in the self-concept or *self-concept maturity* (SCM).

Two sets of hypotheses emerged from the study of the literature. On the one hand, literature and empirical evidence on self-concept development and age differences were reviewed to derive predictions about age differences in the five self-concept facets. On the other hand, theories of personality growth were drawn upon in order to make predictions (a) about the relationship between the SCM profile and personality growth, and (b) the relationship between personality growth and other domains of psychological functioning. Hence, the first set of hypotheses was aimed at replicating age differences in the self-concept, and to validate the instrument as an appropriate method to capture self-concept facets. In contrast, the second set of hypotheses was aimed at testing the convergent and discriminant validity of SCM in order to confirm the instrument's capability to measure personality growth.

Based on the review of the literature, the following five facets of the self-concept were defined as crucial for the assessment of personality growth: complexity of self-concept content, self-concept integration, balance of self-related affect, self-esteem, and value orientation. With regard to age differences, it was expected that complexity of content would remain stable throughout adulthood, and that no age differences would be found. Furthermore, younger adults were predicted to show a higher degree of affect balance, whereas in terms of self-concept integration, value orientation, and self-esteem, older adults were predicted to exhibit higher levels. With regard to the shape of the SCM profile, it was hypothesized that the following combination would reflect personality maturity: high levels in terms of complexity of self-concept content, a high degree of affect balance, a medium level of self-

esteem and self-concept integration, as well as a self-transcendent (rather than a self-centered) value orientation. It was expected that, provided the profile could indeed capture an individual's level of personality growth, it should relate in a systematic and predictable way with chronological age and other domains of psychological functioning: specifically, a strong association was expected between SCM and personality growth, moderate relationships were expected between SCM and the domains of intelligence, self- and life reflection, and life events, respectively, and adjustment and chronological age were not assumed to be linked with SCM.

As an instrument to assess the five components of the self-concept, a modified version of the inventory of self-complexity by Linville (1985, 1987) was used in combination with a short version of the Schwartz Value Survey (e.g., Schwartz, 1992). 167 adults subsequently were tested with the instrument, 78 older adults (aged 60-80 years) and 89 younger adults (aged 20-40 years). Additionally, participants completed a test battery that included various other measures of personality growth, adjustment, intelligence, self- and life reflection, and life events.

Results in terms of age trends were clearly in line with the hypotheses: Older adults showed higher levels of self-esteem, self-concept integration, and self-transcendent value orientation than younger people, whereas their levels of affect balance were lower than in the younger age group. As expected, no age differences were found with regard to the complexity of the self-concept. Furthermore, the validation of the SCM instrument as a personality growth measure by and large was confirmed by the results: SCM revealed a strong link with other variables of personality growth while there was a moderate relationship with the domains of life events and self- and life reflection as well as no relationship with the domain of adjustment. As expected, SCM was uncorrelated with chronological age implying that younger and older adults did not differ in their levels of SCM. Contrary to hypotheses, no relationship was found between SCM and intelligence. Furthermore, the pattern of explained variance of SCM differed significantly from that of an alternative self-concept profile constructed to reflect adjustment instead of growth. Hypotheses that were derived from the previous considerations of the relationship between personality growth, adjustment, and chronological age were appropriate to predict age differences in the conjoint functioning of the two profiles.

Reasons for minor deviations of findings from expectations, as well as possible improvements of the instrument and limitations of the study are discussed. An outlook is given regarding the benefits of integrating the various strands of self-concept research within an overarching lifespan developmental framework.

Acknowledgments

My dissertation study was conducted under the auspices of the DFG research project “Lässt sich Selbsteinsicht fördern”, STA 540/3-1/2 guided by Ursula Staudinger at the Technische Universität Dresden and, later on, at the Jacobs Center of Lifelong Learning and Institutional Development, International University Bremen. The thesis was only made possible thanks to the support and the efforts of many persons and organizations to whom I wish to express my sincerest gratitude.

Of course, no empirical psychological study can be conducted without participants. Therefore, I would first like to thank the persons who committed their time and energy to assist us in our research. Their enthusiasm and interest in the project has provided a great source of inspiration for me, and although the intervention part of the project was primarily intended to enhance the insight of participants, quite a number of times the interactions I had with them made me feel rewarded as well, with new insights and thoughts.

I wish to express my gratitude also to the numerous people who have been involved in the data collection and data processing. Above all, I am thankful for being able to have had Charlotte Mickler as a coworker within the project. Working together with her during the “good and bad times” of the study has not only been helpful because of her considerable statistical skills and highly efficient working style, but simply because she has been such a reliable, sympathetic, smart and funny colleague. As representatives for all of our excellent student assistants and other students who have supported us in our work, a special ‘Thank you’ goes to Franziska Faselt, Manuela Lang, Cindy Noack and Isabell Herms, who have been great interviewers and whose continuous commitment has always made it a pleasure to be able to rely on their assistance.

Of course, I owe a very special debt to my mentor and project supervisor Ursula Staudinger. Not only has she been a perfect and experienced project supervisor and an indispensable source of advice in each and every question that arose within the course of the project or the thesis; but even more important, she was a mentor to learn from. Her tremendous knowledge about lifespan development and psychology in general, her inspiring and thoughtful suggestions and comments on my work, her academic perfectionism, and her insistence on the necessity of adopting a thorough and contextualistic perspective on scientific matters made me feel truly enriched and privileged to have her as a mentor. Moreover, my knowledge about the “world of academics” I have mostly gained through her, because it has been her ambition not only to mentor her students with regard to our academic work but to provide us with information about academic careers in general.

I also want to thank the other members of my dissertation committee, Manfred Diehl and Alexandra Freund, for their willingness to invest their time and effort in this thesis. Manfred Diehl has also accompanied me throughout the time I wrote this thesis, and I feel deeply grateful for the numerous helpful and encouraging emails and communications we have exchanged during this time, as well as for his cooperation concerning parts of the project.

The most valuable help also has been provided to me by Margaret Parks, Debbie Jeske, and, especially, by Ines Schindler, who agreed to read and reread the manuscript a number of times. The feedback they gave me has offered me a very clear and precise guidance for the numerous modifications of the thesis – Thank you for that!

In general, I want to thank the entire staff of the Jacobs Center for their support in every way, and particularly my dear fellow graduate students. The daily academic and non-academic exchange over lunch and in our colloquia and meetings has simply been – and hopefully continues to be – a pleasure and an intellectual stimulation. In this context, I also want to express my gratitude for the numerous other opportunities of academic exchange made possible through the environment of the Jacobs Center and the conferences I attended. In particular, I wish to thank Robert Sternberg, Susan Bluck, Karen Hooker, Fredda Blanchard-Fields, Laura Carstensen, Avril Thorne, Kate McLean, Jennifer Pals, Susanne Scheibe, Jacqueline Baron and Christopher Hertzog for their comments and suggestions that have helped me very much to improve my work.

I am also grateful for the financial support given to me by the DFG and the Jacobs Center. Obviously, this has presented another indispensable source of support, and I feel very fortunate to have received it.

Last but not least, I want to thank all the people who have provided me with support not only within, but also beyond the academic realm. First of all, I would like to thank my parents for all their support; their encouragement and confidence in me has been an effective remedy against all crises and doubts, and their house has always been a sanctuary offering me the peace I needed to do my work, or the opportunity to recover from it, whenever I was in need of either one. Also, my decision to pursue an academic career in psychology is partially their “fault”, and I feel very thankful for the influence they had on me in this respect, not to mention the financial investments they have made to help me to stay on this track.

And, of course, thanks to all the other people who have accompanied me through the ups and downs of this thesis. Above all, I wish to thank Effa, Harun, Anna, Sven, Ingmar, Kathi, Jagger, Katrin, Silvia, Charlotte, Rahel, Guni and Andi; the value of their emotional support has certainly been immeasurable.

1 Introduction

Personality growth is a steadily growing issue in psychology. Yet considering the tremendous amount of time and resources that has been invested and the huge body of research that has dealt with the construct (Staudinger & Kunzmann, 2005), it is somewhat surprising to find that the number of attempts to measure personality growth empirically is relatively small (for overviews see e.g., Compton, 2001a; Compton, Smith, Cornish, & Qualls, 1996; Lopez & Snyder, 2003; Staudinger & Leipold, 2003; Sternberg & Jordan, 2005). On the one hand, this lack is certainly due to the challenge of finding a common definition of personality growth. The debate concerns various dimensions. First, theories differ as to where they locate personality growth. Theories range from mostly cognitive concepts (e.g., Kitchener & Brenner, 1990; Kramer, 2000; Kramer & Weizhen, 1991), to those that emphasize affect regulation and coping (e.g., Haan, 1963, 1977a, 1977b), to still others that capitalize on motives and values (Sheldon & Kasser, 2001; Sheldon, Ryan, Deci, & Kasser, 2004), to cite a few examples. Even more important is the challenge of finding a criterion for “growth”. The term *personality growth* implies a growth, or a maturing, of personal characteristics; but where does this growth lead to? Viewpoints on this issue strongly differ, and will be reviewed in more detail below (see section 1.2).

Naturally, defining any psychological construct theoretically represents a prerequisite for its operationalization. However, in terms of personality growth, even once a theoretical definition has been agreed upon, the researcher faces further challenges of a more methodological nature. Again, this is partly due to the definition problem; hardly any layperson has an implicit concept of the meaning of personality growth or the concrete construct at hand. This, however, represents only a minor problem, because in the completion of a psychological test, it is not necessary and frequently even distorting if the respondents know about the purpose of the investigation.¹ Consider, for example, an intelligence test that might ask the participant to rate the item “I am a smart person” on a 5-point scale. Obviously, in this case, the purpose of the testing seems entirely transparent to the participant, and yet, the data yielded by such an instrument would not be very valid: of course, the participant’s rating might be accurate; but it might just as well be inaccurate, resulting in a very low correspondence between test result and real ability, that is, in a very low validity coefficient. One reason for the lack of validity of direct assessment in this case is that the participant might have inaccurate assumptions about how intelligence is manifested in concrete behavior. For example, the participant might assume that his intelligence is reflected in his/her cooking abilities, and his/her inaccurate rating might therefore be caused by faulty assumptions about the nature of intelligence and its forms of manifestation.

¹ Naturally, a high level of face validity, that is, to translate the instruction and the concrete items in a language that everyone can understand, still represents a vital prerequisite for psychological testing.

Consequently, the probability for an erroneous conclusion as to what a questionnaire item might refer to increases with the level of complexity and the abstract nature of the subject and the degree to which its use is not common in ordinary speech. A term like intelligence, for example, although nobody might associate it with cooking abilities, would evoke very different implicit hypotheses as to the best method for its assessment.

But let's assume that a participant might have a very accurate assumption about the meaning of intelligence and the way it becomes manifest in concrete behavior. Even in this case, his rating on the item above might be wrong and not correspond to his or her real abilities. What is the reason for the lack of validity in this case? One reason might be that the participant has no access to information about the age norms of intelligence, which the psychologist usually has. In contrast, the sampling of the participant consists solely of himself, and possibly, of the people he or she knows. As a consequence, someone who might rate himself or herself as "not smart at all" might be very intelligent with regard to the normative range of his or her age group and might only have underestimated his or her own level of intelligence because of the extremely intelligent persons he is usually surrounded by.

But even if both difficulties were overcome, that is, if a person had very accurate ideas about intelligence and ways to measure it and detailed knowledge about how intelligence is distributed in his or her age group, the answer assessment might still be wrong. It is argued that there are two additional reasons that can account for the lack of validity in this situation.

On the one hand, despite a sufficient level of judgment competence, participants might have an inaccurate perception of themselves. That is, even though the participant might be *capable* of assessing intelligence accurately (i.e., assessment *competence*), motivational or emotional reasons can debase the quality of the actual judgment (i.e., assessment *performance*). For example, not surprisingly, depressive individuals tend to rate their own skills and abilities lower than non-depressive individuals (e.g., Alloy & Abramson, 1988; Taylor & Brown, 1994).² It is not even necessary, though, to draw from the realm of clinical disorders to find judgment biases in self-assessment; a wide range of psychological mechanisms exists that commonly, in the case of psychologically healthy individuals, leads to a distortion of self-judgments. Some examples are that human beings generally tend to perceive themselves in a favorable light (e.g., Taylor & Brown, 1988; Watkins & Cheung, 1995) and in control of situations (e.g., Alicke, 1985; Alloy & Abramson, 1979), that they seek to maintain a high degree of consistency (across time and across contexts) in their self-image (e.g., Clark, Collins, & Henry, 1993; Katz, 2001; Katz & Joiner, 2002; Swann, 1983; Swann, Stein-Seroussi, & Giesler, 1992),

² The case of depressive individuals is only given as an example of how affective preconditions can modify self-ratings, and not as an example of how self-ratings are distorted by affective preconditions. In fact, the cited literature gives consistent evidence for greater accuracy of self-ratings of depressed individuals, whereas self-judgments of non-depressed individuals are much more susceptible to positive illusions.

and that they strive to confirm whatever they believe significant others believe about them (e.g., Andersen & Chen, 2002; Cross, Bacon, & Morris, 2000; Cross, Gore, & Morris, 2003; Gergen, 1981; Pelham & Swann, 1994).³

On the other hand, a lack of validity of direct assessments as given in the example might come about because the participant might wittingly modify the answer to a question. For example, a person might give a very high rating as an answer to the statement above although he might know that his or her level of intelligence is very low. Conscious falsification of an answer will be particularly likely to occur in those cases in which:

(1) The item is unequivocal in terms of the degree of social desirability associated with an answer. For example, it is unlikely that someone would answer falsely to a statement like “I like to drink mineral water”, because neither answer is associated with a very high or low degree of desirability. In contrast, the statement “I am a violent person” is obviously much more susceptible to falsification.

(2) The relevance of the test result is high; this can refer to the personal relevance of a test item as well as to any subsequent consequences a test result might have. For example, someone who does not care about whether he or she is intelligent will probably not bother to modify the answer to the example given above. However, if the situational relevance of the test result is high, for example, if the item above was part of an important job interview, participants would be even more likely to adjust their answers to what they believe is desired in the present situation.

The likelihood for a low validity of an item⁴ can be regarded as a function of all these parameters. It is argued that the higher the degree to which parameters in a certain test situation are salient, the more likely it is that a direct assessment will yield results of a low validity.

What levels do the parameters assume when measuring personality growth? Table 1 gives an overview of the numerous reasons for reduced validity in the case of a direct measurement that have been listed here, and the degree to which these parameters are salient when testing personality growth.

³ A more detailed review of styles and biases in self-perception is given in section 2.3.2.

⁴ The term item in this context refers to the *topic* of a test, or the subject of assessment, and not to a single element of a psychological measure. It is chosen here because other synonyms (e.g., subject, topic) are even more ambiguous.

Table 1.

Overview of Parameters that can Reduce the Validity of Test Results when Assessing Personality Growth in a Direct Way

Sources of false test answers	Concrete parameters causing false answers	Salience in measuring PG ^a	
		low	high
Judgment competence	Item clarity		
	abstractness		x
	complexity		x
	not commonly used		x
Judgment performance	Ignorance of item normativity		x
	Unconscious tendencies		
	positivity bias		x
	self-consistency bias ^b		
	...		
	Faking test results		
	social desirability		x
	personal relevance of test result		x
	relevance of consequences of test result	x	

^a PG = personality growth^b A number of further biases could be listed here; however, as these biases are individually different depending on a person's self-concept, no general statements can be made with regard to the degree they are extant when measuring personality growth.

All parameters in the table are coded in a way that a high salience level implies a high risk for a reduced validity of test results in the case of direct measurement. It can be seen from the table that nearly all parameters that possibly can account for a reduced validity in the case of a direct measurement are salient when measuring personality growth. Hence, in the case of personality growth, the use of direct measures seems highly unwise. Instead, the numerous difficulties associated with direct measurement can be overcome by using indirect measures, that is, measures which are not recognized by the participants as what they are (for further discussions about indirect measures, see e.g., Petermann & Noack, 2003; Webb, Campbell, Schwartz, & Sechrest, 1999). Hence, it was the goal of the present study to provide another indirect alternative of measuring personality growth. 'Indirect' can either imply – as in the case of unobtrusive measures – that a participant does not realize that he/she is being tested at all, or that he/she is not aware of *what* is being tested. A concise overview of indirect measures is given by Petermann and Noack (2003; see Figure 1).

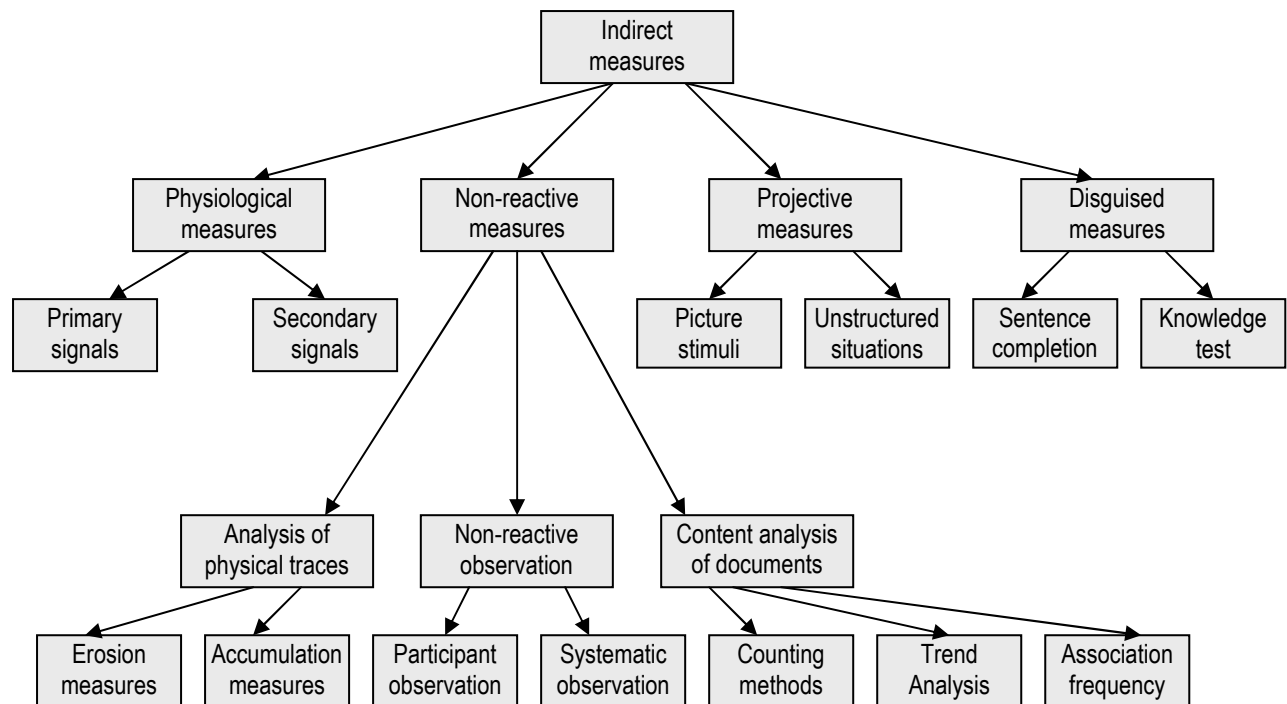


Figure 1. Overview of indirect measures (Petermann & Noack, 2003, p. 440; original in German, translation by author)

The present study is based on what Petermann and Noack call a disguised measurement (getarnte Messverfahren). According to the authors, the main characteristic of disguised measures is that the person, although aware of the testing situation, has no information about the specific aim of the assessment. Examples of disguised measures are personality questionnaires, perception tests or judgment tests. As the measurement of personality growth variables is particularly susceptible to social desirability biases, finding ways of circumventing or avoiding response biases is of special importance in this context.

In the present study, literature on the self-concept provided the theoretical background for the development of a personality growth measure. Why was the literature on the self-concept chosen as a background for developing an instrument? The relationship between the self-concept and personality growth, as well as the usefulness of the self-concept as an indicator of personality growth will be discussed in the following section.

1.1 What Does the Self-Concept Have to Do with Personality Growth?

In order to answer this question, let us first take a look at the basic functions of the self-concept. What is the self-concept good for? A concise summary of the functions of the self-concept in its current form is given by Harter (1999). Accordingly, self-processes serve to provide

- organization,

- motivation,
- and protection.

First, the self-concept performs *organizational* functions, in that it allows the attribution of meaning to life experience and helps to maintain a sense of coherence in the self and the world. In an even stronger statement of this function, Combs and Snygg note that the self-concept “is the frame of reference in terms of which all other perceptions gain their meaning” (1959, p. 145). In our minds, the self is like a stable core, and this perception indeed is crucial for our survival.⁵ The organizational function of the self-concept does not only imply that it orders and arranges pieces of information in a systematic manner. An order is also accomplished through the linking of knowledge with motivations and feelings (e.g., Hoyle, Kernis, Leary, & Baldwin, 1999). After all, feeling positively towards certain things and negatively towards others provides a powerful system of orientation. Furthermore, the function of the self-concept as an organizing element is linked to the social context. First, the same mechanisms that serve to establish a systematic mental representation of the inanimate world – namely by mentally positioning ourselves amidst all other objects – also operate when it comes to social entities, such as individuals, groups, and society. People perceive and judge not only matters, but also other people on the basis of self-relevant dimensions (Hill, Smith, & Lewicki, 1989; Lewicki, 1983, 1984; Markus, Smith, & Moreland, 1985). Thus, we will seek the company of the ones who make us feel good (or at least those who can provide circumstances that satisfy our needs) and avoid those who induce negative affect. The mental representation of our relations with others thus provides the base for the emergence of social structures.⁶ Second, many rules by which we construct our world and ourselves would not even exist without the social context: for example, self-attributions like shame, guilt, and pride only come about once we start to become aware of others’ perception of us (e.g., Izard, 1991; Loevinger, 1976).

Second, the self-concept has a *motivational* purpose in that it energizes the individual to select and pursue goals, and to define standards for improvement. The ability of mental extrapolation is crucial with regard to this purpose: projecting ourselves into the future and remembering our achievements in the past can serve as useful guideline to increase the effectiveness of behavior. Not only does this mechanism make it possible to gauge the desirability of alternative goals, but through comparing extant circumstances with imagined circumstances, we can engage in behaviors that bring

⁵ This need to perceive ourselves as stable is so powerful that processes which might present actual changes in ourselves from an observer’s point of view often are not perceived as such (e.g., Greve, Rothermund, & Wentura, 2005; Greve & Wentura, 2003). This aspect will be discussed in more detail in section 2.5.2.1.

⁶ This tendency to seek those whose company one enjoys also follows an evolutionary purpose: groups that are intentionally chosen because they offer greater benefits for the individual as compared to other groups will be especially close-knit (for a more detailed discussion on the evolutionary benefits of the self-concept, see e.g., Sedikides & Skowronski, 1997; Trivers, 2002).

us closer to the desired endstate. Again, the social context plays a vital role with regard to this function: virtually no need, ranging from the most basic needs linked to physical survival to higher-order needs like security and self-esteem, can be met without the assistance of other human beings. Given this strong dependence on social surroundings, the internalization of social rules is of crucial importance for us. The mental comparison between ourselves and social standards in turn enables us to gear our own behavior in a socially acceptable direction – which enhances the likelihood of being acknowledged as a group member.

Third and last, the self-concept assumes a *protective* function. “Protective” can be interpreted in a very loose sense, insofar as self-protection not only implies securing one’s survival, maximizing pleasure and minimizing pain, but also ensuring the satisfaction of one’s needs and goals in general. Thus, next to sufficient nourishment and hygiene, it may also be the acceptance of one’s status within the group that we will strive to protect, for example by maintaining or restoring a favorable impression of ourselves, by proving our superiority, or by demonstrating our solidarity with the group.

The three functions of the self-concept describe the relationship between an individual and his or her environment: they describe the aims that underly the perception, the mental processing, and the reactions called forth by any given stimulus. A stimulus does not necessarily have to be a concrete, tangible thing; neither does it have to be “outside” of ourselves. Human beings have the capacity for self-reflection, that is, they themselves, and their own thoughts and actions can become the objects of their thinking. In addition, the three functions are deeply intertwined. For example, our motivation will have an impact on what is perceived as dangerous and the ways information is organized; the way and the degree to which our self-concept organizes incoming information will be imparted to the kinds of motives and fears we have; the protective function of the self informs the order that is imposed on incoming information as well as the goals that are perceived as desirable. Thus, the three functions of the self-concept clearly are not isolated processes operating independently from each other. Rather, the self-concept exists to fulfil these three purposes. Its operations work towards all three aims simultaneously.

The reflexivity made possible through the existence of the self-concept is both a blessing and a curse (Leary, 2004a; Sedikides & Skowronski, 1997): on the one hand, the ability to reflect and communicate about oneself is critical to survival in a complex social world. On the other hand, the downside of this capacity for reflexivity is the relatively constant reminder of oneself. The same ability that allows people to plan their behavior, to adjust it to circumstances and expectations and to increase its effectiveness, reminds them that they could fail or fall short of what others or they themselves expect. In the light of these considerations, the three functions of the self-concept can turn into malfunctions: for example, the *organization* provided by the self-concept might draw on overly simplistic

or unrealistic dimensions; the *motivation* induced by one's self-concept can take the form of futile and ineffective goal-setting or might dictate a destructive and harmful course of action; and an example of the *protection function* of the self-concept, taken to the extreme, would be the conviction that contact with others has to be avoided at all costs.

In this work, it will be argued that the functions of the self-concept (i.e., organization, motivation, and protection) and the more or less felicitous realizations of these functions, in addition to our ability to engage in self-reflection, make the self-concept an ideal indicator of the level of personality growth in an individual. As illustrated by the examples above, it is assumed that certain forms of organization, motivation, and protection are superior to others (i.e., closer to the ideal of personality growth). Furthermore, it is hypothesized that a certain phenotype of self-concept functions that is chosen – more or less consciously – by an individual, results from differences in the amount of available resources, in the salience of needs and the conflicts arising from their specific constellation.

To specify the relationship between the self-concept and its functions on the one hand, and personality growth on the other is only possible by giving, first, a rough definition of what is meant by personality growth. Hence, the following section provides a preliminary definition of the concept of personality growth. It will be argued that there are at least two different definitions of growth with regard to personality development in current psychological research. The relationship between these two definitions and the three basic functions of the self-concept will be discussed (see Staudinger & Kunzmann, 2005, for a more detailed discussion).

1.2 The Meaning of Personality Growth

To answer the question of what growth does mean seems relatively easy in terms of some psychological areas. For example, when thinking of cognitive research, it seems obvious that the more words one can remember, the better; and the faster we can complete a problem-solving task, the higher the level of performance (e.g., P. B. Baltes, Lindenberger, & Staudinger, 1998).⁷ However, when it comes to personality, the meaning of optimal functioning seems less obvious. What is a desirable personality? Is there a desirable endstate to personality development? Is there *one*, or are there *many* potentially incompatible ends depending on the outcome criteria we examine? To what degree do subjective and objective criteria converge?

It seems that with regard to personality functioning at least two related but nevertheless distinct forms of positive development need to be distinguished (Dörner, Mickler, & Staudinger, 2005;

⁷ Even in this example, however, there is no *absolute* criterion of what represents a good performance: For example, a 9-year old will certainly be judged according to different standards than a 90-year old person.

Staudinger, Dörner, & Mickler, 2005b; Staudinger & Kunzmann, 2005). The first is based on evaluating developmental changes with regard to their adaptive value and their functionality for the individual as well as the community.⁸ Clearly, the capacity to function well within society, or “the ability to meet the various expectations set by society with a sense of comfort and congeniality” (Helson & Wink, 1987, p. 532) is an important trajectory from both the individual and the societal points of view. Given that personality development proceeds in this positive direction, it contributes to an effectively functioning everyday life, to the maintenance and accomplishment of subjective well-being, life success, and longevity. In other words, the survival and success of any human community is dependent on a high “incidence rate” of this kind of positive development. And indeed societies usually do not leave this to chance but take precaution to optimize the outcome (e.g., schooling system, educational and “developmental” tasks à la Havighurst). According to this view, every human being is regarded as *zoon politikon*, a community-creating being, which can only accomplish happiness when acting *according to* and not *against* the rules of the – both immediate and wider – society that he or she lives in. In sum, this notion of positive development is about adjusting to the given and making the most out of it. Positive development that moves beyond the given is not necessarily included in this positive and highly functional trajectory. Whenever this type of positive development is referred to, it will be called *adjustment*.

In contrast, the second kind of positive development refers to the pursuit of theoretically defined notions of *personality growth* (e.g., ego maturity, integrity, generativity) rather than the adaptation to cultural and biological imperatives. In these models, personality growth is not defined qua adaptation (e.g., as indicated by subjective well-being) but rather it is manifested in certain virtues such as insight, self-realization, self-transcendence, altruism, etc. Growth theories suggest that we continuously confront new tasks related to internal as well as external requirements and thereby have the potential to grow. Unlike the representatives of the previous view, proponents of this approach have in common that they consider neither the well-being of the person, nor the approval of other persons or the society as a yardstick. In contrast, as will be discussed later, individuals who incorporate this form of growth might even be unhappy; they might be at odds with what others expect of them, or might even oppose societal norms. In sum, these trajectories of personality growth imply going beyond the given, to strive for a transcendence of oneself, and to confront inner quandaries in an open and expansive manner. In the present work, this type of positive development will be termed *personality growth*.

When it comes to the relationship between those two forms of positive development, it is likely that they are not fully orthogonal. Instead, growth is only likely to happen once a certain minimum level

⁸ Similarly, the definition of clinical disorders almost always relies on whether a certain symptom causes psychological distress for the individual *and/or* the social environment of the individual.

of adjustment is provided. But an adjustment trajectory does not automatically imply progress with regard to growth. Assuming a high level on an adjustment trajectory might even imply that some problems are avoided intentionally, environmental conflicts are screened out, and that reality is not perceived in an objective manner, but with a positive and/or self-serving bias. The rather complicated causal connection between adaptation and growth is not easy to ascertain empirically (for related discussions, see e.g., Alker & Gawin, 1978; P. B. Baltes et al., 1998; Bauer & McAdams, 2004; Bauer, McAdams, & Sakaeda, 2005; Helson & Srivastava, 2001; Helson & Wink, 1987; Keyes, Shmotkin, & Ryff, 2002; Labouvie-Vief & Medler, 2002; McCrae & Costa, 1983; McGregor & Little, 1998; Noam, 1998; R. M. Ryan & Deci, 2001; Staudinger & Kunzmann, 2005; Waterman, 1993). A more detailed discussion of the relationship between adjustment and personality growth can be found in section 3.4.2.

The three self-concept functions can be used to differentiate the constructs of personality growth and adjustment. This idea is illustrated by Table 2. For example, in order to accomplish a high degree of adaptation, it must be provided that our *motives* do not strongly divert from what is prescribed by the society and the people around us; it must be provided that our mental *organization* of the world by and large is in accordance with the mindset of our culture, and that the organization has assumed a degree of complexity that enables us to grasp what is happening around us and to identify at least to a certain degree with those with whom we interact; it must be provided that our *protective* mechanisms are set on a level that lets us interact and communicate with others in a peaceful and unaggressive way. In contrast, when it comes to personality growth, it must be provided that there is some *motivation* to move beyond the given and question extant rules and regulations, yet with constructive and socially benevolent intentions; it must be provided that the mental *organization* is elaborate enough to allow the understanding of ambiguities as well as complex and abstract processes; it must be provided that protection is not overly strong, thus allowing the possibility of gaining new experiences.

Table 2.
Using Self-Concept Functions to Differentiate Between Personality Growth and Adjustment

	Personality growth	Adjustment
Organization	Highly complex, as well as integrated; structures and limitations prescribed by society become object of one's thought; oriented towards the unfamiliar and ambiguous	Complex enough to understand and follow the given social rules and regulations; structures of thought correspond to those prescribed by society; oriented towards maintaining integration of given knowledge and experience
Motivation	Self-development, learning and questioning; respecting needs and goals of others	Striving for satisfaction and well-being in accordance with one's (social) environment; finding a balance between one's own needs and the needs of others
Protection	Not fearful of the new and unfamiliar; being independent from protection of others	Identifying with the needs and strivings of one's social group; feeling protected through a sense of belonging.

In later sections (see section 3.4.2), the definitions of personality growth and adjustment are presented in greater detail, and more concrete examples will be given as to what kind of specifications are made with regard the functions of the self-concept, that is, organization, motivation, and protection. For now, it is only important to emphasize that analyzing the structure and dynamics of the self-concept is a helpful way to gain information about the levels of personality growth and adjustment.

1.3 The Aim of the Present Study

It was proposed that the self-concept can be regarded as a manifestation of personality growth and adjustment. In stark contrast to this notion, researchers studying the self-concept hold a somewhat one-sided view when it comes to the purpose of the self-concept. Unless self-concept development is regarded from a purely descriptive angle without reference to desirable outcomes, the changes and dynamics of the self-concept are dealt with almost exclusively from a purely adjustment-focused perspective. There are various illustrations of this point: first, legitimacy of self-concept research is frequently derived from its usefulness for well-being and adjustment (e.g., Byrne, 2002; Harter, 1999; Showers & Zeigler-Hill, 2003). Moreover, self-concept research, for quite some time, has been dominated by the study of self-esteem (see section 2.2), thereby focusing on one aspect of the self that is associated with a clearly adjustment-oriented perspective. Third, many of the historical writings about the self-concept originate from clinical literature, as, for example, the theories of Horney, Kelly, and Sullivan. Clinical theories, however, mostly have an adjustment-oriented focus and focus on re-establishing homeostasis, again neglecting developmental trajectories that move beyond a state of well-being.

The matter is hardly different when looking for the status of the self-concept in the literature on personality growth. A vast number of accounts on what growth is exist with regard to personality (D. Schultz, 1977; Staudinger, Dörner, & Mickler, 2005b) and cognitive functioning (for overviews see Alexander & Langer, 1990; Sternberg, 1990; Sternberg & Jordan, 2005). In contrast, it is difficult to find any research on the meaning of personality growth in terms of the self-concept. Exceptions are represented by Labouvie-Vief, who designed a method to evaluate the complexity of self-descriptions as a means to assess personality growth and used self-regulation strategies as markers of personality growth (e.g., Labouvie-Vief, 2003; Labouvie-Vief, 2005; Labouvie-Vief, Chiodo, Goguen, Diehl, & Orwoll, 1995; Labouvie-Vief & Diehl, 1999, 2000; Labouvie-Vief et al., 1994), and the theories by Loevinger (Loevinger, 1976; Loevinger & Wessler, 1970, 1978) and Heath (Heath, 1968; Heath & Heath, 1991) who attempted to operationalize maturity via components of the self. Empirical studies in which personality growth is linked with the self-concept are, for example, the one by Evans and Seaman (2000) who examined relationships between self-complexity and maturity of defense strategies and the work on ego development and self-image complexity by Hauser and colleagues (Hauser, Jacobson, Noam, & Powers, 1983). The study by Diehl, Owen and Youngblade (2004), where open self-descriptions were coded according to their level of expressed agency and communion, falls in a similar vein.

Following up on these attempts, and based on the previous considerations regarding the potential of the self-concept as an indicator of personality growth, the goal of the present study was to construct a measure of personality growth via the self-concept. As discussed above, it seems plausible that next to certain personality characteristics and cognitive features that are ascribed to “mature” individuals, there are also specific *features of the self-concept* that would distinguish personality growth from other forms of development. What is more, by assessing personality growth via the self-concept, personality growth can be assessed in an indirect way. As mentioned above, an indirect method is necessary to (a) circumvent the criteria problem of personality growth (that is, participants might have different ideas about personality growth, and as a consequence, their answers would touch on different constructs when asked directly about personality growth), and (b) to eliminate any problems arising from the high desirability of personality growth. In the case of a direct assessment of personality growth, the criteria problem would result in a low face validity of the instrument (Hoyle et al., 1999), and the social desirability of personality growth would result in a biased answering pattern.

The following work presents an attempt to outline how personality growth is manifested in the self-concept, or, in other words, what *self-concept maturity (SCM)* looks like, and how it can be assessed. The aim of this study is to develop a measure of SCM, to validate it, and to assess age differences. In order to come up with a definition of SCM, Chapter 2 gives an overview of current

theorizing and empirical evidence concerning the self-concept with a particular emphasis on findings relevant to lifespan development. Chapter 3 deals with personality growth: following a selective review of personality growth theories and a tentative location of personality growth with regard to other psychological constructs, an attempt will be made to integrate theories of personality growth with research on the self-concept, thereby proposing a first model of self-concept maturity. In Chapter 4, various methods of self-concept assessment are reviewed with regard to their potential in terms of the current study. At the end of the chapter, a method of measuring self-concept maturity will be proposed. Building on the elaborations in Chapter 3 and 4, Chapter 5 summarizes the current study and presents the hypotheses derived in terms of age differences in the self-concept maturity and the validation of SCM as an instrument to measure personality growth. Chapter 6 comprises information about the methods used in this study, and Chapter 7 gives the empirical results in terms of the age differences in the self-concept and the validation of SCM as an instrument to assess personality growth. In Chapter 8, the results and the design are discussed, and suggestions for potential improvements are made.

2 The Self-Concept: Conceptual Issues of Adult Development

“Will the real self of selves please stand up?” reads the title of an article by Lewis (1992, p. 1092), an editorial by Leary asks “What is the self?” (2004b, p. 1), and Tesser and colleagues articulate the necessity to clean up what they call the “self-zoo” (Tesser, Crepaz, Beach, Cornell, & Collins, 2000, p. 1476). These titles are just some examples that illustrate the confusion and the lack of clarity that is pervasive in current self-concept research. Indeed, self-concept is a term widely employed in the social sciences and covers a variety of meanings. Additionally, there is a tremendous range of related concepts, such as identity, self-theory, self-knowledge, self-system, self-description, etc., that all seem to be defined in similar ways. In the light of this plethora of meanings, it first seems pivotal to specify the meaning of “self” or “the self-concept” as employed in the present study.

2.1 A Preliminary Definition: What is the Self-Concept?

In contrast to the discouraging comments on the lack of agreement in current self-concept research cited above, the degree of overlap between various self-concept definitions is considerable. Although there is little overlap between the various meanings of the term “self,” a greater consensus exists with regard to the meaning of the “self-concept”, at least when it comes to a rough definition. For example, Shavelson defined the self-concept as a person’s self-perceptions that are formed through experiences with and interpretations of his environment (Shavelson, Hubner, & Stanton, 1976). In a similar way, Rosenberg referred to the self-concept as the “totality of the individual’s thoughts and feelings with reference to himself as an object” (Rosenberg, 1979/1986). This comes close to Epstein’s definition of the self-concept as “a theory that the individual has unwittingly constructed about himself as an experiencing, functioning individual” (1973, p. 405). Filipp and Klauer refer to the self-concept as “that part of our knowledge system,” in which “information related to the self is generated, processed, encoded, and stored” (Filipp & Klauer, 1986, p. 169). More recently, Baumeister gave a definition of the self-concept as “the totality of inferences that a person has made about himself or herself,” referring to “one’s personality traits and schemas,” but also to one’s “social roles and relationships” (Baumeister, 1997, p. 681). Likewise, Bergner and Holmes summarized current definitions of the self-concept as an “organized informational summary of perceived facts about oneself, including such things as one’s traits, values, social roles, interests, physical characteristics, and personal history” (2000, p. 36).

However, although at first glance all of these definitions seem rather easy to grasp, they turn out to be relatively unspecific when taking a closer look. For example, is an inference like “I am hungry” also part of the self-concept? Can feelings such as anger, joy, and disgust belong to the self-concept?

It becomes obvious then, that only those self-related thoughts and feelings that are relatively stable over time can be conceived of as parts of the self-concept. Moreover, to think of the self-concept merely as a “passive” body of knowledge being stored in our memory and activated from time to time would mask its dynamic aspects. After all, inferences about oneself are not simply made out of the blue – in contrast, all information that we perceive is processed through certain templates, which in turn are again partly based on our self-concept. A view that takes both the temporal and the bidirectional nature of the self-concept more strongly into account is Markus and Wurf’s definition (1987). The authors describe the self-concept as consisting of multiple representations that vary in (1) their centrality or importance; (2) whether they reflect actual or potential achievements; (3) their temporal orientation – that is past, present, or future; and (4) their positivity or negativity. Markus and Wurf further emphasize that the self-concept has both components that are relatively stable and those that are more malleable and contextually based. To summarize, persons have a relatively stable picture of who they are, what they like, how they would react to certain events, how they appear to others, and so forth. In any given situation, only a part of this picture is accessible to the persons themselves (“working self”; e.g., Markus, 1977; Markus & Wurf, 1987). In addition to these “seasonal” dynamics—which do not really present changes but rather express fluctuating saliences—there are also “macro”-dynamics (e.g., Filipp & Klauer, 1986): A person might truly change with regard to his or her self-concept. However, to what extent the self-concept operates as an agent rather than as a passive body of knowledge that is changed through external influences, and what kind of temporal and other hierarchies exist with regard to the storage of the self-concept, will be discussed in greater detail at a later point, where the historical background of emerging opinions on the issue will also be taken into account.

Based on Markus and Wurf’s working definition of the self-concept, the next paragraph will give a short account of the history of self-concept research (for more comprehensive overviews see Baumeister, 1987, 1997; Byrne, 2002; Harter, 1999, 2003; Hoyle et al., 1999; Leary & Tangney, 2003b; Linville & Carlston, 1994; Mischel & Morf, 2003). However, because the self-concept has played a role in almost all fields of psychology – such as clinical psychology, psychology of child development, and neuropsychology – the focus of this work will be the self-concept from a perspective of lifespan development and social cognition, which seem to be the most relevant areas within this framework. Building on this historical overview of issues related to the self-concept, the next section will describe the current embeddedness of the self-concept within the wider research context of psychology. Specifically, the relationship between research on the self-concept and (1) personality and (2) knowledge acquisition and representation will be elaborated further. The overview of the self in its historical and nomothetic context in turn will provide the theoretical background for the introduction of a conceptual framework that links different approaches on studying the self-concept in current

psychology (see M. Diehl, in press; Filipp & Mayer, in press; Leary & Tangney, 2003b, for alternative classifications). Adhering to the domains of research as introduced within this framework, the second part of the Chapter will give a short overview of current findings related to the self-concept with a particular focus on developmental issues, such as age differences and stability/variability.

2.2 Research on the Self-Concept: A Short Historical Overview

In the following, a short overview will be given on the self-concept in modern psychological literature. In chronological order, the review starts at the end of the 19th century, with the “founding fathers” of modern self-concept research: James, Cooley, Mead, and Baldwin. The popularity of the self-concept instigated by the writings of those authors faded around the 1930 with the advent of behaviorism – those areas where the self-concept retained its role as a psychological key-concept during the behavioristic era will be summarized briefly. The cognitive revolution in the 1970s then brought the rehabilitation of self-concept research: A few examples will be given illustrating the advancement of the self-concept from a primarily cognitive construct to its present status as a key construct in almost all areas of psychology, involving such diverse contexts as, for example, motivation, emotion, personality, and even neurophysiology.

2.2.1 Pioneers of Self-Concept Research: James, Cooley, Mead, and Baldwin

The study of the self-concept has a long tradition in psychological research. Most reviewers begin the modern history of self research with the writings of William James (James, 1890/1948, 1999). James advanced the distinction between the self as knower and the self as that which is known, referring to “the knower” as the “I”, and to “the known” – the self-concept as covered in the previous paragraph – as the “Me”.⁹ Furthermore, James set the stage for another paradigm in self-concept research that has caused heated debate among the scientific community ever since: the view of the self-concept as multidimensional. First, according to James, the *Me* can be subdivided into constituents, namely the *material self*, the *social self*, and the *spiritual self*. The *material self* comprises

⁹ A detailed discussion about the implications, interpretations, and problems with James' distinction would exceed the scope of this work (see Filipp & Klauer, 1986; Harter, 1999 for detailed information). At this point, it might suffice to note that James' distinction, although being highly useful as a rough epistemic framework to classify scientific approaches to the self, in a certain way is rather misleading: it suggests a clear separation between the elements of the I and the Me. However, viewing knower and known with regard to the self as separate entities would clearly be a false assumption. Instead, as mentioned before, the “known” about oneself is profoundly shaped by the way information is perceived and processed by the “knower”, implying influences within and beyond the scope of consciousness. On the other hand, what is “known” about oneself certainly will affect the thoughts, feelings, and behavior of the “knower” in innumerable ways. In other words, our actions are not only the offspring of our self-concept, but also serve as an indicator and corrective for the self-concept. The more recent division into “self as process” and “self as product” (Filipp & Klauer, 1986) therefore might be a more acceptable classification, since it takes these difficulties into account.

the bodily self as well as one's possessions. The *social self* consists of those characteristics recognized by others. Given the potential diversity of others' opinions, James concluded that "a man has as many social selves as there are individuals who recognize him and carry an image of him in their mind" (1890/1948, p. 190). The *spiritual self*, in turn, provides a kind of inner core comprising one's thoughts, dispositions, moral judgments, and so on that are enduring aspects of the self. Moreover, James noted that these multiple selves may not all speak with the same voice. For example, he observed that "many a youth who is demure enough before his parents and teachers swears and swaggers like a pirate among his tough young friends" (p. 169). Even so, James thought that the multiplicity of "self-voices" could be a harmonious one, for example when one is tender to one's children but also stern to the soldiers under one's command. Alternatively, there may be a "discordant splitting" if one's different selves are experienced as contradictory.

Being almost a contemporary of James, Cooley was the second researcher whose writings were of considerable influence for later cohorts of self-concept researchers (e.g., Cooley, 1902). He believed that social interaction was pivotal in forming an understanding of oneself, and that the self-concept indeed was mainly made up of others' opinions during the first stages of life. Thus, he noted that the adult as opposed to the adolescent was

not immediately dependent on what others think; he has worked over his reflected self in his mind until it is a steadfast portion of his thought, an idea and conviction apart, in some measure from its external origin. The sentiment requires time for its development and flourishes in mature age rather than in the open and growing period of youth (p. 199).¹⁰

The concept of deriving an opinion of ourselves through others was deemed "the looking-glass-self" by Cooley (1902): Accordingly, self-evaluations are made by projecting our own experiences in social encounters onto others. Thus, knowing that someone can cause feelings of sympathy, of approval, or of dislike in ourselves, we expect similar reactions from others as *they* encounter *us*. Other peoples' reactions towards us in turn are taken as an indicator of how we appear and how we are.

Baldwin (e.g., 1906) and Mead (e.g., 1934) later built on and extended the themes identified by Cooley, the former by explicating processes of building up self-knowledge in childhood, the latter by putting an even greater emphasis on the role of social interaction.¹¹

The distinction of the I and the Me, the multidimensional view of the self, and the potential conflict between different selves are only three of the themes in which James anticipated contemporary issues of research on the self-concept (for more recent examples, (a) on on the I-self/Me-self dichotomy

¹⁰ A similar development of the self-concept was later proposed by Rosenberg (1979/1986), who stipulated that the increasing awareness of the multiple and conflicting sources of one's self-concept would culminate in a crisis (*self-concept disturbance*) during adolescence.

¹¹ Similar to Sedikides and Skowronski (1997; see section 1.1), Mead believed that the social process was a vital precursor not only in phylo-, but also with regard to the ontogenetical emergence of the self-concept, and that the self-concept would not exist in its present form without the importance of social contacts.

see e.g., Bengtson, Reedy, & Gordon, 1985; Damon & Hart, 1988; Harter, 1983, 2003; Troll & Skaff, 1997; (b) on multidimensional view of the self, section 2.5.1 in this manuscript; and (c) on conflicts arising from multiple selves, e.g., Bigler, Neimeyer & Brown, 2001, Donahue, Robins, Roberst, & John, 1993; Filipp & Klauer, 1986; Harter & Monsour, 1992; Sheldon, Ryan, Rawsthorne, & Ilardi, 1997). Likewise, Cooley's, Mead's and Baldwin's attempts to clarify the role of others in shaping the self-concept have found their way into current theorizing about the self-concept (e.g., Andersen & Chen, 2002; Cross et al., 2000; Cross et al., 2003; Funder & Colvin, 1997).

2.2.2 Self-Concept Research during the Era of Behaviorism: Humanist Psychology as the Driving Force

It took a relatively long time, however, for the threads to be picked up by more recent researchers. In part, this was due to the behaviorist movement (~1930-1960s), or, as phrased in a more drastic manner by Mischel and Morf, "behaviorism virtually killed the self as a legitimate topic for psychological inquiry in mainstream academic research, and banned it as outside of what was then defined as the boundaries of science" (2003, p. 17). Pepitone even comments that during the 1950s, "the self looked as dead as the dodo bird" (1968, p. 347).¹² (Self-)cognitions during that time (1930s to 1960s) were regarded as unobservable and therefore were to a great part excluded from scientific research (Rosenberg, 1989). Moreover, the main method of receiving information about the self-concept, namely self-report, frequently disappeared from the assessment catalogs because people were considered inaccurate judges of their own behavior (Harter, 1998). Furthermore, the functions of the self-concept were not clearly defined, thereby rendering them uninteresting for psychologists with a behavioral background whose main interest, after all, was on the functional analysis of behavior. As a further consequence, studies based on such poorly specified causal relations appeared oversimplified and incomplete (Pepitone, 1968). According to Byrne, further reasons for the negligence of the self-concept were to be found in the "methodological weaknesses addressing both conceptual and psychometric issues... Conceptual deficiencies, on the one hand, focused on problems that related to definition... and to theoretical validity. Psychometric deficiencies, on the other hand, bore on the development, testing, and use of self-concept-measures" (2002, p. 898). Consequentially, extant inventories for self-concept assessment were largely considered as ungratifying because most of them simply consisted of a "hodgepodge of self-related items" (Marsh & Richards, 1988).

¹² Interestingly, the notion that the self-concept was practically dead during the times of behaviorism is mostly proffered by contemporary writers. In contrast, Gordon and Gergen in the introduction to their book "The self in social interaction" published 1968 even use the word "torrent" to denote the host of studies dealing with the self-concept. One interpretation of this contradiction is that only few of the studies and theories about the self-concept dating back to the 1960s have survived until today.

Even during the heyday of behaviorism, however, the self made its way into various theories. Not surprisingly then, especially those theorists within the humanistic protest movement, those who did not want to put up with the dominance of behaviorist teachings, took a firm stand in defense of the self as a fundamental concept for the behavioral sciences.¹³ Especially in clinical (e.g., Assagioli, 1978/1989; Kelly, 1977; Lecky, 1945, 1968; C. R. Rogers, 1951; C. R. Rogers, 1959), developmental (e.g., Erikson, 1963, 1968a; Maslow, 1968), and personality psychology (Allport, 1937, 1937/1961, 1968; J. Block, 1961a) one can find examples in which the self-concept kept its previous prominent role. However, most of these theories did not deal with the self-concept per se, that is, with the way or the content of the self-representation, but focused on certain aspects of the self-concept, with another topic being in the foreground. From today's perspective, the conceptualizations of these authors in terms of the self-concept might be classified into three directions: those who dealt with the *multiple nature of the self* and proposed that there should be a high *consistency* between different self-aspects (e.g., Block, Erikson, Kelly, Lecky); those who stipulated the notion of a *unitary self* and claimed a high *congruence* with it to be vital for psycho-social adaptation (e.g., Assagioli, Maslow, Rogers); and finally those who were preoccupied with the *structure of psychological processes* in an individual, and tried to locate the self within the greater framework of behavior, attitudes and personality (e.g., Allport). However, none of these approaches – with the exception of the theory by Block – at that time resulted in empirical research. If Allport was right, then this should come as no surprise, since, according to him, all concepts related to the self-concept had, at that time, “to experimental positivism... a slight flavour of scientific obscurity”, because they were employing “ancillary concepts such as self-image, self-actualization, self-affirmation, phenomenal ego, ego-involvement, ego-striving and many other hyphenated elaborations” (1955, p. 37). Allport himself was fully convinced that only *morphogenetic* (i.e., idiosyncratic) personality assessment was apt to capture the unique qualities of an individual, and so he identified and championed the use of morphogenetic methods – with one side-effect being that almost no quantitative studies dealing with Allport's concepts are available today (Ozer, 1993).

Instead, those publications that *did* treat the self-concept from an empirical point of view had a very limited scope: They were preoccupied with self-esteem, or as McGuire notes,

obsessed with evaluating, investigating the good-bad dimension almost to the exclusion of all others, as if evaluation were the only dimension in people's meaning space... As a result... in most self-concept research... the researcher-chosen dimension is usually confined to the self-evaluation dimension (1984, p. 88).

¹³ There is also a vast amount of theorizing of the self rooted in a psychoanalytical tradition. However, these Neo-Freudian notions of the self – such as in ego psychology, self-psychology, and object relations theory – are not mentioned here, since the word “self” is used in a different tradition in these accounts.

Authors dealt with the predictors and concomitants of self-esteem (e.g., Bradley, 1978; Coopersmith, 1967), and the question of how individuals were able to keep their self-esteem in the face of adversities (e.g., S. R. Jones, 1973). The same focus is clearly visible in the two arguably most influential scientific monographs on the self-concept of this time, Rosenberg's *Society and the adolescent self image* (Rosenberg, 1965) and Wylie's volumes on *The self-concept* (Wylie, 1961, 1974, 1979).

During the 1960s, there was a tentative reawakening of the interest in the self, probably due to the pervasive popularity of existentialism. After all, according to existentialist teachings, modern man was in desperate need of a sense of self and identity: his essential problems were to realize and to feel his being in an absurd and meaningless world; the questions he suffered were such as "Who am I?" or "What am I doing?". In psychoanalytic treatments of self-identity, these questions became of an increasingly greater concern, and partly even entered areas of scientific research.

2.2.3 Revival of the Interest in Self-Concept Research: The Cognitive Revolution

The onset of the cognitive revolution during the 1970s (Bruner, 1990) finally brought the rehabilitation for the study of thoughts and internal processes. As a consequence, the interest in self-concept research began to burgeon again. New ideas of how people attended to and processed information – many of them rooted in computer metaphors – brought a proliferation of models dealing with cognitive representations, among them many that dealt with self-representation (e.g., Epstein, 1973; Epstein, 1994; Markus, 1977, 1983; Shavelson et al., 1976).

But soon self researchers began to look even beyond the self as object to consider its functions as a "doer": not only the representation, but also procedural aspects of the self-concept, such as the processing, acquisition, and retrieval of self-relevant knowledge and the factors mediating these dynamics attracted increasingly more attention (e.g., Carver & Scheier, 1981; Duval & Wicklund, 1972; Neisser, 1988). This vitalization of the area in turn inspired more and more researchers to look beyond the "cool" topics of knowledge representation and processing, and to take motivations, emotions and behaviors increasingly into account. For example, knowledge structures were extended to include outcome expectations, action evaluation, and affective information and even to prescribe goals and desires (see Hoyle et al., 1999 for a comprehensive discussion). Next to self-esteem, some other definitions of trait-like attributes appeared on the scene that also referred to the self; e.g., *self-monitoring* (M. Snyder, 1974) or *self-consciousness* (Fenigstein, Scheier, & Buss, 1975). Moreover, it soon became obvious that it was almost impossible to study agentic processes such as self-regulation

and self-control without invoking explanatory mechanisms. For example, *why* should someone diet, and be persistent in it? *Why* should someone have the goal of seeking intimate relationships? In the attempt to address these questions, the framework of studying the self was even further expanded to include differential and developmental factors such as stages in lifespan development and autobiographic history. The concept of identity, which hitherto had been popular primarily in sociological research, was increasingly adopted to explain questions related to the self-concept (e.g., Blasi, 1988; McAdams, 1985; Yardley, 1987). Additionally, because of the advent of statistically sophisticated analytic procedures such as structural equation modelling and the availability of computer programs designed for their implementation, many of the conceptual and psychometric deficiencies of previous times could be overcome.

The prominent status the self has reached in various domains of research has exacerbated the definition problem: constructs and conceptions of the self vary widely across and within research domains and even the same terms are far from consistent in usage. As Leary and Tagney note, the topic of self “from the beginning... has been bogged down in a conceptual quagmire as muddy as any in the social and behavioral sciences” (2003b, p. 6). There are two areas which lie especially close by to this “quagmire” made up by different conceptualizations of the self and that sometimes even become part of it: personality and knowledge representation / information processing. Thus, it seems vital to disentangle these constructs from the term self-concept as used in the present study. The following sections provide a more detailed look at (a) the self-concept and personality (see section 2.3) and (b) the self-concept and knowledge representation and information processing (see section 2.4).

2.3 The Self-Concept and Personality

To discuss personality in the present framework seems especially necessary for two reasons: first, the way the self-concept and personality are theoretically related has crucial consequences for the view of the self-concept as malleable / stable throughout development. As the identification of age differences in the self-concept is one main topic of this work, it is of vital importance whether the self-concept is regarded as a stable or changing entity, and, in case it is regarded as malleable, to identify the factors that cause changes in the self-concept. Second, as will be discussed, personality dispositions might have tremendous consequences on the way self-referent knowledge is being processed and how the self-concept affects thoughts, feelings and behavior. Hence, it is indispensable to identify those mechanisms of self-knowledge processing that depend on interindividually different personality dispositions and those that are more or less universal. The self-concept in this study is used as a marker of interindividual differences. Hence, those processes that are universal for all human

beings are irrelevant in this context. In contrast, there are certain tendencies in self-referent knowledge processing that, like personality dispositions, might be salient in an individual to a lesser or greater degree and therefore can be used to differentiate one person from the other. Those tendencies are relevant for this work because they operate as explanatory mechanisms in interindividual self-concept differences.

Naturally, the relationship between the self-concept and personality is easy to identify for those approaches in which both constructs are equated (for examples, see Leary & Tangney, 2003b). However, whereas using “self” as a rough synonym for personality appears to be acceptable for everyday discourse, using both terms synonymously is likely to breed confusion when it comes to scientific writings. After all, is there not something more to a person’s self than what is normally extracted from a personality questionnaire? But what precisely is this “something”? What relationship exists between the self-concept and personality? Of course, the answer to this question depends crucially on how each construct and area is defined. On close examination, those definitions and the cuts they produce in how the phenomena of interest are identified, partitioned, and pursued are highly consequential – and have become increasingly confusing over the years. Not surprisingly then, the relationship between self-concept and personality has seldom been elaborated (see e.g., Epstein, 1993; Gramzow et al., 2004; Greve, 2005a; McCrae & Costa, 1997b, 1999; Pulkkinen, Maennikkoe, & Nurmi, 2000 for exceptions). Self researchers and personality researchers frequently have developed parallel concepts, measures, and findings, thus shadowing each other rather than building on each other in ways that would enhance the growth of a cumulative science. Thus, much of the theory about the self has not been linked to the dynamics of personality. At the same time, much of the work in personality psychology has ignored self-relevant processes and focused on stable traits conceptualized as broad behavioral tendencies or dispositions, as in the so-called “Big Five”. However, apart from the difficulties in bringing two different terminologies together, the question arises in which cases it seems necessary to take both the self and personality into joint consideration. That is, with regard to which research questions *do* the topics of personality and the self overlap?

2.3.1 Relationships between the Self-Concept and Personality

In general, when thinking about the relationship between the self-concept and personality, at least two aspects seem to be of interest: (1) What kind of mutual influences exist between the self-concept and personality? (2) To what degree do personality and the self submit to the same processes?

However, in order to address the basic links between self psychology and personality psychology, one has to begin by clarifying what is meant by personality psychology. For reasons of brevity, whenever the term “personality” is employed here, only the arguably most popular contemporary approach to personality, the *trait approach*, will be discussed (for taxonomies of personality theories on different levels see e.g., Cervone, 2004; Hooker & McAdams, 2003a, 2003b; McAdams, 1995).

Under the trait approach to the study of personality, efforts to characterize individuals in terms of attributes and behavioral dispositions are subsumed, a line of research that originated primarily in the psychometric tradition. Research in this area focuses on the identification of the structure of personality, interindividual differences, and the extent of longitudinal stability (e.g., Costa & McCrae, 1989; Costa & McCrae, 1994, 1997; Goldberg, Sweeney, Merenda, & Hughes, 1998; John & Srivastava, 1999). The focus is on identification and description of the broad traits that people “have” on a consistent and long-term basis.

What relationships exist between personality and the self? Taken together, there seem to be three important ways of mutual representation and/or influence.

First and very obviously, personality traits form part of the content of the self-concept (Leary & Tangney, 2003b; McCrae & Costa, 1988). An individual has beliefs about his/her personality; he/she may see him- or herself as being anxious or calm, sociable or detached, imaginative or practical. Thus, one could compare the relationship between personality and self-concept with the relationship between one's appearance and the image of our appearance when we look in the mirror: our personality, just like our appearance, exists, whether we pay attention to it or not. If we do, though, we can grasp it only from one single point of view; that is, from our own (see also Jopling, 1997).

Second, speaking from a trait approach, personality influences the self-concept in significant ways, whereas the self-concept does not have an impact on personality (McCrae & Costa, 1999; McCrae et al., 2000). This is due to different positions within the personality system: within *Five-Factor Theory* (FFT), the authors identify two different sets of psychological variables characterizing individuals over time. According to this model, *basic tendencies* are supposed to be endogenous, that is, exclusively biologically based.¹⁴ In contrast, *characteristic adaptations*, while originally emerging from basic tendencies, are culturally conditioned phenomena. Personal strivings, attitudes, and the self-concept all fall under this heading. As such, the self-concept, although being rooted in personality traits, is susceptible to all kinds of environmental influences such as parenting, peer influence, the media,

¹⁴ In contrast to other theories of personality (e.g., Cloninger, 2003; Hooker & McAdams, 2003b), where only very broad factors are supposed to be endogenous, FFT assumes that both broad personality factors like extraversion as well as specific traits like sociability or dominance are basic tendencies, that is, “not at all” influenced by the environment (McCrae et al., 2000, p. 175).

educational systems, and so on, whereas personality is not. A second important implication is that, as stated before, personality *does* exert influence on the self-concept, whereas the self-concept has no impact on personality traits. This becomes particularly obvious in the way self-esteem is influenced by personality (McCrae & Costa, 1988): thus, individuals high on the broad personality dimension of neuroticism are prone to be unhappy and dissatisfied with all aspects of their lives including themselves (Costa & McCrae, 1984). Low self-esteem, in contrast, is not supposed to be a source of neuroticism (McCrae & Costa, 1983).

Contrarily, many contemporary self-researchers propose that the way a person thinks about him- or herself will have a profound influence on his or her personality (Mischel & Morf, 2003). Thus, self-researchers much more than theorists coming from the trait-approach propose a mutual interaction between self and personality, whereas researchers from a trait tradition maintain that the self-concept is shaped by personality, but not vice versa.

To conceptualize a psychological construct as strictly endogenous or as susceptible to environmental influences carries important implications for assumptions about its stability and change over the life span. According to FFT, personality is stable whereas the self-concept, though being rooted in the stable personality, can change throughout life. In contrast, most self-researchers and also those personality researchers who do not adhere to the trait approach to personality (P. B. Baltes et al., 1998; Cloninger, 2003; Helson & Kwan, 2000; Helson, Kwan, John, & Jones, 2002; Helson & Stewart, 1994; Roberts, Robins, Caspi, & Trzesniewski, 2003; Roberts, Wood, & Smith, 2005; Staudinger, in press) would deny such a view. Instead, personality and self-concept are seen as being both stable and malleable to a certain extent. Thus, irrespective of the theoretical background, there seems to be a consensual notion of the self-concept as being changeable.

Various approaches deal with interindividual differences in the way in which information is processed and integrated into the self-concept. According to Filipp and Klauer (1986), there are six principles presumably operating on how a given stimulus is encoded and related to the self, namely (1) distinctiveness/uniqueness (2) self-enhancement, (3) consistency/unity, (4) control-enhancement, (5) veridicality/reality, and (6) ontological acceptability (for another summary on principles operating in the processing of self-referent knowledge see, e.g., Epstein & Morling, 1995).¹⁵

In Chapter 1, it was argued that the self-concept fulfills three functions, namely organization, motivation, and protection. How do these functions relate to the principles of processing self-referent information? The relationship is complex, but perhaps it would be most appropriate to say that organization, motivation, and protection operate on a very abstract and global level, whereas the six

¹⁵ The terms are adopted from Filipp and Klauer (1986, p. 178).

principles named above are concrete specifications of how the self-concept functions come to bear when it comes to the encoding, processing, and integrating of self-referent information. As a more detailed description of the six principles will show, all of them to a certain extent contribute to organizing self-referent information, motivating and protecting the self.

On an even more concrete level, a multitude of self-related behavioral tendencies can be derived from the six principles. For example, some concepts deal with the degree to which persons engage in self-reflection, that is, how much they are occupied with self-referent thoughts (e.g., Nasby, 1989a; Nasby, 1989b; Wicklund & Eckert, 1992), or to what degree they adapt their behavior to interaction partners, ("self-monitoring", M. Snyder, 1974, 1987). However, although empirical studies based on such specific forms of self-referent information processing have been very fruitful for self-concept research, their sheer quantity is too great to provide an overview here (for overviews, see e.g., Greve, 2005b; Hoyle et al., 1999; Leary & Tangney, 2003a). Instead, the focus here is on the six more global principles (uniqueness/distinctiveness, self-enhancement, consistency/unity, control enhancement, veridicality/reality) and the way they may lead to general and age-related differences in the self-concept.

2.3.2 Principles of Processing Self-Referent Information

The notion of the principle *uniqueness/distinctiveness* is based on the assumption that individuals try to maintain an optimal level of individuation and feelings of personal distinctiveness (C. R. Snyder & Fromkin, 1977). Although this principle presumably is especially important in early self-concept development – differentiating self from other (Ainsworth, 1973, 1974; Mahler, 1968) – it has been shown to be effective in later years as well, particularly in adolescence (e.g., Hoffman, 1984; Kroger, 1998; Steinberg & Silverberg, 1986). For example, in several studies with schoolchildren and young adolescents, it has been demonstrated that salience in spontaneous self-descriptions clearly follows the principle of differentiation/individuation (Fromkin, 1972; Lynn & Snyder, 2002; C. R. Snyder & Fromkin, 1977). Whether the need for uniqueness remains significant in middle and late adulthood is unclear. It seems plausible that once individuals have acquired a stable identity, being perceived as “different” from others is of minor importance. Indeed, in a study by Mueller and Ross (1984), older people rated significantly more adjectives as mutually descriptive (i.e., self-descriptive as well as descriptive of their best friend) than younger adults. Similarly, Bode, Westerhof and Dittmann-Kohli (2001) found that concerns related to individuality decrease in their centrality for the self-concept across adulthood. However, more research is needed to confirm this age pattern and investigate explanatory mechanisms. The principle of uniqueness/distinctiveness in early ontogenesis might primarily serve an

organizational purpose: conceiving oneself as distinct from the environment and from others is a prerequisite for developing a sense of agency or “will power” in Eriksonian terms. In the course of adolescence, however, the protective and motivating function of the principle seem even more important, since finding out about the “unique” sides of oneself is crucial for finding one’s identity and developing a stable sense of self-esteem.

The second principle, *self-enhancement*, refers to the observation that individuals encode self-referent information in a way that their feelings of self-worth are enhanced or at least protected (e.g., Bosson, Brown, Zeigler-Hill, & Swann, 2003; Bradley, 1978; Colvin, Block, & Funder, 1995; Epstein, 1981; Taylor, Neter, & Wayment, 1995; Trope, 1986). Writers propagating self-enhancement believe that we selectively process positive information – and also try to evoke a positive impression – about ourselves in order to boost our self-esteem. There have been very few studies that have investigated the tendency to self-enhance over the lifespan. One study by Mueller, Wonderlich, and Dugan (1986) yielded that older adults use more positive attributes in their self-description than younger adults. In another study, older adults generated a higher number of positive attributes than younger adults when asked for five role-specific self-descriptions (Dörner, Diehl, & Staudinger, 2006). In any case, a positive self-perception seems to be particularly important in old age regarding its effect on both functional health (Levy, Slade, & Kasl, 2002) and longevity (Levy, Slade, Kunkel, & Kasl, 2002).

The third principle, the *consistency* or *unity principle*, is often considered to operate somewhat antagonistically to self-enhancement: Researchers emphasizing the principle of consistency/unity maintain that individuals seek information about themselves in the attempt to confirm whatever they believe about themselves (“self-verification”, e.g., Katz, 2001; Swann, 1983). Accordingly, individuals frequently resist various attempts to alter their self-referent cognitions (e.g., when provided with contradictory evidence), regardless of whether or not such consistency is achieved in exchange for self-enhancement (Epstein, 1981; Giesler, Josephs, & Swann, 1996; Swann, 1990; Swann & Brown, 1990; Swann, Pelham, & Krull, 1989; Swann, Stein-Seroussi et al., 1992; Taylor et al., 1995). Maintaining self-consistency has frequently been considered an especially important factor in successful aging (Atchley, 1989, 1999; Greve, 2005b). Supposedly, perceiving a strong consistency in oneself over one’s lifetime can help to compensate for age-related decline. According to Brandtstädter, “the maintenance and defense of established self-definitions” in old age even become the “basic vectors of intentional self-development” and thus replace “expansion and self-actualization” as the most important developmental goals (Brandtstädter, 1999, p. 1).

For a very self-assured and self-confident person, the theories of self-enhancement and self-verification would make equal predictions, namely, that a person in any kind of feedback situation would selectively perceive and acknowledge positive feedback and ignore negative feedback. In contrast, for

someone with a negative self-view, self-verification theory would assume that this person would focus on negative information about himself, whereas the *self-enhancers* would still claim that positive information is preferred.

A third group of researchers alleges that the central motive in self-perception is reduction of uncertainty or *control enhancement*. Striving for this goal, they argue, people would prefer an accurate and veridical picture of their abilities and personality characteristics, permitting them a relatively precise prediction of self-relevant outcomes in any situation. In turn, these theorists would claim that in their self-perception, individuals would strive for *self-assessment* and always seek the information with maximal diagnostic value (e.g., Trope, 1986). In contrast to the other two groups, those researchers would negate not only a positive but also a self-verifying bias in self-perception. The important goal here is to rely on a body of self-referent knowledge in the numerous transactions with the “outside” world.

Efforts to see oneself realistically are also in accordance with the principle of *veridicality/reality*. This principle, however, is especially open to dispute. On the one hand, it is claimed that the key for successfully coping with the demands of one’s life is to be accurate about one’s self (Allport, 1937/1961; Haan, 1981; Maslow, 1954/1987). On the other hand, it is argued that an increase in the veridicality of self-related cognitions can often be achieved only at the cost of depressive mood and lower feelings of self-worth. A host of studies consistently report differences between depressive and nondepressive individuals with regard to their causal attributions and contingency perceptions in experimental settings – depressives being much more veridical and “realistic” in their self-perception (“depressive realism”, Alloy & Abramson, 1979, 1988; Taylor, 1983; Taylor & Brown, 1988, 1994).¹⁶

The self-concept has to be “as accurate as possible, but rather as realistic as necessary” (Greve, 2005, p. 51), but it is not easy to ascertain what this precisely means. A core problem of empirically assessing veridicality of self-perceptions is that only those self-related cognitions are measurable in terms of their veridicality that can be linked to clearly defined behavioral references – which limits the possibilities to assess self-veridicality considerably. In an attempt to avoid these difficulties, therefore, researchers have used another experimental paradigm to test self-veridicality: ratings of significant others, such as spouses, friends, and relatives were compared with self-ratings (“self-accuracy”, e.g., Bernieri, Zuckerman, Koestner, & Rosenthal, 1994; A. L. Edwards & Klockars, 1981; Funder, 1991; Funder & Colvin, 1997; McCrae, Costa, Martin et al., 2004; Robins & John, 1997). However, high correspondence does not necessarily prove the veridicality of internal representations of

¹⁶ However, there is an almost equal amount of studies that have questioned the validity of empirical evidence confirming “depressive realism” and deny the very existence of the phenomenon (J. Block & Colvin, 1994; Colvin & Block, 1994; Colvin et al., 1995; Pelham, 1991).

self and other, respectively. Rather, it may reflect the tendency of individuals to continuously co-construct and consensually validate their knowledge within social relationships, as inherent in the notion of “ontological acceptability” (see below). A second empirical paradigm used to assess self-veridicality is to measure the degree of correspondence between self-concepts and actions, mostly – for the sake of assessability – in achievement-related domains. However, correlations are not overwhelmingly high and they even lack statistical significance in some studies (Filipp & Klauer, 1986; Harter, 1990). In fact, most of the times, self-concepts are probably “not faithful mirrors of the self; they range from more or less accurate representations to vaguely workable likenesses to outright illusions. Most self-concepts are a haphazard mixture of all these elements.” (Jopling, 1997, p. 255).

An empirical comparison of all three paradigms (i.e., self-enhancement, self-verification, self-assessment) lent strongest support to the theory of self-enhancement (e.g., Sedikides, 1993) stating that people in general tend to favor and subsequently confirm the discovery of positive rather than negative or highly diagnostic characteristics, even across cultures (Sedikides, Gaertner, & Toguchi, 2003). With regard to the other two motives, findings bolster the self-verification view at the expense of the self-assessment view, suggesting that people prefer information they believe in and are familiar with to unfamiliar information about themselves (Sedikides, 1993). This result is in line with a universal preference towards consistent as compared to inconsistent information (Cialdini, Trost, & Newsom, 1995). At the same time, it is important to note that the preference for self-enhancing information is only a general rule, but that there are also conditions where one of the other two motives takes precedence over self-enhancement (Swann, Hixon, & de la Ronde, 1992; Swann et al., 1989).

From this body of evidence, one can conclude that the needs to see oneself (1) in a positive light and (2) consistently with one’s established self-concept are very powerful mechanisms in information processing. As will be shown later, these needs also influence the amount of change that takes place within the self-concept: for example, an individual will retain the perception of him-/herself as “someone with a good memory” even though his or her abilities to recall and remember information might have badly deteriorated over time. And it follows from the tendency to self-enhance that positive attitudes about oneself will be especially resistant to change.

A final principle is the principle of *ontological acceptability*, which has been introduced by Gergen (1981). Accordingly, individuals often adopt certain views of themselves in order to ensure that their self-referent knowledge is not too discrepant from that held by significant others. Thus, self-knowledge is not only transmitted via social interaction; its generation is also mediated by the need to construct valid concepts that are confirmed by the feedback of one’s social environment, especially the feedback of close others (Andersen & Chen, 2002; Cross et al., 2000; Cross et al., 2003; Pelham & Swann, 1994). Again, this notion strongly reminds us of Cooley’s looking-glass-self, and the importance

of social interaction for one's self-construal as postulated by Mead. The principle of ontological acceptability is supposedly of great importance in the explanation of change or stability of self-referent cognitions across the life span: hence, especially long-lasting social relationships such as partnerships or child-parent interactions might act as stabilizers of an existing self-view, whereas new significant acquaintances might instigate modifications in the self-concept.

A number of theories have specifically dealt with the salience of those principles and the effect they have on stability and change in the aging self: older age represents an especially intriguing setting for studying the dynamics of self-related cognitions because it is normatively associated with numerous physical, psychological, and social role changes that pose a challenge to an individual's sense of self and his or her capacity to live happily. A question that has attracted strong interest therefore is whether and in what way these changes are reflected in the self-concept. Two theories will be briefly reviewed below, specifically the theory by Brandtstädter and Greve (1994) and Whitbourne (1996, see Sneed & Whitbourne, 2005 for further theories on the issue). An underlying notion of both theories is that two of the tendencies just discussed, namely *self-enhancement* (or the "pleasure principle") and *self-consistency* (the "reality principle"), are especially vital principles in mastering the challenges of older age successfully. Furthermore, both theories deal with the question of how *realistic* self-perception has to be in order to maintain an ideal level of coping resources when facing the symptoms of age-related decline.

Brandtstädter and Greve's (1994) model of the aging self is a personal control model that postulates age-related changes in control-related thoughts and behaviors. According to this model, the ability to maintain a positive sense of self in later adulthood is primarily the result of a shift from assimilative to accommodative coping strategies. Assimilative coping strategies are defined as efforts to maintain the desired aspects of the self by maintaining goals even against resistance and pursuing strategies tenaciously until they are achieved. Accommodation is the ability to disengage from blocked goals, adjust one's aspirations and self-evaluative standards, use self-enhancing comparisons, and selectively reduce or increase the attractiveness of developmental goals.¹⁷ Because of normative age-related losses, individuals are seen as shifting from the assimilative mode to the accommodative mode with increasing age. However, to keep a balance between both modes is important for successful aging: giving up whenever a minor obstacle has to be surmounted eventually will result in the abandonment of everything that makes life meaningful and happy. Likewise, clinging to parts of the self that exceed one's present resources and capabilities eventually will lead to exhaustion, and feelings of

¹⁷ The notion of assimilative and accommodative coping strategies is very similar to the notion of primary and secondary control respectively, by Heckhausen and Schulz (1995). In this theory, as well, age is assumed to go along with loss of primary control, compensated by an increase in the importance of secondary control.

burn out, inferiority and failure. Maintaining self-convictions that hold no longer true is similarly dysfunctional. Hence, successful aging can only be accomplished by engaging in flexible goal pursuit and adjusting abilities according to one's needs and resources (see also Brandtstädter & Rothermund, 1994; Heckhausen & Schulz, 1995). At the same time, a disengagement from one goal goes along with upgrading those aspects of the self that still seem viable. In effect, this strategy will result in a self-concept where the aspects of the self that remain unimpaired are at the same time those that are considered most valuable (Greve, 2005b; Greve & Wentura, 2003).

Whitbourne's *identity process theory* (Whitbourne, 1996) proposes that age-related changes in adulthood are negotiated through the processes of identity assimilation, identity accommodation, and identity balance. *Identity assimilation* refers to the interpretation of identity-salient experiences according to one's current self-convictions. Supposedly, identity assimilation is a process that individuals use to maintain a sense of self-consistency even in the face of discrepant experiences or information about the self. An exclusive use of assimilative processes would result in a fixed and rigid way to approach new experiences, and a selective seeking out of information consistent with the current self-concept. *Identity accommodation* is the process of changing identity in response to new experiences that are discrepant with existing convictions about the self. An excessive reliance on accommodative processes would make an individual highly responsive to external influences; looking outside of oneself for inner guidance. In fact, the likelihood for a negative self-evaluation is high once the expectancies of others cannot be met.

In general, whenever identity discrepancies occur (such as feedback that is inconsistent with one's self-concept), they are supposed to be first processed through identity assimilation. Only when identity assimilation fails does the individual use identity accommodation. A dynamic equilibrium between identity accommodation and assimilation is theorized to be the most adaptive approach to aging and is captured in identity process theory by the concept of *identity balance*.

2.4 The Self as Body of Knowledge

To review the writings about the mental representation of the self-concept in the present work is particularly important because many of the self-concept assessment methods that will be discussed later (see section 4) emerged from cognitive research on the self-concept. Hence, current categorizations of self-concept measures as well as the concrete items of self-concept questionnaires frequently bear a strong relationship to self-concept theories coming from the cognitive realm, and therefore a closer look at these theories enables a better understanding of the means and methods applied in the present study.

As it has been shown in the short historical overview of the self-concept, the most recent period of popularity of the self-concept in psychology started with the onset of the cognitive revolution. As a consequence, a wide array of writings deals with the self-concept from a cognitive point of view, that is, as a body of knowledge. As the previous paragraphs have dealt with principles used in the processing of self-referent information and have focused more on differential issues, the next paragraphs will deal with more or less universal principles in the dynamics of the self-concept, such as the sources of self-relevant knowledge and the ways in which the self is mentally represented.

2.4.1 The Sources and Specific Characteristics of Self-Related Knowledge

We are not born with the knowledge of who we are. Just as we have to learn about the things, events and people in our environment, we have to learn about ourselves. In fact, getting to know ourselves is certainly in many ways harder than learning about our environment. First, the surface features we use to categorize every other object in our environment – shape, color, taste, tactile properties, sound, movements, weight – are in general only to a very restricted degree suitable for judging *people*. Other categories have to be applied, and these categories change depending on the developmental stage we are in. Clearly, they have to do with much more than just sensual stimuli, including an increasingly complex network of needs, experiences, and learned heuristics. However, there is a second difficulty which makes the perception of ourselves even more difficult than perceiving others. Indeed, we cannot judge ourselves as we judge others (Hill et al., 1989; Lewicki, 1983, 1984; Markus et al., 1985). We do not simply hedge sympathy for ourselves as we do for others. We cannot go along or disagree with our own lifestyle, attitudes, behavior, as we do in terms of other persons. In fact, we cannot use *any* of the categories that we usually apply to classify our social environment, such as sympathy, similarity, group stereotypes, and so forth.

Cooley's notion of the "looking-glass-self" as introduced earlier was an important step in identifying the sources and measures that people apply in the acquisition of self-knowledge (1902). Accordingly, the social environment presented a pivotal factor in forming our self-understanding, or, as Cooley formulated:

As we see our face, figure, and dress in the glass, and are interested in them because they are ours, and pleased or otherwise with them according as they do or do not answer to what we should like them to be; so in imagination we perceive in another's mind some thought of our appearance, manners, aims, deeds, character, friends, and so on, and are variously affected by it.

A self-idea of this sort seems to have three principal elements: the imagination of our appearance to the other person; the imagination of his judgment of that appearance, and some sort of self-feeling, such as pride or mortification. The comparison with a looking-glass hardly suggests the second element, the imagined judgment, which is quite essential. (1902, p. 84f.)

However, despite Mead's (1934) claims that this kind of information was the primary basis of self-knowledge, this is not the whole story. Obviously, features of oneself are not only deduced from interaction with others. According to Filipp (1979), there are five different sources of self-knowledge, namely (1) direct, (2) indirect, (3) comparative, (4) reflective, and (5) ideational (see Freund & Smith, 1997; 1999, for a similar classification). In line with Cooley's assumptions, an important source of self-knowledge are other people, through whom we receive feedback not only by explicit comments (*direct*), but also by their reactions and the general outcomes of our own actions (*indirect*). However, other people do not only constitute a mirror image of ourselves; rather, the social environment also provides a kind of yardstick that can tell us where we stand (*comparative*). Furthermore, comparisons are not made only with regard to others; we also make temporal comparisons to ourself in the past ("comparative", e.g., Suls, Martin, & Wheeler, 2002; Suls & Wheeler, 2000). Apart from that, we continuously reflect on what we do (*reflective*), and as we get older we form an increasingly more specific picture of how we want to be ("ideational", e.g., Higgins, 1996). Most other categorizations of sources of self-knowledge overlap with this classification (for an overview see Filipp & Mayer, in press). One source not listed here is the *ecological* self (Neisser, 1988), which is the self as directly perceived with respect to the immediate physical environment, and by the tactile and sensory information of our own body.

Now, we have gained more information about the sources of self-referent knowledge. But what kind of information is meant when speaking of self-referent knowledge?¹⁸ First, insofar as the self represents an object of our knowledge and memory system, it succumbs to the same rules as any other object of our knowledge. That is, principles governing the acquisition, change and activation of all knowledge are assumed to equally apply to self-knowledge. Accordingly, the study of how people think about themselves draws heavily on more general models of human cognition. In those models, a basic distinction is made between two broad categories of knowledge, namely *procedural* and *factual* (or "*declarative*") knowledge. The distinction has also proven useful for understanding the nature of self-knowledge (see also Hoyle et al., 1999; Kihlstrom & Cantor, 1984).

However, rules that explain mechanisms related to a purely cognitive understanding of knowledge will only account for a part of the dynamics related to self-knowledge. Informed by the multitude of its sources, self-knowledge is continuously formed and re-formed, and – different from "cognitive" knowledge in the stricter sense – its changes are strongly influenced by motivations and emotions. Thus, the body of knowledge representing the self is in many ways different from the

¹⁸ When speaking of the representation and acquisition of self-referent knowledge, the term knowledge is meant in the widest sense (see the notion of personal knowledge, Polanyi, 1958). Accordingly, each piece of information is associated with a wide range of cognitive, emotional, and motivational implications, emerging from autobiographical memories, goals, schemes, etcetera.

knowledge we have about our environment. One example of the differences in processing self-relevant as compared to self-irrelevant information was mentioned before: knowledge relevant to our self-concept is mostly perceived and processed with an especially positively biased view (for empirical evidence, see, e.g., Bosson et al., 2003; Taylor, 1983; Taylor & Brown, 1988; Taylor et al., 1995). And there is a growing body of research that shows that self-related knowledge is processed differently from other bodies of knowledge yet in a number of other ways, for instance in terms of perception speed or memory quality (e.g., Bargh, 1982; Conway & Dewhurst, 1995; Czienskowski & Giljohann, 2002; Green & Sedikides, 2004; Greenwald, 1980; Greenwald & Banaji, 1989; T. B. Rogers, Kuiper, & Kirker, 1977). It makes sense, therefore, to treat it as a distinct body of knowledge with its own rules.

Adopting and combining the two distinctions introduced above – between world and self and declarative vs. procedural knowledge – we end up with a classification of knowledge that can be viewed as a 2x2 matrix, as shown in Table 3 (from: Staudinger & Pasupathi, 2000).

Table 3.
Dimensions of Knowledge (from Staudinger & Pasupathi, 2000)

	World	Self
Factual Knowledge	Wisdom-related knowledge Professional expertise Beliefs and attitudes Knowledge about people and events	Personality dispositions Self-concept
Declarative Knowledge / Regulatory Processes	Skills Adaptive / maladaptive behavior Problem-focused coping Primary control	Emotion-focused coping Secondary control Comparison processes Goal selection and setting Personal life investment Emotion regulation

Factual self-knowledge consists of the content of self-experience, including the characteristics, traits, roles, and so on that we use to describe ourselves, in short, the self-concept. The self-concept is called on when the person thinks about his or her behavior in a new situation, makes plans for the future, or tries to explain him- or herself to others. That is, factual knowledge structures about the self both represent knowledge about the self and influence the way new information is processed. Procedural self-knowledge, in contrast, consists of all the different rules people use in thinking about themselves, evaluating themselves, and regulating their behavior (i.e., self-regulation).

This work deals with the *self as object*, not as agent, or, in other words, it deals with the *self-concept*, not with the *self*. Additionally, the focus will be primarily on the more “static” rather than procedural knowledge. Hence, the cell in the upper right corner of Table 3 will be of primary interest for this work.

2.4.2 Models of Mental Representation of the Self

When referring to “the self” or even “the self-concept”, images of a unitary, monolithic body of knowledge might come to mind. In fact, as mentioned earlier, many of the early scientific approaches adhered to this view (e.g., Allport, 1961; C. R. Rogers, 1951). Since this notion implied that the mental representation of the self could only have an either positive or negative affective quality, this view is also accountable for the large body of research examining self-esteem (cf. Linville & Carlston, 1994; McGuire, 1984; Rafaeli-Mor, Gotlib, & Revelle, 1999; Rosenberg, 1979/1986). However, it was not until the advent of social-cognitive theory and methodology that the notion of a multifaceted self, although long favored by psychologists from the phenomenological and psychosocial tradition like James (1890/1948) and Mead (1934) gained momentum. Today, the multifaceted view is most common among psychological researchers, although there seems to be no real consensus in terms of what this multiplicity really means (cf. Linville & Carlston, 1994). In order to provide a clearer picture of how the mental representation of the self is conceived here, several assumptions that are central to the understanding of the self-concept *in this work* will be given in the following (for similar notions see Byrne, 1996; Freund, 1995; Linville, 1985, 1987; Marsh, 1990; Marsh & Yeung, 1998).

- In line with most contemporary models (e.g., Campbell et al., 1996; Cross et al., 2003; Gergen, 1990; Higgins, 1987; Kihlstrom, Marchese-Foster, & Klein, 1997; Linville, 1982; Markus & Wurf, 1987; Marsh, 1990; Marsh & Shavelson, 1985), it is assumed that the self is represented in terms of multiple aspects. From now on, these aspects will be referred to as *self-aspects*.
- Self-aspects can refer to any themes or activities that are regarded as important for one’s self-definition. They might refer to close others, meaningful activities (professional as well as spare time), everyday roles, frequent themes of one’s thinking, biographical stages, and so forth. For example, a woman’s self-concept might comprise such different aspects as wife, daughter, lawyer, native country, propensity to introspection, appearance, years during college, environmentalism and musical talent.
- Self-aspects are structured hierarchically. For example, a person might think of herself as quite different when being with her partner than when being with her best friend / father / colleagues; at the same time she might have a conception of herself at a more aggregated level, for example, she might conceive herself in the context of partnership / family / friendships / with others / professional context, each of them comprising various single persons (see also Harter & Monsour, 1992). Aggregation takes place whenever multiple single self-aspects are comprised by a self-definition on a higher level. For example, despite the possibility that a person may perceive herself very differently in various social contexts – that is, as lively and

cheerful with her best friend, introverted in her professional life, calm and relaxed in her relationship with her partner, and hostile toward her father – she might still consider herself as reliable, caring, and faithful with regard to social contexts in general. These, in turn, are features that apply to every single element within the social context domain. Consequently, on the highest possible level of aggregation, a person has stored how she is in general, irrelevant of situational or interactive context. This idea is illustrated in Figure 2.¹⁹ Such hierarchic knowledge structures are best captured by the idea of *propositional networks* (e.g., Anderson, 1988; Linville & Carlston, 1994).

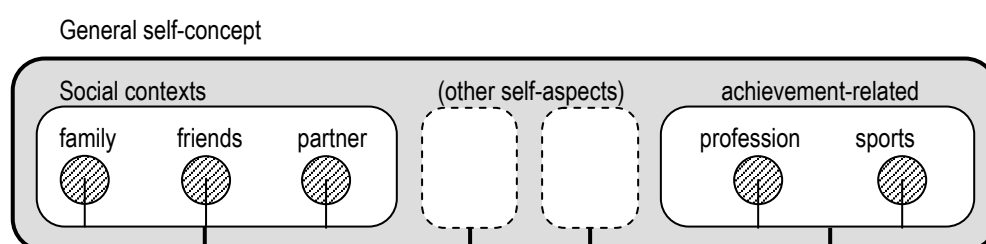


Figure 2. Illustration of the cognitive structure of the self-concept.

- Self-aspects and hierarchical ordering are idiosyncratic. That is, no two self-concepts are alike. Additionally, content and hierarchy are exclusively determined by the individual him-/herself. For example, even though another person might perceive someone as quite different in a private and in an occupational context, the person herself might be unaware of the difference, and hence might have no conception of the two as separate self-aspects. Furthermore, although father, mother, daughter, sister might all be separate aspects within the self-concept, the person might not think of herself as “with the family in general”, because he or she can perceive no commonalities between these different roles.

In sum, the object of scrutiny in this chapter is the self-concept or how people perceive themselves, that is: What is important to them? Which roles do they use to define themselves? How do they evaluate themselves? What are their guiding motives in how they want to be? As mentioned before, processes of self-regulation will be mostly omitted. Instead, there will be an exclusive focus on the static aspects of the self-concept. Processes of self-regulation will only be considered insofar as they represent causes of stability and change in these.

¹⁹ The notion of mental representation presented here corresponds to the associative network approach in the cognitive sciences (i.e., Anderson, 1988; Bower & Gilligan, 1979; Kihlstrom & Cantor, 1984). An important difference however might be that the propositions in the associative networks are more universal, whereas the network that represents the self-concept is much more idiosyncratic.

When discussing aspects of the self-concept, a common distinction is the separation between structure and content (e.g., Altrocchi, 1999; Campbell, Assanand, & Di Paula, 2003; Filipp & Mayer, in press; Harter, 1998; Hoyle et al., 1999; Rafaeli-Mor & Steinberg, 2002; Rosenberg, 1979/1986; Staudinger & Greve, 1997). Again, this classification is possibly due to the predominance of instruments inspired by approaches of mental modeling in the early days of experimental self-concept research – generating mostly instruments addressing the *structure* of the self-concept – and the gradual shift towards research questions that increasingly comprised motivational, emotional, and biographical issues – producing more instruments addressing the *content* of the self-concept. With regard to *structural* components, usually the *number* of self-aspects is examined (e.g., myself when I am with my family, at work, during childhood, etc.), as well as their *differentiation*, or in other words, how similar or dissimilar the self-definitions are to each other with regard to these aspects (i.e., Bieri, 1955; Zajonc, 1960).²⁰ According to Figure 2, the *number* would correspond to the total number of hatched circles, whereas the degree of *differentiation* would refer to how different their content was (i.e., how different a person perceives herself among her friends vs. within the family).

²⁰ Number of self aspects has been a topic of self-concept research since its earliest days, involving authors ranging from William James (1948) and George Kelly (1977) to today's authors such as Atchley (1982), Markus (1987, 1999), and Showers (1992, 1996, 1998), to name just a few. Differentiation, on the other hand, has been a more recent issue, covered, for instance, in studies by Block (1961), Campbell (1999; 2003) Harter and Monsour (1992), and Donahue (1993).

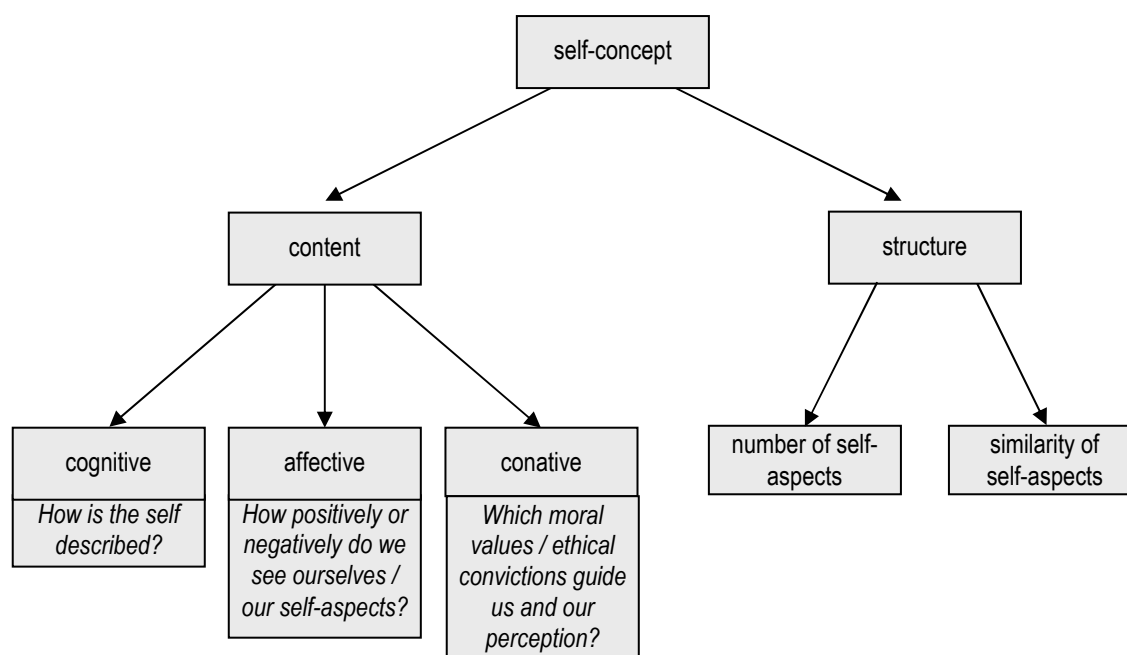


Figure 3. A framework for studying self-concept related issues.²¹

In discussing questions of self-concept *content*, a categorization proposed by Staudinger and Greve is adopted (1997; see also Greenwald & Pratkanis, 1984). Along with a classification first suggested by James (1890/1948), they distinguish *cognitive*, *affective* and *conative* facets of the self. Again, according to the illustration in Figure 2, these facets would all be criteria of the smallest elements; the hatched circles. The *cognitive* facet is concerned with the content of the self-descriptions: are they about social roles, meaningful activities, goals, etc.? For example, age-related changes have often been described along this dimension (e.g., Damon & Hart, 1988; Freund, 1995; L'Ecuyer, 1981, 1994). The second facet concerns the *affective* facet of the self-description. Usually, we do characterize ourselves using positive as well as negative characteristics. The resulting global self-esteem as well as the balance between a positive and negative self-view is the facet of the self-concept most widely explored (cf. Kling, Hyde, Showers, & Buswell, 1999; Mortimer, Finch, & Kumka, 1982; Robins, Trzesniewski, Tracy, Gosling, & Potter, 2002; Trzesniewski, Donnellan, & Robins, 2003), and has sometimes even been used as a synonym for the self-concept (cf. Breyspraak & George, 1979; McGuire, 1984; Rosenberg, 1979/1986). Third, there is a *conative* facet: self-concepts also reflect to a certain degree our priorities, our ethical convictions that guide our thoughts and actions. Little (1983),

²¹ Most of the facets of the self-concept listed here also appear in Rosenberg's book "Conceiving the self" (1979). Like it is done here, Rosenberg suggests a distinction between *content* and *structure*. He also claims that self-concept content can be characterized through certain *dimensions*, namely *content* (which corresponds to the *cognitive* facet here), *direction* (analog to the *affective* dimension in this graph), *salience*, *intensity*, *consistency*, *stability*, *clarity*, *accuracy*, and *verifiability*. As will be shown later, most of these dimensions also appear with regard to the present assessment of the self-concept. What is not considered in this work is Rosenberg's fourth self-concept characteristic, namely *self-extensions*, which represent the boundaries of the self-concept.

Higgins (1989; 1996) or Emmons (1986) are prominent proponents of this research dimension. Figure 3 gives an overview of the classification presented above.

After this short review of the self-concept in psychological research, the following chapter deals with findings concerning the development of the self-concept. Adhering to the structure presented in Figure 3, in the next paragraph life-span evidence on the development of each of the various aspects will be reported, that is, on all facets indicative of the structure or content of the self-concept. After briefly reviewing the literature on adolescence, adult development will be the main focus of attention.

2.5 The Development of the Self-Concept in Adulthood

Figure 3 serves as a structural basis for organizing the review of developmental evidence on the five facets of the self-concept. One facet, namely the affective dimension of self-concept content, will be discussed from two perspectives – first the overall affective appraisal of the self-concept, and then the range/balance of affect in self-attributions. At this point, issues of measurement will only be discussed insofar as they are important for the understanding of the evidence presented – a detailed discussion of measurement issues is provided in a later section (see section 4).

2.5.1 The Structure of the Self-Concept

Drawing on the distinction in Figure 3, the next section will deal with the lifespan development of the *number of self-aspects*. Afterwards, evidence on the development of the *similarity of self-aspects* is presented.

2.5.1.1 The Number of Self-Aspects

What has been found in terms of the developmental trajectories of the *number of self-aspects*? In fact, relatively few empirical studies have been concerned with age differences and lifespan dynamics of structures of the self-concept, and even less with a specific facet of the structure, like the number of self-aspects (Filipp & Mayer, in press; Freund, 1995; Mortimer et al., 1982). Although there is rich empirical evidence on the development of the number of self-aspects during childhood and adolescence (cf. Charles & Pasupathi, 2003; M. Diehl, in press), few findings exist with regard to adult development. And even though a tremendous host of articles in some way deal with the number of self-aspects within the adult self-concept (e.g., number of roles, possible selves, etc.), evidence on the *development* of the number of self-aspects during adulthood is extremely scarce. Thus, when examining the development of number of self-aspects, one also has to draw on related findings, such as the number of roles or measures of self-concept complexity, and so forth.

The number of self-aspects is defined as the number of perspectives adopted towards oneself, and has also frequently been referred to as *self-complexity*. As such, it seems to bear a close relationship with *cognitive complexity*, defined as the ability to take multiple perspectives and to consider various dimensions in terms of a certain matter (Satish & Streufer, 1997; Streufert, 1997). Cognitive complexity has been reliably found to decrease with chronological age (e.g., Bacelar, 1999; P. B. Baltes, Staudinger, & Lindenberger, 1999; Schaie, 1994, 2001, 2005). Hence, it seems plausible that the number of self-aspects follows a developmental trajectory akin to that of cognitive complexity; it should decrease throughout adulthood, and show an even steeper decline during old age. However, especially in theoretical works, there also exists the notion that the number of self-aspects *increases* with age. For example, Markus and Herzog (1991), drawing on the writings of Neugarten (1968) and Perlmutter (1988), assume that older adults, through the virtue of having “more evidence on which to base their theories of the self... will have more complex... self-schemas than younger adults” (p. 115).

However, the evidence illustrates neither an increase nor a decrease in the number of self-aspects; instead, the number of self-aspects seems to remain relatively stable throughout adulthood. For example, in a cross-sectional study conducted by Mueller, Wonderlich, and Dugan (1986), college students and older adults were asked to select self-descriptive attributes from a large set of descriptors. No differences were found between age groups in the number of selected attributes. However, there are also findings that indicate a quadratic rather than a linear trajectory across adulthood. For example, complexity in thinking about oneself²² – as found in freely written self-descriptions – exhibits an inverted u-shape for the age range from 11 to 85 years (Labouvie-Vief et al, 1995), and *engagement in multiple spheres* (i.e., roles, Neugarten, 1968) peaks as well in midlife at least when studied cross-sectionally (Ryff & Heincke, 1983).

Thus, despite the lack of studies directly investigating the development of the number of self-aspects over the lifespan, one might infer the developmental trajectory from measures assessing similar aspects: With regard to these, a pattern emerges with midlife as the apex of lifespan development, and younger and older age groups exhibiting lower scores. Accordingly, the first hypothesis with regard to age differences in the self-concept is that:

H1.1 There is no difference in the number of self-aspects between younger and older adults.

²² Complexity is conceptualized on a more global level, taking into account the degree of abstractness, self-reflection, ambiguity tolerance, and multidimensionality (e.g., motivation, emotion, cognition) in self-descriptions as rated by trained judges.

At the same time, when considering age trajectories within groups, there should be an age-related increase among the young adults, whereas in the group of older adults, an age-related decrease should emerge in terms of the number of self-aspects.

2.5.1.2 *The Similarity of Self-Aspects*

The similarity of self-aspects is mostly studied under the heading of *self-concept integration*, which is operationalized as the similarity of self-aspects: high similarity between self-aspects indicates high self-concept integration (for a detailed discussion of the construct, see M. Diehl, Hastings, & Stanton, 2001). The underlying logic is that someone who sees himself or herself consistently across contexts has come to terms with him- or herself, and has found out who he or she really is: after all, not depending on the concrete context or situation in one's self-definition suggests having a strong sense of those characteristics that form the stable, persistent core of one's self.

Age is often associated with a bolstering and consolidation of the self-concept. As seen from the writings of Cooley, for example, the sense of a stable or "steadfast" sense of self "requires time for its development and flourishes in mature age rather than in the open and growing period of youth" (p. 199). Indeed, according to empirical evidence, adolescence is typically an age where individuals perceive strong conflicts between their various self-aspects (Harter & Monsour, 1992). It is mostly around the onset of adulthood that the conflicts raised by opposing self-aspects tend to alleviate, and the self-structure becomes more integrated again (Arnett, 2000; Moneta, Schneider, & Csikszentmihalyi, 2001). As mentioned before, most theories and evidence covering adulthood expect this trend to continue linearly over the rest of the life span (Markus & Herzog, 1991; Neugarten, Havighurst, & Tobin, 1968; Whitbourne & Connolly, 1999), guided by the assumption that older adults might have a stronger, more delineated sense of self. Moreover, this view is also in line with the Eriksonian notion of *integration* being a vital task of old age.

When it comes to empirical research, only few studies can be found that examine age trends in self-concept integration. One example is a study by Charles and Pasupathi (2003), where the intraindividual variability of self-descriptions was investigated. In their sample ranging from 18 to 94 years, intraindividual variability decreased with age for women, but not for men. In contrast, in a cross-sectional study focusing on self-concept differentiation, findings indicate an inverted-u-shaped relationship between self-concept integration and chronological age for the age range from 20 to 88 years, with the peak (i.e. the highest degree of self-concept integration) being located in middle adulthood (M. Diehl et al., 2001). As opposed to the findings and theories reported above, these results suggest that the increase in integration might only hold until midlife, and that older adults in comparison show stronger intraindividual variation again in their self-descriptions, more akin to the level exhibited

by young adults. Research on identity might also be called on when deciphering age-graded trajectories of similarity of self-aspects: although there is no research explicitly linking similarity of self-aspects with states of identity, it seems highly plausible that those with a high similarity between self-aspects also experience a strong sense of identity certainty. Research examining the development of identity certainty has mostly found an increase of identity certainty with age, although most of the studies only report trends until midlife (e.g., Cramer, 2004; Stewart & Ostrove, 1998).

In sum, it seems that the similarity of self-aspects steadily increases from young adulthood until midlife, and that for old age, evidence is equivocal in that some findings report a continuous increase, and others a decrease. However, as mentioned above, the notion of an integrated and stable self-view in old age is very common. The second hypothesis in term of age-differences thus states that:

H1.2 The similarity of self-aspects is higher for older than for younger adults.

2.5.2 Self-Concept Content

As illustrated in Figure 3, four facets are discussed with regard to self-concept content. First, the focus will be on the cognitive aspects of self-concept content, that is, *what are* self-aspects at different stages of life. Second, the affective aspects of the self-concept content will be addressed. The affective aspects of the self-concept content comprise two different facets: on the one hand, findings related to the overall level of self-related affect or global self-esteem will be presented; on the other hand, evidence relating to the range and balance of positive and negative self-related affect is described. Finally, the conative aspects of self-concept content will be taken into consideration.

2.5.2.1 The Cognitive Aspects of Self-Concept Content

Many of the studies examining the cognitive aspects of self-concept content have dealt with specific age groups. For example, there are many studies on childhood and adolescence (e.g., Damon & Hart, 1988), and a number of studies conducted with older adults (e.g., Freund, 1995; Pinquart, 1997, 1998). For the other age groups, although empirical evidence is not so readily available, at least it is possible to derive certain conclusions about the self-concept by looking at other kinds of research, like studies on development of roles, of life goals, or of psychological investment.²³

What is the self-concept about for different age groups? Throughout childhood and adolescence, there is a trend of self-descriptions shifting more and more from temporary limited or

²³ Roles especially seem to be an important aspect in how people describe themselves. In fact, when openly asked about “aspects which are important parts of you or your life” people tend to give much more roles than anything else, to the extent that some researchers even changed their inquiries to only asking for roles instead (Raffaelli-Mor, personal notice, also cf. McCrae & Costa, 1988).

observable features (e.g., moods, typical behaviors) to stable, internal or abstract themes (belief systems, competencies, personality dispositions) (Damon & Hart, 1988; Fischer, 1980; Flavell, 1985; Montemayor & Eisen, 1977; Rosenberg, 1979/1986). In contrast, when regarding the findings related to adulthood, it might seem astonishing how few self-concept content changes exist across different age groups, given the drastic changes that take place in life circumstances. This empirical evidence is also reflected in self-perceptions of change: for example, in one study, when asked whether they had changed within an interval of a few years, a majority indicated a negative answer (e.g., Costa & McCrae, 1989; Herbst, McCrae, Costa, Feaganes, & Siegler, 2000; Troll & Skaff, 1997).²⁴ Furthermore, whether one asks for investment in life goals (Staudinger, 1996; Staudinger & Fleeson, 1996), goals within the near future (Heckhausen, 1999a), or simply for open self-descriptions (Byrd & Stacey, 1995; Filipp & Klauer, 1986; McCrae & Costa, 1988), certain themes seem to be constant companions within all stages of adult life: adults tend to portray themselves primarily in terms of major life roles within the realm of social life and work, their day-to-day involvements, and their personal dispositions. At the same time, the differences in self-concept content that do occur between age groups seem to reflect developmental tasks.

A closer look at the evidence will give a more detailed impression of continuity and change in self-concept content across the adult life span. Because the content is of primary interest here, evidence will be summarized according to similarities in the findings, rather than the method of assessment. There is a range of methods from which one can derive information about the development of the self-concept. Thus, parts of the self-concept are not only reflected in the answers to explicit questions on the self-concept, but also when people are asked about their future or possible selves, and even about their future goals. Thus, when asked about their personal goals, people often provide responses that do not only reflect “do” goals (Carver & Scheier, 1998; Emmons, 1989), but also “be” goals, that is, goals that reflect their ideal future selves. These ideal selves, in turn, are an important part of the self-concept. Therefore, some evidence on possible selves and goals will be presented here, as well.

For example, in a study examining *spontaneous self-representations* in a sample with an age-range of 32-84 years, McCrae and Costa (1988) found that most adults described themselves in terms of their major life roles, personal dispositions, and their day-to-day activities. However, there were also some meaningful differences between younger and older adults. Whereas younger adults described themselves in terms of family roles, personal relationships, personality traits, and routine tasks, older adults were more likely to mention age, health status, life circumstances, interests, hobbies, and beliefs

²⁴ A very different answering pattern is found with regard to early adulthood. For example, college students tend to view themselves as having changed substantially within a four-year interval (Robins, Nettle, Trzesniewski, & Roberts, 2005).

as part of themselves. Other studies using open-ended methods to assess self-concept content, like the one by Fillip and Klauer (1986) or Freund (1995), have built on and extended these findings. Again, according to these studies, the aforementioned age trend – a predominance of family and work-related issues in young and middle adulthood, and abstract themes, health, and further self-related issues in late adulthood – could be confirmed. This pattern was also characteristic of the cross-sectional sample studied by Heckhausen (1999b). When asked for *goals* within the near future, middle-aged people tended to mention work-related themes while older adults' responses contained more abstract themes like peace and the environment. Some of these trends are also reflected in the findings of a study by Dittman-Kohli (1995), in which a *sentence-completion task* was used to assess the differences between older and younger adults in their self-concepts and concepts of life. Again, achievements in work and school emerged as an important issue from the sentence completions by younger adults whereas older adults, when touching on the achievement motive, were more likely to utter concerns about mastering everyday activities or maintaining their health. Both age groups mentioned social interactions to the same degree; however, in the older sample, this was frequently done in the context of showing a concern for the welfare of others (especially children and grandchildren), whereas younger adults typically referred to others when they spoke about friendship and love – a pattern that is similar to the trend of an increased self-transcendence and concern for issues beyond one's immediate interests displayed by older individuals in the studies described above.

In studies examining *possible selves* by Nurmi and colleagues (Nurmi, 1989, 1992, 1993; Nurmi, Pulliainen, & Salmela-Aro, 1992), adolescents predominantly referred to typical developmental tasks of late adolescence and early adulthood, such as completing education, starting an occupational career, starting a family, and attaining appropriate financial support. In contrast, young adults were most interested in goals concerning future education and family; goals named by middle-aged adults were mostly related to their children's welfare and to their property, while older adults were most concerned with health, retirement, leisure activities, and general world issues (e.g., peace, the environment). These results resemble the findings of Byrd and Stacey (1995), who asked for open answers to the question "Who am I". In a nutshell, the answering pattern suggests that young adult's self portrayals revolve around the issue of intimacy and shift to competence in midlife, while older adults are most likely to provide themes of belief and ideology in their self-descriptions.

In sum, there are relatively few changes in self-concept content (see also Freund & Smith, 1997; Markus & Herzog, 1991). Irrespective of the changes in the *number* of self-aspects (see 2.5.1.1), the changes that *do* occur in the course of adulthood show both a narrowing and widening trend: narrower in the sense of a decreasing radius when it comes to the social environment (e.g., ranging from friends and the work environment, to close others, to an increasing focus on oneself), and wider in

a sense of heightening representation of theoretical and abstract issues in self-relevant statements. The first trend is perhaps well summarized by a statement by Jung, who posited: "For a young person it is almost a sin – and certainly a danger – to be too much occupied with himself; but for the ageing person it is a duty and a necessity to give serious attention to himself." (Jung, 1934/2001, p. 111).

All in all, with regard to age-changes in the content of self-descriptions, we can conclude that the developmental tasks of adulthood and old age are to a certain degree reflected in self-concept content. Thus, younger adults usually define themselves through aspects that are related to the themes of close social contacts, achievement in the work context, and planning the future. They hardly refer to topics outside of their immediate interest, such as peace, environmental issues, and so forth. Older persons, in contrast, draw on these issues when they define self-relevant topics and goals. Furthermore, social contacts remain an important resource of one's self-definition while competence-related themes shift from the realm of work and profession to the domain of health and day-to-day-activities. In sum, when it comes to age differences in terms of cognitive aspects of self-concept content, it is predicted that:

H1.3 In general, contents of self-concepts differ minimally for younger and older adults. There are some areas where slight differences are expected:

Older adults name more self-aspects that have to do with their immediate situation (e.g., health, finances, etc), and their immediate social environment (e.g., family and partner) than younger adults.

Older adults name more aspects that are self-transcendent (e.g., peace, environmental issues) than younger adults.

Older adults name more biography-related aspects (e.g., childhood, youth, time at college...) than younger adults.

2.5.2.2 Self-Esteem

Among all the different aspects of the self-concept, it is self-esteem that has attracted the widest interest in psychological research (Breytspraak & George, 1979; M. Diehl, in press; Filipp & Mayer, in press; McGuire & Padawer-Singer, 1976). Hence, it might seem easy to derive predictions about its lifespan development. Unfortunately though, in contrast to the vast amount of studies dealing with the causes and consequences of self-esteem, there are comparatively few studies dealing with the *development* of self-esteem across the life span. Additionally, when taking a closer look at the construct of self-esteem, one arrives at a confusing mixture of constructs. First, self-esteem has a lot to do with *positive and negative affect*. Obviously, those with higher levels of negative affect also tend to have a more disparaging self-view than others (e.g., Leary & MacDonald, 2003). Additionally, self-esteem is

frequently mentioned with regard to trait personality, especially with regard to neuroticism and extraversion (e.g., Compton, 1998; Costa & McCrae, 1980, 1985; Fujita, 1991). Further concomitants of self-esteem are the dimensions of *optimism and pessimism* (e.g. Markus & Kitayama, 1991) and *narcissism* (e.g., Jordan, Spencer, Zanna, Hoshino-Browne, & Correll, 2003; Sedikides, Rudich, Gregg, Kumashiro, & Rusbult, 2004). Likewise, *subjective well-being* might be an important correlate of self-esteem. In fact, in the early days of self-concept research, a proportional relationship between well-being and self-esteem was taken for granted (see Crocker & Park, 2004), resulting in a huge number of articles aimed at enhancing self-esteem without even mentioning that their actual aim was the increased level of well-being of persons (see Wylie, 1974; 1979 for reviews). A close inspection of the lifespan trajectory of self-esteem has to take all these aspects (and probably even more) into account. However, as the present aim is to give only a very brief overview of self-esteem development, the focus here will only be on those studies that explicitly deal with *self-esteem*.

There are various theoretical frameworks in which the link between self-esteem and aging is discussed. For example, according to the continuity theory of aging (Atchley, 1982, 1989), older people are expected to show higher levels of self-esteem than younger people. Allegedly, older persons are in a position to perceive their ideals, particularly their ideal self, in a more realistic way. To reduce the dissonance between their ideal and their perceived self, they will strive to bring their ideal self more in line with their perceived self – which they indeed seem to accomplish frequently (e.g., Brandtstädter, Wentura, & Greve, 1993; Ryff, 1991). In other words, they will reduce their expectations about themselves, and as a consequence, show increased self-acceptance. The same age trend is predicted by terror management theory (Pyszczynski, Greenberg, Solomon, Arndt, & Schimel, 2004), yet for different reasons. Here, self-esteem is regarded as a buffer against the omnipresent anxiety engendered by the human awareness of mortality. In order to deal with the fear of death, people will tend to emphasize the good and meaningful in themselves. Accordingly, self-esteem steadily increases with closeness to death, that is, with chronological age. A number of studies have given empirical support to the theory (e.g., Cicirelli, 2002; Davis & McKearney, 2003; McCoy, Pyszczynski, Solomon, & Greenberg, 2000; Mikulincer & Florian, 2002). Finally, according to self-determination theory (R.M. Ryan & Deci, 2000), self-esteem is assumed to be a natural by-product when growth-orientated motives are satisfied. Hence, since older adults have shown to be better able to satisfy growth-oriented motives (Sheldon, 2005; Sheldon & Kasser, 2001), they are expected to show higher levels of self-esteem.

In contrast to the vast amount of theory and research dealing with self-esteem, relatively few empirical studies have been conducted about the development of self-esteem during adulthood. Generally, the evidence is extremely mixed. Even review articles have failed to come to a general conclusion: some posit that findings are too ambiguous to determine a global age trend in self-esteem

(Lowenthal, Thurnher, & Chiriboga, 1975; Pinquart, 1998). Other authors found that findings can be summarized by a development toward a more positive self-appraisal in old age (Herzog & Markus, 1999; Markus & Herzog, 1991). However, empirical support for this notion is sparse (for examples see Larson, Boyle, & Boaz, 1984; Mueller et al., 1986), and most studies yield contradictory findings (e.g., Bengtson, Reedy, & Gordon, 1985; McCrae & Costa, 1983; Robins et al., 2002). One difficulty with findings concerning self-esteem is that results are highly sample-dependent, for example, regarding age span, gender distribution, and older participants' level of fitness. One fairly representative cross-sectional study with 97,121 participants found that self-esteem, after having reached a plateau between the ages of 30-40 years and having slightly but steadily increased afterwards, decreases dramatically after age 65 (Robins et al., 2002). The drop in self-esteem is especially pronounced for males, falling even below the level prevailing in young adulthood, whereas women's self-esteem only after age 80 drops below the level typical for adolescence and young adulthood. However, starting with adolescence, males show higher levels of self-esteem than females. Noteworthy is also that, according to this study, the rise of self-esteem in midlife even temporarily intensifies after age 50. In terms of determinants of self-esteem, a parsing of the adult self-concept resulted in eleven domains (see Harter, 1990), in addition to global self-worth.²⁵ Surprisingly, physical appearance remains among the most important determinants of self-esteem throughout life (Harter, 1990, 2003)²⁶, closely followed by intimate relationships, sociability, intelligence and adequacy as a provider.

Taken together, self-esteem, after experiencing a considerable decrease in adolescence gradually increases over the course of adulthood, and then drops in very old age (Robins et al., 2002), that is, after age 65; albeit empirical evidence is still rather incongruous (Pinquart, 1998). When it comes to the present study, the age group of 20-40 year olds is compared with the age group of 60-80 year olds. Given that the study by Robins and colleagues is not exactly in line with other evidence, and given that even in the study by Robins and colleagues, the sharp decrease of self-esteem begins only *after* age 65 and that women only *above* age 80 are as low in self-esteem as typical for young adulthood, it is assumed that:

H1.4 Older adults' self-concept is more positive than younger adults' self-concept.

²⁵ These are: intelligence, sense of humor, job competence, morality, athletic ability, physical appearance, sociability, intimate relationships, nurturance, adequacy as provider, and household management (Harter, 1990).

²⁶ Given the surprisingly important role of physical appearance as predictor of self-worth, the authors conclude, "that the relationship between physical appearance and self-worth may represent an issue more profound than mere media effects in the socialization of both children and adults. As a tentative framework, we are moving toward the view that physical appearance represents the manifestation of the *outer self*, whereas self-worth represents the *inner-self*, both globally defined. As such, appearance seems to be qualitatively different from our other competence/adequacy domains in that it is not merely one discrete, relatively situation-specific area of performance in which one manifests the appropriate behavior, but an omnipresent feature of the self that is always on display." (Harter, 1990, p. 81f)

Furthermore, it is assumed that within the younger age group, self-esteem and age show a positive correlation, whereas there should be a negative correlation between self-esteem and age when considering later adulthood.

2.5.2.3 *Affect Balance*

The term affect balance was originally introduced by Bradburn (1969), and is defined as a difference score capturing “a person’s level of well-being”, specified as “excess of positive over negative affect” (Bradburn, 1969, p. 9). In this study, the term is used in a slightly different way (for measurement details also in relation to the Bradburn affect balance scale, see section 4.3): affect balance in the present study denotes whether a person uses positive and negative attributes to the same degree, that is, in a *balanced* way, in his/her self-description. How does this kind of balance between positive and negative self-attributions develop over the life span?

There is a broad body of literature suggesting that age goes along with an increased ability of emotion regulation (e.g., Carstensen, Isaacowitz, & Charles, 1999; Gross et al., 1997; Lawton, Kleban, Rajagopal, & Dean, 1992; M. J. Lerner & Gignac, 1992; Sheldon & Kasser, 2001). Accordingly, older adults are better able to regulate and control their feelings resulting in a more subdued and balanced emotional experience. Based on this research, one might conclude that older adults have higher levels of affect balance – as defined in the present study – than younger adults. However, at a closer glance, an increase in affect regulation mostly implies a decrease of negative affect with age (Charles, Reynolds, & Gatz, 2001; Stacey & Gatz, 1991), yet perhaps sometimes due only to an increased reliance on passive-avoidant coping strategies (Birditt, Fingerman, & Almeida, 2005; Blanchard-Fields, Stein, & Watson, 2004; Labouvie-Vief, 1999; Labouvie-Vief & Diehl, 2000; Labouvie-Vief & Medler, 2002). Thus, although affect regulation might indeed improve with age, this does not necessarily imply a higher balance in terms of affect, but sometimes in fact the opposite, namely a trend towards affect optimization, that is, the tendency to constrain affect to positive values (Labouvie-Vief & Medler, 2002). However, next to this age trajectory in terms of emotions, two other age trends can be found in the literature, which are of relevance in terms of affect balance, namely:

(1) A decrease in orientation towards rules and regulations, favoring relatively static, dualistic, forms of feeling, and an increase in the capacity of complex, process-oriented and contextualistic feeling (e.g., Kegan, 1982; P. M. King, Kitchener, Wood, & Davison, 1989; Kitchener, 1983; Kramer, 1989). Based on this assumption, affect balance should clearly increase with age. However, as argued by the authors, this is rather an idealistic description of emotion development than a realistic description of age-graded trends.

(2) Additionally, persons during the course of adulthood increasingly are supposed to “listen” to their emotions (Isaacowitz, Turk Charles, & Carstensen, 2000; Izard & Malatesta, 1987; Labouvie-Vief, DeVoe, & Bulka, 1989). In turn, this more “adult” view is also likely to go along with a higher balance in terms of self-related feelings. After all, perceiving one’s negative as well as one’s positive sides speaks for high abilities in facing the world in a realistic and open way.

In sum, theories supporting both sides can be found, that is, research that predicts an age-related increase of affect balance, as well as an age-related decrease of affect balance in favoring the positive side of emotions.

So far, we have considered theoretical accounts on affect balance – but what does empirical evidence have to say? In comparison with the huge number of studies examining the age gradients of positive and negative affect, relatively few empirical studies focus specifically on the topic of age trends in affect balance and range of affect. A few studies by Labouvie-vief deal with affect complexity reflected in text protocols by adult participants. Thus, by content analyzing the emotional complexity of emotional narratives of adolescents and middle-aged adults, Labouvie-Vief and colleagues found that middle-aged’s accounts were characterized by much higher levels of complexity and tolerance of ambivalence, and less conventional descriptions as compared with adolescents’ protocols (1989). In a similar study, Labouvie-Vief and colleagues could show that spontaneous self-representations indeed get more complex from childhood up to middle-age, but tend to decrease again in old age (Labouvie-Vief, 2003; Labouvie-Vief et al., 1995). Likewise, Carstensen, Pasupathi, Nesselroade, and Mayr (2000) in an experience-sampling-study could show that greater age was accompanied by the report of more complex emotional experiences. In terms of affect balance, that is, evenness between the experience of positive and negative emotions, mostly Bradburn’s *Affect Balance Scale* is used (ABS, Bradburn, 1969). This scale consists of 10 questions, answerable with “yes” or “no”, with one half concerning positive and the other half concerning negative emotions. A difference score is computed by subtracting the scores for negative emotions from the scores reflecting positive emotions, thus yielding a score that reflects the degree of evenness of positive and negative affect.²⁷ Using the scale, in a cross-sectional analysis with younger and older adults, Shmotkin (1990) found an age-related decrease in affect balance, whereas an increase in affect balance was reported by Ryff (1989) and Stacey and Gatz (1991). A meta-analysis by Pinquart (2001) that also drew on studies using the ABS yielded conclusions similar to the results by Shmotkin: a linear decrease occurred for positive affect *and* affect balance. A more detailed analysis showed that the decrease in positive affect mainly was related to old

²⁷ Note that ABS-scores are somewhat ambiguous in terms of the degree of affect complexity: A low score on affect balance can be an indicator of a high level of affect complexity, but it can also mean that there is a very low level of affect complexity. However, a one-sided concentration on positive (or negative) affect would also be reflected in high ABS-scores.

age, whereas affect balance decreased during young adulthood but showed no systematic association with age in later life.

In sum, most results seem to indicate that affective balance shows a curvilinear trend across adulthood, perhaps – when drawing on the evidence on emotional complexity – peaking during the middle years. Moreover, the research of Labouvie-Vief suggests that the increase in emotional balance is not normative. Thus, individuals who cannot tolerate or sustain a certain level of ambiguity or conflicting emotions might even regress to more defendant modes of emotion regulation as they are faced with the losses and uncontrollable changes associated with old age. Moreover, most evidence reporting an age-related improvement of affect regulation can be interpreted as a trend towards optimization, which is in line with the body of research dealing with self-appraisal cited in the previous paragraph. With this in mind, it seems most likely that:

H1.5 Younger adults show higher levels of affect balance than older adults.

2.5.2.4 Conative Aspects of Self-Concept Content

When speaking about values, the definition by Glenn is adopted, which defines values as “abstract ideas about what is good or bad, right or wrong, desirable or undesirable” (1980, p. 597; see Rokeach, 1973; Schwartz, 1992 for similar definitions). Several taxonomies have been suggested for ordering the multiple values people can hold into higher categories. Based on the results of a cross-cultural study comprising results of 20 countries, Schwartz (1992) suggested the existence of twelve values ordered along two underlying dimensions (see Figure 4).

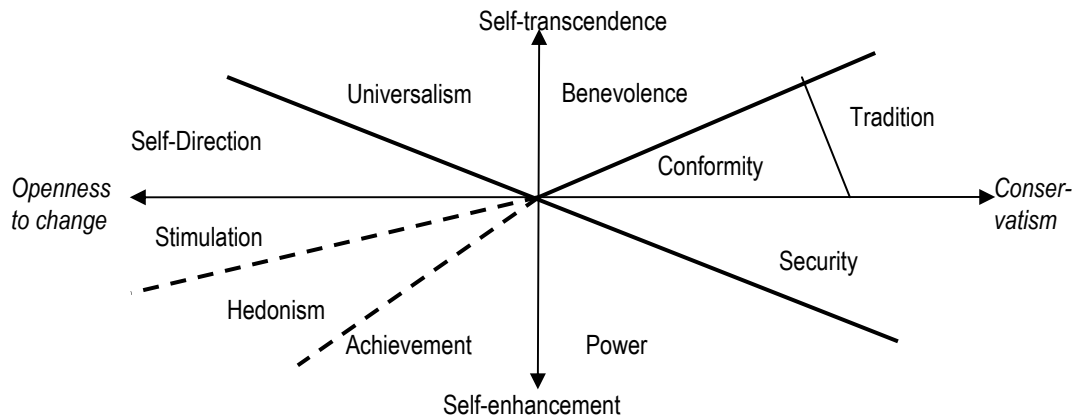


Figure 4. Revised theoretical model of relations among motivational types of values, higher order value types, and bipolar value dimensions (Schwartz, 1992, p. 45).

Accordingly, values are primarily characterized by the dimensions of *self-transcendence vs. self-enhancement*²⁸ (vertical axis) and *openness to change vs. conservatism* (horizontal axis). Since in the present study, those values were of primary interest that reflected self-transcendence vs. self-enhancement, security, conformity, tradition, and self-direction were dropped from the analyses because they represented these two poles either simultaneously or hardly at all.

What can be said about the development of values across the life span? Although the problem of disentangling age- and cohort-effects is especially salient with respect to such culture-related constructs as values, there are a few trends that seem to persist across cultures and generations. These are (a) the trend that older people tend to give a higher importance to concerns of ethics and morals, and that their attitudes in this respect crystallize and become rigid with age; (b) the trend that values tend to become less permissive and more conservative as people age; and (3) the trend that values with chronological age come closer to the ideal of self-transcendent and altruistic concerns. In the following, these three theses will be explained in greater detail.

(a) Aging-stability Thesis: Jung believed that “the convictions and principles – which have hitherto been accepted – especially the moral principles – commence to harden and to grow increasingly rigid, until ... a period of intolerance and fanaticism is reached” (Jung, 1934/2001, p. 107). Glenn (1980) even considered the aging-stability-thesis – the notion that attitudes, values, and beliefs tend to stabilize and become less likely to change as people age – the most popular among both scientists and lay people. Similarly, Schwartz (1992) stated that age might be correlated with “a tendency to give higher importance to values” (p. 56) and Sheldon and Kasser (2001) assume that age might be associated with a tendency to endorse self-determined values more and to take a stronger

²⁸ The word *self-enhancement* is adopted here from the original reference. However, when speaking about values, the term has a wider denotation than in the context of processing of self-relevant information (see 2.3.2), and spans all those goals and motives that reflect a self-serving and self-gratifying attitude.

stand when it comes to questions of morals and ethics (see Pennebaker & Stone, 2003 for a similar view).²⁹ Thus, as people grow older, their convictions in terms of values should be more stable, and as a consequence, they should be more certain of the values they endorse and the ones they reject.

(b) Liberalism – Conservatism Thesis: But what kind of values prevails in later adulthood? Here, again, a widely held notion is that older people are more prone to being conservative, whereas young people support more liberal attitudes (Glenn, 1980). Various explanations have been given for this assumption. For example, it is supposed that the described value change has something to do with the growing responsibility and increasing accumulation of wealth and material possessions that normally comes with age. It is argued that the more a person has to lose, the more he or she will be interested in setting up universal rules that sanction the violating of private (material and non-material) properties (Glenn, 1980). Evidence on shifting goal priorities supports this hypothesis: various studies have shown that younger adults are more oriented towards gains whereas older adults show a stronger orientation toward maintenance and avoidance of losses (for a summary of some results, see Freund & Ebner, 2005). In other words, older people want – or are even forced – to invest in what they have, in fostering, hedging, and securing the resources they have acquired so strenuously, whereas younger adults are the pioneers, the discoverers, and the expanders who do – and even might have to – access foreign properties to find and acquire whatever they need. Of course, then, the former group is primarily interested in measures to secure and “conserve” the status quo, whereas the latter want to dismiss those regulations or even push forward policies that encourage expansion and redistribution. Based on this assumption, Schwartz assumes that the importance attributed to conformity values increases with age. Following the structure in Figure 4, it follows that “the importance of stimulation values would decrease with age, [...] the importance of tradition and security values is likely to increase with age, and the importance of hedonism and self-direction values is likely to decrease” (1992, p. 54).

(c) Aging-Maturity Thesis: A third age-related value pattern results from developmental psychological deliberations. Based on organismic theory on the one hand and Erikson’s stage-model on the other hand, Sheldon and Kasser (2001) posit that older people tend to have more mature values than younger persons.³⁰ This, in turn, will become manifest (1) in the greater proneness of older adults

²⁹ There have been various explanations for this phenomenon, e.g., physiological causes (physiological changes occurring with age cause stronger rigidity), the “reminiscence bump” (Jansari & Parkin, 1996; Neisser & Libby, 2000), occurring before and within young adulthood requiring a continuous re-evaluation of values during this stage, and belief-perpetuation mechanisms. The latter ones have been illustrated by Glenn (1980) as follows: “assume an oversimplified model of attitudinal development whereby one’s attitude on a controversial issue is determined by the mean of all of the pro and con stimuli to which the person has been exposed. The second or third stimulus may change the mean considerably, but the twentieth or fiftieth can have relatively little effect.” (pp. 180-181).

³⁰ A similar trend has been predicted by Peck, who nevertheless has different reasons for his assumption: Given the importance of appearance and attractiveness in our society, he assumes that middle-aged adults have to invert their previous value hierarchies from superficial values to “wisdom- or mental-based values” in order to maintain their previous levels of self-esteem (Peck, 1968, p. 89).

to follow attitudes out of true conviction than for any other reason, and (2) – even more important in this context – a tendency of older people to endorse self-transcendent, altruistic values, rather than self-centered ones. Another notion corroborating an age trend of increasing maturity in values is the instrumentality-terminality-sequence hypothesis by Ryff (e.g., 1979; Ryff & Baltes, 1976). Accordingly, younger adults are more likely to endorse values which represent means to an end, such as “getting to know new things” or “being together with people I like”, whereas older adults tend to strive for values which are an end in itself such as “happiness”, “self-insight” or “harmony” (for similar results, see Brandtstädter, Meiniger, & Gräser, 2003).

A final way to draw conclusions about age-related value changes is to think of them as being brought about by age-related changes in personality. As we are familiar with the typical personality changes associated with the Big Five personality traits during the course of the lifespan, and with the relationships between the Big Five and value orientations, we are able to come to some conclusions about age-graded value changes. Typically, as people age, they show a decline in three of the five major factors of personality – neuroticism, extraversion, and openness – and increases in agreeableness and conscientiousness (for a summary of results see McCrae et al., 1999). Roccas, Sagiv, Schwartz, and Knafo (2002) have recently confirmed that agreeableness correlates positively with benevolence and conscientiousness with achievement. On the other hand, openness is likely to go along with universalism, and extraversion with achievement and stimulation values. As a consequence, one would expect an increase of benevolence with age, whereas universalism and stimulation should tend to be lower in older adults as compared to younger ones. The course of achievement-related values is unclear, because they are related to one increasing (conscientiousness) and one decreasing (extraversion) personality trait.

Taken together, one can assume that older people in general demonstrate stronger adherence to values. Furthermore, the literature cited above suggests a decrease in self-enhancing values such as stimulation, power, and hedonism, whereas self-transcendent values, especially benevolence should increase with age. The evidence on universalism and achievement is equivocal, and thus makes it hard to come up with precise predictions. Probably, the course of universalism across the life span is mediated by openness, whereas achievement depends on the ratio of conscientiousness and extraversion. Taken together, with regard to conative aspects of self-concept content, it is predicted that:

H1.6 Older adults' value orientation is more self-transcendent and less self-enhancing than younger adults' value orientation.

2.5.3 Summary: Lifespan Trajectories of Six Facets of the Self-Concept

This Chapter has dealt with the self-concept. An attempt was made to locate the self-concept within history, as well as within the nomothetic psychological space by outlining its relationship with the areas of personality research and research on knowledge acquisition and representation. A framework for studying the self-concept was presented, which in turn served as a guideline to describe developmental changes in the self-concept. The developmental trajectories of six facets of the self-concept – two structural aspects (i.e., number and similarity of self-aspects) and three aspects of content (i.e., cognitive aspects of self-concept content, affective aspects in terms of global self-esteem as well as affect balance, and conative aspects of self-concept content) – were briefly reviewed. The number of self-aspects seems to exhibit an inverted u-shaped developmental trajectory with younger and older adults scoring on average lower than middle-aged adults. Similarity of self-aspects according to most evidence seems to linearly increase with chronological age, although there are also findings reporting u-shaped or even decreasing trajectories through adulthood. With regard to the content of the self-concept, from a cognitive point of view, self-concept content appears to be quite resistant to change over the life span; the changes that do occur, however, seem to reflect life-tasks. For instance, work-related and future-related themes are most frequently found among the self-descriptions of younger adults, whereas middle-aged adults often mention work and children. In old age, a concern for one's own health and functioning as well as an interest in general themes such as peace and the environment are expressed in the self-concept. Second, global appraisal of self-concept content, although the evidence again is somewhat incongruent, seems to become more positive throughout adulthood, such that older adults show higher levels of self-esteem than younger adults. In terms of affect balance, an inverted u-shaped trajectory seems to hold best, such that affect balance increases until midlife, where it starts to decrease considerably, with levels in old age being lower than during young adulthood. Third, conative aspects of self-concept content can best be summarized by three trends: value-related attitudes are supposed to get more rigid and more conservative, but also more self-transcendent throughout the course of adulthood.

3 Towards a Self-Concept Measure of Personality Growth

Now that the different constructs used to operationalize the self-concept have been discussed, the next step is to derive hypotheses about which of these self-concept constructs might be suitable to index personality growth. To do so, it seems useful to consult the literature on personality growth. Specifically, those theories of personality growth will be reviewed that entail more or less explicit notions or suggestions about the self-concept in relation to personality growth.

3.1 Theories of Personality Growth

Based on the criterion for the selection that has been specified above, the following theoreticians of personality growth have been selected: Gordon W. Allport, Erik H. Erikson, Abraham H. Maslow, Jane Loevinger, Gisela Labouvie-Vief, Carol D. Ryff and Douglas H. Heath.

The review of all of these theories will encompass the following topics that are of importance for the present study:

- The ultimate goal of development: the highest stage of development / maturity;
- The developmental process achieving this ultimate goal;
- The motor triggering and maintaining this development.

As it will become obvious in the course of the next paragraphs, the theories differ with regard to their primary focus, specifically concerning whether their aim is to conceive the goal / end-state, or the content / process and dynamics of development. For instance, Allport's efforts focused exclusively on the definition of the mature personality, that is, the criteria that characterize a mature personality. Issues of antecedents and processes prior to this endstate are almost completely omitted. In contrast, in Erikson's work, much attention is given to the dynamics of growth development. In fact, criteria of personality growth in an absolute sense do not exist in Erikson's theory; rather, the meaning of personality growth depends on the tasks and psycho-social challenges a certain life stage poses to an individual, and the way he or she deals with them. In Maslow's theory, personality growth, or *self-actualization* is conceived as the last step in a hierarchy of increasingly more complex and sophisticated needs. Naturally, the motivations and other processual aspects are much more elaborated than in Allport's writings, while the developmental endstate is also described in great detail. Loevinger, in turn, considered it almost impossible to describe the final stage of *ego development* in concrete terms because of the impossibility of grasping an experiential stage beyond one's own current state. Her aim was to conceive a stage theory of character development akin to Piaget's theory of

cognitive development, and to describe in detail the characteristics that individuals at each stage had in common. However, in contrast to Piaget, Loevinger's efforts were much less focused on the questions of developmental mechanisms and motors than on the stages per se. Labouvie-Vief's writings, in turn, compensate for that omission on Loevinger's side and focus on the dynamics of personality development. In her writings, Labouvie-Vief links findings about self- and affect-regulation and attachment with research from the cognitive realm. In doing so, she attempts to capture different trajectories of lifespan development that, to various degrees, resemble the ideal of personality growth. Ryff's theory represents an attempt to translate the Aristotelian concept of eudaimonia in modern scientific terms. Drawing on various clinical, developmental and personality theories, Ryff specifies certain criteria that have to be met in order to accomplish eudaimonic well-being. Thus, again the theory is more concerned with the characteristics of mature individuals without directing much attention to processes and dynamics of personality growth. The same is true for the theory of Heath: in a longitudinal, qualitative study, Heath followed the lives of a number of classes of college graduates over several decades, using questionnaires, projective techniques and interviews to describe and explain their individual life paths. Like Allport, one of his main goals was to establish a list of personality characteristics that were common to mature individuals. The focus of each theory is summarized in Table 4.

Table 4.
An Illustration of Divergent Foci in Theories of Personality Growth

	Motor / Motives	Process / Dynamics	Goal / Endstate
Allport	+	-	+
Erikson	+	+	+
Maslow	+	+	+
Loevinger	+	-	+
Labouvie-Vief	+	+	-
Ryff	-	-	+
Heath	-	-	+

Note. "+" indicates that the topic is thematized in a theory, while "-" indicates that the topic is mostly omitted.

The following paragraphs will introduce each of the theories, its theoretical background and – if necessary – empirical validation in greater detail. Note that empirical evidence related to the interrelationship of the various models of growth as well as to the relationship of personality growth models with trait personality and adjustment will be reviewed in later section (see section 3.4.2). The primary aim of this section is to introduce and summarize the various conceptions of personality growth.

3.1.1 Abraham Maslow's Need for Self-Actualization

One of the earliest theories about personal growth is Abraham Maslow's theory of needs (1954/1987). Maslow is well known for describing the *course of development* by his pyramid of needs which, however, is often misunderstood as a kind of elevator: in order to reach an upper level one has to pass the lower floors. According to this simple view, a person would automatically reach the highest level of development once all his or her other needs are satisfied. These are – in ascending order – the *physiological needs* (or at least all of them which are fundamental in order to maintain the homeostasis), *safety needs* or the need for freedom from fear, *belongingness and love needs*, and *esteem needs*, which in fact are made up of two subsidiary sets of needs, one being the need for capability and competence, the other being the need for appreciation and status (see Figure 5). The highest need in the hierarchy is the *need for self-actualization* (term originally used by Goldstein, 1939), or the need to live up to one's potentialities.

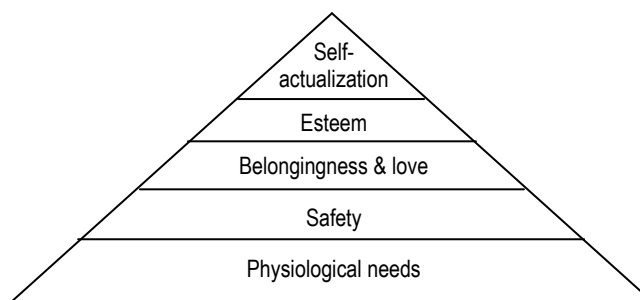


Figure 5. Maslow's hierarchy of needs.

Maslow underlined that his theory somewhat paralleled the system postulated by Erikson, because the steps could also be regarded as steps throughout the life span (Maslow, 1954/1987). Later, Maslow postulated a second hierarchy of knowing and understanding which was supposedly adjunct to the first. Thus, knowing and understanding are partially seen as tools to achieve gratification of the basic needs, and partially regarded as satisfying in themselves, at whatever level of the basic needs one might be.

However, the hierarchy of needs does not simply work like an elevator: one does not automatically reach the state of self-actualization once all other needs are satisfied. Instead, the satisfaction of all lower needs is a necessary, but not a sufficient condition for the emergence of self-actualization. In fact, the way Maslow pictures the *motor of development* is in contrast to other theories of personality growth. These other theories often define certain requirements or experiences as factors enhancing the likelihood of attaining maturity. According to this notion, one is inclined to think that provided that A, B, C are existent, maturity will follow. For Maslow, this is only true to a certain degree.

In order to get into a state of self-actualization, of course the other needs in the hierarchy must be gratified. This is not as easy as one might think: in particular, the level of belongingness and love needs represents a hurdle that can bring development to a halt at a very early age. This is not primarily due to the person, but due to the failure of the early social environment to gratify these needs in the child.³¹ In consequence, people on this (or an earlier) level will always be determined extrinsically, focusing only on what their environment can give them instead of what their own nature asks them to do. This can be regarded as the main reason why very few ever get to the level of self-actualization. A second reason is that, even for people who are not deprived at all, some simply find no reason to struggle to get any higher in the need hierarchy: one either *is* or *is not* self-actualized. To understand this, one has to draw on Maslow's distinction between "motivated" and "unmotivated behavior" (or "coping" vs. "expressing"; Maslow, 1954/1987, p. 62). According to this classification, not all behavior can be explained by the general attempt to satisfy one's needs. There are certain behaviors which are just "an epiphenomenon or by-product of the nature of the character structure" (Maslow, 1954/1987, p. 67). Self-actualization – contrary to all other needs – thus is a form of expression of one's character and comes as naturally as "the beauty of the beautiful person, the slumping posture, lowered tonus, and hopeless expression of the depressed person, the style of handwriting, gesturing, smiling, dancing, and so forth" (Maslow, 1954/1987, p. 65). Self-actualizers consequentially are not the people with the highest motives, but with no motives at all, the "unmotivated and nonstriving" (Maslow, 1954/1987, p. 135). To differentiate this kind of (non-) motivation from the other motives (the Deficiency- or D-Motivation), Maslow called it growth- or metamotivation, being or B-motivation. Thus, the *motor of development* within the first stages is not the same as the motor driving self-actualization: everyone strives for the satisfaction of needs out of the simple wish to become better adapted (e.g., to satisfy thirst or hunger, to seek shelter, to become more accepted). Striving for self-actualization, however, is only pursued by some – and these persons do not even consciously strive for it, but rather are the ones who manage to simply *be what they are*. The needs of *knowing*, *understanding*, and *aesthetics* are conceptualized to be subsets of self-actualization. Hence, in Maslow's opinion, the reasons for psychological growth are not of a rational nature. According to him we grow "for the same reason for which we prefer one pastry over the other" (Maslow, 1968, p. 59), that is, moving in the direction of psychological growth for the healthy individual is simply subjectively more rewarding and consequentially self-justifying.

However, Maslow also thought that every human being was bearing two forces within, one pushing it towards growth, the other pulling it towards security. Feelings of anxiety, defensiveness, and fear in the face of the new and the unfamiliar, Maslow assumed to be indicators of the security force.

³¹ Although Maslow mostly denied the teachings of psychoanalysis, his emphasis of early childhood experiences and social environment for later development bears much similarity with psychoanalytic theories.

Consequently, this force implies the possibility of regression and dependence. On the contrary, confidence and self-acceptance are forces that support growth by our need to try, to discover, to explore. Figure 6 illustrates this idea.



Figure 6. *The basic conflict of human beings according to Maslow (1990, p. 60)*

According to Maslow, the basic conflict of human beings is the one between defensive forces and the trend towards growth. Considering that each of the two elements can motivate the individual either by *attracting* or *detering*, the scheme could also be extended to a 2x2 matrix.³²

The process of development towards maturity thus can be described as a never-ending series of choice situations where the individual has to decide between the two options. Among such decisions, only certain ones propel growth: only when *the attraction of growth* and *the fear of security* outweighs *the fear of growth* and *the attraction of security*, the individual has the possibility to grow. One could also speak of two kinds of motivation, one of them defensive, the other towards growth.

Maslow was convinced that the tendency toward the best and the highest motives, towards growth, was innate, and that we simply had to follow our natural needs to become a mature personality. In his eyes, the only difficulty was to discover one's natural needs in a world too demanding and stressful to let us think of them.³³

Contrary to what is mostly associated with Maslow, he did not just elaborate on the *processes* of development as outlined by the need hierarchy. In fact, much of his work was dedicated to the study of self-actualization, that is, the ideal *end-state* of development. At his time, his attempts to reverse the established clinical proceeding and to study the best instead of the worst in people can be regarded as a truly revolutionary approach. His research methods were similarly unconventional: although about 3,000 people (mostly students) were screened in the pursuit of finding persons who were (1) free from neurosis and (2) self-actualizing, only 49 persons were considered to be in fulfillment of the criteria, among them his own mentors, psychologist Max Wertheimer and anthropologist Ruth Benedict (see D. Schultz, 1977). In order to minimize the artificiality of the participants' behavior, Maslow's methods were highly unobtrusive, "indeed almost surreptitious" (Maslow, 1954/1987, p. 127), and comprised interviews, projective methods, free association, as well as analyses of biographical background. By integrating the results of all these methods, Maslow finally derived the criteria to define a self-actualized person.

³² Similar distinctions – striving for security vs. striving for growth – as well as the 2x2 matrix emerging when taking "push"- and "pull"- factors into account can be found in later conceptualizations of personality growth, for example the ones by Helson and Srivastava (2001) and Labouvie-Vief (2005). Other examples of current research pertaining to this topic are Higgins's distinction between a *prevention-oriented* and *promotion-oriented regulatory focus* (Higgins, 1997) or the socio-psychological notion of *approach* vs. *avoidance* motivation (e.g., Elliot & Thrash, 2002).

³³ A similar notion has later been proposed by Ryan and Deci (R.M. Ryan & Deci, 2000) who also argue for an innate or "intrinsic" need to gratify higher order human motives.

What is it that characterizes self-actualizing behavior? First of all, self-actualizing behavior is without reason and marked by its effortlessness. Rather than being motivated by attaining another need, it is an end in itself. This in turn has implications for cognition, affect, and behavior.

In terms of cognition, perception is not distorted by any subtle or open needs: self-actualized persons do not perceive their environment “in order to” or “because of,” they just see things as they are. This feature was first phrased as good taste and judgment, but soon turned out to be something more universal: a global capability to see what is there, or a *perception of reality*.³⁴ This ability of clear, undistorted judgment also implies certainty in terms of *ethics* and *values*. Self-actualizing characters, on the one hand, have the ability to tell right from wrong, while, on the other hand, they are able to distinguish between relevant and irrelevant matters, which in combination lets them ignore some of the issues most widely discussed in public while being deeply concerned about matters otherwise hardly noted. Furthermore, self-actualizing people distinguish clearly between *means and ends*. Mostly, they are fixed on ends rather than means. However, they are often also able to regard “as ends in themselves many experiences and activities that are, for other people, only means,” for example, by transforming rote experiences into “structured and amusing games” (Maslow, 1954/1987, p. 141). This is not the only example of *creativity*; instead, creativity is a pervasive feature of self-actualizing persons. According to Maslow, it is even a feature of human beings in general, that gets lost as people are enculturated. *Resistance of enculturation* does generally characterize self-actualizers’ behavior: for instance, indifference towards dressing in the latest fashion, calmness (instead of rebellion and uproar) in carrying through important goals, objectivity when it comes to the accomplishments and failures of one’s own culture, and being slightly detached from one’s culture in general.

Behavior of self-actualized people in general is, just as their cognition, free of any other than its original purpose, that is, their behavior is not aimed at impressing people or at holding up conventions, but instead can be characterized by great *spontaneity*. Furthermore, their actions are not directed toward ego-centered goals. Free of anxieties and complexes as they are, they do not have many personal problems. Instead, they invest their energy in problems of more global importance, thus always acting *problem-centered* instead of ego-centered.

Towards other people, their behavior is guided by *acceptance* and *human kinship*. Frailties, weaknesses and shortcomings both of themselves and other persons are not encountered with harsh disapproval or feelings of guilt, shame and fury, but rather are taken “in the same unquestioning spirit with which one accepts the characteristics of nature” (Maslow, 1954/1987, p. 130). Superficial characteristics like appearance or culture do not count for them, and rather than seeing themselves as

³⁴ Expressions printed in italics mark the original expressions as used by Maslow (1954/1987).

superior to others, their interactions with other people are marked by *humility and respect*. Consequently, their *interpersonal relations* are of a specific nature, being more profound and deeper than relationships of other people. A related aspect is the characteristic sense of *humor* of self-actualizing people. Degrading, authority-rebellion, or hostile jokes are not the sort of things that amuse them. Their humorous talent shows less in punning and witty remarks, but in comments revealing again an extraordinary clarity in the face of the realities, but also the absurdities of life.

A specific feature of the perception of a self-actualized person is that they can experience joy over a person or a matter many times anew. What is called “*fresh appreciation*” by Maslow enables them to especially appreciate the most basic things again and again. The ability to have “*peak experiences*”, that is, nearly mystical ecstatic emotions, falls in a similar vein. Yet here, not all observed self-actualizers were similar. Instead, Maslow identified two different groups of people, where the “peaking” self-actualizers seemed more apt to “write the poetry, the music, the philosophies, and the religion”, while the “nonpeakers” were more likely to turn out as “the social world improvers, the politicians, the workers in society, the reformers, the crusaders” (Maslow, 1954/1987, p. 138). Finally, Maslow believed that, for persons on this level the classic *dichotomies*, for example, between heart and head, reason and instinct, or cognition and volition, would be resolved. For example, Maslow thought that the people on the highest level of maturity were also the ones most childlike in many aspects, the “*lustiest*” and “*most animal*” despite having the highest ethics and morals, that they would perceive no difference between work and play.

In 1964, Shostrom published a questionnaire designed to measure the values and behavior which seem to be of importance in the development of the self-actualizing person (see above): the Personal Orientation Inventory (POI)³⁵. Thanks to the inventory, there are thousands of studies giving empirical evidence for the dimensions postulated by Maslow. However, a review of the literature suggests that most of the studies applying the POI have had a rather specific focus, which might account for why there are no overall reviews available: often the POI is used to test the success of a specific – mostly clinical – intervention (e.g., yoga or meditation experiences, university courses supposed to foster personality growth, etc.), the level of maturity in certain subsamples (e.g., prisoners, foster parents, people in nursery service), or only subscales are used to validate other inventories in the field of creativity, humor, peak experiences, and the like. Some doubts have been raised about the psychometric properties of the test, which have hardly ever been subject to closer scrutiny, and when they have, results were far from satisfactory (Ray, 1984; Silverstein & Fisher, 1973). Consequently, up to this point no single study has reliably confirmed that mature persons are marked by the dimensions

³⁵ The POI was later followed by the Personal Orientation Dimensions (Shostrom, 1977), which, however, do not meaningfully differ from the POI as far as content and validity are concerned (Plake & Impara, 2001; Ray, 1984).

suggested by Maslow. Of course, an alternative approach would be not to question the features outlined by Maslow as indicative of personal maturity and to accept them as the constituents of the trait of self-actualization. However, even then the POI, because of its questionable psychometric properties, would not represent a satisfactory instrument to identify self-actualizers.

3.1.2 Allport's Catalog of Virtues

Gordon W. Allport's mission as a personality psychologist was to unchain the roots of personality from childhood traumas (a notion enforced by psychoanalysts) and rigid S-R response mechanisms (a viewpoint propagated by behaviorists). Thus, he strongly denied the psychoanalytic notion that all human behavior can be traced back to the reduction of drives, and was similarly opposed to the behaviorist view on behavior as a pure reaction to stimuli. In contrast, he was convinced that next to behaviors aimed at immediate need gratification, most behavior that a healthy human being shows is aimed at *increasing* instead of decreasing the level of tension. Provided that all basic needs are gratified, Allport believed, human beings would seek the challenge, not the rest. He thought that motivation is to a great degree not stemming from the need to make up for deficits in the past, but from the wish to pursue long-term "intentions" (Allport, 1937/1961, p. 223). In fact, he thought that effort would make people happier than the success, the battling more than the victory, the striving more than the arriving.

As mentioned above, his theory of personality growth is not really a theory, but rather a list of characteristics that describe mature persons. In fact, Allport once posited that "psychologists cannot tell us what normality, health, maturity or personality mean" (Allport, 1937/1961, p. 307). Thus, his selection is more of an assembly of characteristics taken from lay concepts of maturity and from theories and empirical findings of other psychologists (e.g., Barron, Erikson, Maslow). The focus of his theory of maturity is primarily on the ideal *endstate* of development. Thus, Allport's theory is more apt to explain changes located in childhood, such as the basic formation of personality, than changes taking place during adulthood. For these reasons, only Allports' notions concerning the ideal endstate of development will be covered here.

First, Allport believed the *capacity for self-extension* to be crucial for a mature person. Capacity for self-extension means the capability to identify oneself with more than one's bodily properties. It can be defined as a decentered way of life, both from the immediacy of bodily needs and ego-centeredness. Accordingly, the mature individual engages in certain sectors of his life (for example, work, family, spare-time-activities, politics) while deriving no immediate reward through his commitment, solely acting out of a deep interest going beyond an immediate gratification of his or her personal

needs. In a modern sense, these components might be identified as both delay of gratification (e.g., Funder & Block, 1989) and self-transcendence (e.g., Kohut, 1978) or altruism (e.g., Kunzmann & Baltes, 2003; Schwartz, 1992).

As a logical consequence, a mature person is able to form *compassionate and intimate relationships with others*. Allport describes this feature as the ability to experience love and intimacy towards others without intrusiveness, overpossessiveness, and ulterior motives. Allport believes that compassion comes from the realization of human fallibility and mortality, through which the person is able to realize that, in the end, every human being has to combat the same adversities of life.

Another vital point to Allport, who always stressed the importance of behaving in line with societal expectations, is *emotional security and self-acceptance*. At first sight, these two seem to represent different components of self-regulation. In Allport's view they are connected: by accepting one's own needs and desires as well as fears, they cease to exert control over one's behavior and actions, thus endowing the person with frustration tolerance and self-control. Also, for Allport, the trust acquired in childhood is an important foundation for the emergence of this competence. However, rather than unconditional self-acceptance Allport considers the skills of *self-objectification and humor* as characteristic for a mature personality.

Similarly important for the functionality and productiveness of the healthy person as emphasized by Allport is the capability of *realistic perception, skills and assignments*. At first sight similar to what was previously mentioned by Maslow, Allport stresses the necessity of intelligence for becoming mature. Along with this, he thought that almost every mature individual would possess a disposition to lose oneself in work.

Finally, a person with all of the above mentioned abilities would not be considered as mature unless he/she possessed a *unifying philosophy of life*. Allport adopted the term "Bestimmung" from Charlotte Bühler to convey what he meant by this: a person had to see a purpose in life, had to have values and a sense of identity to guide his actions.

3.1.3 Eriksons Theory of Psychosocial Crises

A theory that considered the importance of cultural and societal influences in development more than any earlier developmental approach is the work of Erik Erikson. He describes human development as a succession of stages with an ever-widening (inter-)action radius. As a consequence, whenever an individual enters the next circle of the psychosocial environment, he or she is faced with certain age-specific challenges, stemming from biological pressures within and sociocultural expectations outside the person as well as the challenges that arise out of that specific constellation.

Thus, development according to Erikson follows an epigenetic principle while at the same time it is embedded in the cultural context. By listing the challenges an individual has to master on the way to maturity, Erikson at the same time defined the criteria of a mature personality: “for every act calls for an integration of all” of the single psychosocial strengths listed (Erikson, 1963/1995, p. 244). Only the priorities shift successively from competences needed in a child’s world to those that are important in an adult’s life.

The basic concept of each stage consists of a crisis or a conflict. The individual is faced with a new difficulty and in coping with it, he or she is torn between two poles, one representing adjustment and harmony, the other maladjustment and unhappiness. If the person has found a balance in the resolution of the crisis, he or she will pass it with a new skill. However, in regarding this process, two aspects are important to consider:

- (1) Erikson cautioned that the skills acquired through the successful resolution of an acute crisis did not make a person “impervious to new inner conflicts and to changing conditions” (Erikson, 1963/1995, p. 247). Accordingly, the struggle to achieve psychosocial adaptation and maturity is as long as a person’s life.
- (2) Erikson further pointed out that the exclusive experience of a good outcome of a crisis did not make a person more mature, but instead, the balance or a “favorable ratio” of both the experience of struggling on the one hand and mastering a crisis on the other would endow a person with further psychosocial skills.

Since at the heart of Erikson’s theory is the interaction between the individual and the socio-cultural environment, all stages can be interpreted in terms of the (inter-)active functional focus, and the impact a crisis leaves upon the individual and his/her environment. Erikson’s first stages therefore can be interpreted as acquiring the basic “constitution” for what later provides the foundation for positioning oneself in one’s world (P. B. Baltes et al., 1998, p. 1093): during the first stage, the child must learn to *trust*; that is, the child has to experience that there is a continuity to the changes perceived in the environment, that persons, sounds, colors of his environment are more or less familiar, and that there are some contingencies he can rely on even though his sensory functions – which would allow him to fully grasp the course of events – are not fully developed. Given that the interaction between the child and his parents is apt to establish this feeling, a sense of *hope* can emerge. As sensory functions cease to change as dramatically as immediately after birth, the importance of muscular-anal function shifts to the foreground. The child acquires the capabilities to receive and to give, and with these the first tools to exert power over others. Whenever a child learns to control these functions willfully, he accomplishes the first steps towards *willpower* and self-control, while otherwise feeling doubt and shame about his competencies. Still, in this phase, the child is to a great extent controlled by bodily

functions. This changes in the next stage, where the child fully discovers his realm of locomotoric and mental possibilities. A danger, therefore, exists in an overly reckless use of these newly realized energies, and consequently in the experience of guilt over one's initiated actions. On the other hand, a successful handling of the feelings of initiative vs. guilt results in a sense of *direction* and purpose of one's deeds. With the next stage, the child enters the world of systematic instruction, and thereby, the world outside the family. Tools and skills become important means to compete with peers outside the family, and the success in handling these tools determines whether this stage leads to industry or a feeling of inferiority. Finding a balance with regard to those two in the end is rewarded by a sense of *competence*. This stage represents the last stage of childhood, and with the next phase, the individual enters the stage of youth. Here, the sense of self-sameness, of continuity, of identity, of rules and norms is deeply shattered because of the tremendous changes which take place in both physiology and societal expectations now facing the grown-up child. In this phase, it becomes vital to resist the urge to "overidentify... with the heroes of cliques and crowds", but to "integrate all identifications with the vicissitudes of libido, with the aptitudes developed out of endowment, and with the opportunities offered in social roles"; in short: to find one's own true identity (Erikson, 1961/1995, p. 235). It is otherwise likely that the qualities of *devotion and fidelity* cannot develop. To be sure of one's identity is also a necessary prerequisite for the next stage, where the struggle of life mainly centers on achieving intimacy with another person. If a person is unable to accomplish the proper ratio between intimacy and isolation, this in turn is going to bar the way towards the experience of true *love*. But relationships, according to Erikson, should go beyond what is necessary to satisfy a person's need for intimacy, and this happens in the next stage, where the need sets in to give and convey to others what one possesses, to be generative. In adulthood, this is often the stage of raising children or of working for a common, self-transcending goal. A person who fails to feel this need to *care* for others ultimately will be faced with a sense of stagnation. Finally, late adulthood, in Western civilizations often associated with the threat of the irreversible loss of youth, of time becoming short, and despair in the face of death, is claimed by Erikson to offer the chance to achieve *wisdom*. Accordingly, the negative side often associated with old age only occurs in people who were unable to master the last task, to achieve ego-integration.

3.1.4 Loevinger's Theory of Ego Development

According to Loevinger, human development can be described along four lines: physical, psychosexual, intellectual, and in terms of character (e.g., Hauser, 1976). While in the 60s and 70s *intellectual* development was among the most popular topics in psychological research, "no one ever

came to the idea of stages of character development” (Loevinger, 1998a, p. 353). Jane Loevinger was among the first researchers to fill this gap. With her theory of ego development, she attempted to capture character development in a stage-model following the Piagetian stage-model of cognitive development. However, while Piaget’s concern was to describe the changes that occurred in attempts to make sense of the world by cognitively more and more refined methods, Loevinger investigated the development of means to protect the self-system³⁶ (Loevinger, 1998). Thus, while Piaget was considering the representations of object relations in the human mind as an impersonal ground, ego development theory approached “objects, people, and also the person’s own characteristics ... specifically for the relations they have with the subject, namely, with the person’s needs, anxieties, interests, goals, and so on” (Blasi, 1998, p. 16). It was Loevinger’s goal to account for general trends in psychological development as well as for interindividual differences. Strictly speaking, therefore, hers is not merely a stage-, but a stage-type theory, since it attempts to seek “the common thread in stages and types” (Loevinger, 1998, p. 202).

Loevinger conceived the stages of ego development as a successive progression toward psychological maturity, developing along the four dimensions of impulse control, interpersonal style, conscious preoccupations, and cognitive styles (Blasi, 1998; Loevinger & Wessler, 1970; Manners & Durkin, 2000, 2001). The model comprises eight stages,³⁷ being characterized by increasingly mature versions of the four personal dimensions mentioned above (see Table 5). Empirically, most people are found in the 3rd to 5th stage, that is the Conformist, Self-Aware, and Conscientious Stage with the Self-Aware Stage being the one modal in late adolescence and adult life (Holt, 1980; Loevinger, 1997). The eighth stage, the Integrated Stage, is rarely seen in random samples (Loevinger, 1997).

Despite adopting the Piagetian stage-concept as a role model for her own theory, Loevinger was well aware of the differences in assessing personality and cognitive abilities (Loevinger, 1997). In fact, the differences between the measurability of the two concepts were the reason Loevinger regarded classical psychometric approaches as unsatisfying for personality assessment, since those relied entirely on linear hypotheses (Loevinger, 1997). In her opinion, in order to get information about the features of personality that mostly evolved in a curvilinear way, a projective method was more appropriate. She therefore constructed a sentence-completion-test (The Washington University Sentence Completion Test WUSCT, e.g., Loevinger & Hy, 1996).

³⁶ Loevinger adopted the term “Self-system” from H.S. Sullivan (1953), who thereby described a psychological system somewhat equivalent to the immune system (Loevinger, 1987), insofar as it served to “protect the child from anxiety, which would result from admitting observations or ideas inconsistent with the person’s current frame of reference” (Loevinger, 1998a).

³⁷ Theoretically, there are even more than eight stages with the first not being accessible by any language-based measurement (Loevinger, 1997).

While declining a rigid stage-age assignment, Loevinger believed that development was taking place in the direction from lower to higher stages, and that – at least superficially – all previous stages had to be passed in order to reach a certain stage. Therefore, it is almost impossible to attain one of the highest stages during childhood, and it is similarly unlikely for older adults to be situated in the stages on the bottom end.

Table 5.
Some Characteristics of Levels of Ego Development (from Loevinger, 1997)

Level	Characteristics			
	Impulse control	Interpersonal mode	Conscious preoccupation	Cognitive style
Impulsive	Impulsive	Egocentric, dependent	Bodily feelings	Focused on separate-ness betw. self & world
Self-protective	Opportunistic	Manipulative, wary	"Trouble", control	egocentric
Conformist	Respect for rules	Cooperative, loyal	Appearances, behavior	depends on stereotypes
Self-aware	Exceptions allowable	Helpful, self-aware	Feelings, problems, adjustment	more independently
Conscientious	Self-evaluated standards, self-critical	Intense, responsible	Motives, traits, achievements	rich vocabulary, focus on longterm goals
Individualistic	Tolerant	Mutual	Individuality, development, roles	Awareness of paradoxes and contradictions
Autonomous	Coping with conflict	Interdependent	Self-fulfillment, psychological causation	Awareness of the multifaceted complexity of situations & life choices

Note. The last state ("Integrated") is omitted because its implications are far less clear-cut than those of the other stages.

A detailed description of the various stages can be found elsewhere (Holt, 1980; Loevinger, 1976, 1983, 1997, 1998b; Loevinger & Wessler, 1970, 1978), and does not seem necessary in order to identify those aspects of Loevinger's theory that concern the self-concept.

All in all, it is an almost impossible task to translate Loevinger's stages of ego development one to one into a certain type of character embodying the mature person as it had been attempted by Allport and Maslow. Evidence has shown that people at the higher stages have the tendency to be more intelligent (e.g., Cramer, 1999), to have a higher socio-economic status (e.g., Snarey & Lydens, 1990),³⁸ and are likely to be over 25 years of age, but under 80 years (e.g., McCrae & Costa, 1980). In terms of gender differences, it has been found that girls in adolescence acquire higher ego levels earlier than boys, but that they also reach a plateau earlier (Cohn, 1991). But, apart from the facts mentioned above, we know relatively little about the personality of people on lower and higher ego levels. To be able to draw conclusions from a given level of ego development to the character of a

³⁸ However, Snarey and Lydens (1990) could show that the high correlations of ego development and SES to a great extent could be explained by socio-political factors of the living and working environments and not by higher education, higher standard of living, or a more cultivated milieu per se.

person, the best way seems to be to further reduce the degrees of freedom, by looking at the level of ego development in combination with some other meaningful trait (for an example of such an approach see e.g., Helson & Wink, 1987). This procedure allows the formation of more homogenous groups of people for which predictions in terms of their character may be accurate. However, the fact that this is necessary to come to a conclusion about a person's character also reveals that the omnipotence of ego development as conceived by Loevinger is restricted; and that it is *another* rather than a *better* instrument to judge a person's character. However, in order to estimate the level of a person's maturity, Loevinger's theory clearly surpasses the classic trait approaches, since it not only considers personality dispositions, but can also grasp interpersonal, motivational, cognitive, and affective facets of a person. When looking at maturity, such an integrative approach is certainly the most useful.

3.1.5 Ryff's Concept of Psychological Well-Being

Contrary to Loevinger's theory, Carol Ryff's concept of psychological well-being (e.g., Ryff, 1989; 1995) is a theory dealing almost exclusively with the characteristics of the ideal end-state of human character development. Although assumptions about the motor of development are somewhat implicit in this theory, almost no information can be found on the processes that drive development and that eventually can lead to maturity.

The term *psychological well-being* (PWB) might at first glance evoke associations of life satisfaction and happiness. However, this description falls short in conveying what Carol Ryff intended to grasp with her theory of PWB. At the center of her interest is not perceived life satisfaction, but eudaimonia in the Aristotelian sense of the term, implying a distinction between the satisfaction of right and wrong desires, or "the striving for perfection that represents the realization of one's true potential" (Ryff, 1995, p. 100). Her aim is to bring together theories from various psychological backgrounds in order to identify the essential features of positive psychological functioning, and to derive operational definitions. According to Ryff, theoretical guidance could be provided mainly from three different literatures: first, developmental psychology, particularly lifespan developmental psychology with authors such as Erikson, Bühler, and Neugarten offered depictions of wellness, "conceived as progressions of continued growth across the life course" (Ryff, 1995, p. 99). Second, some clinical authors, e.g., Maslow, Rogers, Jung, and Allport had made significant contributions in defining well-being. And third, a couple of theorists in the field of mental health, "although guided largely by absence-of-illness definitions of well-being" (Ryff, 1995, p. 99) could give some hints as to what well-being means. Jahoda and Birren especially should be emphasized here. Points of convergence identified by Ryff are depicted in the inner circle of Figure 7.

Guided by the literature and statistical considerations (for a detailed description see Ryff, 1995), Ryff finally arrived at six main dimensions of PWB, each represented by nine items in a single questionnaire.

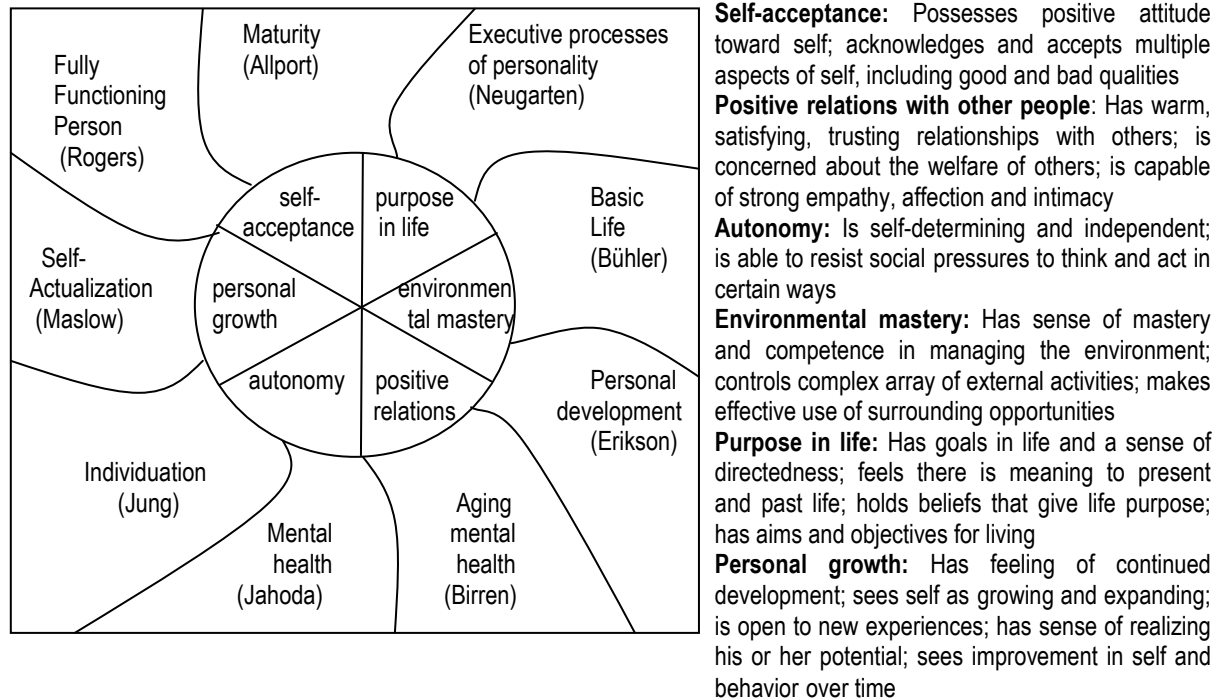


Figure 7. Core dimensions of well-being, their theoretical origins, and definition (in excerpt) (Ryff, 1995, p. 100f.).

To understand the nature of wellness, exploratory methods were applied to investigate age- and gender differences. Using a cross-sectional design with three different age groups, the following age differences were found in PWB (Ryff, 1995): environmental mastery and autonomy increased with age, especially until midlife. Personal growth and purpose in life decreased, especially from midlife to old age. There were no significant age differences for positive relations with others and self-acceptance. The findings were replicated in other studies (Ryff & Keyes, 1995). Only the age trend of positive relations with others varied across studies between no differences and increases with age.

Of the six variables, positive relations with others and personal growth were the only facets of well-being showing significant differences between men and women. On both, women tended to score significantly higher than men. Ryff points out that these findings are almost complementary to the often reported higher incidence of certain psychological problems in female populations (Ryff, 1995). Her results show that just as women tend to be more at risk than men when it comes to certain psychological problems such as depression, they also tend to surpass men at the other end of the spectrum of mental health, that is, in certain domains of PWB. These gender differences also hold across cultures, where the biggest differences occurred in the dimension of positive relations with others – Koreans showed the highest self-ratings as opposed to the other dimensions – and personal

growth, which was usually the highest-scoring dimension among U.S.-citizen while rated lowest by Koreans (Ryff, 1995).

3.1.6 Labouvie-Vief's Cognitive-Emotional Integration

Gisela Labouvie-Vief offers a lifespan theory of emotion that situates emotional development within the context of developing cognitive and ego processes. The theory suggests that emotional experiences are qualitatively restructured as the maturing individual (a) acquires more complex forms of cognition with which to reflect upon the world and (b) develops a more differentiated and integrated self-concept. While Labouvie-Vief initially dealt foremost with stages of adult cognitive-emotional development, more recently her writings have increasingly shifted towards describing the endstate of development. Building on and extending the cognitive theory of Piaget, Labouvie-Vief designed a stage model of cognitive and emotional development, where the cognitive sophistication that comes with age provides an ever more complex scaffolding for affective experience and emotion regulation (Labouvie-Vief, 1982; Labouvie-Vief, Hakim-Larson, DeVoe, & Schoeberlein, 1989). Accordingly, in adulthood, cognitive development is marked by a gradual shift away from convention towards an increasingly contextualistic thinking. The rules of logic are not applied in a rigid fashion.³⁹ Instead, ethical, social, and pragmatic consequences of a decision or a process are considered. Similarly, the individual does not simply obey conventions and rules, but is reflecting them in context, thereby building up a value system of his/her own. As a consequence, subjectivity, autonomy, and self-exploration increase. This, in turn, leads to a de-repression of emotions that comes to be more prominent during the middle years of adulthood. However, being highly sensitive towards conflicting or opposing feelings also creates a certain tension, which might not be sustainable for some individuals. Therefore, the reaction to these de-repressed emotional states is crucial for future development. Either, individuals will intensify their efforts at reconciling and integrating, or they will retreat into more defensive modes of operating.

Obviously then, a special focus in Labouvie-Vief's theories is on the role of affect. This includes the realization of intrapsychic and interindividual conflicts, an authentic awareness of one's true feelings without projecting them onto others. Emotions are not repressed, but perceived realistically with the possibility to express them, but also to control and regulate them. Throughout development, self-representations develop from "poorly differentiated from others or social conventions to ones that involve emphasis on process, context, and individuality" (Labouvie-Vief, Chiodo, Goguen, Diehl & Orwoll, 1995).

³⁹ According to Labouvie-Vief (1982), this may be the reason for the generally lower achievements of older adults in conventional intelligence testing, since here, a rigid clinging to logical principles is rewarded.

Labouvie-Vief's theory could be validated by coding people's written self-descriptions and descriptions of emotions (Labouvie-Vief, DeVoe et al., 1989) according to a number of principles inherent in mature thought. In fact, it could be shown that subjects high in ego development (Loevinger, 1976), received higher scores on these tasks (Labouvie-Vief et al., 1995; Labouvie-Vief, DeVoe et al., 1989) than subjects with lower ego levels.

Labouvie-Vief recently extended her theory about modes of affect regulation, which are seen as an important component of successful self-regulation in general. It is assumed that there are two independent strategies to regulate emotion: Affect Optimization (AO) – “the tendency to constrain affect to positive values” – and Affect Complexity (AC) – “the amplification of affect in the search for differentiation and objectivity” (Labouvie-Vief & Medler, 2002, p. 571). Labouvie-Vief assumes that self-regulation can be predicted by the conjoint operation of the two modes, since both are vital for adaptive behavior. An attempt to verify this theory empirically will be described below, when the relationship between personality growth and adjustment is reviewed on a more general level (see section 3.4.2).

3.1.7 Heath's Model of the Maturing Person

Heath's theory in many ways is similar to the one by Allport. Like Allport, Heath attempted to generate a list of those characteristics that are typical of a mature person. Also similar to Allport, he did not draw on extant theories: inspired by his work as an educator at a college building on modern principles, he attempted to specify the goals of education, or those criteria that should be taught “to succeed in our principal adult roles and to be healthy adults” (Heath & Heath, 1991, p. xiii). In one sentence, these goals are “to grow intellectually, to form guiding values, to become knowledgeable about oneself, and to develop social, interpersonal skills” (Heath, 1968, p. 4). Based on these definitions, Heath followed several samples of college graduates from their time in college up to middle age, collecting qualitative data by using projective techniques, questionnaires, and interviews with the graduates themselves and their relatives and acquaintances.

The key paths to maturity were originally summarized by Heath (i.e., in his book from 1968) in five criteria. Later, Heath elaborated on these criteria, wrapping them into a more complete, but also less clear theoretical framework. For the present purpose, it seems sufficient to describe the five originally formulated criteria, which still present the bottom line of Heath's later theory.

Representing experience symbolically is the first feature listed by Heath as a goal of adult development. At first glance, this variable comprises only cognitive skills, but is meant by Heath in a much broader sense. There are mainly two abilities summarized under this heading: the capacity to realize, to be aware of certain matters, and to communicate one's thoughts to others. The most

important domains where such a realistic view and open way of communicating ought to be extant are one's beliefs and values, oneself, and one's partnership. Despite the positive side of symbolization, however, it never ought to exceed a certain degree and turn into obsessive introspection. Questionnaire items comprise statements such as:

"Because I seldom reflect about why I believe and act as I do, I find these questions difficult to answer."

Becoming allocentric is the second heading, which to Heath seems of overall importance to attain a mature personality. Again, this criterion has very broad implications: mature persons ought not only to be able to communicate with others, and to be able to solve social conflicts, but they also should have other-centered values and act according to them. A person with an allocentric instead of an egocentric worldview should have – similar to Allport's mature personality – a sense of human kinship; he or she ought to care for others, understand others' perspectives, and have intimate relationships with others. In this respect, Heath finds it noteworthy that less mature people tend to overly value aesthetic and creative activities. However, according to Heath, the emphasis on creativity just suggests that those persons have not found adequate means to communicate yet. Likewise, in immature people, valuing aesthetics has more to do with narcissism. Examples of questionnaire items which reflect this attitude are:

"I usually know what other people think of me."

"I have so liked a friend that I did things for him even at the expense of my own interests."

"Fundamentally, I am like most other persons"

Becoming integrated is a further step towards maturity. This implies that the person is "continually open, flexible, curious, and actively engaged" (Heath, 1968, p. 11), that is, he or she acts in accordance with the incessant adaptations required by changing environmental demands and one's own aging process. This does not mean to say that the integrated human being is "an inhuman organization man" ((Heath, 1968, p.18). Rather, integration refers to one's thoughts, interests and beliefs: in the process of maturing, a systematic, logical network gradually emerges that will also increase the consistency of thought and reflection on interests and beliefs. An important component of integration concerns the self-concept: mature persons will no longer feel "torn and divided, pulled between competing values or ways of life" (Heath, 1968, p. 12). Their self-images become more integrated, congruent and stable. The gap between the real and ideal self diminishes: self- and other-image are in increasing accordance with each other. Persons with an integrated and congruent self-image do not play a role and do not feel alienated from others. Furthermore, the growing integration of the self is accompanied by increasing stability and balance of affect and moods. Finally, with increasing

maturity, interactions with the other sex become more open and sensitive. Items that reflect this aspect of maturity are, for example:

“I rarely feel I can just be myself with a close girl friend; there are parts of me she doesn’t know.”

Becoming more stable is another criterion that characterizes the maturation process. Rather than advocating rigidity, this means that the intellectual skills, values, image of oneself, and interpersonal relations become more resistant to disruption by threat. Mood swings, personal frustration, or failures cannot shatter the mature person’s confidence for a long time – the more mature a person is, the shorter the effect of the disruption will be. According to Heath, the process of becoming more stable is also expressed by Erikson’s concept of identity achievement: both ideas comprise the individual coming to know who he/she is and what he/she wants. This growing identity certainty releases more energy for concerns beyond one’s own interests, such as the lives of other people.

Becoming more autonomous is the last item among Heath’s characteristics of maturity. Heath cautions not to interpret this requirement as “hermetic existence nor an inhibited coldness” (Heath, 1968, p. 18). Rather, the person will become less manipulable by his environment and less driven by infantile wishes and conflicts. “Maturing is directly correlated with an expanding area of ‘free’ decisions” (p. 15), that is, decisions do not grow out of superficial or childish needs (e.g., based on superstition, appearance, etc.), or the persuasive opinions of others. A higher certainty with regard to one’s beliefs and needs suggests also being less corruptible. Commitments will be more stable and more reliable, even in the face of adversities. Allocentrism and autonomy at first glance might contradict each other, but the apparent contradictions by mature individuals are resolved in this way: although increased allocentrism enables an individual’s the perception, awareness and identification with others, his autonomy, at the same time, permits him to remain in control of his own decisions, and to selectively accept what others might say. According to Heath, this balance between allocentrism and autonomy is paradigmatic for maturity. Thus, he states that:

The implied assumption, fundamental to understanding the systemic nature of the maturing process, is that too extended development of one of the dimensions or self-structures eventually inhibits its own future development. Too extended allocentric development not approximated by a comparable development in autonomy produces a rigid conformism, which may in turn stifle allocentrism; too great autonomy not balanced by a comparable allocentrism produces an insufferable aloofness or unreasonable rebelliousness... Maturing depends upon the reciprocal development of all dimensions, with development of some dimensions perhaps leading at one time, other dimensions at another time (Heath, 1968, p. 17).

3.2 Integration of the Theories: A Model of Personality Growth within the Self-Concept

The previous paragraphs have dealt with various concepts of personality growth. The goal of this selective review was to identify commonalities between the approaches (for a more detailed discussion on the topic, see Baltes et al., 1998) and apply them to the self-concept. Obviously, there are points of overlap when comparing the theories along the dimensions of motor, process, and endstate. For example, with regard to the motor of development, a number of theories (Erikson, Maslow, Loevinger, Labouvie-Vief) assume that personality development represents the continuous attempt to reconcile two opposing needs: the need for security, resulting in a defensive and self-protective mode (Maslow and Labouvie-Vief) that rejects any experience that is not immediately assimilable to the self-system (Loevinger), and the need for growth (or “tension” according to Allport), resulting in an open, complex and realistic mode (Labouvie-Vief) that attempts to integrate new information – including knowledge and facts which are discrepant to the individual’s previous knowledge and self-concept.⁴⁰ Whereas this basic conflict characterizes development throughout the life span, the setting and concrete content of the conflict shifts with age. This notion has been discussed in detail by Erikson, and partly by Maslow, while the cognitive and emotional prerequisites for experiencing and settling a conflict at different developmental stages have been specified by Loevinger and Labouvie-Vief. Accordingly, the focus of human striving is shifted from relatively primitive and self-focused topics (trust, willpower and self-control in Erikson’s theory; physiological and security needs in Maslow’s theory) to complex issues that *either* – according to Erikson’s theory – are assumed to require the incorporation or understanding of the perspective of others, of society, and finally of an abstract, generalized social, as well as inanimate environment (intimacy, generativity, wisdom) – *or*, according to Maslow – imply becoming completely independent of social and cultural expectations, and to listen to one’s true inner feelings and needs (self-actualization). Because of the idealistic *Menschenbild* associated with this notion, this last stage automatically will result in a selfless and other-centered worldview. Eventually, under ideal conditions, we should become able to integrate our selves and our lives including the contributions by and views of others. With regard to the *process*, in accordance with the notion of two opposing poles acting as developmental “motor”, at the heart of most of the selected theories lies the basic idea of the dialectics of development, and in this regard especially the coordinated dialectics between self and other. Within this framework, the developmental organization is described to move from the self as focus to the other and eventually to the integration of both.

⁴⁰ In other words, one could also state that the various levels of coping with the opposing poles of security and growth crystallize in the three mechanisms assumed to be basic to the functioning of the self-concept, namely the ways of *organizing* incoming information, *protecting* the self, and the basic *motives* underlying behavior.

What are the overarching criteria for personality growth that cut across the different theoretical models, and which of them are relevant from the perspective of the self-concept? Table 6 presents an attempt to identify five dimensions of personality growth deemed relevant by most of the selected theories. In the following, each of these five dimensions will be discussed separately, thereby giving a short description of its content, its theoretical roots, and finally its linkage with the self-concept.

Table 6.
Overview of Commonalities in the Definition of Mature Personality across Selected Theories

	Allport	Maslow	Erikson	Loevinger	Ryff	Labouvie-Vief	Heath
Complexity	<i>self-extensions: mature individuals engage in multiple spheres & roles</i>	increasingly complex needs underlying human actions	Tasks become increasingly complex in terms of social "radius" (self, parents, ..., society, abstract "other"), acquired skills and level of abstraction	<i>Impulse control, interpersonal style, conscious preoccupations, cognitive styles become increasingly more complex</i>	-	consideration of multiple psychological "levels" (e.g., emotion, cognition, motives); increasingly wider spectrum of affective experience	<i>Representing experience symbolically → development towards higher abstraction in perception and communication</i>
Integration	<i>Having a unifying philosophy of life: existence of guiding principles & clear sense of identity</i>	<i>Resolving the basic dichotomies of life</i>	<i>Integration as final life task; integrating opposing poles at the heart of solution to every life crisis</i>	<i>Integrate stage as final stage of development</i>	<i>Purpose in life: having an overarching guiding principle entailing all other needs & strivings</i>	Integration of thinking and feeling, self and other	<i>Becoming integrated step towards maturity</i>
Affect Balance	<i>Emotional security: "Allowing" emotions enables their controllability</i>	<i>Peak experiences capability of extreme positive emotions</i>	<i>Perception of reality, problem-focus; not optimizing</i>	<i>Impulse control becomes increasingly refined</i>	<i>Drawing positive emotions only from gratification of the "right" desires</i>	Balance between affect complexity and optimization	<i>Becoming more stable: experiencing fewer mood swings, not being disrupted by strong affects</i>
Self-esteem	<i>Self-objectification & -acceptance: Accepting one's needs, desires & fears</i>	<i>Self-esteem as basic human need</i>	<i>Having a sense of identity as vital task of adolescence</i>	-	<i>Self-acceptance & autonomy as criteria of well-being</i>	-	<i>Becoming autonomous: high certainty with regard to one's beliefs</i>

Note. Terms and expressions used in the original writings are printed in italics.

Table 6 (continued).

	Allport	Maslow	Erikson	Loevinger	Ryff	Labouvie-Vief	Heath
Value Orientation	<i>Capacity for self-extension: Realizing the importance of matters beyond one's immediate interest</i>	Criteria of mature personality: <i>Ethics & values; acceptance, humility & respect towards others; sense of human kinship</i>	Life challenges move from self- to other-focused tasks	-	<i>Positive relations with others as criterion of well-being</i>	-	<i>Becoming allocentric: Developing an other-centered value orientation</i>

Note. Terms and expressions used in the original writings are printed in italics.

3.2.1 Complexity

As illustrated in Table 6, development towards personality growth is almost always associated with an increase in complexity. There exist certain conceptual differences, however, in what is meant by complexity. Complexity might entail the number of factors, perspectives and roles involved in one's thoughts and actions (e.g., Allport), the interlocking of multiple psychological functions (such as emotion, cognition, motivation; e.g., Labouvie-Vief), and the level of abstraction and reasoning underlying one's motives (e.g., Loevinger, Maslow).

What does complexity mean in terms of the self-concept? Individuals take on more perspectives as they develop, and as a consequence, they are able to perceive themselves in a wider variety of ways. Thus, "Self-complexity" should reflect the variety of perspectives a person adopts in describing him- or herself.⁴¹

Complexity and the self-concept. Complexity with regard to the self-concept content is best conceived as the number of perspectives an individual adopts with regard to himself or herself. This parameter is not only a proxy for the number of social roles and life contexts an individual considers self-relevant: Self-aspects can also comprise non-social, even abstract themes like music, shyness, home country, and so forth. Thus, self-complexity at the same time represents the level of abstraction a person can accomplish in his/her thinking, as well as the degree of differentiation, or the "granularity" that characterizes his/her perception of the personal environment.

Evidence that lends empirical support to the association of self-complexity and personality growth is scarce. One example is a study by Hauser and colleagues (Hauser et al., 1983) in an adolescent sample. Complexity of the self-concept in this study was defined as complexity vs. simplicity in rating patterns across a number of self-descriptive attributes (e.g., patient, hostile,...) and a number

⁴¹ A detailed description of the meaning of the term self-complexity in psychological literature is provided in chapter 4.1.

of relevant contexts (e.g., now; in the eyes of my friend,...). This measure of self-complexity was significantly related to ego development. The same relationship was found in a study by Labouvie-Vief et al. (1995), in which a complexity rating of open self-descriptions was taken as a measure of self-complexity (see section 3.1.6). Another study by Evans and Seaman (1994), in which the complexity of self-domains was assessed by rating the similarity between reactions to various self-relevant scenarios, yielded a significant association between this kind of complexity of self-concept and the degree of maturity of psychological defenses. In a later study, using the same paradigm in a sample of female psychiatric in-patients, Evans and colleagues found a significant relationship between this kind of self-complexity and ego development (Evans, Brody, & Noam, 2001).

However, next to being a direct concomitant of personality growth, complexity in self-concept content can also be considered as an indirect indicator of growth, namely as a correlate of a number of variables that are conducive to personality growth, thus promoting personality growth in an indirect, mediating way. Three variables are of special importance here that foster personality growth and might manifest through a high level of complexity in the self-concept: Life transitions and -experiences, self-reflection, and number of social roles.

It is quite plausible that experiences, transitions, and interactions leave traces in our self-concept. Each time we conquer a novel “domain” – as manifested for example, by a change in profession, the attainment of new social roles, or important persons who enter our life – one might think that a new aspect is added to the self-concept. While this might be a very exaggerated notion -- since we have neither the will nor the capacities to re-define ourselves from a perfectly new angle each time we face some kind of change -- diversity of life contexts is reflected in the self-concept at least to a certain degree. Thus, Donahue and colleagues (1993) found that individuals who have gone through many role changes, such as marriage, divorce, and job changes pictured themselves in much more variable ways than individuals who had not experienced any transitions. What does this mean for maturity? As has been shown in numerous studies, the exposure to different life contexts and the ability to master transitions successfully has been considered a vital ingredient in the making of personality maturity (e.g., Davis & McKearney, 2003; Davis, Nolen-Hoeksema, & Larson, 1998; Helson & Roberts, 1994; Stewart & Ostrove, 1998; Tedeschi & Calhoun, 1995, 1996), and has been held accountable for the predominant role of adolescence and young adulthood when it comes to personality development. Many intervention programs to promote adult ego development (see 3.1.4; Loevinger, 1976) draw on the growth potential inherent in such exercises as assuming new roles, getting to know new contexts, and perspective-taking (for an overview see Manners & Durkin, 2001).

Second, as it is claimed, for example, by Linville (1982), people develop more complex knowledge structures for areas of life where they have greater experience or familiarity. As a

consequence, one can assume that self-concept complexity is also an indicator of an intense engagement in self-related thoughts, and thus, a kind of expertise with regard to the self (Linville, 1982).

Last but not least, a greater number of social roles – which in turn is assumed to raise the number of perceived self-aspects, and thus, the general level of self-complexity -- has been shown to be conducive not only to well-being, but also to the development of identity (e.g., Thoits, 1999), two factors that are of importance with regard to maturity.

As a consequence, mature individuals, when thinking about themselves, are expected to take multiple perspectives, regard themselves on different levels of abstraction, and should be able to perceive varying features that characterize them depending on the context. In short, they should be characterized by a high level of self-complexity, for example, not only perceive themselves as mother, but also as wife, lawyer, tennis player, and artist. They should think about themselves not only in global terms but also with regard to specific roles, situations, and abilities. They should not only reflect upon their appearance, but also on their emotions, thoughts, behavior, motives, and memories.

3.2.2 Integration

“A clearly delineated sense of self-definition or identity acts like a compass navigating the individual throughout the life course”, Sneed and Whitbourne state in a recent article (2003, p. 313). Such a compass, then, should be to the minds of those with high levels of personality growth. Accordingly, as summarized in *Table 6*, integration assumes a key-role in almost each of the selected theories: Sometimes on a rather vague and abstract level (Allport, Maslow, Loevinger, Heath), sometimes in more concrete terms (Labouvie-Vief), the authors claim a sense of integration to be vital for achieving personality growth. Integration, in their theories, implies the integration of knowledge, memories and attitudes, of self and other, and of different psychological levels of functioning, such as motives, cognitions, and emotions.

Integration and the self-concept: It was assumed that mature persons would be characterized through a maximum degree of self-complexity. However, a high level of complexity always carries the risk of leading to fragmentation, disorganization and chaos. In other words, being complex carries an essential caveat: it might come at the cost of consistency. As perceiving and weighing a matter from all possible sides might make a decision more difficult, so might considering oneself from manifold viewpoints aggravate the answer to the question of who one is. Similarly, Block (1961a) remarked that a person with a too differentiated self-view was an “interpersonal chameleon, with no inner core of identity, fitfully reacting in all ways to all people. This kind of person is... plagued by self-doubts and

despairs for he has no internal reference which can affirm his continuity and self-integrity" (p. 392). Likewise, in Lecky's theory, self-consistency is an essential component of mental health (Lecky, 1945, 1968). Further analog notions can be found within the theories of Assagioli, in which it was claimed that a disorganization of the self-concept would finally culminate in a personal crisis (Assagioli, 1978/1989), within the writings of James, who labeled the lack of integration with the German term "Zerrissenheit" (1890/1948), in Erikson's theory, in which he propagated "self-sameness" as a vital prerequisite of healthy development in adulthood (1968b), and in Roger's teachings (1959), who believed congruence with the "true" self to be a vital indicator of mental health, (for an overview of some theories see Sheldon, Ryan, Rawsthorne, & Ilardi, 1997). This logic might at first glance suggest that a *maximum* level of self-concept integration indicated personality maturity. However, would someone indeed exhibit maximum self-concept integration (or a minimum of self-concept differentiation), it would mean that he did not differentiate his self-concept at all, no matter what situation he was in, which persons he might be with, or what demands were put upon him within a specific context. Again, in Block's words, such an individual "behaves uniformly in all situations, disregarding the different responsibilities different circumstances may impose. Here the core of identity is hollow, based not on a genuine and unquestioned sense of personal integrity but rather upon deep seated fear of any amount of self-abandon" (1961, p. 392). Obviously then, this kind of self-concept would be no sign of maturity either. Instead, it is assumed that the self-concept should also reflect a certain situational flexibility, that is, a certain process of adaptation to contexts and persons. Although the self-concept of a mature person should provide a sense of self-sameness (e.g., Labouvie-Vief, Hakim-Larson et al., 1989) or continuity in the individual, it nevertheless should also answer the opposite demand, namely to affirm the person's capacity to adapt and to assimilate to different surroundings. As a consequence, for a mature person the task would be to find the proper balance between role rigidity and role confusion (cf. Block, 1961). Therefore, a medium degree of self-concept integration is expected.

3.2.3 Affect Balance

Most of the above theories comprise assumptions about coping with affect. Different levels of affect processing are addressed: at the level of perception, some of the authors (like Erikson, Labouvie-Vief) caution against a biased and self-serving way of interpreting incoming information; that is, the tendency to pronounce positive emotions at the cost of realistic perception. At the level of dealing with emotions, theorists (such as Allport, Loevinger, Heath) stipulate a reflected, open and accepting way of processing one's feelings. Finally, at the level of the expression of affect, mature individuals are mostly assumed to act controlled and well-reflected (for example in the theories of Erikson, Loevinger, and

Labouvie-Vief). Maslow is the only one who points at the capability of mature individuals to experience peak-experiences, that is, an overflow of emotions.

Affect balance and the self-concept: Affective perception and internal processing of feelings are of particular importance for the self-concept. As reported above (see section 2.3.2), biases in processing incoming information are usually of a self-serving, self-protective nature. To accomplish personality growth, however, positive as well as negative self-referent information has to be perceived and accepted. Internal conflicts and discrepant feelings have to be dealt with in an open and realistic manner. Thus, affect balance with regard to the self-concept implies a somewhat even distribution in terms of positive and negative attributes that are ascribed to oneself both globally and in terms of a certain context. For example, with regard to herself as a mother, a person might feel “happy” as well as “dissatisfied”. In general, she might perceive herself as being “at ease” as well as “tense”. What level of affect balance is expected for persons with high levels of personal maturity? As mentioned in section 2.5.2.3, adulthood according to Labouvie-Vief is mostly associated with a much more subtle and differentiated perception of feelings than the earlier stages of life. According to Labouvie-Vief, these advances in cognitive and ego-complexity produce an important reorganization of the self, which eventually leads to a de-repression of emotions that becomes more prominent during the middle years. According to Labouvie-Vief, this greater awareness of sometimes opposing and even conflicting inner states makes for a certain degree of tension. Those individuals who cannot sustain or resolve the tension as a consequence might retreat into more defensive modes of operating, putting a high emphasis on optimizing their emotions. In contrast, to the degree that individuals manage to reconcile and integrate antagonistic forces, in that they permit positive as well as negative self-related feelings to occur, they will advance in personality maturity (Labouvie-Vief et al., 1995). Thus, a high level of affect balance with regard to the self-concept is clearly an important sign of personal maturity.

3.2.4 Self-Esteem

The role of self-esteem in well-being and psychological health is obvious (see for example, Diener & Diener, 1995; Sedikides et al., 2004); however, when it comes to personality maturity, its importance is frequently overlooked. Most researchers seem to take for granted that generativity, altruism, and self-transcendence are the motivational forces that underlie a positive development. While this is a highly plausible notion, it is tempting to neglect the prerequisites that are decisive for such motivations to come into being. Thus, although self-esteem is seldom mentioned as, and might not even be, an essential indicator of personality growth, it is nonetheless of high importance when considering it as a breeding ground for personal maturity. When reviewing the personality growth

theories above, the role of self-esteem as a prerequisite for personality growth is acknowledged in most of the theories (see *Table 6*).

Self-esteem and the self-concept: According to the growth theories listed above, it is assumed that mature people should have a certain level of self-esteem (e.g., Maslow, Allport). Yet, at the same time, most of the theories do not favor a high level of self-esteem, but rather a moderate one: individuals with an inflated sense of self-esteem tend to be uncritical and unquestioning toward themselves, which certainly does not promote a self-reflective and mature attitude (e.g., Baumeister, Smart, & Boden, 1999; Bosson et al., 2003; Foster, Campbell, & Twenge, 2003; Jordan et al., 2003). The ability to keep an objective and not exaggerated view towards one's strengths and weaknesses seems even more important bearing in mind the pervasive motivational force of self-enhancement as described in section 2.3.2. Therefore, a medium rather than a high degree of self-esteem is considered crucial for maturity – not as a direct indicator of it, but rather as a substantial prerequisite for growth to happen.

3.2.5 Value Orientation

All criteria mentioned so far are relatively value-free dimensions, that is, they are not particularly associated with a specific world-view or cultural background. However, all of them together are not sufficient to define personality growth. Complexity, integration, and self-esteem can all be present to a high degree, and yet a person could still engage in behaviors or actions that are highly harmful to his/her environment and the persons around him/her. However, when talking of personality growth, as obvious in the theories of Maslow, Allport, and Heath, it seems necessary to exclude motives that are purely self-serving and harmful to others/the environment.⁴² In other words, a certain – in Heaths' words "allocentric" – value orientation has to be an additional criterion of personality growth. Thus, mature individuals should be characterized by a self-transcendent and selfless value orientation.

Value orientation and the self-concept. As the review of the theories suggests, certain conative attitudes are also a decisive component of a mature self-concept. As Noam points out, even though persons might have a "complex understanding of themselves", they can "use their insights in the service of self-alienation, self-hate, and contempt for others" (Noam, 1998, p. 289). Not only does this quotation again underline the importance of self-esteem in mature individuals, but illustrates unequivocally that complexity alone is hardly enough for a person to be mature. Rather, a certain kind of value orientation is necessary to channel complex cognition in a mature direction. It is assumed that mature individuals primarily endorse values that stand for altruism, and self-transcendence. Such a

⁴² (For discussions about whether psychology should involve value-related questions see Brandtstädter, 1985; Compton, 2001a, 2001b; Greve, 2001; Kendler, 1993, 1999; Sheldon, Schmuck, & Kasser, 2000).

view of maturity as connected to a certain value orientation is found not only in the growth theories cited above, but also in a number of concepts of developmental psychologists (e.g., Achenbaum & Orwoll, 1991; Allport, 1961; Orwoll & Perlmutter, 1990). Empirical evidence for this notion comes from experiments examining the relationship between wisdom (as measured sensu the Berlin wisdom paradigm) and values (Kunzmann & Baltes, 2003b), demonstrating that people nominated as wise exhibit a significantly stronger tendency to endorse self-transcendent values.

3.2.6 Growth Implies Concerted Instead of Isolated Functioning

In sum, what features are considered essential when assessing maturity from a self-concept perspective? First, it is expected that a mature person demonstrates a high degree of *complexity in terms of self-concept* content as manifested in the number of self-aspects that are part of his or her self-concept. However, to ensure a stable sense of identity despite high self-complexity, and at the same time the flexibility needed to adapt to changing circumstances, it is equally important to have a medium degree of self-concept *integration*, expressed in the similarity of an individual's self-aspects. The objective, veridical way of perception ascribed to mature people should be reflected through a high level of *affective balance*, that is, a balance in affective quality both within and between self-concept aspects. As to the appraisal of self-concept content, it is assumed that mature persons are neither overly high nor low in *self-esteem*. That is, nor should they be overly insensitive towards criticism, but neither should they be plagued by the pervasive self-uncertainty that often comes with low self-esteem. Finally, for the *conative self-concept dimension*, it is argued that mature persons are characterized through altruism, self-transcendence, and selflessness.

However, thinking about the implications of the previous paragraph, the individual features of the self-concept hardly seem appropriate to characterize mature individuals. Thus, should it really be assumed that a person high in self-complexity is more mature than someone with a less complex self-concept? Is it indeed likely that persons with a medium level of self-esteem are more likely to be mature than others? Certainly not, if these persons had at the same time, for example, a very selfish and egotistic value-orientation, or were not even certain about their real “*me*”. Thus -- in line with what Heath stipulates in his writings about the mature personality -- the features of self-concept that were identified as being indicators of personality growth are in fact not indicators of growth when considered in isolation. Instead, a certain feature of the self-concept with a certain level would *only* be an indicator of personality growth provided that all other features assume the level that was defined as being growth-promoting. As a consequence, it would make no sense to predict personality growth based on single features of the self-concept. Instead, personality maturity is only expected if the five specified

features of the self-concept fall together to form a certain profile. Summarizing the assumptions about the level a mature self-concept should assume with regard to each of the five specified dimensions, the *SCM profile* in turn should be defined by a high level of self-complexity, a medium level of integration, a high level of affect balance, a medium level of self-esteem and a self-transcendent (as opposed to a self-enhancing) value orientation (see *Figure 8* for an illustration).

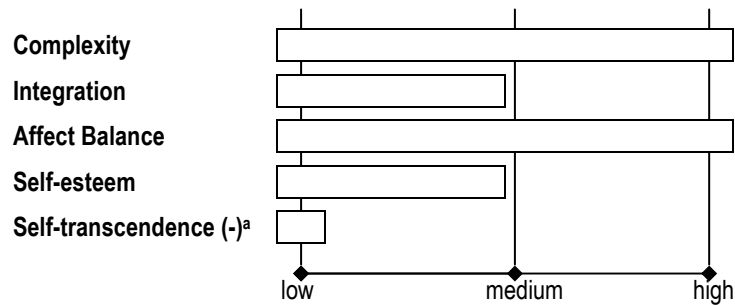


Figure 8. An illustration of the *SCM profile*

ª To expect a low level of inverse self-transcendent value orientation is equivalent to expecting a high level of self-transcendent value orientation. To formulate expectations in this way instead of in the "natural" way has methodological reasons and will be explained at a later point (section 6.3.1.2.1.5).

Defining a specified profile rather than isolated variables as indicative for a psychological construct is not unusual in psychological research, especially if the respective construct is a complex one. Several fields of psychology research capitalize on profiles.

First, within personality psychology, profiles are most often used to define certain personality types that are characterized through a specific answering pattern on personality questionnaires such as the NEO-FFI (Costa & McCrae, 1988). However, most research in this vein has focused on *identifying* personality profiles by cluster analytical procedures rather than *comparing* them. Additionally, as opposed to the present study, the profiles are obviously derived in an empirical rather than theoretical manner (for examples see Asendorpf, Borkenau, Ostendorf, & Van Aken, 2001; Costa, Herbst, McCrae, Samuels, & Ozer, 2002; Rammstedt, Riemann, Angleitner, & Borkenau, 2004).

Second, from a methodological point of view, profiles are of interest with regard to the assessment of interrater agreement. Again, profiles are defined through empirical data, this time through the answering or scoring patterns of a number of raters. The difficulty then is to find an adequate method to capture similarity in terms of shape, elevation, and scatter of scoring profiles. Previous suggestions to assess profile similarity frequently included distances or variances (e.g., Cronbach & Gleser, 1953; Du Mas, 1953), while more recent approaches more heavily draw on the use of correlation coefficients such as intraclass correlation (e.g., Armstrong, 1981; Asendorpf & Wallbott, 1979; Bartko, 1966; Bortz & Döring, 1995; J. M. Diehl & Staudenbühl, 2002; Shrout, 1995; Shrout & Fleiss, 1979).

Third, profiles are used in clinically oriented psychology to identify individuals with a constellation of personality features that might predispose them for certain disorders. Mostly through

expert consensus, profiles (i.e., certain answering patterns on psychological questionnaires) are defined that correspond to the symptoms of psychological disorders (e.g., Lynam & Widiger, 2001; Miller, Reynolds, & Pilkonis, 2004; Widiger, 2005). Within this vein of research, intraclass correlation is used as an adequate means to capture scatter as well as elevation of a profile.

Fourth, profiles are used in some approaches from lifespan developmental psychology. For instance, there are a number of studies that have used the California Q-sort (J. Block, 1961b) to create prototypes defined through a certain Q-sort pattern that indicate features related to personality or self-regulation. Some examples are the works based on Peterson's *generativity prototype* (e.g., MacDermid, Franz, & De Reus, 1998; Peterson, 1994; Peterson & Klohnen, 1995),⁴³ studies using the *psychological health prototype* by Livson and Peskin (Hightower, 1990; C. J. Jones & Meredith, 2000; Livson & Peskin, 1967), research related to a prototype representing *ego identity status* by Mallory (Helson, 1992; Helson, Stewart, & Ostrove, 1995; Mallory, 1989), and investigations dealing with Block's prototype of *ego-control* (J. H. Block & Block, 1980; Kremen & Block, 1998). Profiles can also be found in the work of Sternberg on implicit notions of wisdom (Sternberg, 1985) or in Wink and Helson's work on practical and transcendent wisdom (Wink & Helson, 1997). Most of the approaches mentioned use either Pearson or intraclass correlation to assess similarity between individual data and the respective prototype.

Obviously, studies of the latter kind come closest to the intention of the present study. Therefore, when deciding on methods and the more general procedure of data analysis, this kind of studies may serve as a guideline. However, this question will be addressed in more detail in part 0, where alternative methods to assess profile similarity are also presented.

Whereas the previous sections attempted an overview of the *internal* characteristics of personality growth – its structure, components, and indicators from a self-concept perspective – the following sections will shift the focus toward its relationships with *external* concepts, primarily its relationship with other domains of psychological functioning. Among these, the domain of *adjustment* is of particular importance, because – as discussed in section 1.2 – it is an alternative way to conceive positive personality development in general. Thus, adjustment maintains a key role when assessing the discriminant validity of personality growth. For this reason, adjustment will not only be discussed as a relevant correlate of personality growth. Instead, the following section aims at establishing an alternative self-concept profile indicative of adjustment instead of personality growth. Comparing the two profiles (i.e. the similarity indices with the two profiles) on a number of dimensions will enable to

⁴³ More recent versions of the generativity prototype seem to use a dichotomous method rather than defining a constellation of items as indicative for generativity: thereby, a number of items are defined as highly characteristic of generativity, and an individual's level of generativity is determined according to the proportion of items out of this pool that are characteristic for him or her (Peterson, 2002).

study the implications of both alternatives of positive personality development. Most importantly, hypotheses will be made regarding the relationship of each profile with other domains of psychological functioning.

The following sections will be structured in the following way. After defining adjustment, a short overview will be given of how the concept relates to the five self-concept dimensions specified previously. That is, the level that each self-concept dimension assumes will be specified, this time not from a perspective of personality growth, but from a perspective of adjustment. Based on these elaborations, a self-concept profile akin to the one presented in *Figure 8* for personality growth will be defined for adjustment.

By discussing the relationship of both personality growth and adjustment with other domains of psychological functioning, such as intelligence, life experience, life reflection, and age, hypotheses will be derived about the convergent and discriminant validity of both self-concept profiles.

3.3 A Counterpart of Personality Growth? Adjustment and Well-Being

In folk psychology, wise people are often described as the doubters, the ones who have experienced hardship and who know about their own shortcomings, the opposites of any happy-go-lucky natures (e.g., L. A. King, 2001). In these sayings, happiness appears as something which has to be forfeited on the road to wisdom and insight. However, there are also proverbs that depict happiness at the core of wisdom. These implicit notions of wisdom give a good impression of the contentious nature of happiness and its relation to personality growth. Sometimes happiness is only a luxury for fools; sometimes it is a privilege of the wisest; and sometimes it is simply associated with a superficial and hedonistic life style (for comprehensive overviews of implicit notions on wisdom and the good life see, e.g., Armon & Dawson, 2003; Bluck & Glück, 2005; Clayton & Birren, 1980; Holliday & Chandler, 1986; Jason et al., 2001; L. A. King & Napa, 1998; Scollon & King, 2004; Staudinger, Maciel, Sowarka, Smith, & Baltes, 1998; Sternberg, 1985). To what degree are these different connotations of happiness and adjustment reflected in psychological research? The following section gives a short overview of adjustment and its various meanings in psychology.

Staudinger and Kunzmann (2005) describe adjustment and personality growth as the two main forms of positive development. Adjustment comprises those developmental changes that have an adaptive value for the individual and the society, that is, those changes that enable effective functioning within society: Personality development of this kind implies accomplishing high levels of well-being, life

success, and longevity. It is all about adjusting to given societal circumstances and making the most out of them.

It is difficult to give a concise summary of the main factors of adjustment, and the literature on the topic is diverse (e.g., Compton, 1998, 2001; Compton et al., 1996; Ryan & Deci, 2001; Staudinger & Kunzmann, 2005), making it impossible to provide a consensual notion of the term's meaning and components. It is argued here that three main components of adjustment are subjective well-being, agency, and relatedness. Let us begin by taking a closer look at the meaning of subjective well-being.

Subjective well-being (SWB) emerged in the late 1950s in the search for useful indicators of quality of life to monitor social change and improve social policy (Land, 1975). As a milestone in this literature, a book by Andrews and Whitey (1976) clarified that although people live in objectively definable environments, it is their subjectively defined worlds that they respond to, thus giving prominence to SWB as a relevant index of people's life quality. Other influential volumes at that time (Bradburn, 1969; Gurin, Veroff, & Feld, 1960) elaborated on the structure and components of SWB. The view emerging from this early writings pertains until today (for a more concise overview of the history of research on SWB, see e.g., Keyes et al., 2002): Discussions dealing with the basic structure of SWB nearly always center around the distinction between hedonic tone (i.e., positive and negative affect) and life satisfaction (e.g., Andrews & Robinson, 1991; Andrews & Withey, 1976; Bradburn, 1969; Diener, 1994; Lucas, Diener, & Suh, 1996; Okun & Stock, 1987; Ryff, 1989; Veenhoven, 1984).

Life satisfaction became an increasingly important dimension especially in the investigation of successful aging. Life satisfaction is assumed to reflect the *cognitive* component of SWB, because it is based on a global judgment that people make when they consider their life as a whole.

In contrast, *hedonic tone* represents the *affective* component of SWB, because it is an expression of ongoing emotional reactions to events. The discovery of the central importance of hedonic tone for SWB is mainly due to Bradburn's (1969) classical work on the structure of psychological well-being. The aim of this research was to learn how certain macrolevel social changes affected the life situations of individual citizens and, in turn, their sense of psychological well-being. The subsequent decision to operationalize psychological well-being as the excess of positive emotions over negative emotions was essentially an empirical one. That is, pilot investigations had revealed that answers to questions about positive functioning (e.g., "During the past few weeks, did you ever feel pleased about having accomplished something?") did not predict answers to questions about negative functioning (e.g., "During the past few weeks did you ever feel upset because someone criticized you?"). The two dimensions were also found to have different correlates – hence, they were conceived as independent dimensions by Bradburn, and it seemed justified to form a composite index by subtracting them. Despite the fact that currently no complete consensus has been reached with regard

to the question of whether positive and negative emotions form independent dimensions (for articles proclaiming an independence of both, see e.g., Cacioppo, Gardner, & Berntson, 1999; Diener & Emmons, 1984; Diener, Smith, & Fujita, 1995), at least both appear to make independent contributions to life satisfaction and well-being (for overviews see, e.g., Keyes & Waterman, 2003; Okun & Stock, 1987).

This, in short, is the definition of SWB. In quite a number of accounts, the accomplishment of SWB in itself is regarded as one kind of positive development (e.g., Ryan & Deci, 2001). In contrast, it is argued here that to regard only the accomplishment of SWB as a sufficient indicator of positive development leaves too many degrees of freedom as to what is labelled as “positive” development. Notions that regard SWB as sufficient indicator of positive development imply a view of the individual as isolated system and thus, take only his/her well-being as a yardstick of his/her functioning. However, the routes to SWB are manifold, and it is argued here that those routes in which the rights of others are violated do not qualify to be labelled “positive”. In fact, the term *adjustment* was chosen precisely because it combines notions of personal well-being with notions of social adjustment, and because it emphasizes the interactive and social aspect that is basic to an individual’s well-being. For example, according to Bradburn (1969), human beings are not self-sufficient but must live in an interdependent society where other human beings are also engaged in the pursuit of their goals and desires. Inevitably, this interaction will lead to difficulties and conflicts. In turn, “the ability to cope with these difficult situations without undue pain to oneself or others is one of the common criteria used for distinguishing ‘mental health’” (Bradburn, 1969, p. 2). Thus, the criterion to adjust and to live in accordance with the norms set by society and others who pursue their own goals in this society is inherent in psychological notions of adjustment. According to this perspective, only those individuals would be deemed to be adjusted who accomplished personal well-being within and adhering to the bounds of extant social norms, without violating the needs and interests of others. Thus, adjustment is based on two criteria: subjective well-being on the one hand and the ability to respect and successfully manage to keep a balance between one’s own desires and needs and the interests of others and society. It is argued here that the two main factors that capture those interactive and social facets of adjustment are *agency* and *relatedness*. In the following, the meaning of those two constructs and the reasons why they were chosen as the two main factors indicating adjustment next to SWB will be elaborated further.

A definition of both terms and their relation to another is provided in a recent publication by Kagitcibasi (2005, see also Blatt & Blass, 1996; Chirkov, Ryan, Kim, & Kaplan, 2003). The interpersonal relatedness dimension reflects the degree of connection with others and extends from *separated* to *related*. The agency dimension has to do with the degree of autonomous functioning. It extends from *autonomy* to *heteronomy*. The term agency as used in this context refers to volitional

agency underlying autonomy. The term “autonomous” versus “heteronomous” morality used by Piaget (1948) reflects this meaning of agency: autonomous morality means being subject to one’s own rule. Heteronomous morality means being subject to another’s rule. Hence, autonomy is the state of being a self-governing agent, whereas heteronomy is the state of being governed from the outside.

The two dimensions are orthogonal. Thus, one’s standing on one dimension may or may not influence one’s standing on the agency dimension. In other words, one of these dimensions does not have to imply the other. For example, it should be possible for a person to be high in both autonomy and relatedness. The idea is illustrated in Figure 9.

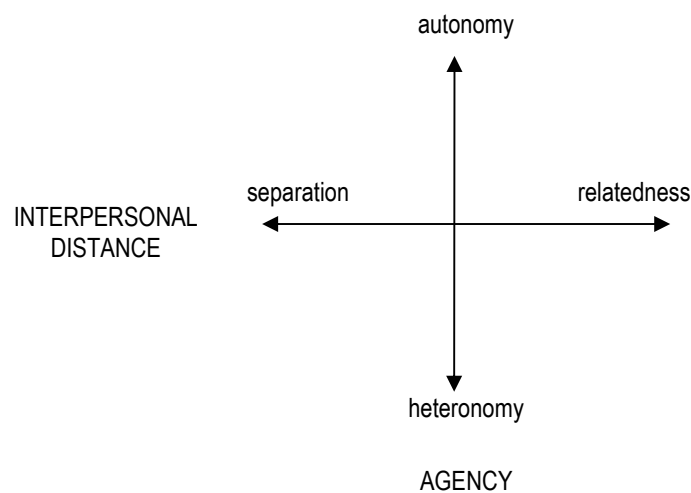


Figure 9. Interpersonal distance and agency as two dimensions of adjustment (from Kagitcibasi, 2005, p. 412)

Kagitcibasi (2005) considers agency and relatedness mainly as important for the definition of security. In the present study, the two dimensions are regarded as relevant in an even more encompassing sense, namely as basic factors of adjustment in general. Relatedness implies belonging to a social group, being related to other individuals. However, the dependence on others that is implied by a high level of relatedness should only be of an affective nature. In contrast, thoughts, decisions, goals, opinions and actions can be formed independently from others. In other words: a high level of adjustment implies a social *interdependence*, but also an *independence* of thoughts and actions.⁴⁴

Hence, the measures that are relevant for operationalizing adjustment are those that assess SWB as well as those instruments that pertain to a more objective perspective of an individual’s functioning and that grasp a sense of agency and of interpersonal relatedness. In the following, a short overview will be given of instruments to measure adjustment.

⁴⁴ Heath speaks to this point when pointing out the conflict arising as the dimensions of *allocentrism* and *autonomy* increase. *Allocentrism* fosters the ability to adopt another person’s perspective whereas *autonomy* enables the individual to focus on his/her own genuine needs and interests and to ignore the opinion of others.

3.3.1 Measuring Adjustment

A number of established measures exist for the measurement of SWB. One-item scales are very common for the measurement of life satisfaction (e.g., Andrews & Withey, 1976; Fordyce, 1988; Gurin, Veroff, & Feld, 1960), as well as some multiple-item instruments (e.g., Diener, Emmons, Larsen, & Griffin, 1985; Neugarten, Havighurst, & Tobin, 1961). In terms of hedonic tone, as mentioned above, a widely used instrument is the Affect Balance Scale (ABS) by Bradburn (1969), in which well-being is assessed by subtracting negative affect (as measured by a number of single-item ratings) from positive affect (as measured, analog to negative affect, by a number of single-item ratings). Depending on the research context, sometimes a separate assessment of positive and negative affect is preferred over this approach, either using the items from the ABS (e.g., Charles et al., 2001; Maitland, Dixon, Hultsch, & Hertzog, 2001; Stacey & Gatz, 1991; Stallings, Dunham, Gatz, Baker, & Bengtson, 1997), or using the items from the Positive And Negative Affect Scale (PANAS, Watson, Clark, & Tellegen, 1988).

Several articles have doubted the incremental validity of hedonic tone over personality dispositions. For example, Watson and Clark (1984) have argued that negative affectivity and neuroticism are the same, and Fujita (Fujita, 1991) found that extraversion and long-term positive affect – and only these – were highly related. Likewise, Kahnemann (1999) relies on the power of the dispositional tendency to experience positive or negative affect when he claims that an experience-sampling approach is more adequate to assess “objective happiness” than affect ratings given at one single time of measurement (Kahneman, 1999). However, integrative reviews of the literature indicate that personality dispositions like the Big Five, despite their impact, can explain only a limited variance relating to the vicissitudes of SWB and its reactivity to mental processes and life experiences (DeNeve & Cooper, 1998; Diener & Lucas, 1999). Thus, extraversion and neuroticism might be only viewed as the temperament underpinnings to a predilection towards positive and negative affect, respectively. Two empirical findings corroborate this thesis. First, unlike personality traits, SWB reacts to life changes and life events (e.g., Keyes & Waterman, 2003; Ryff & Heidrich, 1997). Second, extraversion and neuroticism have been shown, for example, despite exhibiting considerable correlation with SWB, not to be synonymous with it. Extraversion is highly correlated with positive affect ($r = .20$, Costa & McCrae, 1980) and neuroticism shows strong links with negative affect ($r = .38$, for similar results, see Diener & Fujita, 1995; Emmons & Diener, 1985; Headey & Wearing, 1989; Keyes et al., 2002; Schmutte & Ryff, 1997; Watson & Clark, 1992). Beyond these two dimensions, other personality dimensions, namely conscientiousness and agreeableness, may influence SWB instrumentally by engendering conditions and behaviors that facilitate or moderate SWB. In fact, agreeableness and conscientiousness have been shown to predict SWB incrementally over the influence of extraversion and neuroticism (McCrae

& Costa, 1991). In contrast, openness to experience has shown the weakest associations with SWB, possibly because it may evoke both positive and negative affect. Taken together, neuroticism and extraversion are good indicators of SWB, agreeableness and conscientiousness are moderate predictors of SWB, and openness to experience cannot account for any variance in SWB.

In the definition of adjustment, it was emphasized, given that human beings are not loners but dependent on their social environment for survival and the satisfaction of their needs, that a second criterion for adjustment is the ability to adapt to the needs of others, and to the rules of society (= *relatedness*), while still retaining the ability to independently form and pursue goals (= *autonomy*). It was suggested that this capability may be summarized by the two dimensions of agency and interpersonal relatedness. An instrument that might comprise measures pertaining to these capabilities is Ryff's PWB inventory (1989a).

PWB has been introduced as one of the attempts to conceptualize personality growth; hence, it seems to be of particular interest for the present work which of the PWB scales can be regarded as indicators of personality growth, and which might have a closer relationship to well-being. Indeed, using a principal component factor analysis on several measures of personality growth, adjustment, and religiosity, Compton (2001a) found that only four out of the six PWB scales load together on a factor with measures of personality growth, namely personal growth, positive relationships, purpose in life, and autonomy. In contrast, self-acceptance and environmental mastery showed higher (loadings) on a factor indicative of adjustment. When factor analyzing the PWB scales with other well-being measures, this result is replicated to a great extent. Again, self-acceptance and environmental mastery, but also, in this case, positive relations, exhibit the strongest link with measures of well-being (Keyes et al., 2002).

When investigating the link between PWB and the Big Five, it is the personal growth scale that appears to be closest to openness, the Big Five trait that is most of all associated with personality maturity (Compton, 1998; Schmutte & Ryff, 1997). Empirical studies vary in which scale is used as personality growth indicator: For example, Helson and Srivastava (2001) used only personal growth as indicator of maturity; Bauer, McAdams and Sakaeda (2005) found personal growth, purpose in life and autonomy to be in closest relation with personality growth. In sum, when it comes to personality growth, clearly purpose in life, and to an even greater extent, personal growth seem to provide the best indicators of all PWB subscales in terms of personality growth, whereas positive relations, environmental mastery, autonomy, and self-acceptance are indicators of agency and relatedness, and thus, clearly more predictors of SWB than of personality growth.

In the current work, adjustment is defined as something that entails SWB as well as agency and relatedness. Hence, when measuring adjustment, it would be appropriate to include measures that assess SWB, and the dispositional components of SWB, in addition to instruments that diagnose the

degree to which an individual is agentic and interpersonally related, as measured by the PWB scales of environmental mastery, autonomy, self-acceptance, and positive relations.

3.3.2 The Five Self-Concept Dimensions in the Light of Adjustment

As mentioned in section 3.2.6, adjustment will not be regarded as a mere correlate of personality. Instead, in order to provide an additional way to validate the concept of SCM, an alternative profile will be constructed, this one indicative of adjustment. However, in order to accomplish this goal, let us briefly review the hypotheses posited for the five dimensions of the self-concept when viewing them from an adjustment oriented perspective.

Self-complexity and adjustment. Many studies report that well-being tends to increase with the number of self-aspects (e.g., Lutz & Ross, 2003; Martire, Stephens, & Townsend, 2000; Ogilvie, 1987). Furthermore, research on the number of roles has seldomly failed to demonstrate the beneficial effect that an accrual of roles has on psychic health especially for older individuals (e.g., L. M. Coleman, Antonucci, & Adelman, 1987; Dietz, 1996; Helson, Elliot, & Leigh, 1990; Thoits, 1986; Vandewater, Ostrove, & Stewart, 1997). Studies that examine the effect of the number of self-aspects on psychosocial adjustment within the paradigm of self-complexity come to the same conclusion (for reviews see Koch & Shepperd, 2004; Rafaeli-Mor & Steinberg, 2002; Solomon & Haaga, 2003).⁴⁵ On the other hand, too many self-aspects can also be an indicator of role strain or identity uncertainty (J. Block, 1961a). Additionally, a high number of self-aspects frequently goes along with an intense engagement in self-reflection, which in turn is more likely to induce negative affect, self-doubts, and uncertainty (e.g., J. D. Brown & Dutton, 1995; Silvia & Gendolla, 2001; Wicklund & Eckert, 1992; Wilson & Dunn, 2004). It is therefore expected that, from an adjustment perspective, a medium degree of self-domains presents the optimum degree of well-being.

Self-concept integration and adjustment. In terms of the relationship between similarity of self-aspects and adjustment, on theoretical grounds, a case has been made for a quadratic relationship – such that a medium degree of self-aspect similarity (or self-concept integration) would be associated with the highest level of adjustment (e.g., J. Block, 1961a) – and for a positive linear relationship (e.g., Lecky, 1968). However, empirical evidence on this topic, despite some inconsistent findings (Gramzow, Sedikides, Panter, & Insko, 2000), all in all confirms a linear promoting effect of self-concept integration on psychological health and well-being (for summaries, see Campbell et al., 2003; Lutz & Ross, 2003).

⁴⁵ Usually, studies on self-complexity use statistics that only *involve* the number of aspects, thus making it impossible to isolate the effect of the number of self-aspects on adjustment. Only a few studies have examined the effect of the number of self-aspects separately. A thorough overview of studies on self-complexity will be given in 4.1.

Thus, it is assumed that a higher degree of similarity or integration of self-aspects is associated with a higher level of adjustment.

Affect balance and adjustment. Is it conducive to one's well-being to sometimes have ambiguous feelings towards oneself? Empirical evidence suggests otherwise. People who feel uniformly positively about themselves have consistently been found to demonstrate high levels of psychosocial adjustment (J. D. Brown, 1991; J. D. Brown & Dutton, 1995; Wicklund & Eckert, 1992; Wilson & Dunn, 2004). Even though this view might be unrealistic and lead people to overestimate their capabilities, the benefits for people with a onesided positive view of themselves still prevail (Foster et al., 2003; Sedikides et al., 2004). Thus, as in terms of self-appraisal, it is argued that not balance, but rather a positive colouring of self-related affect is optimal for well-being and adjustment.

*Self-esteem and adjustment.*⁴⁶ Although recently some studies have dealt with the downsides of self-esteem (Baumeister, Campbell, Krueger, & Vohs, 2003; Colvin & Block, 1994; Colvin et al., 1995; Crocker & Park, 2004; Jordan et al., 2003; McFarlin, Baumeister, & Blascovich, 1984), the evidence of a strong relation between self-esteem and well-being is still overwhelming (see Diener & Diener, 1995 for a review). The same literature that documents the benefits of a onesided positive as opposed to a mixed and complex self-view (section 2.5.2.3) also illustrates the effect of a uniformly high self-esteem: those with a high self-esteem are clearly the ones who feel more satisfied, report a higher state of well-being, and exhibit fewer symptoms of psychological disorders (for a review of lifespan evidence see Harter, 1990). On the other hand, having an overly high sense of self-esteem carries a number of risks. People with a very high level of self-esteem are generally disliked by others, tend to overestimate their performance in an unrealistic way, and experience disappointments due to unrealistic expectations more often than those with more moderate levels of self-esteem (e.g., Baumeister et al., 2003; Colvin et al., 1995; Crocker & Park, 2004; Jordan et al., 2003; Leary & MacDonald, 2003; McFarlin et al., 1984; Sedikides et al., 2004; Seligman, 1993). Although an above-average level of self-esteem seems to be beneficial for well-being and life satisfaction, persons with maximum scores run the risk of encountering an increased number of aversive experiences in the social and the achievement context. Thus, a slightly-higher-than-medium level of self-esteem will be the most beneficial from an adjustment point of view.

Value orientation and adjustment. Do the types of values people hold reveal anything about their adjustment? Prior research suggests that there is a relationship. In a series of studies, it was found that a focus on financial success, physical appearance, and social recognition were correlated

⁴⁶ A high level of self-esteem and a low level of affect balance (favoring positive self-attributions) result in the same assumptions. Separating self-esteem and affect balance is necessary, however, when referring to medium levels of self-esteem, because medium levels of self-esteem can imply different variations of affect balance. In order to follow the same line of argument as in the case of SCM, the separation of self-esteem and affect balance is kept here.

with lower well-being, whereas aspirations concerning physical health, the community, and self-acceptance were positively related with well-being (Chan & Joseph, 2000; Kasser & Ryan, 1993, 1996; Schmuck, Kasser, & Ryan, 2000; Sheldon & Kasser, 2001; Sheldon et al., 2004). Are those with the “better” value orientation generally those with higher scores on adjustment then? Generally, this is not the case. For instance, findings on the relationship between personality traits and value orientations suggest that extraverted people (i.e., those with higher levels of adjustment, see Costa & McCrae, 1980) tend to strive for concerns related to achievement and stimulation more than altruistic concerns (Roccas, Sagiv, Schwartz, & Knafo, 2002). Likewise, a study examining the associations between value priorities and well-being found that those with high affective well-being are more likely to adhere to values related to achievement, self-direction, stimulation, tradition, conformity and security (Sagiv & Schwartz, 2000). Furthermore, studies contrasting happy with unhappy people have shown that one of their main differences is their hedonic orientation: people who are happy frequently cite it as a conscious goal to enjoy their lives, seek positive experiences, and look for stimulation and sensual pleasure (e.g., Diener & Fujita, 1995; Lyubomirsky, 2001; Sagiv & Schwartz, 2000; Sheldon et al., 2004).

In sum, individuals with high levels of adjustment should simultaneously strive for self-serving goals, as well as sustainable issues. A way to dissolve these seemingly contradictory results might be to discern two different dimensions: superficial vs. substantial on the one hand, and self-centered vs. self-transcendent on the other hand. It seems then, that those with a high level of adjustment know better than to concentrate on elusive values like money and beauty, which, after all, can be generally regarded as means to another end (i.e., attracting other people; buying “a better life”). Instead, they focus on more sustainable matters like health, the community, and so forth. However, higher levels of adjustment are also likely to go along with a certain ego-centeredness when it comes to values. Those with high levels of adjustment tend to endorse values that primarily serve to enhance their own well-being. Thus, it is expected that such people have a high tendency to endorse self-enhancing values.

In sum, a high level of *self-concept integration* seems to be beneficial in terms of psycho-social adjustment. *Self-complexity* should not exceed a moderate level – otherwise a fragmented and ambiguous self-view, leading to self-doubts and the lack of a sense of a stable identity might result. Likewise, adjusted individuals’ self-concepts should be characterized by a lack of *affect balance*, favoring positive attributes much more than negative ones. An adjusted person’s *value orientation* should indicate a tendency to put one’s own interests first, but should also evince a tolerance towards the needs and aims of significant others. Finally, a higher-than-medium level of *self-esteem* is expected to be most conducive to adjustment and well-being. Thus, a self-concept profile indicating a high

degree of adjustment – as opposed to one that is characteristic of individuals with high levels of personality growth as specified in Figure 8 is expected to assume the following shape (see Figure 10):

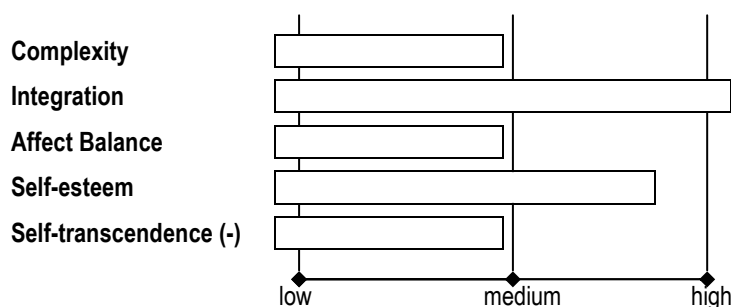


Figure 10. An illustration of a self-concept profile indicative of a maximum level of adjustment

Analogous to the SCM similarity index, an individual's score for his or her similarity with the idealized adjustment self-concept profile as specified in Figure 10 will be termed *self-concept adjustment similarity index* or *SCA similarity index*.

3.4 The Psychometric Space of SCM: Its Relations with Variables of Personality Growth, Adjustment and Other Domains of Psychological Functioning

Let us return again to the other dimension of positive development now, the realization of personality growth. Provided that the extant concept of SCM does indeed represent personality growth, its associations with other domains of psychological functioning should be easily predictable by the way personality growth, as indicated by established variables, relates to these other domains of functioning. For example, there are assumptions about how personality growth is related to intelligence, chronological age, adjustment, and about what role life events and life reflection play in the accrual of wisdom and personality growth. The following section will review the various relationships of personality growth to other domains of psychological functioning, as well as the interrelationship of various approaches to personality growth. In turn, the assumptions derived from these relationships will be used to derive hypotheses about the convergent and discriminant validity of SCM.

3.4.1 SCM and Other Variables of Personality Growth

3.4.1.1 Ego Development

Ego Development is one of the earliest, but also one of the most contentious measures of personality growth because it is based on a projective assessment approach. However, the instrument has also been deemed to be “the most extensively validated projective technique” with an “impressive construct validity” demonstrated “in numerous studies” (Lilienfeld, Wood, & Garb, 2000, p. 56).

Likewise, Manners and Durkin (2001) conclude their review of the validity of ego development with the statement that “substantial support was found for the construct validity of ego development in terms of the relation to the external criterion of alternative measures” (p. 561). A range of alternative measures have been used to validate ego development as a measure of personality growth, such as emotion regulation (Labouvie-Vief et al., 1989), stage of moral development (P. M. King et al., 1989; Lee & Snarey, 1988), political ideological reasoning (Candee, 1974; Snarey & Lydens, 1990), level of socio-emotional cognitive performance (Blanchard-Fields, 1986), complexity of behavior (Pazy, 1985), as well as various external criteria, such as capability to form and maintain intimate relationships (Westenberg & Block, 1993), the degree to which participants reported exploratory goals in their life narratives (Bauer & McAdams, 2004), or the variety of personal interests while in college (Helson & Wink, 1987; for a review of further relationships of ego development see, e.g., Hauser, 1976, 1993; Manners & Durkin, 2000; 2001). Ego development was shown to be significantly linked to all of these variables.

The relationship of ego development with four variables might be of particular relevance for the current study, because these variables represent measures applied here. First, there is evidence of a significant association between ego development and openness to experience (Einstein & Lanning, 1998; McCrae & Costa, 1980, 1997a); second, ego development is linked to variables of interpersonal style, particularly psychological mindedness (Helson & Moane, 1987; Helson & Roberts, 1994; Helson & Wink, 1987; Lorr & Manning, 1978); third, ego development relates significantly to self-related wisdom (Mickler, 2005); and fourth, there is a significant association with measures of self-complexity or self-image complexity in adolescence (Evans et al., 2001; Hauser et al., 1983) and complexity of emotions in adulthood (Kang & Shaver, 2004).

Furthermore, Loevinger's description of higher stages of ego development bears many conceptual similarities with SCM (e.g., Loevinger, 1976). Individuals at an advanced stage of ego development are characterized by a cognitive style that makes them capable of grasping complex and ambiguous situations; they perceive themselves and their actions in the context of others and their environment; and they are preoccupied with the realization of their true authentic potentials. Given the strong relationship of ego development to other measures of personality growth and the high similarity in the underlying theoretical concept, a high level of significance is also expected for the relationship between SCM and ego development.

3.4.1.2 Self-related wisdom

The goal of this approach has been to create a measure of self-related wisdom (Mickler & Staudinger, 2004), by integrating the definition of wisdom as developed in the Berlin wisdom paradigm with conceptions of personality growth (e.g., Allport, 1937/1961; Bühler, 1968; Cloninger, 2003;

Erikson, 1959; Freud, 1917/1993; Jung, 1934; Labouvie-Vief, 1982; Loevinger, 1976; Maslow, 1954/1987; C. R. Rogers, 1961). This way, self-related specifications were identified, and the five new criteria of self-related wisdom were developed.

The first criterion is rich self-knowledge, that is, deep insight into oneself. A self-wise person should be aware of his or her own competencies, emotions and goals and have a sense of meaning in life. The second criterion requires of a self-wise person to have available heuristics for growth and self-regulation (e.g., how to express and regulate emotions or how to develop and maintain deep social relations). Interrelating the self, the third criterion, refers to the ability to reflect on and have insight into the possible causes of one's behavior and/or feelings. Self-relativism, the fourth criterion, represents the ability to evaluate oneself as well as others from a distance. Finally, tolerance of ambiguity involves the ability to recognize and manage the uncertainties in one's own life and one's own development. It is reflected in the awareness that life is full of uncontrollable and unpredictable events, including death and illness. At the same time, tolerance for ambiguity includes the availability of strategies to manage this uncertainty through openness to experience, basic trust, and the development of flexible solutions. Self-related wisdom is measured by first using a thinking-aloud (Appendix A11) and subsequently a rating procedure, developed along the lines of the Berlin (general) wisdom paradigm. Thinking-aloud-protocols are rated in terms of each of the five criteria, with ratings ranging from 1-7. A mean score is computed as a general score for self-related wisdom.

There is a strong conceptual overlap between this measure of personality growth and SCM: both are aimed at assessing levels of personality growth in an indirect way, and both emphasize components of the personality that have to do with self-view and self-attitudes. Additionally, self-related wisdom exhibits substantial convergent validity with other measures of personality growth, such as ego development, openness to experience, and subscales of psychological well-being indicative of personality growth (personal growth and purpose in life; Mickler, 2005). Hence, SCM should show a strong relationship with self-related wisdom.

3.4.1.3 PWB

PWB, as explained in greater detail in section 3.1.5, was developed by Ryff as a modern approach to measuring the Aristotelian concept of Eudaimonia. Eudaimonia, in the Aristotelian sense, refers to the distinction between the satisfaction of right and wrong desires, or following Rogers, it implies a "striving for perfection that represents the realization of one's true potential" (Ryff, 1995, p. 100)

Yet, as argued in chapter 3.3.1 in opposition to Ryff's original hypotheses, subscales are not fully convergent. Not only do the six subscales demonstrate very distinct age gradients over the life

span (R. M. Ryan & Deci, 2001; Ryff, 1989, 1995; Ryff, Keyes, & Hughes, 2004), but they also relate differently to measures of personality such as the Big Five (e.g., Compton, 1998; Schmutte & Ryff, 1997), well-being (Keyes et al., 2002), and personality growth (Compton, 2001a). It was argued that, based on the emerging empirical relational pattern of the scales, only the subscales of personal growth and purpose in life were apt to measure personality growth, whereas all others rather assess adjustment. Personal growth taps on an individual's willingness to learn, to change, and to grow throughout life, whereas purpose in life captures the general conviction that one's life has a purpose and is worth living. As shown above (3.3.1), in accordance with these theoretical conceptualizations, these scales indeed show the strongest linear relationship with other measures of growth among all subscales. Furthermore, their content is clearly in line with characteristics of the SCM profile, according to which personality growth is characterized by integration and a flexible and complex self-view. Thus, the PWB scales of personal growth and purpose in life should be associated positively with SCM.

3.4.1.4 Openness to Experience

Openness to experience, one of the *Big Five* personality scales (e.g., McCrae & Costa, 1999), is supposed to measure a personal disposition that is characterized by openness in terms of imagination, ideas, feelings, aesthetics, and values. Openness to experience is frequently used as a concomitant of personality growth and has been shown to correlate – as mentioned in section 3.4.1.1 – with ego development (Einstein & Lanning, 1998; McCrae & Costa, 1980), emotional complexity (Kang & Shaver, 2004), the PWB subscale personal growth (Schmutte & Ryff, 1997), maturity of coping strategies (Costa, Zonderman, & McCrae, 1991) and various other constructs related to personality growth (for a review see McCrae & Costa, 1997a).

These empirical relationships suggest that openness to experience is a valid measure of personality growth. Also on a theoretical level, it is plausible to expect SCM and openness to experience to be related. For example, individuals with high levels of openness do not suppress conflicts or ambiguities – they are able to cope with complex and contradictory stimuli inside and outside of themselves (McCrae & Costa, 1997). Therefore, openness in some ways might be considered an antecedent of personality growth, because only an open, not a closed system, is capable of receiving new input and of changing in the aftermath. Hence, there should at least be a moderate relationship between SCM and openness to experience

3.4.1.5 Psychological Mindedness

Psychological mindedness represents an item on the borderline between trait- and growth personality and is assessed by a subscale of the California Psychological Inventory (CPI; Gough &

Bradley, 1996). It is defined as the “degree to which an individual is interested in, and responsive to, the inner needs, motives, and experiences of others” (Gough, 1964, p. 11). To have a sense of the thoughts and feelings of others is likely to go hand in hand with self-reflection and a complex understanding of personal matters; components which are also very likely substantial prerequisites for achieving a high level of SCM. Psychological mindedness is used as a correlate or indicator of personality growth in many studies (for a review see McCallum & Piper, 1997).

3.4.1.6 Behavioral Rigidity

A construct that is not indicative of a mature personality, but has a vital impact on the development of a mature personality, is behavioral rigidity (Krampen, 1977). Thus, it is expected that preparedness, openness to new experience, and the ability to flexibly adjust to new challenges are the vital ingredients of the maturing process. In contrast, behavioral rigidity will most likely block those progressions that eventually lead to personality growth. Moreover, rigidity is frequently even associated with pathological tendencies (for a review, see P. W. Schultz & Searleman, 2002). Hence, it is assumed that SCM will be related negatively to rigidity at least on a moderate level.

3.4.1.7 Summarizing the Relationship of SCM and Other Variables of Personality Growth

Given that the variables listed in this section (section 3.4.1) represent more or less established indicators of personality growth, and that SCM has been devised to be an equivalent measure of personality growth, a high intercorrelation is expected between them. That is, a high degree of convergent validity should be manifested in high correlations between SCM and these other variables of personality growth. In short, it is expected that:

H2.1 SCM exhibits a strong positive relation with other measures of personality growth.

3.4.2 Personality Growth and Adjustment

“It is better to be a human being dissatisfied than a pig satisfied; better to be Socrates dissatisfied than a fool satisfied”, John Stuart Mill (1863/1998) stated in a classical treatise recapitulating a question raised by Plato on the nature of happiness. He continues, that “a highly endowed being will always feel that any happiness which he can look for, as the world is constituted, is imperfect.” Consequently, does a person with a high level of personality growth have fewer chances to attain a state of well-being?

In order to answer this question, let us have a look at the empirical evidence on the topic. For example, various studies have dealt with the relationship between *ego development* and measures of adjustment.

One example is a study by Helson and Wink (1987). Using data from their longitudinal study of life and personality changes in a sample of 90 female former college graduates at 43 years of age, they compared two different conceptions of maturity, one being ego development, the other being the competence score on the revised California Psychological Inventory (CPI, Gough, 1987). Whereas the CPI conceptualizes maturity as the ability to function well within society (= “adjustment”, as the term is used here), ego development can be seen as the degree of intrapsychic differentiation and autonomy, independent from social conventions (Manners & Durkin, 2001). Scores on these two scales were compared on a range of measures including descriptions of life experiences, ratings of interpersonal maturity, and measures of Allport’s (1961) descriptions of a mature person. While the two measures showed considerable overlap, both in correlations with themselves and with the other measures, there was also remarkable variation in their respective relations with other variables. For example, the *level of interpersonal maturity* showed significant correlations only with ego development, and not with competence. Of the Allport criteria, the biggest differences could be found in terms of *capacity for intimacy*. Competent people scored high on “pursuit of harmony”, whereas persons on a high ego level tended to show high “appreciation of the other’s individuality”. A trend towards non-adjustment of participants with high ego levels also became visible in other results. Whereas competence usually went along with emotional security, ego development was rather associated with features of non-adjustment to societal norms, such as individuality of personal integration, and conscious development of a personal and unifying philosophy of life and values.

Does “non-adjustment” to societal norms also imply maladjustment? That is, were those with high levels of ego development also more prone to maladjusted behavior and symptoms? This question cannot be answered easily. Although there are various accounts of a linear relationship between ego development and *favorable, well-adjusted* personality characteristics such as ego-resiliency, interpersonal integrity, regulation of needs (Westenberg & Block, 1993) or socio-emotional tasks and impulse-control (Blanchard-Fields, 1986; Labouvie-Vief, Hakim-Larson et al., 1989), and measures related to mental health (e.g., Lorr & Manning, 1978; Vaillant & McCullough, 1987), there are two striking results somehow contradicting this broad evidence (for reviews on the relationship between ego-development and other constructs see Cohn, 1998; Cohn & Westenberg, 2004; Manners & Durkin, 2000, 2001; Westenberg, Blasi, & Cohn, 1998; Westenberg & Block, 1993). First, in the sample of Helson & Wink (1987), as well as in the male sample of Vaillant & McCullough (1987), ego development was positively and significantly correlated with lifetime psychiatric visits and regular

psychotherapeutic sessions, respectively. Fisher pointed out that this data does not allow a clear conclusion whether “psychotherapy helped subjects to advance developmentally or whether later stage capacity to see ambiguities in life increased individuals’ willingness to seek psychotherapy” (Fisher, 1995, p. 11). However, bearing in mind that individuals with high levels of ego development, at least in the sample of Helson and Wink, also were much less likely to be found in a functioning long-lasting relationship, and that a specific subgroup of those high in ego development (namely, those with low competency scores) was especially prone to psychological breakdown, Fisher’s latter hypothesis, namely that capacity to see ambiguities might raise the likelihood of experiencing psychological problems, seems more suitable to describe the relationship. In any case, summarizing the findings, a curvilinear relationship between adjustment, at least when defined “as a sense of comfort and congeniality in meeting the expectations of society” (Helson & Wink, 1987, p. 540) and ego level seems most likely.⁴⁷

The reasons for this seemingly paradoxical pattern – with individuals at very low as well as at very high stages of ego-development showing relatively low levels of adjustment – have been addressed by Noam in an article titled “The Ego Development - Mental Health Riddle” (Noam, 1998). Noam discusses whether levels of adjustment show a positive linear relationship with ego level or whether those extremely high on ego development would show a diminished degree of adjustment, as well. His solution consists of a *two-dimensional* concept of ego development, entailing the cognitive process of *self-complexity* on the one hand and the predominantly affective and interpersonal process of *self-integration* on the other. Noam argues that a delay in ego development puts people at risk of mental health problems; while conversely, an increase of developmental complexity could entail an emergence of more complex problems. As a consequence, an increase in ego development should not entail an *increase* or *decrease* in problems related to psychosocial adjustment, but simply, a shift in *type* of psychosocial problems, ranging from disorders related to a lack of cognitive and affective resources at the bottom end and such related to an excess of cognitive and affective processes at the top end of the ego development scale. However, if Noam was right, his hypothesis should be replicable on the statistical level, showing at least two distinct powerful factors accounting for the variance in ego development. The results of a factor analysis by Loevinger & Wessler (1970) defy such a division. The analysis yielded a first factor which could account for 20% of the variance, the second only for 5,6%. While the first factor was also correlated highly with the sum of item ratings, this was not the case for

⁴⁷ A curvilinear rather than a linear relationship is expected because individuals with very low levels of ego development are assumed not to possess sufficient coping resources to deal with conflicts and crises. Therefore, their levels of adjustment, like the levels of adjustment of those in the highest stages of ego development, should be low.

the second factor – indicating that there are not – as proposed by Noam – *two* factors accounting for the variance in ego development.

Noam's were not the only attempts to re-interpret Loevinger's concept (for another example see Labouvie-Vief & Diehl, 1998), but none of them were successful in separating out specific items to measure a particular aspect – such as self-complexity or self-integration, as proposed by Noam – of ego development (for an overview see Manners & Durkin, 2001). A very helpful metaphor, especially for the question of adjustment of ego development, has been given by Loevinger herself: She compares her (and Sullivan's) idea of the self-system to a kind of psychological immune-system, since "it too has the function of distinguishing the perceptions and conceptions that are assimilable to or by the self from those that are not assimilable, and rejecting or distorting those that cannot be assimilated" (Loevinger, 1987, p. 93). As a consequence, problems can either occur when the defenses of the self-system are not strong enough to bar certain perceptions or conceptions from intruding, but they can also stem from an overreaction of the self-system, that is, a self-system working too well and treating "a relatively harmless invader as if it were a noxious agent." (Loevinger, 1987, p. 93). In other words, problems can either stem from a lack of coping resources or from a hypersensitivity and overreaction when facing difficulties. Maybe this metaphor provides an answer to the question of why those at the lower end of the ego development spectrum are not the only ones who suffer from mental illness, neurosis, and dysfunctional adaptations, but why those at mature levels of development are also vulnerable to the aforementioned conditions.

What is found with regard to the relationship between personality growth and adjustment when drawing on other conceptions of personality growth? An especially intriguing approach to study the relationship between these constructs is Ryff's PWB scale, since it attempts to combine notions of adjustment and notions of personality growth, and entails facets of both.

In an effort to clarify the links between personality and well-being and thus to avoid tautological findings when investigating the relations between them in future, Schmutte and Ryff (1997) conducted correlational analyses between PWB (Ryff, 1989) and the NEO Five-Factor Inventory (Costa & McCrae, 1988). Because PWB as well as the NEO five factor inventory contain variables with close relationship to adjustment (namely extraversion and neuroticism, but also agreeableness and conscientiousness in the NEO and all PWB-scales except purpose in life and personal growth, see section 3.3.1) as well as variables indicative of personality growth (namely, openness to experience in the NEO, see section 3.4.1.4, personal growth and purpose in life among PWB scales), this study is of importance for clarifying the relationship between personality growth and adjustment. Since prior research had demonstrated positive links between the PWB-dimensions and measures of affect balance (Ryff, 1989), it was expected that all PWB-scales would be positively linked to extraversion (E) and negatively linked

to neuroticism (N). Feelings about one's self (Self-acceptance) and beliefs about one's ability to control and manage day-to-day activities (environmental mastery) were supposed to receive the strongest emotional influence, and thus, to exhibit the strongest correlations to E and N. Positive relations with others were assumed to be facilitated by an agreeable personality and therefore to correlate with agreeableness (A). A conscientious (C) life on the other hand, was supposed to most likely give rise to a sense of competence and mastery (environmental mastery). Similarly, openness (O), was assumed to be beneficial in terms of the motivation to grow and to improve across the life course (personal growth). Likewise, persons with high O were supposed to be driven by a strong sense of self-determination (autonomy).

As shown in Table 7, the negative links with N as well as the positive links with E, were confirmed for nearly all subscales (the correlation between personal growth and N was only significant at the 5% level). Environmental mastery, purpose in life, and self-acceptance show very similar correlational patterns. The expected differential relationships were only partly confirmed. For example, O correlated with personal growth, but not with autonomy. C and A showed highly significant correlations with all PWB-subscales (with the exception of autonomy, where the relation with agreeableness became significant only at the 5%-level).⁴⁸

Table 7.
Hypothesized and Empirical Relationships between PWB and the Big Five

Hypothesized significant relationships		Empirical sign. relationships
Environmental mastery:	N-, E++, C+	N-, E+, A+, C++,
Purpose in life:	N-, E+	N-, E+, A+, C++
Personal growth:	N-, E+, O+	E+, O+, A+, C+
Self-acceptance:	N-, E++	N-, E+, A+, C++
Autonomy:	N-, E+, O+	N-, E+, C+
Positive relations:	N-, E+, A+	N-, E+, A++, C+

Note. Only correlations with $p \leq .01$ are reported. On the right-hand side, empirical correlations over $r = .50$ are marked by two minus-/plus-symbols.

To reduce the influence of affect overlap between the well-being and the personality measure, results were also controlled for current affect. Notably, the magnitude of the correlations of PWB with the five factors was dramatically reduced after controlling for affect. Nonetheless, C remained a powerful predictor of all PWB criteria except for positive relations, where A and E had the most meaningful influence. An especially interesting result is a small but significant positive relation between N and personal growth even after controlling for affect. Schmutte and Ryff assume that a reason for this

⁴⁸ Almost all of the results reported here in terms of gender differences, age differences, and NEO Five Factors were recently replicated in a German sample of 89 young (20-40yrs) and 80 old adults (60-80 yrs) (Staudinger, Dörner, & Mickler, 2005a). There are primarily three aspects where our results diverged from the results reported by Ryff: we found (1) no gender differences in personal growth and (2) no age differences in purpose in life. (3) In terms of self-acceptance, we found a slight, but significant positive correlation with age ($r = .16$; $p < .05$).

result may be found in the logic that “some facets of neuroticism may drive the individual to search for solutions to inner quandaries and to grow and develop in the process” (Schmutte & Ryff, 1997, p. 557). Noteworthy is also a significant negative link between agreeableness and autonomy which occurs after current affect is partialled out. Possibly, the authors argue, individuals with a trusting, good-natured character are less likely to see the necessity of taking their life in their own hands. All in all, and contrary to prior results suggesting that neuroticism and extraversion are pivotal in attaining a high state of well-being (e.g., McCrae & Costa, 1983), the authors conclude that “PWB may be achieved by more people than just the nonneurotic, extraverted members of society” (Schmutte & Ryff, 1997, p. 558).

There is another study on PWB that is highly elucidating when it comes to the relationship of adjustment and personality growth, namely the one by Helson and Srivastava (2001). The authors suggest that theories of maturity can be divided into two classes: First, there are theories which proclaim certain criteria that generally have to be met in order to attain maturity. Examples of such theories would be those by Allport, Erikson, and Loevinger. A second position emphasizes that for each person, there is an individual route to wisdom and maturity, and that general principles do not apply. Authors favoring this view are, for instance, Buehler, and Jung.

In a first effort to operationalize and to verify the second view, Helson and Srivastava distinguished positive mental health patterns in three groups of people: “Those who seek the security and harmony of living in accord with social norms (Conservers), those who value social recognition and achievement (Achievers), and those who seek personal knowledge and independence in social norms (Seekers)” (Helson & Srivastava, 2001, p. 995). The groups were formed by high and low scores on the PWB-scales environmental mastery (EM) and personal growth (PG) (see Figure 11). Building on work by Helson & Wink (1987), the authors assume that EM, or effectiveness in the outer world, and PG, or intrapsychic development, often preclude one another. An indicator for the appropriateness of this assumption lies in the low correlation between the two scales, and their different personality correlates (Schmutte & Ryff, 1997; see above).

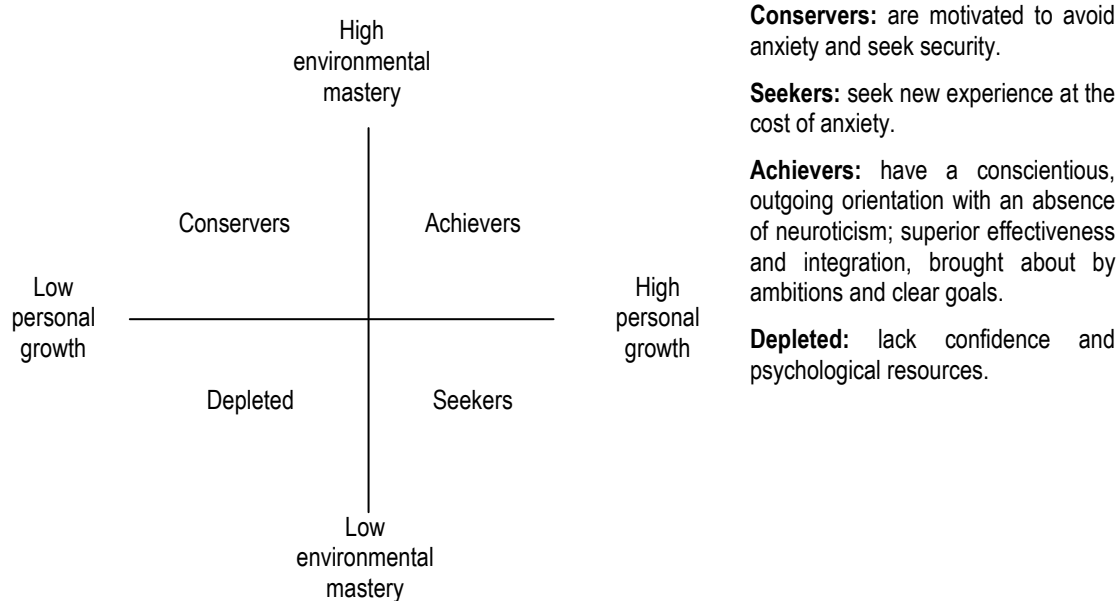


Figure 11. Ryff's (1989) dimensions and the positive mental health patterns (Helson & Srivastava, 2001, p. 996).

To identify the groups in the longitudinal sample of 111 60-year-old women, a multiple regression approach was used to avoid the loss of information and power associated with other approaches (e.g., median split, analysis of variances). This way, prototypes with fuzzy borders emerged rather than discrete categories, as Figure 11 might suggest. For each of the groups, it was hypothesized that characteristic strengths and weaknesses applied. The groups high on EM (Conservers and Achievers) were expected to show strengths on different aspects of psychosocial development, while groups high on PG (Achievers and Seekers) were expected to show strengths in intrapsychic development, with Seekers excelling except where the intrapsychic development was in the service of adjustment and achievement. The California Psychological Inventory (CPI) Competence scale (Gough & Bradley, 1996) and a measure of generativity (Peterson & Klohnen, 1995) were used for assessing successful psychosocial development. Intrapsychic maturity was measured by ego development (Loevinger & Wessler, 1970), a wisdom composite (Helson & Srivastava, 2001) taken from the Practical and Transcendent Wisdom scales (Wink & Helson, 1997), and a wisdom task modified from Baltes, Staudinger, Maercker, and Smith (1995). The results clearly correspond to the hypotheses (see Table 8).

Table 8.

Regression of Four Criteria of Adult Development onto Environmental Mastery (EM), Personal Growth (PG), and their Interaction (from Helson & Srivastava, 2001, p. 1001)

		Achievers (EM+, PG+)	Conservers (EM+, PG-)	Seekers (EM-, PG+)	Depleted (EM-, PG-)
Psychosocial maturity	Generativity	.39	.03	.07	-.49
	CPI Competence	.32	.22	.12	-.66
Intrapsychic maturity	Wisdom	.08	-.48	.56	-.16
	Ego Development	.13	-.35	.65	-.43

Note. Estimated standard scores are computed for the regression equation, using combinations of ± 1 SD on EM and PG. Predicted high scores are in bold face.

It was assumed that positive mental health patterns had their roots in long-term individual differences in emotionality. Because of Schmutte & Ryff's findings that PG goes along with extraversion while EM shows a link with low neuroticism, the authors assumed PG to be related to positive emotionality and EM to be related negatively to negative emotionality. The four groups of mental-health patterns followed exactly the predicted pattern. Achievers indeed tended to accentuate positive emotions and minimize negative ones. Conservers were characterized by generally subdued positive and negative emotions, much in contrast to the Seekers, who showed a full range of both positive and negative emotions. The Depleted experienced little positive and much negative emotionality.

In terms of lifestyle descriptors, Conservers scored highest on a scale of conventional social adjustment, followed by Seekers, and the Depleted, with Achievers surprisingly ranking lowest. Another unexpected result occurred in terms of life satisfaction scores. Conservers, again, indicated highest life satisfaction, while Achievers and Seekers scored similarly moderate and Depleted scored very low.

When looking deeper into the life paths of their sample, the authors were reluctant to deem one strategy the best. Indeed, it seemed that each advantage (e.g., in case of the achievers being the most generative, experiencing the most positive and the least negative emotions) had some trade-offs: "In attaining their goals, some achievers made sacrifices in the area of intimacy, and some had not spent the time in reflection that is necessary for high levels of ego development and wisdom" (Helson & Srivastava, 2001, p. 1008). The same can be said about the Conservers and Seekers: they, too, had their strengths, but never without costs.

Another study examining the link between personality growth and adjustment yet from a different angle has been presented by Labouvie-Vief (2005; see also Labouvie-Vief & Medler, 2002). In the study, the author investigated the link between the styles of affect regulation (Affect optimization AO – corresponding to the present notion of adjustment – and affect complexity AC – corresponding to the present notion of personality growth, see section 3.1.6) with the personality component of coping and

defending. Drawing on a host of measures from affect and personality literature, the authors derived two virtually uncorrelated dimensions of AO and AC. Based on the level that individuals received on both of these dimensions, four unique groups of emotion regulation styles were identified (see Figure 12). As mentioned by the authors, the classification resembles other divisions suggested in the literature, such as the one depicted in Figure 11 by Helson & Srivastava (2001).

			Hypothesized Characteristics			
	AC -	AC +	Dysregulated	Self-protective	Complex	Integrated
AO -	Dysregulated	Complex	Low pos. affect	Med. Pos. affect	Med. Pos. affect	High pos. affect
			High neg. affect	Low neg. affect	Med. Neg. affect	Low neg. affect
			Low pers. growth	Med. pers. growth	High pers. growth	High pers. growth
			Low env. mastery	High env. mastery	Med. env. mastery	High env. mastery
AO +	Self-Protective	Integrated	Low subj. health	Med. subj. health	Med. subj. health	High subj. health

Figure 12. The four types of emotion regulation styles according to Labouvie-Vief & Medler (2002)

AC = Affect complexity; AO = Affect optimization; + = high level; - = low level

Certain hypotheses are made in terms of life history and personality correlates for the four groups. Based on the literature, AO is assumed to go along with living in an integrated and well-functioning social climate, while in AC, cognitive influences are more pronounced. Thus, the level of AC is supposed to correlate with variables such as intelligence, SES and cohort, which appear to meaningfully inform intellectual functioning throughout the life course. As for coping strategies, in congruence with the deliberations stated earlier, specific items were selected from a coping scale (Haan, 1977a) apt to serve as markers for the four groups.

In sum, the characteristics of the four groups fully correspond to what had been hypothesized. The *Integrated* group, which was expected to function best, is characterized by high ego levels, high intelligence, and exhibits adaptive coping patterns, excluding repressive or regressive strategies. The *Self-Protective* group, although scoring second highest on positivity of affect, are characterized by repressive coping styles, and their intellectual ability tended to be low. The *Complex* group, in contrast, represent a kind of mirror image when compared to the *Self-Protective*. With the lowest scores on repression, and high intelligence scores, they can be regarded as the most open and objective group of the four. The poorest picture of adjustment is formed by the *Dysregulated*, who also exhibited low scores on intellectual functioning. Their coping styles are marked by doubt, regression, and repression. Lifestyle indicators further corroborated the assumptions of the authors: AO showed a clear link to quality of social relationships, while AC was primarily accounted for by education and – to some extent – socio-economic status.

How then, do these four types relate to different age groups? According to Labouvie-Vief (2003), affect optimization and affect differentiation work in a complementary mode, especially if resources are scarce. Since affect differentiation involves elaborative processing and learning, it is the

mode which requires more cognitive resources. Consequently, since cognitive resources diminish in old age, older people tend to rely more heavily on affect optimization. Presumably, therefore, younger rather than older people should be more often found among the complex types (AC +, AO -), whereas the elderly should prevail within the self-protective type (AC -, AO +). No explicit predictions were made for the dysregulated and the integrated type. The results clearly confirm the assumptions (see Figure 13).

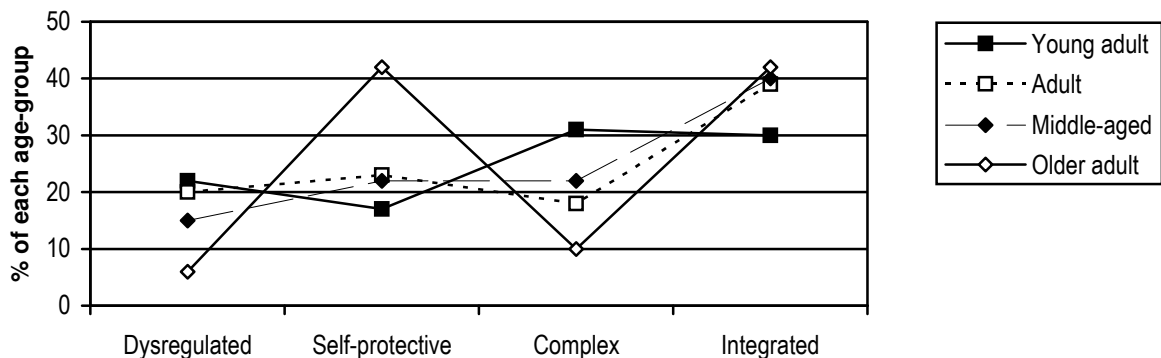


Figure 13. Age group by emotion regulation style (from: Labouvie-Vief & Zhang, 2003)

The x-axis presents the percentage of each age group which belongs to the respective emotion regulation type.

The pattern was also confirmed by longitudinal evidence: over a 6-year interval, declines in differentiation predicted increases in optimization.

When summarizing empirical evidence on the relationship between personality growth and adjustment, what kind of assumptions are made about the relationship between the two constructs?

As mentioned in the introduction to this section, some theorists assume that more mature individuals in general have a harder time, that is, they are less adaptive at least when compared to individuals with medium/average levels of personality growth. For example, as we have seen, aside from the empirical results quoted in the context of Loevinger's or Ryff's theories, there are several indicators that seem to suggest, if anything, that those on high developmental stages are likely to show *lower*, and not higher amounts of psychic health. With regard to ego development, for example, in two samples there was a positive and significant correlation with lifetime psychiatric visits and regular psychotherapeutic sessions (Helson & Wink, 1987; Vaillant & McCullough, 1987). Furthermore, those with high levels of ego development, at least in the sample of Helson and Wink were also much *less* likely to be found in a functioning long-lasting relationship, and a specific subgroup of those high in ego development (namely, those with low competency scores) was especially prone to psychological breakdown. In terms of Ryff's measure, it was found that there was a small, but significant positive relation between *NEO-neuroticism* and *personal growth* even after controlling for positive/negative

affect. As mentioned before, the authors assume that “some facets of neuroticism may drive the individual to search for solutions to inner quandaries and to grow and develop in the process” (Schmutte & Ryff, 1997, p. 557). In short, one view that emerged from empirical findings regarding the relationship between personality growth and adjustment is that those with higher levels of personality growth are *lower* in adjustment at least when compared to those showing moderate levels, probably mediated by their higher levels of striving for autonomy and independence (e.g., Helson & Roberts, 1994), and their higher sensitivity to ambiguities and conflicts within and outside of themselves (e.g., Noam, 1998; Schmutte & Ryff, 1997). Note that the reasons for a lack of adjustment are assumed with regard to different facets of the construct: whereas Helson and colleagues argue that the strong striving for autonomy would prevent mature individuals from conforming with others’ expectations and become adaptive, Ryff claims that mature individuals cannot accomplish complete happiness because their sharpened awareness of conflicts and ambiguities would block the route to contentment.

However, to assume a negative – or quadratic -- association between personality growth and adjustment in certain ways is confusing. Thus, one should assume that having a more evolved understanding of the contradictory nature of human thought, feeling, and action provides a safeguard against harm and enlarges the repertoire of coping reserves (Heath & Heath, 1991; Noam, 1998; W. D. Wessman, 1969). This view has been tested by Alker and Gawin (1978), who suggested that (1) happiness was positively related to psychological maturity and that (2) the determinants of happiness differed for more or less mature individuals. In theory, this notion is not new. For example, we have seen in the theories of Allport and Maslow that mature individuals are characterized by their “capacity for intimate relations”, “peak experiences”, “self-acceptance”, and so forth.

Alker and Gawin indeed found empirical support for the notion of a positive relationship between happiness and personality maturity. However, the finding has hardly ever been replicated by subsequent studies. By comparison, in multiple analyses where the factor structure of measures of psychological health and growth were investigated, the two were repeatedly found to load on different factors, suggesting that there is neither a positive nor a negative, but indeed *no relationship* between personality and growth. The emerging pattern was very reliable: Independent from the exact variables and measures used, those variables that indicated personality growth and those that represented psychological health showed a different correlation pattern. In sum, the position that there is a *positive* relation between psychological health and adjustment is well refuted on empirical grounds (Compton, 2001a; Compton et al., 1996; McGregor & Little, 1998). Various studies have corroborated the notion of personality growth and adjustment as independent variables. McCrae and Costa, two of the authors who profer this view, point out that, in contrast to personality maturity, adjustment is inherited. In turn, no matter what levels of maturity an individual reached, this would change nothing about the affective

tone, the degree of well-being, or the contentment of the person (McCrae & Costa, 1983). As they claim, “the optimism of a Leibniz and the pessimism of a Schopenhauer are both the products of mature and differentiated thought, but their implications for the well-being of their adherents is vastly different.” (p. 247). To illustrate, they cite Maslow’s concept of “grumbles” and “meta-grumbles” (Maslow, 1965), suggesting that with rising levels of maturity, complaints may change in quality, but not in quantity. McCrae and Costa assume a similar mechanism for happiness.

The lack of an association between adjustment and personality growth has also been stated on different grounds. For example, Helson and Roberts, though admitting that “the manner of coping with major life problems... both reflects and affects ego development” at the same time conclude that “ego development does not bring adjustment and happiness” (Helson & Roberts, 1994, p. 919). They compare the pursuit of personality growth with “the story of the hero, which is a hazardous search for realization, self-knowledge, and maturity” (Helson & Roberts, 1994, p. 919). This is also consistent with Loevinger’s view of ego development and mental health as being two distinct dimensions (see Noam, 1998).

There is a fourth notion which has seldomly been argued for theoretically, but especially the studies by Helson and Wink (1987) and Labouvie-Vief and Melder (2002) seem to suggest that the relationship of adjustment and personality growth may follow a threshold model. Thus, a very low level of personality growth is likely to be associated with low levels of well-being, because it implies a lack of cognitive and personality resources that might be important to accomplish life satisfaction. However, well-being is not expected to linearly augment with increasing personality growth. Instead, well-being might emerge only once a very high level of personality maturity has been achieved. In contrast, at lower levels of personality maturity, an individual might experience even more self-doubts, failures and negative feelings than someone who does not even try to achieve personality growth (i.e. those with a very low level of personality growth might even show higher levels of well-being than those who display medium to higher levels).⁴⁹ In short, the process of achieving personality growth might be more difficult and harder to bear than the process of achieving adjustment; however, only the ones on the path for personality growth have a chance of gaining both personality growth *and* adjustment in the very end. For example, in the sample by Helson and Wink (1987), the “Achievers”, that is, those who combined

⁴⁹ On a micro-level, this assumption fits the results of a study by Pennebaker, Colder, and Sharp (1990). The authors asked a sample of college students to regularly write down their anxieties, self-doubts, thoughts and feelings throughout the year after entering college and compared their levels of positive moods, physical health, and indicators of achievement with those of a control group receiving no treatment. Findings indicate that after 2-3 months, the experimental group showed more negative feelings such as homesickness and anxiety than the control group. However, at the end of the year, the experimental group was either equal or superior to members of the control group, concerning both positive mood as well as achievement. Hence, to face and to deal with one’s shortcomings, self-doubts, and problems (i.e. making an effort towards personal growth) might be detrimental to one’s well-being in the short run, but pays off when adopting a long-term perspective.

high levels of personal growth with high levels of environmental mastery, and thus had reached this “endpoint”, were characterized by an absence of neuroticism, high levels of positive affect, and low levels of negative affect (except their overall life satisfaction was only moderate). Likewise, the correspondent group in Labouvie-Vief’s sample, the Integrated (those with high levels of AO and AC) again showed high levels of positive affect, low levels of negative affect and high levels of subjective health (2005). Like their counterpart in the Helson and Wink sample, their levels with regard to the Ryff scales of personal growth and environmental mastery were both high.

However, when comparing all theoretical models – that is, negative relation, positive relation, no relation, and the threshold model, theoretical accounts stating that there is *no significant relationship* between personality growth and adjustment have received the most empirical support – possibly because, as Noam (1998) suggests, because each level of personality growth is associated with its own characteristic set of problems related to psychosocial adjustment, shifting gradually from problems related to a lack of cognitive/interpersonal/emotional resources, to those that are caused by an excess and overcomplexity of cognitive/interpersonal/emotional processes. Hence, in the current model of personality growth, this notion will be adopted. It is argued that rising maturity is accompanied with an increase in risks *and* an increase in reserve capacities. Thus, because these two level each other out, no correlation is expected between personality growth and adjustment.⁵⁰ With regard to the self-concept measure of personality growth, it is concluded that the findings will confirm the notion that:

H2.2. SCM exhibits no relation with adjustment.

What is more, if personality growth and adjustment show indeed orthogonal developmental trajectories, and if their emergence and evolvment depends on different variables, this difference should also be reflected in the self-concept indices that reflect personality growth and adjustment in the present study. Thus, the SCM index as specified in Figure 8 and the analogously formed SCA index as specified in Figure 10 should show substantially different patterns of relationships to other domains of psychological functioning. That is, the kind, as well as the rank order of variables that account for the explained variance in SCM and SCA, respectively, should substantially differ from each other. Hence, it is hypothesized that:

H2.3 The pattern of variables accounting for the explained variance of SCM should differ significantly from the pattern of variables accounting for the explained variance of SCA.

⁵⁰ As we have seen above, the statistical orthogonality of personality growth and adjustment has been exploited by some authors to formulate type-like classifications by treating both dimensions as dichotomous features (Helson & Srivastava, 2001; Labouvie-Vief & Medler, 2002). In these, the type with both a high degree of personality growth and adjustment has emerged as the most successful both in terms of happiness and complexity of understanding.

Another intriguing question is what would be expected when considering the conjoint functioning of SCM and SCA, in a way similar to the study by Helson and Srivastava and the study by Labouvie-Vief presented above. In other words, what would be expected when crossing the dichotomized SCM and SCA scores, yielding four groups of individuals, each with its own characteristic levels of SCM and SCA (namely, SCA-/SCM-; SCA+/SCM-, SCA-/SCM+; SCA+/SCM+ with pluses and minuses indicating a high/low level on the respective dimension)?

As demonstrated by the four groups specified in the samples of Helson and Srivastava and in the sample of Labouvie-Vief, their levels of SCA and SCM have important implications for other variables. One variable repeatedly investigated with regard to the interaction of personality growth and adjustment (section 3.4.2) is chronological age. In turn, these age-related findings should facilitate predictions with regard to the distribution of the two age groups regarded in the present study, namely younger and older adults, across the four SCM/SCA groups. For example, in the group with the highest emphasis on adjustment, that is, the group where levels of SCM were low but levels of SCA were high (SCM-/SCA+), older individuals should outnumber younger individuals, because variables of adjustment tend to increase with chronological age. In contrast, there is almost no relationship between personality growth and chronological age. Therefore, in the group characterized by high levels of SCM and low levels of SCA, no marked differences in the number of individuals of each age group, respectively, should occur. Furthermore, in the group characterized by low levels on both dimensions, more younger than older adults were expected to be found. It is assumed that older adults have had more opportunity during their lives to settle on at least one of the two successful developmental trajectories whereas younger adults might not have decided yet what is important in their lives, and are uncertain as to which direction they should choose. In contrast, more older than younger adults are expected in the group with high levels on both dimensions. This is concluded from the assumption that young adults and older adults have about equal chances to accomplish personality growth, but older adults have better chances to realize adjustment. It follows that older adults have also more chances to achieve high levels on both trajectories. In short, with regard to the distribution of the two age groups across the four SCM/SCA groups, it is expected that:

H2.4 More older adults than younger adults are expected among the group characterized by a high level of SCA and a low level of SCM (SCM-/SCA+) and the group demonstrating high levels on both dimensions (SCM+/SCA+). The two age groups should be equally represented in the group characterized by high levels of SCM and low levels of SCA (SCM+/SCA-).

For example, it seems obvious that groups should exhibit differences in terms of other variables of adjustment. In more detail, it is expected that those two groups with high levels of SCA show higher levels on other variables of adjustment than the groups with low levels of SCA. Likewise, it is predicted that individuals belonging to the groups with high levels of SCM should show higher degrees of personality growth than groups with low levels of SCM, and that the two groups should differ significantly in terms of this variable.

H2.5 Individuals categorized into groups with high levels of SCA should show significantly higher levels of adjustment than individuals categorized into groups with low levels of SCA. Individuals categorized into groups with high levels of SCM should show significantly higher levels of personality growth than individuals categorized into groups with low levels of SCM.

Like in the studies presented above, using categories similar to those used by Helson and Srivastava, and by Labouvie-Vief, theoretically it would be possible to derive predictions extending to a number of other variables such as cognitive, affective, or experience-related variables. However, in the present study, the interaction between adjustment and personality growth was mainly discussed with regard to chronological age. Therefore, at this point, it seems only possible to derive hypotheses about the four SCM/SCA groups in terms of chronological age and in terms of other variables measuring adjustment and personality growth. Instead, relationships of the SCM/SCA groups and other variables will be regarded only in an exploratory manner.

3.4.3 Personality Growth and Intelligence

A considerable number of growth theories are rooted in theories of cognitive development, particularly Piaget's theory of cognitive development (for an overview see Alexander & Langer, 1990). Thus, it is not surprising that cognition is often ascribed a leading part in personality development. Thinking, after all, seems to reflect our motivations, feelings, personality dispositions, and actions more than any other solitary psychological action. Therefore, it might be justifiable to equate the development of thinking with psychological development in general. The significance of *intelligence*, on the other hand, is often misjudged in the context of development: classical psychological theories of intelligence cover only a *specific* part of thinking (Anderson, 1988; Sternberg & Ruzgis, 1994), namely the part which is (a) responsible for academic achievement and (b) measurable. When judging someone's academic ability, it seems desirable to give an estimate that is independent of this person's wishes, goals, cultural background and current mood. Therefore, when dealing with intelligence, topics such as

motivations, emotions, attitudes and social competencies are often deliberately excluded, in order to assess “pure” intelligence without any background noise.

What can be said in general about the relationship between personality variables and intelligence? The overlap between intelligence and personality measures in general has recently inspired a meta-analysis of 135 studies involving 19 personality traits (e.g., well-being, stress-reaction, openness to experience, see Ackerman & Heggestad, 1997). Notably, only 4% of the correlation estimates were $\geq .30$. The largest correlations with intellectual abilities emerged for the two personality dimensions of openness to experience and intellectual engagement. However, the authors intentionally omitted measures of developmental aspects such as ego development. But what about those? Is intelligence a component, or perhaps a preliminary stage of mature thinking?

Opinions differ on this question. One group of researchers indeed regards the kind of thinking in which intelligence serves as a mark of quality as a preliminary level to the final, most mature form of thinking. Some authors even argue that “contemporary measures of ‘moral reasoning’ and ‘ego development’ probably add little to the prediction of meaningful psychological phenomena over conventional general ability measures” (Lubinski & Humphreys, 1997, p. 191). Accordingly, when measuring personality development in particular, which often involves assessment methods like sentence completions, responses to social dilemmas, or interviews, intelligence is likely to play a crucial role in the result (Cohn & Westenberg, 2004).

Another group of researchers, including Loevinger, regard intelligence as a necessary ingredient, only in order to accomplish *the highest* developmental levels. The capacity for self-awareness, perspective-taking, and psychological insight certainly requires some degree of intelligence. However, Loevinger also cautioned that “what we call ego development should not just be another name for intelligence, or ... all of its valid variance should not be accounted for in terms of intelligence” (Loevinger & Wessler, 1970). Most likely, the relationship between intelligence and ego development follows a threshold-model, such that the level of intelligence must be above a certain mark to attain higher stages of ego development, whereas lower stages do not require prerequisites in terms of intellectual abilities (Hauser, 1976). A meta-analysis examining the relationship between ego development and intelligence yielded a median correlation of .31 (Cohn & Westenberg, 2004). The authors conclude that: “Ego development and intelligence are conceptually and functionally distinct concepts” (p. 767).

Among the theories presented above, Labouvie-Vief’s demonstrates the most explicit emphasis on cognitive abilities. Thus, from the two modes of affect regulation that characterize developmental progress, one (i.e., affect complexity) is closely linked to cognitive abilities. Crystallized and fluid intelligence both load relatively high on a factor representing affect complexity (.64 and .46,

respectively; Labouvie-Vief & Medler, 2002). Likewise, complexity of self-representations correlate significantly with crystallized (.30; $p \leq .1$) and fluid intelligence (.33, $p \leq .01$; *ibid*). Thus, in terms of Labouvie-Vief's concept, intelligence seems to have a direct linear relationship with personality growth.

If so far, only Loevinger's and Labouvie-Vief's concept of personality growth and its relation to intelligence have been discussed, the reason is that, surprisingly, there is almost no such evidence for any of the other models of personality growth. In fact, Labouvie-Vief is the only one who has included measures of cognitive abilities in her studies; but there are no empirical data available with regard to Maslow's, Erikson's, Allport's, Ryff's, or Heath theories of personality growth.

Along the lines of Loevinger's argumentation, it is assumed that intelligence might be a necessary prerequisite to attain higher stages of development, but for the lower stages of development, an average or even somewhat below-average level of intelligence might suffice. Hence, it is predicted that:

H2.6 Fluid intelligence can predict SCM only up to a certain degree of fluid intelligence. After that, SCM and fluid intelligence do not show any significant relationship. There is no relationship between crystallized intelligence and SCM.

3.4.4 Personality Growth and Life Events

It seems reasonable to suspect an association between life events and personality growth. After all, why does the stereotype of "older and wiser" exist? Presumably, older people have lived long, seen and been through a lot, and have faced many transitions – according to our logic such experiences simply cannot pass unnoticed. There are a couple of other examples in which the heuristics "experiences make one wiser" is also applied (see also Staudinger & Dittmann-Kohli, 1994). For example, if we have lived through something traumatic, in many instances we will seek the support of persons who have been through the same experience, thereby relying on the almost automatic conclusion that nobody can understand better than people who have had similar experiences. If a person appears to us as if he/she has gotten to know many different parts of the world, or has gone through many crises unharmed, we will frequently consider this person worldly and knowledgeable. Thus, should not persons who have gone through a particularly high number of life events be the most experienced, understanding, and insightful (J. Block, 1982; Loevinger, 1976; Staudinger, 2001)?

On the other hand, of course it is well-known that some life events and transitions might create a strain that individuals can never get over (e.g., Maercker, 1998; Maercker, Schützwohl, & Solomon, 1999). In terms of personality growth, then, these experiences might even cause a relapse into an earlier developmental stage, representing a change in the very opposite of the desired direction.

Hence, the crucial part of the “experience makes one wiser”-heuristics, then, is *not* the fact that people have experienced something; instead, the crucial part seems to be that they were able to *go through it more or less unharmed*. Being old, for example, is especially revered in those societies and times where an individual’s life is threatened by so many risks and dangers throughout the life course that the simple fact that he/she managed to stay alive against all odds obviously hints at some special qualities in this person.

In short, what influence do life events have on our lives, and more specifically, on personality growth? Are they pacers, or do they rather hinder positive development?

Although the vast literature on post-traumatic stress disorder in clinical psychology suggests a preoccupation in psychological research with the negative side of life experiences, some authors, especially from the field of existential psychology, have dealt with the positive aspects of difficult life-experiences (for a short overview, see Tedeschi & Calhoun, 1995). For example, the theory of Victor Frankl has become well-known for pointing out that people cannot find meaning in their existence merely through creative acts and existential encounters, but through experiencing suffering, guilt, and transitoriness (Frankl, 1947). Similarly, Fromm noted that psychological growth comes about only because the individual faces the inescapable tragedies of life (Fromm, 1947). In more recent times, Leder stated that long periods of pain (of an emotional or physical nature) produced the most far-reaching searches for meaning (Leder, 1984-1985). And Shostrom – the author of the POI-questionnaire measuring Maslow’s self-actualization – even stated that “most people who become self-actualizing do so as a result of a struggle to overcome problems in their lives” (Shostrom, 1964).

With regard to empirical findings, Fillip (1999) lists three different research traditions that have dealt with trauma in psychology. First, within lifespan developmental psychology, the concept of critical life events has been proposed as stimulating change in adult development (e.g., P. B. Baltes, 1979; M. J. Lerner & Gignac, 1992). Second, the topic has been dealt with within the traditional stress and coping paradigm. Here, life events are considered digressions from the equilibrium that the individual has to re-establish through coping. A third perspective relates especially to those events that include the trauma of victimization. For our purposes, it is clear that the first perspective is the most important.

Let us start out with a study examining a subgroup that was characterized through a *lack* of challenges and transitions, namely a sample of female college graduates who chose to become housewives and mothers (Helson & Picano, 1990). Without wanting to underestimate the challenges children and housework can represent, experiences in this role most likely will not require adaptations as strong as an occupation outside this context. Indeed, the results clearly point to a decline in psychological health within 20 years after graduation. In contrast to women participating in the labor force, these women were characterized by a moderate drop in well-being, no increases in

independence and assertiveness, but instead an increase in the already high levels of impulse control. The authors conclude that “the traditional role seems to have provided a shelter in which conscientious, competent women who were somewhat overcontrolled in young adulthood were becoming maladaptively so over time” (p. 318). This might allow the tentative conclusion that a lack of challenges indeed seems to hamper personality growth. What about an accrual of challenges? The amount of accommodative challenges (“Life stimulation” or LS) was taken as an independent variable in a study by Helson and Roberts, examining the same longitudinal sample of women (Helson & Roberts, 1994) with respect to their degree of personality growth (as assessed via ego development). The authors compared those participants (1) who never made a commitment to either family or career (low LS) with those (2) who had remained in traditional family roles (medium LS) and (3) those showing strong career involvement (high LS). In this analysis, accommodative challenges turned out to be a crucial factor in promoting personal growth, showing in a substantial correlation between LS and ego development ($r = .27$; $p \leq .05$, $N = 86$). The study also comprised an interview section about having “difficult times”. Notably, it turned out that within these interviews, those with especially high levels of personality development disproportionately told stories about the search for an independent identity or about abandonment, again pointing at the growth-catalyzing function of stressful events (for similar findings see Bursik, 1991; Stewart & Ostrove, 1998).

Studies exploring identity state transitions also yielded concordant results (e.g., Anthis, 2002; Kroger & Green, 1996): According to these studies, critical life events frequently were associated with transitions to identity states with higher levels of self-exploration. Likewise, in a study using Shostrom’s POI (see section 3.1.1) to assess the level of self-actualization of holocaust survivors, it was found that 82% of the studied sample yielded average or above-average scores (Eger, 2003). Additionally, interviewees said that they had become stronger, more compassionate, helpful, and human, and able to cope more successfully with everyday stress through their experiences. A further study lends additional support to this conclusion (Davis & McKearney, 2003). Here, the recall of a serious previous trauma increased the perceived meaning of life, an effect that the authors explained by the fact that people actively sought the positive and the gains to defend themselves against the mortality engendered by the experience (for an overview of more studies examining post-traumatic growth see Davis & McKearney, 2003). The effect behind these findings is supposedly multifaceted.

First, facing the end of something sensitizes individuals to the experience’s positive sides. For example, people who are close to death are more prone to emphasize the positive aspects of their current relationships (Carstensen et al., 1999). Second, having to fear for their lives or the lives of their loved ones forces individuals to take a different perspective and to rethink one’s priorities towards their own lives as well as the world in general. As a consequence, people who have escaped a great danger

or have recovered from a severe accident or disease have the tendency to consider life as a treasure, to be more trusting and confident, more grateful for life and to consider their life as more meaningful (Bierhoff, 1992, Davis & McKearney, 2003). Additionally, having to endure feelings of existential fear is likely to foster empathy with those in similar situations and perhaps even a more global sense of “human kinship”, as termed by Maslow. In fact, it seems that the criteria of wisdom according to the Berlin wisdom paradigm, that is, the acknowledgement and management of uncertainty, value-relativism, and life-span contextualism, are all likely to increase in the wake of losses or crises (Maercker, 1995), as such events normally imply experiencing a profound feeling of uncertainty, rethinking one’s values and considering alternative models, as well as reflecting about the age-normativity of life (e.g. when a very young person dies vs. an old person). Particularly those three aspects of life events are consequently expected to moderate their effect on individuals: the degree to which their course and result is unpredictable and/or out of one’s control, the degree to which they involve other individuals / other value orientations, and the degree to which they are age normative (e.g., Brim & Ryff, 1980; Filipp, 1990a; Filipp & Aymanns, 2005; Ryff & Dunn, 1985; Stallings et al., 1997).

When considering empirical relationships between variables of personality growth and life events, it is important to keep in mind that the causal influence is bidirectional. Not only do life events have the capacity to trigger changes in personality, but certain personality features also enhance the probability for life events and transitions to occur (e.g., P. B. Baltes, 1987; Brandtstädter, 1984, 1998; Haan, 1981; R. M. Lerner & Busch-Rossnagel, 1981; Schmitz, Rothermund, & Brandtstädter, 1999; Thoits, 2003).

In sum, it can be concluded that stressful experiences, provided they do not actually traumatize a person irreversibly, and that an individual is psychologically stable enough to cope with them, indeed seem to foster personality growth to a certain degree (for an elaboration of this notion see Bonanno, 2004). Thereby, the capability of the individual to modify his/her environment, even in such a way as to avoid changes, must always be taken into account, that is: critical life events do not only “happen”; an individual can modify his/her environment in such a way that life events are more/less likely to happen. Again, in terms of the way personality growth is operationalized here, it is predicted that:

H2.7 SCM exhibits a moderate positive relation with life events.

Because life events were just one among various predictor variables in the present study, several parameters of life events that are likely to moderate this relationship were not examined, for example, predictability, age normativity and severity of life events. However, some person parameters are also assumed to act as moderators of the influence of life events on SCM. Particularly the degree to which life events are perceived, reflected on and integrated with prior experiences will make a

considerable difference with regard to the effect they have on SCM. These assumptions will be specified in the following section.

3.4.5 Personality Growth and Reflection on Life and Self

Most therapeutic interventions dealing with post-traumatic stress disorder include telling and re-telling the trauma to others (e.g., Maercker et al., 1999). Likewise, many interventions that seek to reduce the negative psychological and physical impact of old age capitalize on life-review (for overviews see e.g., Butler, 1963, 1968, 1980; P. G. Coleman, 2005; Haight & Webster, 1995; Molinari & Reichlin, 1984-85; Staudinger, 2001; Webster, 1999; Wong, 1995). One underlying assumption here is that it is not the “objective” occurrence of a life event that inevitably leads to a certain effect, but that the subjective reconstruction that takes place during private and collaborative self- and life reflection determines how a person will be affected by the event. For example, even the most negative traumatic event might be evaluated positively afterwards if an individual has gained an important insight through it or if the event eventually entails some positive implications or consequences (Davis, 2001; Davis et al., 1998; McAdams, 2001). As a consequence, the process of reconstructing the past has emerged as an important topic in psychological research, especially – also due to the prominent status of life review in Erikson’s theory – when it comes to old age.

Different taxonomies have been suggested in the literature with regard to the process of remembering (for an overview see Staudinger, 2001). Based on a review of some of these approaches, Staudinger suggested to abandon the most frequent classification of reminiscence processes according to their degree of functionality and to adopt a perspective that rather emphasizes the process components necessary to accomplish the various functions (Staudinger, 2001). In turn, she proposes to differentiate between *reminiscence* and *life reflection* as compound processes consisting of different social-cognitive process components: reminiscence is defined as the remembering of life events whereas life reflection is defined as the remembering of events *plus* the further analysis of these events, that is, evaluating and explaining them. The processes of explanation and evaluation themselves contain a mixture of cognitive, motivational, and emotional elements, (e.g., processes of abstraction, categorization, comparison, social and emotional regulation). Thus, reminiscence might be linked to functions such as boredom reduction, oral history, or conversational pleasure. Functions specific to life review may include alleviating depression, teaching others, solving a problem, enhancing self-understanding and self-insight, or enhancing life insight and wisdom.

Unfortunately, in most empirical studies about life reflection, hypotheses have been poorly specified. Thus, although the *adaptive* (e.g., alleviating depressive symptoms, enhancing life

satisfaction) value of using life review is empirically well-established especially when dealing with older people (for overviews see e.g., Bohlmeijer, Smit, & Cuijpers, 2003; Pinquart & Sorensen, 2001; Wong & Watt, 1991), studies dealing explicitly with other positive effects, for example, variables related to personality growth (such as ego development, self-actualization, ego-integrity, self-insight), are extremely scarce (for exceptions see, e.g., Beaton, 1991; Dunning, 2005; Giltinan, 1990; Silvia & Gendolla, 2001; Taft & Nehrke, 1990). However, in these studies, variables of life reflection have repeatedly been found to show a positive relationship with personality growth. Generally, the positive effects of life review might be brought about by the two basic processes mentioned above, that is, the process of reminiscence and the process of life review. It is assumed that positive effects *sensu* adjustment are derived by both processes, whereas positive effects *sensu* personality growth might be primarily associated with the process of life review (e.g., Filipp, 1990b; Haight, Coleman, & Lord, 1995; Staudinger & Dittmann-Kohli, 1994). Thus, only if attempts are made to explain and evaluate life events in the context of present and past, self and others, etc., personality growth might emerge (Staudinger, 2001). That is, the mere number of life events that one has experienced is not decisive, but rather the way these life events are processed. The few findings on the relationship between life review and personality growth (see above) support this notion.

Certainly, the probability that a life event will trigger a process of life-reflection is greater for some kinds of life events than for others. For example, Schütz and Luckmann (1979) argue that only those life events that cannot be assimilated to the scripts and templates that have been acquired throughout socialization will cause an enhanced re-orientation and re-evaluation (see also Filipp & Ferring, 2002). Likewise, Wollheim (1984) stipulates that life review is a process called forth mainly by those events that interfere with the common routine and that do not correspond to expectations. A similar result was also found in a study by Kroger and Green (1996), in which events associated with identity status change were examined. It was found that, among all kinds of events, the greatest frequency of changes in identity status was associated with events categorized as *internal changes*, that is, “new ways of thinking about the self and others and new realizations and recognitions” (p. 488). Loevinger’s notion (e.g., 1976) that only dis-equilibrating events, that is, those that shattered beliefs about the world or oneself, would have a significant impact on ego development, speaks to the same point. However, because the manner in which life events are processed is extremely subjective and cannot be assessed easily, types of life events that have the potential to trigger growth, and those types that do not, are highly difficult to disentangle. As mentioned before, in the present study, life events were assessed without gaining detailed information about their specific nature, hence not allowing any predictions that have to do with differences in the effect of life events due to their different characteristics.

The evidence and theories discussed so far in this section, have dealt primarily with life reflection. Life reflection has emerged from the cited studies as a positive and growth-fostering behavior. This view is common in terms of life reflection, but not when it comes to self-reflection. In contrast, numerous studies have documented the dysfunctionality and maladaptiveness of thinking about oneself, for example, by showing a strong relationship between self-reflection and psychopathology (Hoyer & Kunst, 2001; Ingram, 1990; Ingram, Cruet, Johnson, & Wisnicki, 1988; Leary, 2004a), by documenting the absence of self-reflectiveness in happy people (L. A. King, 2001; Lyubomirsky, 2001) or by reporting the negative consequences of levels of heightened self-awareness, such as reduced quality of preferences and decisions (Dunning, 2005; Hixon & Swann, 1993; Silvia & Gendolla, 2001; Wicklund & Eckert, 1992; Wilson, 1991; Wilson & Dunn, 2004).

One reason for these differences is certainly the sampling differences between studies examining life review and those that investigate self-reflection. The study of life review is common primarily in a gerontological research context and therefore mainly draws on old-aged participants, whereas the study of self-reflection usually has been performed with the common student sampling typical for social or clinical experimental research. A hypothesis raised by this observation thus would be that self- and life reflection might have a more positive effect on older adults than on younger adults. This is at least in line with the usual association of life review as a life task reserved for older people.

Yet another reason for the discrepant evidence of studies examining self-reflection and those studying life review is the topic they deal with. For example, whereas self-reflection might entail thoughts concerning present, past and future, life review mainly deals with the past (although the integration with the present is the goal of many intervention studies). Reviewing one's past, however, is in multiple ways different from thinking about the present. Thus, the more time has passed between an event and reflecting on it, the more this event will be susceptible to modifications. These modifications, in turn, will mostly be self-serving, given the predominance of the self-enhancement principle in the organization of self-referent information. Not incidentally, the hindsight bias often implies the realization of many other reasons and circumstances that might be responsible for a certain event. In contrast, the main subject of self-reflection is, of course, the self. Furthermore, as opposed to life review, self-reflection is more likely to set in immediately after something has happened, giving the individual less opportunity to "correct" the memory, and leaving less time to identify other causes and circumstances that might account for an event. This is particularly consequential since events that are associated with self-reflection are more likely to be failures and negative experiences than successes and positive events. Hence, self-reflection might be much more prone to induce feelings of incompetence, self-doubts, shame and guilt than life reflection.

In other words, the relationship of self- and life reflection on SCM might be twofold. On the one hand, engagement in self- and life reflection certainly catalyzes the growth-promoting effect of life events. On the other hand, persons that tend to engage in intense self- and life reflection frequently are characterized through depressive symptoms, anxieties, and despair, elements that do not only thwart the way to adjustment but challenge the emergence of personality growth.

In sum, profound and thorough self-reflection might induce and reinforce self-doubts, anxieties and stress. For those not prone to neurotic tendencies, it might be worthwhile, because growth might emerge in the process; for individuals with high levels of neuroticism, however, self- and life reflection might simply result in the exacerbation of psychological symptoms associated with mood disorders or anxiety disorders. Yet, self- and life reflection are indispensable when considering the relationship between life events and SCM: life events should only result in a higher level of SCM if they are accompanied by a strong tendency to reflect about life and self. In sum, it is assumed that

H2.8 SCM exhibits a moderate positive relation with life events.

Self- and life reflection and SCM are stronger associated for individuals with low levels of neuroticism than for those with high levels of neuroticism, and for older as opposed to younger adults. In general, the influence of life events on SCM is stronger if they are accompanied by a high level of self- and life reflection.

3.4.6 Personality Growth and Chronological Age

“The wine of youth does not always clear with advancing age; sometimes it grows turbid” claimed Jung (1934/2001, p. 107). Contrary to this statement, common age stereotypes purport a rather onesided view of the relationship between chronological age and personality growth. Thus, age is allegedly associated with a gain in wisdom, life insight and common sense (Clayton & Birren, 1980; Hendrick, Knox, Gekoski, & Dyne, 1988; Holliday & Chandler, 1986; Kekes, 1983). The underlying logic sometimes just seems to be that “more” years have to go along with “more” of other attributes, and not *only* with losses. Of course, the heuristics mentioned above, namely that the accrual of life experiences induces a learning process in an individual, also comes into play. Thus, is chronological age necessarily associated with personality growth as defined here? There are indeed some results that seem to prove the case: for example, Wink and Helson (1997) found that practical wisdom tended to be lower for respondents at age 27 than at age 52. Similarly, Sheldon and Kasser (2001) found that older people tended to list more strivings concerning generativity and ego integrity than younger people. Furthermore, based on an analysis of written or spoken text samples from a disclosure study involving 3,000 participants, Pennebaker and Stone (2003) concluded that increasing age was associated with a

general pattern of *increasing* cognitive complexity. Finally, two dimensions of Ryff's PWB scale, namely *autonomy* and *environmental mastery*, have been shown to increase with age (Ryff, 1995; Ryff & Keyes, 1995). Yet, the same instrument uncovered very different age trends. Thus, the dimensions of *personal growth* and *purpose in life* declined with age (*ibid*). All in all, these latter trajectories seem to be much more in line with what is found in most studies. In fact, evidence for *stability* or even *decline* in personality growth has been shown so often that it outweighs those findings that report an age-related *increase*. Thus, stability or decline has been found with regard to ego development (Cohn, 1998; McCrae & Costa, 1980; Truluck & Courtenay, 2002), wisdom (see Staudinger, 1999, for a review), self-assessed wisdom (Ardelt, 2003), complexity in self-descriptions (Labouvie-Vief et al., 1995; Labouvie-Vief, DeVoe et al., 1989), and affect complexity (Labouvie-Vief, 2003; Labouvie-Vief & Medler, 2002), to cite just a few examples. An explanation for finding an age-related increase in personality growth then, might be the age of the sample (most of the studies that find age-related increase involve few individuals who are older than middle-aged), and an underlying definition of personality growth that emphasizes adaptive features. Hence, it is assumed that:

H2.9 SCM exhibits no systematic relation with chronological age.

3.4.7 Summarizing the Results on the Relationship between Personality Growth and Other Domains of Psychological Functioning and Chronological Age

Figure 14 summarizes the hypotheses made in terms of the domains of psychological functioning and SCM. Other measures of personality growth are supposed to account for the highest amount of predictive variance with regard to SCM. Life events as well as self- and life reflection are also supposed to predict SCM. Additionally self- and life reflection should operate as a moderator of the relationship between life events and SCM: those who engage strongly in self- and life reflection should benefit more from life events than others. Intelligence is expected to explain only moderate amounts of variance, and fluid intelligence is assumed to have a stronger relation to SCM than crystallized intelligence. Variables of adjustment, just like chronological age, are assumed to be of no relevance in terms of SCM. Assumptions are summarized in *Figure 14*.

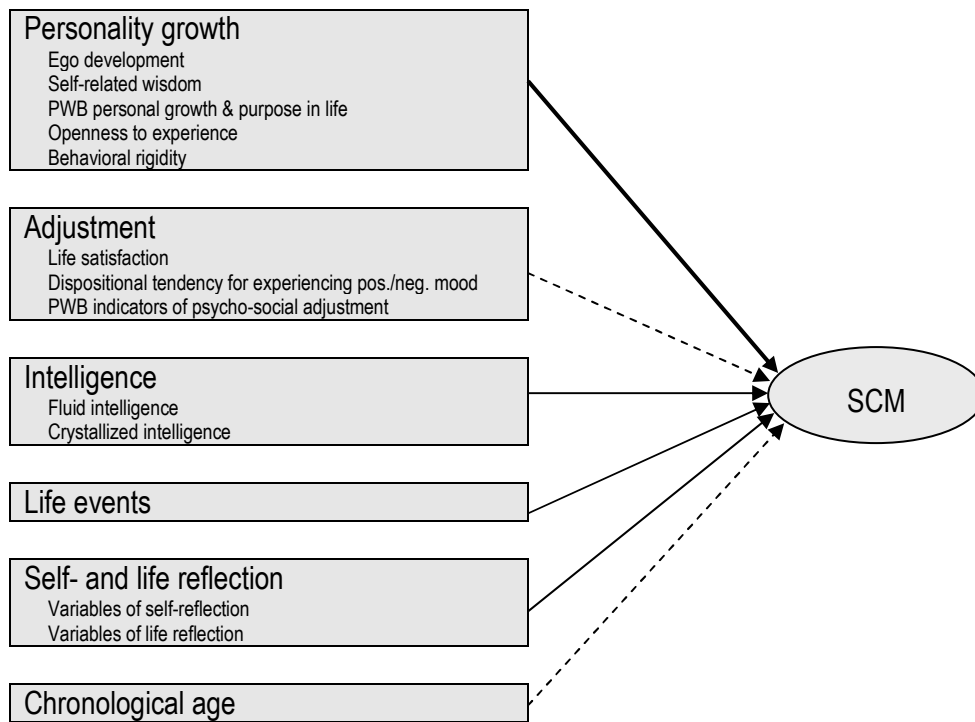


Figure 14. Predictors of variance in SCM

Note. Arrows in boldface indicate a high hypothesized degree of predictive power, thin arrows indicate a lower degree, and perforated arrows indicate no predictive power. Self- and life reflection is expected to be a direct as well as an indirect predictor of SCM. Apart from its direct relationship, it is supposed to operate as a moderator of the linkage between life events and SCM.

4 Assessing Self-Concept Maturity: Five Components

It is the main goal of the present study to develop a new method for the assessment of personality growth. This measurement is made in an indirect way via components of the self-concept that, in combination, are expected to capture personality growth. What is the best way to assess the specified self-concept components? The following chapter provides a selective overview of assessment methods currently used to assess the five self-concept components specified (for a more thorough overview see Byrne, 1996), that is, self-concept complexity, self-concept integration, balance of self-related affect, self-esteem, and value orientation.

4.1 Extant Alternatives of Measuring Self-Concept Complexity

Two aspects are important for the measurement of self-concept complexity: First, self-concept complexity entails a structural aspect, namely the number of self-aspects (see Figure 3). Second, self-concept complexity characterizes the variety in self-concept content. Traditionally, content and structure of the self-concept have been studied within different research paradigms, and have only seldomly been considered in combination: the content of the self-concept has frequently been of interest in studies addressing the developmental trajectories of self-referent knowledge, whereas structural self-concept components have much more often been an issue in experimental research studying characteristics of the self-concept in relation to other variables. In turn, the self-concept has been often been treated as a dependent variable in the first kind of studies, whereas in the latter kind of studies, features of the self-concept (like for example, high/low number of self-aspects, high/low similarity of self-concept aspects, etc.) were frequently adopted as the independent variable. As a consequence, measures of self-concept content typically are more sensitive towards interindividual differences but also more difficult to compare across participants, whereas measures of self-concept structure comprise considerably fewer degrees of freedom for the participants, but are easier to compare. In the following, a very short overview will be given on measures assessing self-concept content, and inventories designed to assess self-concept structure.

4.1.1 Extant Alternatives of Measuring Complexity in Self-Concept Content

In order not to restrict or prime the participant (for a more elaborated discussion of the topic see McGuire, 1984), often open-ended inventories are used for the assessment of self-concept content. The Twenty-Statement Test as applied, for example, by Kuhn and McPartland (1954) is a widely used inventory to assess content of the self-concept. In this test, participants have to complete a sheet with

20 sentences (time varies among assessment instruments) starting with “I am...”. In a similar approach, participants just have to answer the question “Who am I?” (e.g., Bugental & Zelen, 1949, 1950). The following example is taken from a study where participants were asked to provide 10 sentences as an answer to the question (Freund, 1995, p. 113):

I am a 100 year-old man. During my life, I've traveled around the world a great deal and I've finally settled down in Berlin. I have been a pensioner for over 50 years. No, not over 50 years, that's not true, over about 40 years. And as a hobby, I used to do carpentry. This allowed me making part of my present furniture myself. Apart from this, I've traveled with my wife each year. But not such long trips as they do nowadays. I had a lot of friends in my life, from which unfortunately, only a few are left today. But to my joy I can say that I have good relationships with our friends from our times, in the case that they're still here. Since about 20 years I cannot read or write any more, which does make life indeed difficult. And since my wife has died recently, I feel very lonely and abandoned. To distract me, I am actually dependent on the radio alone. I cannot watch TV. If I could still do carpentry, I would be a happy man.
(100-year-old, widowed, single man)

To be able to compare self-descriptions yielded by a free-response format across participants, it is necessary to create categories into which aspects mentioned in a self-description can be sorted. Various classification systems have been suggested in the literature. Table 9 provides an overview of some of these suggestions. The categories in bold print are only a tentative solution to find common categories in the various classification systems and do not always manage to closely match the categories proposed by previous authors. However, it seems that the categories identified do at least appear in a majority of the selected categorization system. Nearly all systems encompass categories about (1) demographics, physical self and aptitude; (2) social roles and relationships; (3) Activities, interests and contexts of experience; (4) values, attitudes, and beliefs; (5) personality; (6) material concerns. It is also obvious that the differentiation of domains strongly varies, depending on the purpose of the study. For example, in Filipp's and Klauer's study about developmental changes in the self-concept a strong differentiation in terms of personality characteristics is made, and in Freund's study, in which the well-being and physical fitness of older adults is an important variable, a relatively high number of categories fall under the heading activities, interests and contexts of experience.

Table 9.

Overview of Different Category Systems Used to Classify Self-Descriptions (updated from Freund, 1995)

Kuhn & McPartland (1954)	Epstein (1973)	Gordon (1968)	McGuire & Padawer-Singer (1976)	Bond & Cheung (1983)	Markus & Nurius (1986)	Cross & Markus (1991)	Filipp & Klauer (1986)	McCrae & Costa (1988)	Freund (1995)
Physical self, demographic attributes and aptitude									
Physical self	Ascribed characteristics (sex, age, name, ethnic or national origin, religious group)	Demographics (age, date of birth, name, city, health, sex, ethnicity, religion) Physical characteristics (color of hair, weight, size, color of eyes) School	Physical attributes Personal facts	Physical description General description or adjectives Skills Profession	Body / physical concerns Skills and education Profession	Physical appearance Skills and aptitudes	Physical characteristics (appearance, health, other) Abilities (cogn. ability, skills)	Sociodemographic variables (sex, name, nationality, city, age / date of birth, family status, residency) Body image Profession Health	
Social roles and relationships									
Social self	Roles and memberships (family status, professional role, political affiliation, social class, area, member of an interacting group) External meanings (“other images”, referral to situation)	Significant others (family, friends, pets, public personalities)	Role (family, school, age, sex, association, member of society, religion, social class) Social category	Relationships	Family Social relationships Social responsibilities	Social roles	Social roles (sex, age, nuclear & extended family, personal relationships, religion, nationality, employment, education, social group)	Social contacts / social relations Family / kinship	
Activities, interests & contexts of experience									
	Interests/activities (judgments/taste/preferences, intellectual concerns, artistic activities, other activities)	Activities (hobbies, entertainment, sports, locations, daily tasks, skills, TV, books, profession, diverse experiences)		Lifestyle	Spare time Lifestyle	Preferences for objects / activities	Activites and attitudes (interests, hobbies, routine tasks, hopes & goals, attitudes, beliefs)	Indoor & outdoor activities / interests (social responsibilities, interests/hobbies) Daily duties/daily life Experiences / life events	

Table 10 (continued).

Kuhn & McPartland (1954)	Epstein (1973)	Gordon (1968)	McGuire & Padawer-Singer (1976)	Bond & Cheung (1983)	Markus & Nurius (1986)	Cross & Markus (1991)	Filipp & Klauer (1986)	McCrae & Costa (1988)	Freund (1995)
Values, attitudes and beliefs									
		Four systematic aspects of self (moral values, self-determination, sense of unity, competence) Abstract identification (existential, member of an abstract category, referral to ideology or attitude)	Attitudes (likes and dislikes, aptitudes, hopes and wishes) Self-evaluation (moral, physical, intellectual, emotional)	Choices Aspirations Beliefs		Success	Abstract self-definitions	Life circumstances (evaluation of life, defending life events, other)	Attitudes and opinions (religious / ideological / general / political attitudes) General life insights / mottos
Personality									
	Psycho-logical self	Personality characteristics (interpersonal style, psychological style / personality)	General psychological attributes			Perso-nality	Extraversion & interpersonal style Emotionality Autonomy & independence Trust & cooperation Ego-strength, working style & resilience	Personality traits (neuroticism, extraversion, openness, conscientiousness, ambiguous term)	Psychological style (general / personality, self-related, object-related, moods / feelings / emotions)
Material concerns									
Material		Material concerns (property / resources, physical self / body image)				Material concerns	Material resources		Material concerns
Miscellaneous									
Consensual & sub-consensual			Miscellaneous	Self Not codeable			Not codeable	Abstract (me, unique individual, human being, child of God, other)	Life review Death & dying

Note. Differences in column width are due to differences in amount of text and have no significance. Categories in bold print are only a tentative solution to find commonalities across the various classification systems and do not fit perfectly to given categories in the various studies.

An alternative means of measuring *self-concept content* is *reactive* measurement. Here, the participant is asked to provide his/her agreement either through rating or a dichotomous yes/no-answer to a number of personality-related statements or attributes (e.g., Adjective Check List ACL by Gough & Heilbrun, 1983). The most prominent among these instruments is probably the Tennessee Self Concept Scale (Fitts, 1977). Its items cover three facets of the self, namely identity (e.g., what I am), satisfaction (e.g., how I feel about myself), and behavior (e.g., what I do or how I act). For each of these facets, participants have to rate items regarding their physical, moral, personal, family and social self-concept. The Tennessee Self Concept Scale thus is a measure which emphasizes the multidimensionality of the self. By providing different contexts and frames of reference, the structure of the self-concept is assumed to be fixed and the same for each person.

4.1.2 Extant Alternatives of Measuring Complexity in Self-Concept Structure

Campbell and colleagues (2003) suggest that current methods dealing with the assessment of self-concept structure can be divided into two categories: instruments that measure *self-concept unity* and instruments that measure *self-concept pluralism*. Both characteristics have primarily been examined in studies with a clinical focus, that is, in studies aimed at enhancing levels of adjustment: Researchers of the first tradition maintain that greater *unity* in the structure of the self-concept enhances personal well-being,⁵¹ whereas the latter studies claim that *complexity* of the self-concept has a positive influence on variables of adjustment. Methods dealing with self-concept unity are in closer relation to the present self-concept component of *integration*, and will be discussed under the respective heading. In the following, only methods addressing self-concept pluralism will be discussed. The most extensively used instrument among these measures is Linville's self-complexity questionnaire (1985, 1987), which will be presented in greater detail.

Complexity of the self-concept has been used as a term for a variety of different constructs. It has been used to refer to the number of aspects that people spontaneously conceive as important for their self-definition; it has been used to denote the independence of self-defining domains; and it has been employed as a term for the tendency to think about oneself in a complex manner. Table 10 gives an overview of these different approaches.

⁵¹ This would relate to the similarity of self-aspects in Figure 3.

Table 10.

Approaches to the Assessment of Self-Complexity and Related Constructs (in Chronological Order; see also Woolfolk et al., 2004)

Authors	Participant's task	Indicator of self-complexity	Computation of self-complexity index
Bieri (1955); Kelly (1977); <i>high level of differentiation in personal constructs</i>	Repertory grid technique: Describe a number of given persons (= elements) on a series of self-generated dichotomous scales (= personal constructs) that characterize that person's behavior/attitude towards oneself (e.g., loving vs. cruel)	Degree to which one's personal constructs (=self-generated scales) are differentially applied in self-and other-descriptions	Number and frequency of personal constructs used to describe one element, are used to describe other elements (inverse; one score per element)
Hauser, Jacobson, Noam, & Powers (1983): <i>self-image complexity</i>	Complexity vs. simplicity in rating pattern across a number of given self-descriptive attributes (e.g., patient, hostile,...) and a number of given relevant contexts (e.g., now; in the eyes of my friend,...)	Similarity of attribute ratings across contexts	<i>H</i> -statistics: generally a measure of redundancy in binary data sets, corresponds to number of uncorrelated aspects
Linville (1985; 1987): <i>self-complexity</i>	Card sorting task: sorting cards into groups with self-descriptive attributes that described "aspects of themselves"	Number and similarity of self-perspectives (= groups of attributes)	<i>H</i> -statistics, see explanation above
Sande, Goethals, & Radloff (1988): <i>multifaceted self</i>	Semantic differential: describing the self along a list of bipolar adjective scales	Tendency to perceive both poles as appropriate in one's self-description	Center bias: tendency to circle the middle in each pair of opposing poles
Labouvie-Vief et al. (1994): <i>self-complexity; affect complexity</i>	Describe oneself (free-response format)	Complexity as rated by experts (e.g., frequency of combining cognitive and affective elements, naming positive and negative affects simultaneously,...)	Rating of self-protocols by a panel of trained raters
Evans (1994); Evans, Brody, & Noam (2001); Evans & Seaman (2000): <i>self-complexity</i>	Rating whether and how much effect a stressful event from one life domain has on each of a number of other domains (across 8 events)	Interrelatedness of life domains	Sum of ratings across domains
Gara, Woolfolk, Cohen, Goldston, & et al. (1993): <i>cognitive differentiation of self-perception</i>	1. Generating self-descriptive attributes: Describe oneself in terms of various aspects (e.g., actual self, self with mother,...) and describe important persons (e.g., parents, significant other,...) via free-response format; investigator constructs a checklist from all attributes used in free descriptions 2. Rating oneself and others using the checklist, thereby creating a target x attribute matrix	Cluster analysis based on patterns of attribute co-occurrence across target persons	Number of distinct classes of self-generated attributes linked to the self in a hierarchical cluster analysis

Table 10 (continued)

Authors	Participant's task	Indicator of self-complexity	Computation of self-complexity index
Freund (1995): <i>multifacetedness of self-definitions</i>	Spontaneous answer to the question "Who am I"	Multifacetedness: Number of domains identified in self-descriptions and their richness (i.e., number of possible realizations)	Number of domains and level of their richness according to the rating of a panel of trained raters
Woolfolk, Novalany, Gara, Allen, & Polino (1995): <i>self-complexity</i>	Rating of 12 self-aspects and 12 other people on 70 descriptive attributes	Degree to which an attribute is perceived as self-descriptive for several domains (e.g., only descriptive of 1 group, of 2 groups, of 3, etc.); attributes with the same degree form attribute clusters	Euclidean distances between clusters within self-descriptive semantic space as analyzed by <i>D</i> -statistic (measure of dispersion in continuous data)

Note. Obviously, there are many more studies using the measures presented here. The table contains only works where a measure was used for the first time or at least significantly modified.

A completely free answering format is used by Labouvie-Vief: participants simply have to describe themselves without any more specific instructions, and those self-descriptions are rated afterwards by a panel of trained raters according to their level of complexity. Complexity of self-descriptions in this case comprises various aspects, such as cognitive-emotional integration, frequency of association between positive and negative attributes, et cetera. A number of studies are based on variations of the repertory grid technique devised by Bieri and refined by Kelly. Studies of this kind (Gara et al., Woolfolk et al.) use given or self-generated attributes, and examine to what extent self- and other-descriptions or self-descriptions on various domains match with regard to the use of the attributes. Sande et al. employed a semantic differential to study complexity of the self. Here, the tendency to perceive both characteristics on a number of bipolar adjective scales as self-descriptive, that is, the tendency to choose the center between two opposing attributes, was rated as a high level of complexity. Evans and colleagues investigated the degree to which a stressful event in one self-domain would affect other self-domains, thus conceiving self-complexity as the degree of independence between self-relevant life domains. Freund assessed the multifacetedness of the self-definitions of older people by letting a panel of trained judges rate the number and the richness of domains participants generated in an open-ended self-description task. Finally, a number of studies resumed the approach of the repertory grid technique by presenting a pool of self-descriptors (and, as in the study by Hauser et al., a number of social roles) to participants and asking them to generate clusters of these self-descriptors reflecting the different aspects of themselves (e.g., Linville).

Patricia Linville's model of self-complexity represents probably the most influential model of *self-concept pluralism* to date. Coming from a socio-cognitive research tradition, Linville investigated complexity of mental concepts, which turned out to be an important dimension with regard to affective reactions: According to Linville's results, simple concepts (that is to say, concepts with few mental dimensions or *knots*), would elicit extreme affective reactions, whereas complex concepts would

diminish affective extremity. For example, people with a simple concept of immigrants would have stronger negative or positive feelings towards them than people with a complex concept of immigrants.

It is important to note that complexity here is a function of two parameters: the number of aspects that one uses to cognitively organize knowledge about one specific concept, and the degree of relatedness of these aspects (Linville, 1985). As a consequence, the greatest degree of self-complexity would occur in an individual with a self-concept that involves many aspects that are totally independent from each other and not overlapping.

Linville subsequently applied the idea to the self-concept: if more complex mental concepts dampened affective extremity, people with a more complex self-concept should be less extreme in their reactions to positive or negative events. As a consequence, they should be less vulnerable and experience less stress when being exposed to negative stimuli, as well as having fewer mood swings than people with a less complex self-concept. This was assumed for two reasons (see Figure 15): first, based on the assumption that an event directly affected only one aspect of the self-concept, this aspect would be a smaller proportion of the total self-representation for a person high in self-complexity. Second, because according to Linville's definition greater self-complexity implies less relatedness between the aspects, the impact of emotionally salient events is less likely to spread from the immediately affected self-aspects to other self-aspects ("affective spill-over", Linville, 1987). Within two studies (Linville, 1985, 1987), Linville could confirm these hypotheses, proving the effectiveness of self-complexity as a stress-buffer as well as a protective factor against depression.

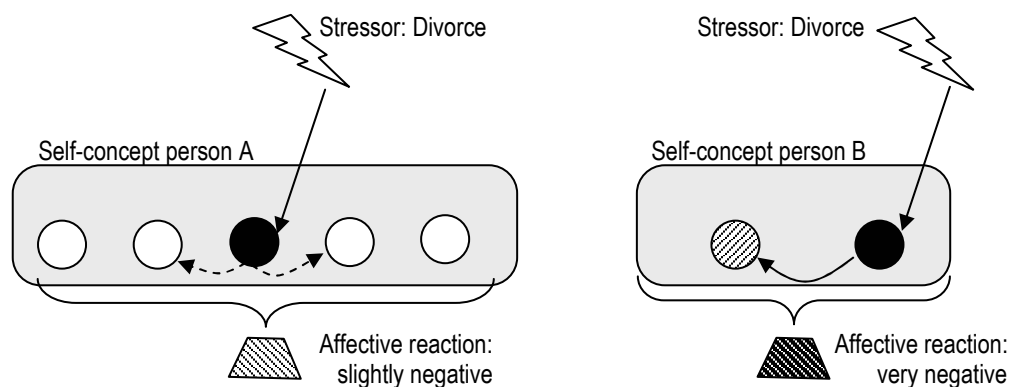


Figure 15. Illustration of the affective spill-over hypothesis.

In order to assess self-complexity, participants were provided with a packet of 33 randomly ordered index cards, each containing the name of one trait. The traits "were chosen to represent a wide range of dimensions that students use to think about themselves, and included both positive and negative traits" (Linville, 1985, p. 103). Participants were asked to think about themselves and to identify the traits they would consider as self-descriptive. In turn, these traits should be ordered into

groups, “according to which traits you think belong together” “until you feel that you have formed the important ones” (ibid), leaving open the number and size of the groups. Labels for the groups could be optionally provided, afterwards. Two examples of questionnaire outcomes are given in Table 11.

Table 11.
Examples of Two Participants’ Feature Sorts (taken from Linville, 1987)

Participant 1					
Relationship with men	Relationship with friends	Relationship with family	Studies	Physically	At parties
Outgoing	Humorous	Emotional	Quiet	Individualistic	Humorous
Playful	Relaxed	Playful	Studious	Affectionate	Playful
Reflective	Assertive	Reflective	Organized	Industrious	Outgoing
Mature	Outgoing	Mature	Mature	Quiet	Sophisticated
Emotional	Mature	Assertive	Reserved	Organized	Affectionate
Assertive	Emotional	Humorous	Industrious		Competitive
Competitive	Reflective	Outgoing	Individualistic		Imaginative
Relaxed	Soft-hearted	Individualistic			Impulsive
Humorous	Not studious	Unconventional			Mature
Affectionate	Affectionate				
Soft-hearted	Individualistic				
Individualistic					
Sophisticated					

Participant 2					
Dorm life	Home life	School	Social life	Work (dining hall worker)	Activities
Playful	Lazy	Reflective	Outgoing	Industrious	Imaginative
Relaxed	Emotional	Reserved	Humorous	Rebellious	Relaxed
Outgoing	Relaxed	Unorganized	Quiet	Playful	Quiet
Assertive	Humorous	Lazy	Relaxed	Outgoing	Outgoing
Competitive	Playful	Insecure	Playful	Assertive	Assertive
Affectionate	Affectionate		Insecure	Relaxed	Unorganized
Humorous	Unorganized		Impulsive		Affectionate
Soft-hearted	Soft-hearted		Not studious		Soft-hearted
Unorganized	Not studious		Conformist		
Lazy	Irresponsible				
Imaginative					
Individualistic					

In concordance with the theoretical model, a single index of self-complexity (the H-statistics, see Scott, 1969) was calculated using two kinds of information from each participant: first, the number of groups the participants had formed, and second, the overlap of traits between groups. The H-statistics is an index of dispersion in binary data derived from information theory (Scott, 1969). It can be interpreted as the minimal number of independent binary attributes underlying a person’s feature sort about the self (Linville, 1987).

Despite its popularity, Linville’s procedure has been criticized on various grounds. Not only were subsequent attempts to replicate Linville’s results far less successful (for reviews see Koch & Shepperd, 2004; Lutz & Ross, 2003; Rafaeli-Mor & Steinberg, 2002; Woolfolk, Gara, Allen, & Beaver, 2004), but Linville’s approach has been considered problematic, especially with regard to the somewhat

arbitrary choice of traits (Morgan & Janoff-Bulman, 1994; Rafaeli-Mor et al., 1999; Showers, Abramson, & Hogan, 1998; Woolfolk et al., 1995) and the calculation of self-complexity based on two indicators with allegedly different meanings. Various research has shown that it is useful to treat number and similarity of self-aspects in the self-concept as two distinct dimensions (e.g., Campbell et al., 2003; Lutz & Ross, 2003; Rafaeli-Mor & Steinberg, 2002; Rothermund & Meiniger, 2004; Sheldon & Kasser, 1995; Zajonc, 1960), and not, as has been done by Linville (1985, 1987), as two poles of one dimension. The orthogonality of both dimensions is illustrated in Figure 16. As can be seen from the chart, while the number of self-aspects remains stable, the degree of integration varies. Thus, there is not necessarily a covariation of both aspects, as assumed by Linville.

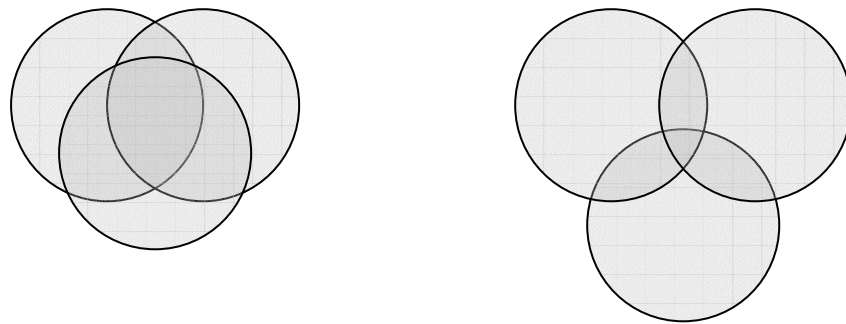


Figure 16. Two levels of self-concept integration involving three aspects (from Hoyle et al., 1999)

Circles represent self-aspects. The shared area represents information shared by all three self-aspects (=degree of integration). While the number of self-aspects is the same for both figures, self-aspects represented on the left are relatively high in integration compared to those represented on the right.

Conceptually, there are findings that suggest that self-complexity is not an overarching individual difference that characterizes the self-system in all contexts (see also Salovey, 1992). Rather, self-complexity may vary in different parts of the self-system, and it clearly varies according to the perspective from which the self is conceptualized. For example, actual self-complexity predicts reactions to *present* success and failure, while self-complexity of possible selves predicts only reactions to success and failure *in the future* (Niedenthal, Setterlund, & Wherry, 1992).

Which method is most appropriate for assessing complexity of the self-concept in the present study? A measure is needed that captures complexity of content as well as complexity of structure. Complexity of content can only be assessed by using an open-ended approach. At the same time, the way answers are generated should be fixed to allow for a comparability of the number of generated aspects. Linville's measure seems to combine these two criteria and therefore was chosen as basic measure for the present study, yet was slightly modified by using a paper-pencil format rather than a card-sorting format (see Appendix A3 for ways in which the Linville questionnaire was modified for the present study and the reasons for these changes). Thus, a first step in the assessment of the self-concept in the present study consisted of asking participants to generate a list of relevant self-aspects. By not using a fully open-ended format, this methodology enabled a comparability of results across

participants. Yet, by imposing no restrictions concerning the kind and number of self-relevant aspects that had to be generated, it was still possible to yield inter-individual variance in complexity.

4.2 Extant Alternatives of Measuring Self-Concept Integration

Relevant for assessing the degree of self-concept integration are those instruments that have been mentioned before (section 4.1.2) as measures of self-concept unity (Campbell et al., 2003). Instruments available for assessing self-concept unity are diverse, ranging from the concept of self-concept differentiation (e.g., J. Block, 1961a; Donahue et al., 1993), to Campbell's measure of self-concept clarity (1999; 1996). In all approaches, self-concept unity is regarded as an asset in terms of adjustment and coping. A greater degree of unity or integration within the self-concept is supposed to indicate a lack of fragmentation stemming from "unresolved intrapsychic conflicts" (Donahue et al., 1993, p. 835). Hence, individuals with a more integrated or unified self-concept are assumed to be more stress-resistant, resilient, and mentally healthy.

A variety of scales is available for assessing self-concept unity, partly by assessing self-attitudes of the person by questionnaire items, partly by comparing self-descriptions across different contexts. A summary of some approaches is given in Table 12.

Table 12.
Approaches to the Assessment of Self-Concept Integration and Similar Constructs (in Chronological Order)

Authors	Participant's task	Indicator of self-concept integration	Computation of self-concept integration index
Block (1961): <i>Role variability</i>	Rate oneself in terms of 60 attributes in five different contexts	Degree of interrelatedness between self-descriptions in different contexts	Factor score on first factor emerging from a principal component analysis across the five contexts per person ⁵²
Heath (1968): <i>Integration</i>	Perceived Self Questionnaire (PSQ)	Self integration (2 items; certainty and congruence self- and other-image) and self stability (2 items; susceptibility to changes in self-concept)	Scale means
Lowenthal (1975): <i>Ego Diffusion</i>	Self-rating (Yes/No) of 100-item Q-sort	Percentage of 100 self-descriptive statements where participant can decide on either "right" or "wrong", and is not reluctant to choose (Observer rating)	Percentage of self-descriptive items a person is unsure about
Rosenberg (1979/86): <i>Stability of self</i>	Stability of self scale	5 questionnaire items on changeability of self-esteem, cognitive content of self-concept, and values and beliefs	Scale mean

⁵² According to Donahue and colleagues (1993), this score corresponds to the average pairwise correlation of self-descriptions (p. 837).

Table 12 (continued)

Authors	Participant's task	Indicator of self-concept integration	Computation of self-concept integration index
Harter & Monsour (1992): <i>Opposing attributes</i>	Self-description questionnaire: Generate five self-descriptive adjectives for five contexts	Opposing attributes = 1-Overlap between self-descriptions in different contexts	1 minus the proportion of overlap of self-attributes between pairwise combinations of role-specific self-representations
Campbell et al. (1996): <i>Self-concept clarity</i>	Self-concept Clarity scale	Perceived internal consistency and temporal stability of self-beliefs, generic self-certainty (12 items)	Scale mean
Charles and Pasupathi (2003): <i>Self-variability</i>	Experience sampling (1 week): Identify six trait dimensions central to self-concept; rate oneself along dimensions in terms of 35 items over course of 1 week	Variability in self-descriptions at different points of time	Degree of intraindividual variability

Studies can be subsumarized under two approaches: studies that employ conventional questionnaire formats (self-report, e.g., Campbell, Heath, and Rosenberg; other-rating, e.g., Mallory et al.) with items addressing temporal and/or situational stability of the self-concept, and studies that assess the self-concept in various domains and calculate the degree of overlap between domain-specific self-generated or given lists of self-descriptors (e.g., Block, Charles & Pasupathi, Donahue et al., Harter & Monsour). Most extensively used among these instruments is probably the self-concept differentiation (SCD) measure established by Donahue and colleagues that was originally used by Block. Underlying this thread of research is the Eriksonian notion that a certain degree of self-sameness is as important to the feeling of identity as the absence of role-confusion (J. Block, 1961a). Accordingly, a medium degree of integration should have the most favorable results on adjustment and subjective well-being. However, when tested with well-being as the dependent variable, the results showed instead that extreme role variability (or self-concept differentiation) was indeed related to personality maladjustment, whereas extreme role rigidity was not (ibid). Thus, the relationship between self-concept differentiation and well-being seemed to be linear, rather than u-shaped as assumed by Block. Building on this work, Donahue and colleagues resumed Block's research (Donahue et al., 1993). Their measurement requests participants to rate the self-descriptiveness of sixty traits in each of five different roles (friend, romantic partner, son or daughter, student, worker) via Q-sort. A self-concept differentiation score is in turn generated for each participant indicating the mean inter-role correlation (Donahue et al., 1993).⁵³ Thus, the score reflects the degree to which one sees the self as having

⁵³ Another procedure used for computing self-concept differentiation involves a factor-analytical procedure based on the intercorrelations between different self-aspects. The first factor is interpreted as the extent to which the intercorrelations between self-aspects can be explained by a single underlying score (J. Block, 1961a).

different personality characteristics in different social roles. In the study, the findings of Block could be replicated both within a student sample and a middle-aged sample, confirming a negative linear relationship between self-concept differentiation and well-being as measured by depression, anxiety, neuroticism, and self-esteem (inverse) at all ages. A similar result was yielded in a study by Diehl, Hastings, and Stanton (2001), in which the authors examined the trajectory of self-concept differentiation across the adult life span using two different instruments (namely, the Donahue method and the Harter and Monsour method). Similar to previous results, self-concept differentiation was associated with poorer mental health. The relationship was especially strong for older adults.

One aim of the present study was to create an indirect measurement of growth. Thus, direct methods such as questionnaires were not desirable, and most of the available alternatives had to be ruled out. The SCD-measures used by Block and Donahue were not only more compatible with the idea of an indirect measurement, but had also been proven more valid than other measures (see Diehl et al., 2001) to assess self-concept integration.

Thus, a second step in self-concept assessment was to provide each participant with a checklist of self-descriptors for each of the self-generated self-aspects. By computing the average from all possible pairwise correlations of these aspect-specific checklists, the degree of similarity of self-descriptions per aspect, or their integration (= their inverse self-concept differentiation), could be assessed.

4.3 Extant Alternatives of Measuring Affect Balance

When it comes to structural variables of affective experiences, such as range, complexity, or balance of positive and negative affect, a variety of methods have been applied. Table 13 lists a number of the most common assessment instruments.

Table 13.
Approaches to the Assessment of Affect Balance and Related Constructs (in Chronological Order)

Authors	Participant's task	Indicator of complexity	Computation of affect-complexity index
Wessman & Ricks (1966) <i>Feeling Richness & Diversity</i>	Experience Sampling: Daily rating of mood	Richness and diversity of subjective feelings	Number of within-subject factors derived by P-technique (i.e., within-subject factor analysis)
Bradburn (1969): <i>Affect Balance</i>	Affective Balance Scale (ABS) Adjective check list: Rate five positive and five negative adjectives on whether they apply	Degree to which positive and negative adjectives are rated as characteristic	Difference between positive and negative adjectives that are rated as characteristic (plus a constant to avoid negative values)

Table 13 (continued).

Authors	Participant's task	Indicator of complexity	Computation of affect-complexity index
Sommers & Scioli (1986): <i>Emotional Range</i>	Projective test: Elaborating short vignettes of situations in terms of the emotional experiences the character might have	High range of emotions	Number of different emotions mentioned in the description
Lane, Quinlan, Schwartz, Walker, & Zeitlin (1990): <i>Emotional Awareness</i>	Projective tests: Describing given interpersonal situations in terms of their emotional consequences for self and others	High "level" of emotional awareness	Levels of emotional awareness
Larsen & Cutler (1996); Zelenski & Larsen (2000): <i>Affective Complexity</i>	Experience Sampling: Self-reporting mood according to a checklist at a given time daily for two months	Level of covariation among emotional states	Number of within-subject factors needed to account for a given amount of variance in daily ratings
Barrett (1998): <i>co-occurrence of emotional experiences</i>	Self-reporting current affect in multiple formats: (1) adjective check list, (2) list of statements, (3) semantic differential for different emotional states	Valence focus and arousal focus	Individual factor score on valence scale and arousal scale
Carstensen et al. (2000): <i>Covariation of emotional states</i>	Experience Sampling, pager-study: Rating 19 emotions on 65 occasions within a 1-week interval	Level of covariation among emotional states	Number of within-subject factors derived by P-technique (i.e., within-subject factor analysis)
Labouvie-Vief (2003); Labouvie-Vief & Medler (2002): <i>Affect complexity</i>	Freely generated descriptions of self and emotions	Level of emotional complexity	Rating of protocols according to emotional complexity by expert raters
Kang & Shaver (2004): <i>Range & Differentiation of Emotional Experience (RDEES)</i>	RDEES Questionnaire (14 items; rating on 7-point-scale)	(1) a broad range of emotional experiences and (2) a propensity to make subtle distinctions of emotion categories	Mean questionnaire score on range and differentiation
Vansteelandt, Van Mechelen, & Nezlek (2005): <i>Covariation of emotional states</i>	Experience Sampling: Rating 12 emotions on 11-point scale at 126 occasions within a 2-week interval	Co-occurrence of emotions	Within-subject correlations of emotional states

A number of these approaches are – unlike the present study – aimed at assessing the nature of emotions rather than features of personality (for example, which emotions co-occur, are they best described by dimensional or discrete models, etc.; e.g., Barrett, Vansteelandt et al.) and are therefore of minor relevance for the present study. A further host of studies (e.g., Carstensen et al., Ong & Bergemann, Wessmann & Ricks), capitalize on within-subject factor analyses based on data collected by experience sampling. A necessary condition for using this methodology is that the same amount of measurement points is available for every participant. Thus, this methodology is not apt for the present study, in which every participant is asked to provide self-descriptions for each of his / her self-generated

self-aspects, resulting in an interindividual variance of number of self-aspects or “measurement points”. Likewise, projective techniques such as the ones suggested by Sommers and Scioli or Lane and colleagues do not match the present purpose, because individuals do not reflect on themselves, but on given vignettes. Questionnaire methods like the one by Kang and Shaver do not fulfill the criterion of an indirect assessment, and therefore, are not appropriate for the present purpose. A coding of affect characteristics as suggested by Labouvie-Vief requires a fully open-ended answering format, which was ruled out from the beginning.

The only method left is the affect balance score suggested by Bradburn (1969). This method seemed viable in the present study: the checklists used to describe each aspect were made up of an equal amount of positive and negative self-descriptors, and an affect balance score could be computed based on difference between the mean ratings of positive / negative self-descriptors. However, it is important to note that this score also has a vital drawback. It only captures the balance between positive and negative self-descriptors, that is, the tendency to experience positive and negative self-referent emotions to the same degree, whereas initially, two aspects seemed to be important in terms of affect balance: the range of negative and positive emotions, and their relationship to each other (or their balance). However, it is not possible to assess both parameters at the same time. Assessing both separately did not seem plausible either, because a high range in emotions cannot account for a lack of balance and vice versa. Instead, only one criterion had to be chosen from these two. One could either decide to put an emphasis on affect complexity (in which case one would have opted for assessing average variance of positive/negative self-descriptor rating) or to put an emphasis on affect balance. Here, the latter criterion, that is, the relationship between positive and negative self-descriptors was chosen, because the alternative predictor, the average size of variance in positive/negative attributes is too ambiguous to use as an indicator. For example, a moderately high average variance could come about by a very high range in using positive self-descriptors and only a moderate variance in using negative self-descriptors or vice versa. What is more, even with a high level of average variance, a person might experience positive self-referent affect to a very strong degree, whereas he or she might experience negative self-referent to a very low degree – certainly a pattern which does not indicate personality growth. Note that also the chosen indicator has its drawbacks: a high degree of balance, that is, equal means of positive and negative self-attributes, can result when both means are very high (in the case of high affect complexity) as well as when both means are very low (in the case of low affect complexity). This drawback, however, was considered less problematic than the risk described above, namely to “reward” a strong inequality in the use of positive and negative attributes. Therefore, affect balance was assessed at the cost of affect complexity, and a similar method to the one used in the Affect Balance Scale (ABS, Bradburn, 1969) was adopted: Thus, for each self-description checklist,

the mean rating in terms of negative and positive attributes was computed separately. In this way, each self-aspect yielded two scores: one for positive, and one for negative attributes. Positive / negative scores were subsequently averaged across all aspects. Like in the affect balance scale, the final score was calculated by subtracting the average negative variance from the average positive variance.⁵⁴

4.4 Extant Alternatives of Measuring Self-Esteem

In the present study, self-esteem was supposed to represent a global appraisal of one's strengths and weaknesses. There are innumerable alternatives for measuring self-esteem, the most popular among them perhaps being Rosenberg's *Self-Esteem Scale* (RSE, Rosenberg, 1979/1986). The scale assesses global self-esteem through ten self-related statements that have to be answered on a 4-point scale ("strongly agree", "agree", "disagree", "strongly disagree"). The scale mostly comprises items that express confidence in one's competence and worth (e.g., "On the whole, I am satisfied with myself", "I certainly feel useless at times"). However, there are also scales that have used one single item ("I see myself as someone who has high self-esteem") to assess global self-esteem (Single-Item Self-Esteem scale SISE, Robins, Hendin, & Trzesniewski, 2001). Much theorizing has concerned the dimensions of global self-esteem (Pelham & Swann, 1989; Tatarodi & Swann, 1995), and the equivalence of global self-esteem ratings vs. scores that average self-esteem ratings on several self-relevant domains. Whereas some authors argue for a conceptual difference between these two alternatives (Harter, 1990; Rosenberg, Schooler, Schoenbach, & Rosenberg, 1995), more recent studies have provided empirical evidence for a conceptual equivalence between the two (Marsh, 1986, 1993). However, scores building on the average of multiple domain-specific ratings of self-esteem must be based on domains that represent personally meaningful and important areas of life.

To assess self-esteem in a way compatible to the earlier steps of measurement seemed relatively uncomplicated. Participants were simply asked to rate each self-aspect in terms of its positivity/negativity and the average was computed from these ratings. Personal meaning and importance were ensured by letting the participants generate the self-domains spontaneously. Additionally, participants were asked for an importance rating of domains.

4.5 Extant Alternatives of Measuring Value Orientation

As mentioned earlier, value orientation was the part of SCM that could not be assessed by the adapted Linville inventory, because it did not directly concern aspects of the self-concept but rather, the

⁵⁴ Bradburn suggests using means instead of variances for computing the affect balance score. For the present purpose, however, it seemed more important to compare the *range* of positive/negative self-descriptors rather than their level.

guiding principles salient in the perception and processing of (self-referent) information and behavior. Therefore, another inventory was used which is well validated in the realm of ethical values (Vinken, Soereters, & Ester, 2004), namely the Schwartz Value Survey (e.g., Schwartz, 1992). The Schwartz Value Survey was chosen from a number of value questionnaires, for example the Aspiration Index (Kasser & Ryan, 1986) or the Rokeach Value Survey (Rokeach, 1973), because it explicitly uses a framework based on self-related dimensions, namely *self-enhancement* versus *self-transcendence* (see Figure 4). The original questionnaire represents twelve distinct motivational types, namely self-direction, stimulation, hedonism, achievement, power, security, conformity, tradition, devoutness, spirituality, benevolence, and universalism (see Figure 4). Not all of the motivational types as specified by Schwartz (1992) were used for the present study. Instead, only those motivational types were selected that could be arranged along the dimension of *Self-Transcendence* vs. *Self-Enhancement* (see Figure 4). The second dimension specified in Schwartz's model (*Openness to Change* vs. *Conservation*) is far more equivocal with regard to its implications for personality growth and the self-concept, and therefore, values mostly representing this dimension were omitted. Thus, the motivational types included in the value questionnaire as used in the present study were stimulation, hedonism, achievement, and power (indicative of *Self-Enhancement*) vs. universalism and benevolence (indicative of *Self-Transcendence*).

After reviewing alternatives of measurement for each of the five self-concept components indicative of SCM, the following instrument emerged as the most apt method of assessment: roughly along the lines of the method applied by Linville to measure self-complexity, participants were first asked to spontaneously create a list of self-relevant aspects. Number and content variety in this list seemed an apt indicator of complexity. In turn, participants were asked to describe themselves in terms of each of these aspects using a checklist of self-descriptors. Comparing these aspect-specific self-descriptions and assessing their similarity in turn enabled the measurement of integration. Half of the self-descriptors used for the self-description in terms of each self-aspect were positive, and half of them were negative. Considering the relationship of positive and negative attribute means provided a way of gauging affect balance in terms of the self. Participants were further asked to provide an evaluation and importance rating for each of the self-generated aspects, serving as a basis for the measurement of self-esteem. Finally, through completing a value questionnaire, value orientation of participants were measured.

As mentioned above, these variables were not by themselves considered as indicators of personality growth. Rather, only a certain combination, or a certain profile of self-concept components is assumed to characterize the self-concept of mature individuals. In section 3.2, the shape of this profile was described: self-concept complexity as well as affect balance and self-transcendent value orientation should be extant to a high degree; integration and self-esteem only to a medium degree.

However, exactly how the five components were derived, and how they were combined to form a profile, will be discussed in more detail in section 6.3, which will elaborate on methods and measurements applied in this study. Before introducing measures and the procedure, section 5 will give a short overview of the present study and the research hypotheses.

5 The Present Study

The present study is part of a larger project dealing with alternative methods to measure and enhance personality growth.⁵⁵ One new measure of personality growth is presented here; this study deals with its conceptualization and empirical validation.

With regard to the *conceptualization* of the measure, it was the goal of the present study to develop a new and indirect way of assessing personality growth. To accomplish this goal, the self-concept was employed as a “bridge” to assess levels of personality growth. The final outcome consists of a measure of self-concept maturity in which personality growth is defined as integrated self-complexity with a self-transcendent value orientation and a high level of affect balance, based on a medium level of self-esteem.

In terms of the empirical validation of the instrument, two goals guided the present study: one focusing more heavily on the self-concept component of the measure, the other on the personality growth component. To verify the capability of the instrument to capture self-concept related issues, age trends were examined. If the instrument indeed represented a veridical and meaningful measure of the self-concept, then the age-related findings it uncovered should conform to empirically established age differences in the self-concept. To identify the potential of the self-concept measure to assess personality growth, its relations with other domains of psychological functioning were examined. If self-concept maturity was an expression of personality growth, its relations to other domains of psychological functioning should correspond to those exhibited by other, better validated concepts of personality growth. Furthermore, with the help of another self-concept profile that was constructed to indicate adjustment, a self-concept typology was created. Four self-concept types emerged that were characterized through the two dimensions of self-concept maturity (high/low) and self-concept adjustment (high/low). Following an approach by Labouvie-Vief (Labouvie-Vief, 2003; Labouvie-Vief & Diehl, 2000), it was expected that those four types would exhibit systematic differences with regard to other domains of psychological functioning. Specifically, it was expected that they would rank in a predictable hierarchy in terms of personality growth and adjustment (e.g., Labouvie-Vief, 2005) and that the distribution of age groups across the four types could be predicted from knowing univariate relationships between age and personality growth and adjustment, respectively.

A sample of 169 participants completed the questionnaire on self-concept maturity, various other measures of personality growth, and questionnaires with regard to each of the domains of psychological functioning specified above. One half of the sample was 20 to 40 years old, the other half

⁵⁵ Project funded by the Deutsche Forschungsgemeinschaft (DFG), project number STA 540/3-1/2. Original title: „Lässt sich Selbsteinsicht fördern?“ [How to foster self-insight?“]

was 60 to 80 years of age. Table 15 gives an overview of the hypotheses. The first block of hypotheses comprises the hypotheses in terms of age differences in self-concept, whereas the second block contains those regarding the validation of the instrument as a measure of personality growth, that is, predictions for the relations between SCM and other domains of psychological functioning.

Table 14.
Summary of Hypotheses

	Theory see page	Results see page
1. Age differences in the self-concept		
<i>H₁ The self-concept-components as specified in Figure 3 exhibit distinct age-graded trajectories. In greater detail, it is assumed that</i>		
H1.1 There is no difference in number of self-aspects between younger and older adults.	39	183
H1.2 The similarity of self-aspects is higher for older than for younger adults.	41	184
H1.3 In general, contents of self-concept differs only slightly for younger and older adults. However, there are some areas where slight differences are expected:		
- Older adults name more self-aspects that have to do with their immediate situation (e.g., health, finances) and immediate social environment (e.g., family, partner).		
- Older people name more aspects that are self-transcendent (e.g., peace, environmental issues).		
- Older people name more biography-related aspects (e.g., childhood, youth, time at college...).	42	189
H1.4 Older adults have a higher self-esteem than younger adults.	45	186
H1.5 Younger adults show higher levels of affect balance than older adults.	48	185
H1.6 Older adults' value orientation is more self-transcendent and less self-enhancing than younger adults' value orientation.	50	187
2. Validating SCM as a measure of personality growth		
<i>H₂: The degree to which an individual's self-concept profile resembles the mature self-concept profile as defined in Figure 8 (= SCM similarity index) has a linear relation to personality growth.</i>		
<i>A person's SCM similarity index shows</i>		
- A strong positive relation with growth-related measures (H2.1)	94	194
- No relation with adjustment-related measures (H2.2)	98	195
- A moderate positive relation with intelligence (H2.6)		
- A moderate positive relation with life events (H2.7)	112	196
- A moderate positive relation with measures of self- and life reflection Self- and life reflection and SCM are stronger associated for individuals with low levels of neuroticism than for those with high levels of neuroticism, and for older as compared to younger adults. In general, the influence of life events on SCM is stronger if they are accompanied by a high level of self- and life reflection. (H2.8)	118	196
- No relation with chronological age (H2.9)	121	193
<i>With regard to the conjoint functioning of SCM and SCA, it is expected that</i>		
H2.3 The pattern of variables accounting for explained variance of SCM should differ significantly from the pattern of variables accounting for explained variance of SCA.	98	207
H2.4 More older adults than younger adults are expected among the group characterized by high levels of SCA and low levels of SCM (SCM-/SCA+) and high levels on both dimensions (SCM+/SCA+). The two age groups should be equally represented in the group characterized through high levels of SCM and low levels of SCA (SCM+/SCA-).	98	207
H2.5 Individuals categorized into groups with high levels of SCA should show significantly higher levels of adjustment than individuals categorized into groups with low levels of SCA. Individuals categorized into groups with high levels of SCM should show significantly higher levels of personality growth than individuals categorized into groups with low levels of SCM.	98	207

6 Method

After describing the general design and procedure of the present study, this chapter provides an overview of participants and instruments, as well as the data screening preceding the analyses.

6.1 Design and Procedure

The present study represents one part of a research project funded by the Deutsche Forschungsgemeinschaft (German Research Foundation DFG) on ways to measure and enhance personality growth.⁵⁶ The project started in November 2001; data collection took place throughout the following year. 169 participants took part in the study, ranging in age from 20 to 40 years (*younger adults*) and 60 to 80 years (*older adults*). Participants took part in three sessions with an overall duration of approximately nine hours of which only the first session is used in the present study and will be reported here.⁵⁷ Session 1 and 2 were scheduled ca. one week apart, session 3 took place another two weeks later. Only those instruments that required instruction in an individual setting were assessed in sessions 2 and 3.

The first session took place in a group setting heterogenous in terms of age and gender with 10 to 20 participants and was conducted by the author or another PhD-student ($M = 27$ years). Its duration was approximately three hours. Next to a demographic questionnaire, participants completed a test battery including personality tests and a cognitive inventory. Inventories requiring more detailed oral instruction were given at the beginning of the session. Starting from the 5th instrument, instruments were self-administered, although the experimenter remained present to distribute and collect questionnaires in the right order and to assist with any problems and questions. The self-concept questionnaire was given as the third instrument; the value survey was number six. Table 15 gives an overview of the measures administered in each session and the order of administration (for details on schedule and participant briefing of session 1, see Appendix A1). Sessions 2 and 3 required an individual setting and were conducted either by the author, the other PhD-student, or one of four trained interviewers ($M = 24$). In order to minimize age group specific interviewer effects, each interviewer conducted approximately the same proportion of interviews per age group. The interviewers, all undergraduate or graduate students majoring in psychology, completed a 4-day training seminar on interpersonal skills, as well as in the application of the task at hand.

⁵⁶ Project Nr. 540/3-1/2; Project title: "Lässt sich Selbsteinsicht fördern? Eine empirische Untersuchung mit Hilfe einer Intervention zur Lebensreflektion" [Is self-insight enhanceable? An empirical investigation using a life-reflection intervention]

⁵⁷ Only the retest reliability scores reported here are computed based on the repeated measurement of the self-concept in session 2.

Table 15.
Order of Administration of Tasks and Questionnaires

Session number	Measures ^a
1	Demographic questionnaire Fluid intelligence Self-concept questionnaire (t1) Ego development Behavioral rigidity Value survey (t1) PWB questionnaire Self- and life reflection questionnaire NEO questionnaire Psychological mindedness
2	Self-related wisdom Self-concept questionnaire (t2) Value survey (t2) Life event questionnaire
3	Crystallized intelligence

^aOnly measures included in the present study are listed here.

6.2 Participants

As mentioned before, a total of 169 individuals participated in the study. The following paragraphs describe the recruitment, demographic features, and some other characteristics of the sample.

6.2.1 Participant Recruitment

The cross-sectional sample was recruited in the town of Dresden, a mid-sized German city in the Eastern part of Germany, the former German Democratic Republic. 169 Individuals from two age groups participated in the study: younger adults (20-40 years) and older adults (60-80 years). Participants were recruited to form a heterogeneous age-by-sex and age-by-educational status stratified sample. Thus, selection criteria involved age (20-40 years / 60-80 years), gender (male / female), and educational status (no college degree (Abitur) / college degree or academic education).⁵⁸

Participants were recruited through newspaper articles that informed the public about the project and the institute in a very general and unspecific manner (Appendix A2). The project was introduced as a research project investigating personality continuity and change in the adult years. Newspapers ranged from two daily local newspapers to various weekly or monthly journals that were available for free at various locations. Persons interested in participating in the project were asked to

⁵⁸ Recruitment was aimed at accomplishing an equal percentage of men and women as well as individuals with a high and individuals with a low educational degree in each age group. However, as common in volunteer samples, a disproportionately high number of the volunteers were female / had a high educational degree (Bortz & Döring, 1995). Hence, the required percentages had to be adjusted correspondingly.

get further information via telephone. Callers received a short introduction into general aims, organizational issues and financial compensation (€ 30.- for a total of 8-9 hours⁵⁹). Since parts of the study – which are not reported here – required a dyadic interaction with a familiar person, another requirement for participation was to bring along another person who was part of one's everyday life. These “partners” of the participants, generally close friends, partners, or relatives, completed all measures except the self-related wisdom task in the same manner as participants did. However, to avoid effects of sample selectivity due to the differences in the recruitment of these persons in comparison to the regular participants, they were not regarded as part of the regular sample and their data is not considered in the present study. Individuals who agreed to participate and who met the selection criteria were recruited as participants.

6.2.2 Age and Gender

One aim of the research project was to study age differences. Investigating age differences on a cross-sectional base requires a quasi-experimental design with different age groups. To ensure sufficient statistical power and to facilitate the identification of extant age differences, discontinuous age groups were chosen as target groups, namely younger adults (20-40 years) and older-aged adults (60-80 yrs). Table 16 provides an overview of categorically scaled features of the sample such as education, occupational and marital status, children, and origin. Table 17 gives an overview of chronological age, and further demographic and psychological variables of the sample. As can be seen from the tables, the original intention to have an equal amount of female and male participants had to be given up, because the number of female prospective participants was much higher than the number of male prospective participants. Thus, about 59% of the sample consisted of women. However, gender distribution did not significantly differ between the two age groups, $\chi^2_{(1; N = 169)} = 0.01$, n.s..

⁵⁹ Participants took part in three sessions of which only one is used in the present study.

Table 16.
Sample Description in Terms of Education, Occupational and Marital Status, Children, and Origin

	Young adults (20-40yrs)			Older adults (60-80 yrs)			Overall sample		
	men <i>n</i> = 36	women <i>n</i> = 53	total <i>n</i> = 89	men <i>n</i> = 33	women <i>n</i> = 47	total <i>n</i> = 80	men <i>n</i> = 69	women <i>n</i> = 100	total <i>N</i> = 169
Education (%)									
9 years or less ("Hauptschule")	2.8	-	1.1	6.1	27.7	18.8	4.3	13.0	9.5
10 years ("Real-/Berufsschule")	27.8	27.3	28.1	-	17.0	10.0	14.4	23.0	19.6
13 years ("Abitur")	11.1	13.2	13.4	3.0	12.7	8.8	8.6	13.0	11.3
> 13 years; university degree	55.5	58.5	57.3	90.0	42.5	62.6	72.4	51.0	59.7
Current occupational status (%)									
full-time employed	50.0	37.7	42.7	6.1	10.6	8.8	29.0	25.0	26.6
part-time employed	25.0	15.1	19.1	6.1	8.5	7.5	15.9	12.0	13.6
currently not employed	13.9	26.4	21.3	81.8	55.3	66.3	46.6	40.0	42.6
unemployed	8.3	15.1	12.4	-	4.3	2.5	4.3	10.0	7.7
Add. work activity information (%)									
student	30.6	26.4	28.1	-	-	-	15.9	14.0	14.8
apprenticeship	8.3	11.3	10.1	-	-	-	4.3	6.0	5.3
retired	5.6	-	2.2	90.9	91.5	91.3	46.6	43.0	44.4
Marital status (%)									
married	16.7	26.4	22.5	84.8	55.3	67.5	49.3	40.0	43.8
long-term relationship	27.8	18.9	22.5	-	-	-	14.5	10.0	11.8
single	47.2	35.8	40.4	-	6.4	3.8	24.6	22.0	23.1
divorced/separated	8.3	17.0	13.5	6.1	21.3	15	7.2	19.0	14.2
widowed	-	1.9	1.1	9.1	17.0	13.8	4.3	9.0	7.1
Have children (%)	25.0	45.3	37.1	97.0	89.4	92.5	59.4	66.0	63.3
Grew up in East Germany (%)	89.5	86.4	87.8	93.5	84.2	88.4	92.0	85.0	88.2

6.2.3 Education, Occupation and Marital Status

It was not possible to fully accommodate the initial selection criterion of equal amounts of participants with below average educational status and participants with above average educational status. Probably due to the recruitment via newspaper, there was a sample bias towards individuals with above average educational status (see Table 16). Of the younger adults, more than two thirds (71%) had a college degree (Abitur; 13%) or higher education (57%). Education did not differ across gender, $\chi^2_{(1; N = 89)} = 0.05$, n.s.. Almost one third (28%) of the younger age group were currently enrolled as university students, and about two thirds (62%) held fulltime or part-time jobs. Almost half of them (40%) were single, a fifth of them had a partner without being married (23%), and another fifth (23%) were married. More than ten percent (14%) were divorced. Furthermore, 37% of the participants in the younger age group had children.

Among the older adults, about an equal percentage (71%) as in the young sample had finished college (Abitur) or had pursued an academic career afterwards. There was a strong gender difference

in terms of education, $\chi^2_{(1; N = 80)} = 14.12$, $p \leq .01$: 94% of the men had college (Abitur) or even higher degrees as compared to 55% of the women. A large majority (91%) of the older sample had already retired from work. Most of them (68%) were married, 15% were divorced, and an almost equal percentage (14%) were widowed, whereas the percentage of unmarried singles was extremely small (4%). Almost equally small was the percentage of persons without children (6%).

As has been shown, gender differences in terms of education were much stronger with regard to the older than to the younger sample. However, an age-by-education stratification could still be accomplished: When comparing educational status (Abitur vs. no Abitur) across age groups irrespective of gender, no significant differences were found, $\chi^2_{(1; N=169)} = 0.00$, n.s.. Not surprisingly, almost all participants irrespective of their age and gender had been born and grew up in Eastern Germany (the former GDR).

Table 17.

Sample Description in Terms of Age, Life Satisfaction (Past, Present, Mean), Subjective Health, Subjective Intellectual Demands in Life, Fluid Intelligence, and Crystallized Intelligence

		Young adults (20-40 yrs)			Older adults (60-80 yrs)			Overall sample		
		men <i>n</i> = 36	women <i>n</i> = 53	total <i>n</i> = 89	men <i>n</i> = 33	women <i>n</i> = 47	total <i>n</i> = 80	men <i>n</i> = 69	women <i>n</i> = 100	total <i>N</i> = 169
Age (<i>Min</i> = 20; <i>Max</i> = 80)	<i>M</i>	30.06	29.64	29.81	68.60	66.47	67.35	-	-	-
	<i>SD</i>	5.36	6.51	6.04	3.63	4.66	4.38	-	-	-
Satisfaction past life (1-5)	<i>M</i>	3.56	3.51	3.53 _a	4.06	3.83	3.92 _b	3.79	3.66	3.71
	<i>SD</i>	.73	.89	.83	.50	.70	.64	.68	.81	.77
Satisfaction present life (1-5)	<i>M</i>	3.58	3.38	3.46 _a	4.09	3.68	3.85 _b	3.82	3.52	3.64
	<i>SD</i>	.73	.97	.73	.69	.94	.86	.75	.95	.89
Life satisfaction mean (1-5)	<i>M</i>	3.57	3.44	3.49 _a	4.08	3.76	3.89 _b	3.80	3.59	3.67
	<i>SD</i>	.70	.95	.86	.63	.71	.68	.60	.75	.70
Subjective health (1-5)	<i>M</i>	3.56	3.37	3.44 _a	2.84	2.62	2.71 _b	3.22	3.01	3.10
	<i>SD</i>	.70	.95	.86	.63	.71	.68	.75	.92	.85
Neuroticism (1-5)	<i>M</i>	2.47	2.70	2.60 _a	2.04	2.31	2.19 _b	2.26	2.51	2.41
	<i>SD</i>	.65	.79	.73	.70	.69	.73	.70	.76	.74
Subj. intellectual demands (1-5)	<i>M</i>	3.57	3.70	3.65	4.38	3.83	4.05	3.96	3.76	3.84
	<i>SD</i>	.66	.70	.68	.66	.76	.77	.76	.72	.74
Fluid IQ (0-18)	<i>M</i>	14.92	14.08	14.42 _a	8.76	8.28	8.48 _b	11.97	11.35	11.60
	<i>SD</i>	3.68	3.91	3.82	5.04	4.24	4.56	5.34	4.98	5.12
Crystallized IQ (0-84)	<i>M</i>	47.94	54.73	51.95 _a	64.73	55.93	59.61 _b	56.21	55.32	55.69
	<i>SD</i>	17.3	11.1	14.2	1.9	14.2	13.6	16.67	12.66	14.41

Note. Average age for the overall sample is not provided here, since the gap between both age groups would be neglected when averaging scores. Total scores that do not share the same subscripts across age groups are significantly different.

6.2.4 Life Satisfaction, Health, and Cognitive Functioning

When comparing life satisfaction and health across age groups, a common pattern emerges (see Table 17). Life satisfaction is rated significantly more positively by the elderly, $t(167) = -3.80, p \leq .01$, despite worse subjective health, $t(167) = 6.21, p \leq .01$ (for similar findings see M. M. Baltes & Baltes, 1986; Diener & Suh, 1998; Keyes & Waterman, 2003; Mroczek & Spiro, 2005; Smith, Fleeson, Geiselman, Settersten, & Kunzmann, 1999). Subjective perception of health can be regarded as a good approximation of objective health (e.g., LaRue, Bank, Jarvik, & Hetland, 1980). A measure of general psychic health is provided by the Neuroticism scale of the NEO personality inventory (e.g., Costa & McCrae, 1985). Consistent with prior evidence (e.g., McCrae, Costa, Hrebickova et al., 2004; McCrae et al., 1999; Srivastava, John, Gosling, & Potter, 2003; Twenge, 2000), younger adults exhibited significantly higher levels of neuroticism as compared to older adults, $t(167) = -3.59, p \leq .01$. All in all, mean neuroticism scores of both age groups are in line with the respective age norms (Ostendorf & Angleitner, 2004). Thus, the sample can be described as psychologically healthy.

There is a significant difference in terms of fluid IQ, $t(167) = 9.2, p \leq .01$, such that younger adults clearly show higher scores – which is another empirically well established finding (e.g., Nyberg, Bäckman, Erngrund, Olofsson, & Nilsson, 1996; Schaie, 1996, 2001, 2005). In contrast, older adults were superior to younger adults in terms of crystallized IQ, $t(165) = -3.49, p \leq .01$ (for similar evidence see, e.g., Schaie, 1994). Again, mean scores of both age groups lie within the normal range (Heller, Kratzmeier, & Lengfelder, 1998).

6.3 Measures

Below, instruments used in the present study are presented and the reasons for their selection and construction are explained briefly. The first part of this section gives a thorough overview of the derivation of SCM, and the processes of administration, coding, computation and data restructuring involved in its formation. After that, the other measures used in this study will be described in more detail.

6.3.1 Measuring Variables Related to the Self-Concept

In the following, an overview is provided of the various steps involved in the computation of the main dependent variable in this study, SCM, and its components. First, the administration of the self-concept questionnaire is explained. Second, computation of each of the five self-concept components is described. The final part of the section deals with the combination of the five self-concept

components in a single SCM prototype and the derivation of a similarity score with the SCM prototype as the final dependent variable.

6.3.1.1 *Administering the Self-Concept Questionnaire*

The questionnaire described here is a modified version of the Linville self-complexity questionnaire (1985, 1987).⁶⁰ In the present study, the questionnaire was administered in a group session with oral instructions given by the experimenter (Appendix A4). Participants were first asked to think about aspects of themselves that were important to them. They were told that these aspects could be

„Roles assumed in everyday life (such as ‘partner’ or ‘son’), different groups of people of which you are a part (such as ‘friends’ or ‘colleagues’) ... or areas of achievement (such as ‘sports’ or ‘work’), or moods you might experience sometimes (such as ‘under stress’ or ‘at my best’). Aspects do not necessarily have to relate to the present; they could also be aspects from the past or future (such as ‘childhood’ or ‘future job’). That is, when talking about aspects of importance to you, they can take any possible form; the exact definition depends solely on yourself.” (Appendix A4)

To write down these aspects – either in just one word or a short sentence – participants were provided with a sheet of numbered lines (Appendix A5).

After 5 minutes, participants were asked to describe themselves in terms of each of these aspects using a 40-word checklist. To do this, they were provided with further sheets (Appendix A5). At the top of each sheet, there was a blank to enter the specific aspect (e.g., “childhood”). Below this blank, a list of 40 adjectives was provided, each followed by a 5-point-rating scale (1= “does not apply at all” to 5 = “fully applies”). Order of the adjectives was varied to avoid sequence effects. Participants were instructed to state for every adjective to what degree it applied to them in terms of the specific aspect. For example, if a participant had entered “childhood” in the blank above, he had to indicate for each of the 40 words to which degree it applied to him with regard to childhood. For example, if he felt very happy and not shy at all when thinking about himself as a child, he would mark the “5” next to the word “happy”, and the “1” next to the word “shy” on the sheet for childhood. Participants were given 25 minutes to complete sheets for every aspect.

Afterwards, participants were asked to return to the first sheet, where only the aspects had been entered. Next to each aspect, two 5-point-rating scales were provided to judge (a) the importance of the aspect (1= “not very important” to 5 = “highly important” and (b) the appraisal (1 = “very negative” to 5 = “very positive”) associated with the aspect. The importance rating scale was marked with a “W” (“Wichtigkeit”), the positive/negative appraisal scale was marked with an “B” (“Bewertung”; see

⁶⁰ Further information about differences between the self-concept questionnaire and Linville’s questionnaire are given in Appendix A3 and will not be discussed here.

Appendix A5). For example, if a person had entered “childhood” as the first aspect, and would rate this aspect as highly important but associated with somewhat more negative emotions, he or she would mark “5” on the rating scale for importance and “2” on the scale for appraisal. An explanation for the rating scales was given in oral and written form. An example of the information provided by a participant’s completed questionnaire is given in the Appendix (A6).

The procedure as described here differs from the Linville procedure in various points. The main differences between the current procedure and the procedure adopted by Linville and the reasons for these modifications are reported in Appendix A3.

To assess self-transcendent value orientation, participants completed parts of the Schwartz Value Survey. As mentioned above (section 4.5), only those six motivation types were selected from the survey that reflected the dimension of self-transcendence vs. self-enhancement (see Figure 4), namely stimulation, hedonism, achievement, power (representative of self-enhancement) and universalism and benevolence (representative of self-transcendence). Each motivation type is represented by two to eight items. For instance, stimulation is represented by “an exciting life”, “a varied life”, and “daring”. For each of the items, participants are asked to indicate on a 5-point Likert rating scale to what degree they perceive the specified goal as a “guiding principle of their life” (Appendix A7).

Both poles of the dimension (i.e., Self-Enhancement and Self-Transcendence) are represented by an almost equal number of items (15 measuring Self-Enhancement vs. 18 measuring Self-Transcendence). Furthermore, two items were adopted from Kunzmann and Baltes (2003) that are also indicative of self-transcendence but are not included in the original scale by Schwartz. One item (“Self-insight”) was added because it seemed of particular importance for the present study. Because the three added items were too few to open up a new scale, they were integrated in the scale reflecting Universalism, since they were conceptually in line with that scale’s contents. The items, the motivational type and the major dimension they represent, the source for every motivational type, and their internal consistency are given in Table 18.

Table 18.
Items of Value Orientation Included in the Value Questionnaire

Motivational type	Items	Source	r_{tt}	Internal consistency (Cronbach's α)
Self-enhancement			.82	.81
Stimulation	an exciting life a varied life daring	Schwartz (1992)	.75	.70
Hedonism	pleasure enjoying life	Schwartz (1992)	.67	.74
Achievement	ambition influence capable successful self-respect	Schwartz (1992)	.63	.65
Power	social power wealth authority preserving my public image social recognition	Schwartz (1992)	.74	.64
Self-transcendence			.80	.80
Benevolence	helpful responsibility forgiving honest loyal mature love true friendship	Schwartz (1992)	.85	.64
Universalism	equality unity with nature wisdom a world of beauty social justice protecting the environment a world at peace	Schwartz (1992)	.74	.64
Personality growth / Insight into life (here: part of universalism scale)	meaning in life inner harmony self-insight ^a	Kunzmann & Baltes (2003)		

^aThe self-insight items was inserted by Staudinger, Dörner, and Mickler for the purpose of the present study only.

As for the briefing and answering format, wording and format were in line with suggestions by Schwartz (see Appendix A7).⁶¹ To avoid sequence effects, items were represented in random order, that is, not according to their affiliation with a particular motivational type.

⁶¹ A German version of the Schwartz questionnaire was provided to us by Wolfgang Bilsky, whom I would like to thank for his kind assistance.

6.3.1.2 Operationalizing SCM

The five components involved in the assessment of self-concept maturity were: complexity of content, affect balance, self-concept integration, self-esteem, and self-transcendent value orientation. Before explaining the procedure used to compute the profile, the procedure applied in computing each of these five constituents will be described step by step.

6.3.1.2.1 Developing Five Indices of SCM

In Chapter 4, measurement alternatives in assessing each of the five self-concept components were reviewed and evaluated in terms of their aptitude for the present study. This section provides a more detailed description of the steps involved in computing each component.

6.3.1.2.1.1 Computing an Index of Self-Concept Complexity

In other samples (e.g., Rafaeli-Mor et al., 1999), complexity of self-concept is assessed by simply counting the number of self-aspects that a person spontaneously lists in the first step of the inventory (see above). The number of those freely generated self-aspects then operates as an indicator of self-complexity. This method was also adopted in the present study, yielding a satisfactory retest-reliability (i.e., correlation between the number of aspects at t1 and t2), $r_{tt} = .58$ ($p \leq .01$).

However, it was argued that the number of self-aspects is not a sufficient indicator of complexity in the self-concept because it only captures a structural indicator of complexity or the breadth of listed self-aspects. However, even in the case of a high structural complexity of the self-concept, that is, when many self-aspects are listed, complexity of content or the depth of the listed aspects might be low. For instance, a participant might have listed the following seven aspects: father, grandfather, son, brother, husband, uncle, and godfather. Obviously, although the number of aspects is not small in this example, their depth is very limited: all aspects belong to one single content category, namely family roles. Such a profile would hardly demonstrate a high level of self-complexity. Therefore, it seemed necessary to also include the number of categories reflected in the aspects. In order to assess this, the aspects had to be categorized.

A review of the literature (see Table 9) yielded several possibilities for categorizing self-descriptions. For the categorization system used in this study, it seemed important for it to cover all self-aspects, for categories to be mutually exclusive, and for the categories to be somewhat equivalent, e.g., concerning their level of abstraction and their level of dissolution. Furthermore, since by categorizing was only as a means of capturing the diversity of the content, at this point other dimensions (e.g., "consensual" vs. "subconsensual", see Kuhn & McPartland, 1954) were negligible.

Taking all the alternatives into consideration, Freund's categorization system (see Table 9) was chosen as a role model because it matched the criteria specified above, and at the same time, similar to the present study, was based on a developmental approach. However, it was necessary to supplement this top-down-strategy (i.e., using an existing categorization system to order the data in the present study) with a bottom-up strategy (i.e., creating and modifying categories based on our data). In some cases, Freund's categories did not meet the affordances of the data in the present study, presumably because the method and the sample in Freund's study differed from those in the present study (e.g., Freund used fully open-ended self-description, and applied it in a sample of old-aged participants only).

For example, in contrast to Freund's categorization system, it was necessary to modify the categories of activities: for the present purpose, it seemed unimportant whether activities were indoors or outdoors. Furthermore, some of the categories emerging from open self-descriptions as used by Freund do not appear when participants are asked for self-relevant aspects as it was the case here. For example, in the present data, socio-demographic variables or appearance were not mentioned as self-aspects; a category for these terms therefore was unnecessary.

The final coding system comprised 10 categories and 24 subcategories (see Table 19). Self-aspects were categorized by the author (R1) and a student assistant majoring in psychology (R2) using the subcategories (Table 19, right column) as listed in the coding manual (see Appendix A8). Since categories were relatively simple, a sheet containing the categories together with a short explanation and examples for each category was sufficient as a coding manual. Coding comprised three steps. In the first step, R1 categorized all self-aspects according to the categorization system by Freund (1995). For this purpose, self aspects were stored in a separate Excel database hiding all information about participants, in order to prevent any bias when coding the self-aspects. Excel also facilitated the coding by arranging the data in such a manner that each term only had to be classified once. During the first coding, categories were still modified and some were added, some were dropped from the coding system. Therefore, after the first coding-trial, the list of words was coded by R1 for a second time, this time adopting from the start all modifications that previously had been made. Based on this categorization, a written manual was prepared (Appendix A8). After the coding of all self-aspects was completed, R2 was introduced to the manual. In the next step, both R1 and R2 did a test coding of 152 self-aspects (generated by a group of sixteen individuals who had participated in pilot testing) to test agreement. The coding was discussed subsequently between the raters, clarifying the cases where no consensus had been reached. Afterwards, R2 rated the full list. Inter-rater agreement (Cohen's Kappa) was sufficiently high, .89.

Table 19.
The Categorization System Used in the Present Study

Categories	Subcategories
1. Social roles	family (all family other than partner) partnership friendship/acquaintances other social groups
2. Profession / profession equivalent	-
3. Self-centered hobbies/activities	sports (active involvement) travelling music and art (active involvement) interest in history / sports / cultural issues / politics / special subjects (e.g., geography, archaeology) other sparetime activities
4. Self-transcendent hobbies/activities	political and social engagement house and garden taking care of pets religious involvement
5. Sexuality	-
6. Health	-
7. Financial concerns	-
8. Life review, self- and life reflection	life goals/mottos engaging in life review or –planning personal characteristics
9. Biographical concerns	life events life stages
10. General statements	-

Note. Only the right column (=subcategories) was used for coding. Aggregation was performed afterwards. The differentiation into "self-centered" vs. "self-transcendent" hobbies was introduced in the attempt to capture an aspect of value orientation by the content of self-descriptions. However, this categorization turned out not to converge with the other assessment of value orientation, and thus, not to be a valid indicator of value orientation. The categorization was retained nonetheless because the activities in the two categories seemed to describe two somewhat different points of view.

To avoid redundancy when computing the complexity component of the SCM profile, either the number of subclasses or the number of classes had to be dropped as an indicator of complexity. To decide which of the two would fit better as an indicator of complexity of content, the internal consistency of each of them with the number of aspects was computed. The number of subclasses showed much higher internal consistency (*Cronbach's alpha* = .82) when compared to the number of categories (*Cronbach's alpha* = .53). Number of subclasses, therefore, was adopted as a second indicator of complexity of content (next to number of self-aspects). Retest-reliability again was computed by correlating the number of subclasses at session 1 with the number of subclasses at session 2, and was satisfactory, $r_{tt} = .58$ ($p \leq .01$; see Table 27). The similarity of the retest reliability coefficients between the number of aspects and the number of classes (Table 27) also confirms coding reliability.

6.3.1.2.1.2 Computing an Index of Self-Concept Integration

Integration was intended to capture the degree to which a person applied the same self-description across different contexts/situations, that is, the degree to which the person saw himself/herself as being the same across contexts. In the light of the alternatives reviewed (see Table 12), self-concept differentiation (SCD, J. Block, 1961a) seemed among the most valid indicators of self-concept integration. Methods with a standard questionnaire format were ruled out to avoid a direct assessment; scores based on within-subject factor-analysis were ruled out because the data in the present study lacked the necessary prerequisites for performing within-subject factor analysis (see section 4.2). SCD has been empirically proven superior to other alternatives of assessing self-concept integration (Diehl et al., 2001) and computing it was possible with the present data set. However, SCD assesses only similarities in the rank order of adjectives. For example, a person might rate herself or himself as follows with regard to aspect A: honest (5), caring (4), irritated (1). In terms of aspect B, he or she might rate the same three characteristics in the following way: honest (3), caring (2), irritated (1). Thus, the rank order of the adjectives remains the same, resulting in a high SCD score, although the person perceives herself or himself as “extremely” honest in terms of aspect A and only as “moderately” honest in terms of aspect B. In other words, SCD only provides a relative measure of similarity. Thus, another index is needed that expresses the absolute similarity between self-aspects.

SCD. As a first indicator for self-concept integration, the *degree of SCD* was assessed. That is, the Pearson correlation was computed for each possible pairwise combination of aspects. For example, if a person had five different self-aspects, 10 (= 4+3+2+1) pairwise correlation analyses were performed. To compute the average correlation of self-aspects, correlation coefficients had to be Fisher-z-transformed (see Bortz, 1993, p. 201). Based on the Fisher z-scores, an average score was computed and re-transformed afterwards.⁶² Retest reliability for SCD was satisfactory, $r_{tt} = .72$. For computing test-retest scores, the Fisher-z-transformed scores were used.

Coreself. A way to assess the absolute similarity of pairwise self-descriptions is to consider whether a participant rates adjectives consistently across all aspects (i.e., indicates in terms of every aspect that “happy” would apply “strongly” or “very strongly”). These adjectives were termed “core”-adjectives. Core-adjectives were computed by counting the number of adjectives that received either a rating of 1-2 or a rating of 3 or a rating of 4-5 with regard to *all* self-aspects. Thus, the final score comprised those among the 40 self-descriptive attributes that were rated roughly the same across *all* aspects. This procedure yielded three scores (always “1-2”, always “3”, always “4-5”), which were

⁶² According to Donahue et al. (1993), average intercorrelation between aspects is equivalent to the factor score on the first factor emerging from a principal component within-subject factor analysis across aspects that are sometimes also used as an indicator of SCD.

summed up subsequently forming one score that indicated those among the 40 attributes that had been rated in a consistent manner.

In five cases, it happened that a person had checked less than 40 adjectives. In these cases, absolute scores are misleading. To take these cases into account, therefore, absolute scores were transformed into percentage of completed ratings (e.g. 4 out of 40 completed adjectives: 10%; 4 out of 36 completed adjectives: 9%). Thus, the final coreself score denotes the percentage of the self-descriptive adjectives that had been rated consistently across aspects. Additionally, this score has a greater face value and is easier to understand. Retest reliability was satisfactory, $r_{tt} = .54$.

6.3.1.2.1.3 Computing an Index of Affect Balance in the Self-Concept

From various alternatives of measuring affect balance (see Table 13), Bradburn's concept of affect balance (1969) was chosen an indicator of affect balance. Usually, the affect balance coefficient is computed by subtracting the mean rating of negative self-descriptors from the mean rating of positive self-descriptors and adding a constant afterwards (see Bortz, 1993, for averaging variances). This procedure was adopted, except that adding a constant did not seem necessary in the present study, since variables were z-standardized afterwards (see section 6.3.1.2.1.3). Since a high level of affect balance is expressed by very low scores (that is, when means are close to equal), the variable was recoded, so that a high level of affect balance implied a high score.⁶³ Retest reliability was relatively high, $r_{tt} = .77$ ($p \leq .01$).

As mentioned before, the affect balance coefficient also has a vital drawback: it only reflects the degree of balance in the degree of experiencing positive and negative self-descriptors, and does not capture the range of positivity/negativity ratings. Thus, high affect balance can result even when both variances are at a very low level. Ideally, a score would be needed that reflects the balance between positive/negative self-descriptors *as well as* their (relative) range. However, there is no score available to reflect both parameters at the same time, and thus, the affect balance coefficient represented the least rejectable of the available alternatives.

6.3.1.2.1.4 Computing an Index of Self-Esteem in the Self-Concept

A score reflecting self-esteem was simply computed by averaging positivity/negativity ratings across all self-aspects. Average importance of self-aspects was 4.42 ($SD = .03$), and there was little variance in importance judgments, $M (SD)_{old} = 4.46 (.04)$; $M (SD)_{young} = 4.39 (.05)$. Hence, all the aspects mentioned by a person seemed important for his/her self-definition. Averaging domain-specific

⁶³ Recoded scores were used in all analyses except for the analyses on age differences, for which the original balance indicators were retained.

evaluations therefore seemed an appropriate method for computing global self-esteem. Internal consistency (*Cronbach's alpha*) of the average score was .44, which is not overly high, but plausible, given that positivity/negativity ratings of one self-aspect will not be predictable from the positivity/negativity rating of another self-aspect. Retest correlation was reasonably high, $r_{tt} = .59$.

6.3.1.2.1.5 Computing an Index of Self-Transcendent Value Orientation

As mentioned in section 4.5, parts of the Schwartz Value Survey were used to measure self-transcendent value orientation. Scores for both motivational types of the self-transcendence pole (universalism, benevolence) were computed by averaging the respective items. Scores for dimensional poles (self-transcendence, self-enhancement) in turn, were generated by computing means across subscales. All in all, retest-reliabilities of motivational types (see Table 18) are satisfactory, considering the complexity of the scales. The internal consistency (*Cronbach's alpha*) of dimensional poles was very satisfactory: the coefficient was .80 for *Self-Enhancement*, and .81 for *Self-Transcendence*. Likewise, retest reliability scores were very satisfactory, $r_{tt}(\text{self-enhancement}) = .82$, $r_{tt}(\text{self-transcendence}) = .80$.

Scores of motivational types were recoded so that the lowest scores were transformed into the highest scores and vice versa before including them in further analyses. The main reason for this measure was that retaining motivational types at a high level would have resulted in a profile in which three out of five components would have exhibited high levels, and two out of five components would have exhibited medium levels. In other words, this profile would have been relatively flat, not showing a great deal of variance. However, because the profile is supposed to be subjected to correlation analyses, flatness is problematic, since variance is a vital prerequisite for computing correlation coefficients. In sum, motivational types were recoded to reduce the degree of flatness of the profiles in order to make them fit better to correlation analyses.

Five indices were computed as components of the prospective SCM profile: complexity, integration, affect balance, self-esteem, and self-transcendent value orientation. Table 20 gives an overview of the aspects, their reliability, and the variables used to compute them. Affect balance and self-esteem were computed on the basis of univariate indices; all other aspects of self-concept maturity are represented by two variables.

Table 20.
Components of the Profile of SCM

Components and variables	Retest reliability (r_{tt})
Complexity of content	
Number of aspects	.58
Number of aspect categories	.58
Integration	
Average intercorrelation between self-aspects (= "Self-concept differentiation")	.72
Number of adjectives rated consistently across self-aspects	.54
Affect Balance	
Difference between mean of positive attribute ratings and negative attribute ratings	.40
Self-esteem	
Average positivity/negativity rating across self-aspects	.59
Value Orientation	
Universalism	.70
Benevolence	.74

Note. Retest reliability was assessed by Pearson correlation based on a retest scheduled one week after initial testing.

6.3.1.2.2 Establishing a SCM Profile Prototype

As explained in section 3.2.6, in order to receive information about the maturity of the self-concept, it is not sufficient to calculate scores of the different facets of SCM. Instead, it is necessary to define a profile prototype of the mature self against which empirically assessed profiles are compared. The following will describe which steps had to be taken to arrive at a prototype of the SCM profile.

As seen in Table 20, there are, in total, eight variables indicating SCM: two variables indicative of complexity of content, two variables indicative of integration, one variable indicative of affect balance, one variable indicative of self-esteem, and two variables indicative of self-transcendent value-orientation. Before scores could be summarized to form a profile, a first data screening was performed, checking for accuracy of data entry, missing values, and fit between the distributions and the assumptions of profile analysis.

None of the eight variables had missing values in more than 5% of the cases. Two univariate outliers were found (i.e., z-values in excess of 3.29, Tabachnick & Fidell, 2001), one in each value orientation scale. Since profile analysis is sensitive to outliers (idem), the values producing the outliers were replaced by the highest values that did not produce an outlier. No multivariate outliers were identified.

Deviations from normality were found in a number of distributions. As can be seen from the summary of descriptive statistics (Appendix A9, Table 2), the distributions of the number of aspects, the number of aspect categories, universalism and benevolence exhibit either extreme Kurtosis or extreme Skewness or both. Extreme scores were identified by checking whether the quotient Kurtosis / SE (Kurtosis) or the quotient Skewness / SE(Skewness) significantly differed from zero using z-distribution

(Tabachnick & Fidell, 2001). In fact, in these cases, a comparison of the distribution with the normal distribution by a Kolmogorov-Smirnov test yielded significant deviances from normality (see Appendix A9, Table 3). However, since profile analysis is very robust to violations of normality (*idem*), no steps were taken to transform distributions.

The first step in building the prototype was to z-standardize each of the eight variables to arrive at a common scaling. Second, in order to compute correlation coefficients, data were rearranged so that cases were transformed into variables and variables into cases.⁶⁴ Only the relevant variables as specified above were used for this newly structured dataset. Thus, in contrast to the original data matrix which contained 169 cases (corresponding to the number of participants) and x variables, a data matrix with eight cases and 169 variables resulted. In order to have an equal number of variables representing each self-concept constituent, those variables where a constituent was represented by only one variable were duplicated (i.e., affect balance and self-esteem), which yielded a data matrix with ten cases. A fictitious 170th person was then added to the dataset, who was characterized by a maximum degree of self-concept maturity (= the SCM prototype). Thus, on each of the ten constituents of self-concept-maturity, this person exhibited the ideal level as specified in *Figure 8*. (For better understanding, the figure is displayed again here).

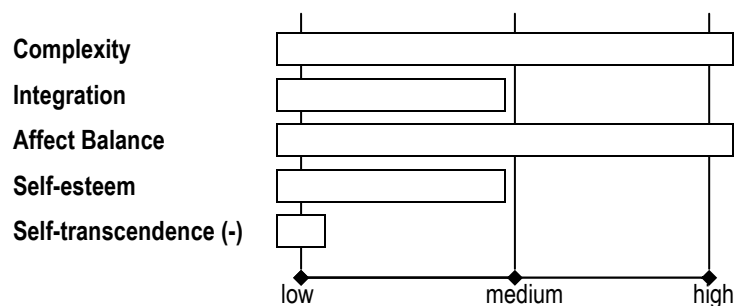


Figure 8 (repeated depiction). An illustration of the SCM profile

Hence, in accordance with the profile as specified in *Figure 8*, this person showed a high level of complexity of content (= number of aspects, number of aspect classes), a medium level of integration (= intercorrelation between self-aspects, number of “core-adjectives”), a high level of affect balance (= difference score from mean of self-ratings on positive and mean of self-ratings on negative attributes), a medium level of self-esteem (= average appraisal of self-aspects), and a low level of recoded self-transcendent value orientation (= universalism (-), self-transcendence(-)). “High”, “low” and “medium” were chosen based on the z-distribution: “high” was defined as being two standard deviations above the mean (= 2.00), “medium” was defined as mean (“0”), and “low” was defined as being two standard

⁶⁴ SPSS 12.0.1 for Windows was used for all analyses.

deviations below the mean (“-2”).⁶⁵ A correlation coefficient was computed for each person by correlating his/her profile with the SCM prototype. The output of this calculation in turn was copied into the original data matrix, so that one variable in the original dataset indicated the SCM similarity index of the participant (i.e., his/her similarity with the SCM prototype). Hence, a SCM similarity index of 1.00 was obtained for a participant who showed a self-concept profile identical in pattern to that of the idealized mature person, and, conversely, a SCM similarity index of -1.00 was obtained for a participant who showed a self-concept profile identical to the idealized immature person. Again, for further analyses, the score was Fisher-z standardized.

After establishing the theoretical profile, the next important step is to determine the similarity of each tested individual with the ideal. This sounds easier than it is, as the calculation of profile similarity coefficients has, in itself, created a sizeable amount of literature. For this reason, it seems necessary to summarize and evaluate those approaches in an excursus.

Excursus: In Search of Similarity

Measures of proximity or similarity belong to one of two groups (Backhaus, Erichson, Plinke, & Weiber, 2003; Wirtz & Caspar, 2002): *measures of similarity* reflect the similarity between scores; the higher the score of similarity, the greater the similarity between objects. In contrast, *measures of distance* reflect the dissimilarity between objects: the higher the distance score, the greater the dissimilarity between the objects.

Depending on the scaling of the data to be analyzed, a first rough classification of the available methods can be made: when the collected data have a binary structure (that is, a nominal level of scaling) measures such as the *Tanimoto-coefficient*, the *M-coefficient*, the *Kulczynski-coefficient*, the *RR-coefficient*, or the *Dice-coefficient* can be used to assess similarity. In contrast, for data with metric scaling, one can use either measures of distance such as the *Minkowski-metrics* (or *L-norms*; e.g., *city-block*, *Euklidean distance*, *squared Euklidean distance*, *Mahalanobis*), or measures of similarity (e.g., *Q-correlation*). Since in the present study the data have a metric scaling format, only the measures applying to data with metric scaling will be examined in closer detail.

⁶⁵ A disadvantage of defining theoretical values via the z-distribution is that scores rely partly on the empirical distribution in the present sample: for example, the z-score of “0” is located at the mean of the empirical distribution. Two alternative procedures were considered. Maximum- and minimum scores could have been taken from the empirical maximum and minimum values. However, this would have increased the dependence on the empirical dataset and therefore it was dismissed. A second alternative consisted in taking the theoretical maxima and minima as anchors. For example, the theoretical maximum of the core-self which was computed on the basis of 40 attributes would have been 40. However, this solution did not prove valid either: First, some of the variables (e.g., number of self-aspects that were generated spontaneously) did not have a theoretical maximum. Second, the relationship between theoretical and empirical maximums varied strongly across variables. For example, nobody in the sample attained a core-self of 40, whereas some persons showed the maximum scores on the value orientation scales. Adopting the theoretical maxima and minima as anchors, therefore, would have had different implications for each variable. This solution was therefore dismissed as well.

The profile approach developed in the present study is used to illustrate the differences between the measures, drawing on fictitious data of three participants. (Fictitious non-decimal values are used in order to facilitate understanding.) In order to facilitate understanding, not all features of SCM are used in the example, but only self-esteem, self-concept differentiation and coreself.

Table 21.
An Illustration of Similarity Assessment: Raw Data Matrix

	Self-concept differentiation	Coreself	Self-esteem
Participant A	2	1	2
Participant B	-1	3	0
Participant C	1	1	1
SCM-prototype	2	2	1

Note. In order to facilitate the understanding of the following mathematical procedures, decimals were dropped from this example.

In terms of distance measures, the city-block distance (also: L_1 -Norm or *Manhattan-metrics*) probably offers the easiest method to assess similarity. In principle, this technique consists of adding up the distances between two objects across all their features. For example, the city-block distance between Participant A and the SCM prototype would be $|2-2| + |1-2| + |2-1| = 0 + 1 + 1 = 2$.

Table 22.
An Illustration of Similarity Assessment: Distance Matrix According to L_1 Norm

	Participant A	Participant B	Participant C	SCM-prototype
Participant A				
Participant B	5			
Participant C	2	5		
SCM-prototype	2	5	2	

Thus, when using the city-block-metric, participants A and C demonstrate the highest similarity with the SCM-prototype. The formula for the Squared Euklidean distance is very similar. Squared Euklidean distance is the sum of the *squared* differences between the values, whereby big distances are assigned a relatively greater weight while small distances are weighed less heavily when computing overall similarity. Euklidean distances (resulting from extracting the root from the final sum) as well as squared Euklidean distances are frequently applied in cluster analysis. More recently, cluster analyses based on squared Euklidean distance have been especially popular in research on personality types (e.g., Asendorpf et al., 2001; Costa et al., 2002; Rammstedt et al., 2004). Thereby, each individual is described by the profile of scores with regard to certain variables (e.g., questionnaire scales, ratings, test scores). These profiles are grouped by cluster analysis into relatively homogeneous clusters. The similarity heuristics used to cluster objects is very frequently computed via Euklidean or squared Euklidean distances. Each cluster then represents a personality type, and the average profile of the cluster members describes a personality prototype.

In the present example as illustrated by table Table 23, the use of Squared Eukclidean distance yields the same results as before: again, participants A and C exhibit the greatest similarity with the SCM-prototype. However, considering the similarity scores between the participants, a change in the ranking has taken place: participant A and B are less similar to each other than participant B and C.

Table 23.
An Illustration of Similarity Assessment: Distance Matrix According to Squared Eukclidean Distances

	Participant A	Participant B	Participant C	SCM-prototype
Participant A				
Participant B	17			
Participant C	2	9		
SCM-prototype	2	11	2	

Cluster analyses are not the only examples where measures of distance are used to assess similarity. Distance measures have also been employed to assess interrater agreement. Here, profiles are defined by the answering or scoring patterns of a number of raters. The difficulty, then, is in finding an adequate method to capture similarity in terms of the shape, elevation, and scatter of scoring profiles. Previous suggestions to assess profile similarity frequently included distances or variances (e.g., Cronbach & Gleser, 1953; Du Mas, 1953). However, in the wake of the publication of an article by Cronbach (1955) using distance measures to assess similarity has become a very controversial issue in psychological research. The two most frequently mentioned caveats (cf. Armstrong, 1981) are perhaps:

(1) ...the confounding of sources of differences between two objects: For example, in terms of interrater agreement, differences between two rating profiles can be due to differences between objects; they can be due to differences in the overall biases of judges; they can be derived from the specific impression of a certain object on a certain judge, and finally, random error (Cronbach, 1955).

(2) ...the difficulty of interpreting the magnitude of difference scores. The magnitude is determined by both variation in profiles and the measurement scale. A detailed overview of methodological criticism regarding the use of distance measures is given by Edwards (1994; 1995; 2001; 2002).

More recent approaches to the assessment of interrater agreement draw more heavily on the use of correlation coefficients such as intraclass correlation (ICC, e.g., Armstrong, 1981; Asendorpf & Wallbott, 1979; Bartko, 1966; Cattell, 1949; Shrout, 1995; Shrout & Fleiss, 1979; Wirtz & Caspar, 2002). Intraclass correlation (ICC) can be defined as a correlation coefficient that is used in cases where the correlation of persons in a sample of variables is of interest (e.g., a number of raters estimates a person or a number of persons with regard to a number of variables), and not – as usual –

the correlation of variables in a sample of persons.⁶⁶ As will be seen, generating this kind of correlation requires the consideration of a number of prerequisites that are mostly irrelevant when correlating data in the usual way.

First of all, ICCs are appropriate for data with metric scaling. The basic principle underlying almost all ICCs is the reliability formula: Thus, ICC terms essentially reflect the proportion of the total variance that is attributable to genuine target differences.⁶⁷ For example, when the majority of the observed variance is due to systematic differences between target persons, high consensus is obtained and the ICC approaches one: in this case, the reliability of judgment would be close to perfect. In contrast, when the residual variance is large relative to the target person variance, consensus is low and ICC approaches zero. Different versions of ICC statistics are used depending on the selection of judges (fixed or random), the design of the study, the use of the findings, and the unit of analysis. The following factors have to be considered when deciding on which method to use (see Armstrong, 1981; Asendorpf & Wallbott, 1979):

1) Is the number of raters two or higher? Shrout states that “when only two judges are asked to rate targets, both Pearson and ICCs can be computed” (1995; p. 88). The difference between them is that “Pearson correlation is invariant to different mean rating levels, and thus it is sensible to compute when elevation differences are of no consequence” (idem). As a consequence, the utility of ICCs mainly applies to situations where more than two raters are to be considered, or where the absolute correspondence of two raters – correspondence not only in terms of the ranking of their ratings, but also in terms of the rating means – is of interest. This aspect is separately addressed in the next paragraph.

2) Should differences in rater means be taken into account? If only correspondence of rank orders is of interest (ratings are treated as quasi-ordinal data), variance due to differences in rater means is removed from the error term (*adjusted reliability*). Whenever the absolute correspondence between judgments is of interest (scatter *and* elevation), variance due to mean differences between raters is regarded as part of the error variance – in this case, reliability estimates are not adjusted for mean differences (*non-adjusted reliability*, Asendorpf & Wallbott, 1979)

⁶⁶ Another name for this type of correlation is Q-correlation. This name refers to Cattell's correlation classification system (1946). Cattell described six correlational techniques (R, Q, P, O, S, and T) derived from the various possible correlations (between rows and between columns) in three types of data matrices: Persons x Variables, Persons x Occasions, and Variables x Occasions. The familiar correlation between variables in a sample of persons is Cattell's R-technique whereas the reverse of this operation, the correlation between persons in a sample of variables is Cattell's Q-technique, and the type of correlation used is called Q-correlation (Ozer, 1993). Thus, Q-correlations and ICCs basically refer to the same type of correlation coefficients. However, the former term is most often used to classify correlation coefficients that describe scores that capture *item- or person-reliability*, that is, those parameters that reflect an orientation toward *intraindividual* variation, while the latter term mostly denominates scores that reflect *interrater reliability*.

⁶⁷ Alternatively – that is, when something other than interrater reliability or profile similarity is of interest – one could generate ICCs that reflect the proportion of the total variance that is attributable to genuine *item* or *rater* differences (Ozer, 1993).

3) Is the focus of interest on the reliability of *one average rater* or on the reliability of the *mean rating of a group of raters* (that is, the reliability of the item means when averaged across all raters)? The versions of the ICCs that are relevant to the description of interrater consensus are those that focus on *one average judge* (as opposed to the mean rating) as unit of analysis (Shrout, 1995).

4) Is generalizability of the data to other raters required, or is the focus only on the fixed set of raters? For the fixed judge case, inter-judge variance is entirely removed from the formula, so that ICC in this case is a measure of the internal consistency (interrelatedness) of ratings rather than agreement among judges on ratings.

5) Did the same set of judges or a different set rate each subject? This question is relevant to the previous criterion. If judges are considered random samples of the population of judges then it has to be taken into account whether or not the same judges rated each subject.⁶⁸ In cases where the same judges rated each subject, reliability has to be adjusted for mean differences of raters and hence is not regarded as part of the error variance.

Various other factors are reported in the literature that can be taken into account in order to make the reliability estimate even more precise. For example, variance of item means might be too small (Asendorpf & Wallbott, 1979). Hence, the classification given above only provides a synopsis of the most important and commonly cited coefficients (for further coefficients, see e.g., Armstrong, 1981; Asendorpf & Wallbott, 1979; Bartko, 1966; Cattell, 1949; Shrout, 1995; Shrout & Fleiss, 1979; Wirtz & Caspar, 2002). Table 24 gives an overview of the formulas used in each of the cases.

⁶⁸ Note that this differentiation is only important when judges are considered random, and hence, only the third row in Table 24 comprises two columns.

Table 24.
Formulae for ICCs Based on Use and Unit of Analysis

	Adjusted reliability (only rank order is compared)	Non-adjusted reliability (rank order and means are compared)
Two raters	$\text{Pearson} = \text{cov} / s_x * s_y$	$2 * \text{cov} / s_x^2 + s_y^2$
Two or more raters, fixed judges case → results cannot be generalized to other judges		
Individual rater unit of analysis	$\text{BMS} - \text{EMS} / [\text{BMS} + (K-1)\text{EMS}]$ (Armstrong: ICC ₃ ; Asendorpf: Formula 6)	—
Group of raters unit of analysis	$\text{BMS} - \text{EMS} / \text{BMS} = \text{Cronbach's } \alpha$ (Armstrong: ICC ₆ ; Asendorpf: Formula 12)	—
Two or more raters, random judge case → results can be generalized to other judges		
Individual rater unit of analysis	$\text{BMS} - \text{EMS} / [\text{BMS} + (K-1)\text{EMS} + K (\text{JMS} - \text{EMS}) / N]$ (Armstrong: ICC ₂ ; Asendorpf: Formula 7)	$\text{BMS} - \text{WMS} / [\text{BMS} + (K-1)\text{WMS}]$ (Armstrong: ICC ₁ ; Asendorpf: Formula 2)
Group of raters unit of analysis	$\text{BMS} - \text{EMS} / \{[\text{BMS} + (\text{JMS} - \text{EMS})] / N\}$ (Armstrong: ICC ₅)	$\text{BMS} - \text{WMS} / \text{BMS}$ (Armstrong: ICC ₄ ; Asendorpf: Formula 4)

Note. BMS = Between-Target Mean Square (or variance of item means); WMS = Within-Target Mean Square or variance of items within target; EMS = Error Mean Square or residual variance; JMS = Judge Mean Square or variance of rater (or judge) means; K = number of raters; N = population of raters

Which of the coefficients named above is most apt for the present study? Would distance measures provide a good estimation of similarity? In the present study, computing distance measures would imply computing the distance between an empirical profile and the theoretically derived profile. This proceeding, however, operates on the assumption that it is primarily the elevation of scores, and not their scatter, which carries the most important information – profile scatter is only considered in an indirect way. Hence, for the present study, the importance of the profile scatter would clearly be underestimated when using distance measures. A second, even more compelling aspect as to why distance measures are not apt for the present study is that they require the elevation of scores that constitute the profile by themselves to be meaningful, not simply their relative positioning towards each other. However, this condition is not completely fulfilled in the present case: elevation of scores draws on the z-distribution, and therefore varies depending on the sample. As a consequence, profile elevation is relative rather than absolute. Hence, since a maximum generalizability of the rules is desired in the development of this profile measure, the application of distance measures would clearly not be useful.

Similarity measures thus prove more valid estimates of similarity for the present purpose. However, which of the similarity measures that have been introduced should be applied? For the present study, since only two rows of data are compared with each other, Pearson and ICC will yield similar results. However, as opposed to Pearson correlation coefficients, ICCs offer the possibility to take differences in mean levels of observers into account. Is this intended in the present study? As

mentioned before, considering the elevation of scores should be avoided because of their sample-dependency. Hence, only adjusted ICCs prove to be useful indicators for the present purpose, because they neglect elevation and only assess similarity of rank orders. When choosing between adjusted ICCs, it is of further importance that the estimate of reliability (i.e., similarity between profiles) does not have to be generalized, since it is used as an estimator of the similarity between two profiles rather than as an estimator of reliability that has to be generalizable to other samples. Hence, only the two terms in the fixed judge case are of interest. Which of these two provides a better estimate of similarity in the present study? Criteria for similarity (or reliability) assessment are stricter here than in the case of the group of judges, because the denominator is larger due to the addition of error variance. Whenever it is intended to measure interrater consensus, therefore, those versions of the ICC are applied that focus on the individual judge.⁶⁹ As a stricter estimate of similarity is intended here, the formula for the individual judge case, that is, the formula in the cell on the upper left is most useful to apply.⁷⁰

Which similarity matrix would emerge using this kind of ICC and the Pearson correlation in the present example? In the following, first the Pearson correlation and then the ICC are used to assess similarity.

The similarity matrix yielded by using the Pearson correlation can be seen in Table 25.

Table 25.
An Illustration of Similarity Assessment: Similarity Matrix Based on the Pearson Correlation

	Participant A	Participant B	Participant C	SCM-prototype
Participant A				
Participant B	-1.0			
Participant C	not applicable	not applicable		
SCM-prototype	-.50	.28	not applicable	

Note: It is not possible to calculate correlation with the scores of participant C, because variance in C's scores is zero.

When using the Pearson correlation, participant B turns out to be most similar to the SCM-prototype. That is, in this case, the use of the Pearson correlation yields results that strongly diverge from the results yielded when using distance measures, where participants A and C were closest to the SCM-prototype. Which scores emerge when using ICC according to the formula given above? Because

⁶⁹ Using the Spearman-Brown-formula on the reliability scores derived from the formulae for the individual judge cases will eventually yield results equivalent to those derived by applying the formulae in the group of judges cases – hence, reliability will markedly increase, especially when adding the first few judges (Armstrong, 1981).

⁷⁰ As it will be shown, results, when applying this ICC formula, are very much akin to those resulting from applying the Pearson correlation. Only small numerical differences between the Pearson correlation and ICC will be observed due to the way the variances of the ratings are taken into account: The Pearson statistic essentially takes a geometric average of the variance between objects or judges, whereas the ICC statistic takes an arithmetic average (Shrout, 1995). These calculation methods will only make a noticeable difference if the variance of the ratings or scores across targets is very different for two targets. Thus, the chief limitations of the Pearson correlation when compared with the kind of ICC applied here are that (a) it is not well suited for estimating correlation when the number of judges is higher than two, (b) it does not allow the investigator to consider the effect of differences in means and variances between the objects of comparison.

there are only pairwise comparisons in the present example, the results should not differ greatly from the results yielded when using Pearson correlation.

Table 26.

An Illustration of Similarity Assessment: Similarity Matrix Based on Q-correlation

	Participant A	Participant B	Participant C	SCM-prototype
Participant A				
Participant B	-1.0			
Participant C	<i>not applicable</i>	<i>not applicable</i>		
SCM-prototype	-.50	.28	<i>not applicable</i>	

Note: It is not possible to calculate correlation with the scores of participant C, because variance in C's scores is zero. In the present data set, no case exhibited zero variance, and hence, no case had to be dropped because of profile flatness.

Indeed, in the present example, ICC yields exactly the same results as the Pearson correlation, that is, participant B again is estimated to be most similar to the SCM-prototype.⁷¹

6.3.1.2.3 Establishing a Self-Concept Prototype Indicative of Adjustment

To ensure that it was the specific constellation and not the self-concept components by themselves that accounted for the association with self-concept maturity, the specified profile had to be compared with another profile indicative of adjustment (see section 3.3.2). In addition, the availability of two different measures – one indicative of personality growth, the other indicative of adjustment – allowed a conjoint analysis of personality growth and adjustment as reflected in the self-concept. For this purpose, based on the relationships that were shown for the self-concept components and adjustment (see 2.5), a profile was constructed to reflect maximum adjustment. Along the lines of the derivation of the SCM similarity index, as a first step, theory-based levels were specified as being indicative of adjustment for each self-concept component (see Figure 10). Drawing on the assumptions made in section 3.3.2, the resulting profile exhibited medium levels with regard to complexity of self-concept content, complexity of affect, and value orientation, whereas a maximum score was expected in terms of integration and a close-to-maximum score in terms of self-esteem. The resulting profile was depicted in Figure 10 and is displayed here, again, for better understanding. It presents a prototype for adjustment as reflected in the self-concept. As mentioned before, analogous to the SCM similarity index, an individual's score for his or her similarity with the idealized adaptive self-concept profile will be termed *self-concept adjustment similarity index* or *SCA similarity index*.

⁷¹ Scores were not the same when computing Pearson correlation and ICC in the much more complex final data set. Hence, computing ICCs instead of Pearson coefficients was not redundant.

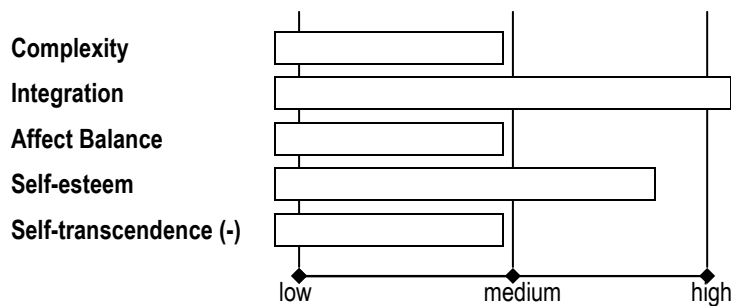


Figure 10 (repeated depiction). An illustration of a self-concept profile indicative of a maximum level of adjustment

Computation of the SCA similarity score corresponds exactly to the computation of the SCM similarity score, and will therefore not be discussed in any more detail at this point.

Following this description of the derivation of variables related to the self-concept, in the following, other measures used in this study will be presented. Next to the two variables related to the self-concept (SCM and SCA) and demographics (see Appendix A10), four psychological domains were of particular relevance for the present study (see Figure 14): First, various measures of *personality growth* were applied to assess convergent validity of the new measure. Second, because of the close theoretical link frequently posited between personality maturity and adjustment (e.g., Alker & Gawin, 1978; Diener & Fujita, 1995; Keyes et al., 2002; McCrae & Costa, 1983, 1991; Ryff, 1995; Schmutte & Ryff, 1997; Urry et al., 2004; Vandewater et al., 1997), and to assess discriminant validity, the assessment of *adjustment* was of importance for the present study. Furthermore, as another domain to test for discriminant validity, and since personality growth is often associated with cognitive development (e.g., P. B. Baltes & Smith, 1990; Kunzmann & Baltes, 2003a; Maciel, Heckhausen, & Baltes, 1994; Staudinger, Lopez, & Baltes, 1997; Staudinger, Maciel, Smith, & Baltes, 1998; Sternberg, 1985, 1990; Sternberg & Ruzgis, 1994), measures of *intelligence* were applied. Fourth, critical life events which are often considered as a vital concomitant of growth, were assessed. Fifth, measures of *self- and life reflection* were used, because – as mentioned before – the way individuals think about themselves and about their life experiences is regarded as a crucial constituent in the emergence of personality maturity (e.g., Filipp & Ferring, 2002; Park, 1999; Tedeschi & Calhoun, 1995, 1996). For most of the domains, several scales and inventories were used in assessment. The following paragraph will describe the instruments in greater detail.

6.3.2 Personality Growth

Under this heading, those instruments are summarized that assess personality growth as defined in the very beginning of this work (see section 1.2) and through the theories of personality growth presented in section 3.1. Measures of personality growth comprise ego development (Loevinger, 1998b), self-related wisdom (Mickler, 2005), behavioral rigidity (reversed) (Krampen, 1977),

the NEO-PI-R subscale openness to experience (Costa & McCrae, 1988), the CPI-subscale psychological mindedness (Gough & Bradley, 1996), and two subscales from the PWB scale (Ryff, 1989). The next paragraphs will give a detailed description of each of these instruments.

6.3.2.1 Ego Development

As a first measure to assess personality growth, the Washington University Sentence Completion Test to measure ego development was used (WUSCT, Loevinger, 1998b). The test is empirically well validated and because of its projective technique avoids the problem of social desirability. The test comprises 36 incomplete sentences such as „What gets me into trouble is...“ or „Raising children...“, and comprises separate forms for men and women, which differ in terms of items related to gender-issues. Participants are asked to complete the sentences spontaneously. Sentence completions subsequently are judged according to a manual by two trained raters in terms of the level of ego development they represent. Questionnaires with more than 9 (25%) answers missing were excluded from the judgment process, as recommended in the literature (e.g., Holt, 1947, 1980). This was the case for 9 participants. The manner in which these cases were dealt with is described below (see 6.3.7).

Loevinger conceived the stages of ego development as a successive progression toward psychological maturity, developing along the four dimensions of impulse control, interpersonal style, conscious preoccupations, and cognitive styles (Blasi, 1998; Loevinger, 1976; Loevinger & Wessler, 1978). Loevinger's test has been applied in various settings, and thus, its meaning and relation with other measures of personality is well established (see Manners & Durkin, 2001, for a review). Rater judgment converged on 75% of participant ratings (= Cohen's Kappa: .62) in the present study. This level of interrater consensus is in accordance with levels of interrater agreement in other studies (e.g., Einstein & Lanning, 1998).

6.3.2.2 Psychological Well-being: Personal Growth and Purpose in Life

A further mean to assess personality growth is by way of some scales from the psychological well-being questionnaire (PWB) by Carol Ryff (1995). Levels assessed by the subscales (environmental mastery, self-acceptance, personal growth, purpose in life, autonomy, positive relations with others) are supposed to give an estimation of a person's level with regard to "Eudamonic well-being".

The test comprises 54 items (i.e., 9 per subscale) that are answered on 5-point rating scales, ranging from 1 ("not at all") to 5 ("strongly applies"). Means are calculated for each subscale. The PWB-scale was chosen because it represents another alternative to measure personality growth, and is widely used in research on adjustment and personality growth (e.g., Compton, 2001a; Helson &

Srivastava, 2001; Keyes et al., 2002; Ryff & Keyes, 1995; Sheldon et al., 2004 for some examples). Coefficients of internal consistency range from .59 (autonomy) to .73 (environmental mastery) and can be considered satisfactory.

The pattern reported in section 3.1.5, with only purpose in life and personal growth as dimensions of personality growth, and all other PWB scales as dimensions of well-being, was mostly confirmed in the present sample. A principal component analysis with oblique rotation -- factors were not expected to be orthogonal -- yielded two factors, explaining 64 percent of the variance (Appendix A14, Table 4): environmental mastery, self-acceptance, and autonomy loaded on the first factor (explaining 40%), whereas personal growth, purpose in life and positive relations loaded on the second factor (explaining 18%). Additionally, self-acceptance, purpose in life and positive relations showed high loadings (>.4) on both factors. In the present study, only personal growth and purpose in life will be used as measures of personality growth. Positive relations, although having a high loading on the personality growth factor, seems to be of vital importance for adjustment, too, and therefore seems inappropriate to use as an indicator for identifying discriminant validity.

6.3.2.3 Openness to Experience

The revised NEO personality inventory (NEO-PI-R, Borkenau & Ostendorf, 1989; Costa & McCrae, 1988) measures five factors that allegedly constitute the basic dimensions of personality, namely neuroticism, extraversion, openness to experience, agreeableness, and conscientiousness by a 5-point Likert scale answering format. The short version, which was developed in a study by Staudinger, Fleeson, and Baltes (1999) comprises 30 items, with five items representing each of the dimensions. Openness to experience is the most contentious scale among the Big Five scales. Not only has there been heated debate about an appropriate label for the dimension (some alternative labels are, e.g., intellect, culture, sensation vs. intuition, etc.; see McCrae & Costa, 1997), but there have been even doubts as to whether this scale would even represent a stable dimension of individual differences like the other scales, or if it would rather serve as an indicator of cognitive abilities or education level (ibid). In contrast to these notions, McCrae and Costa see openness as a stable character disposition denoting the “breadth, depth and permeability of consciousness” (p. 826). The relation of openness to experience and personality growth has been discussed in section 3.4.1.4: it was assumed that openness would operate as an antecedent and, thus, also as a correlate of personality growth.

Internal consistency of the scale was very low (Cronbach's $\alpha = .25$) in the present study. However, the five items of the scale were chosen to represent the each of the five subscales of openness (namely openness for imagination, aesthetics, feelings, actions, ideas and values). Within

each of these facets, their selectivity is satisfactory ($>.42$, Ostendorf & Angleitner, 2004). Moreover, the short version exhibits a sufficiently high correlation with the long version ($r = .61$, Staudinger et al., 1999). Hence, it is assumed that the openness scale presents a valid measurement of openness for experience despite its low internal consistency.

6.3.2.4 Self-related Wisdom

Next to the measure for self-concept maturity, another newly developed instrument used in this study offers an attempt to conceptualize personal wisdom based on the Berlin wisdom paradigm (e.g., P. B. Baltes, Smith, & Staudinger, 1992). As discussed in section 3.4.1.2, self-related wisdom should exhibit an especially close relationship with SCM because of its conceptual similarity. Self-related wisdom is assessed by an expert rating of think-aloud protocols about important matters in one's life, such as "What am I like in friendships?" (see Appendix A11). Protocols are rated in terms of five criteria, namely

6.3.2.5 Psychological Mindedness

Psychological Mindedness is a subscale of the California Personality Inventory (Gough & Bradley, 1996) and is assumed to assess the tendency to think in psychological, or introspective terms about oneself, other people, and interpersonal relations. Its relatedness with measures of personality growth has been explicated in section 3.4.1.5.

Participants respond with yes or no to the 22-item German version of the psychological mindedness subscale. The coefficient of internal consistency (Cronbach's alpha) was .53 in the present study, which, seems sufficient with regard to the huge variance in terms of item content.

6.3.2.6 Behavioral Rigidity

The behavioral rigidity questionnaire (Krampen, 1977) was used to assess flexibility as an important precursor of personality growth (see section 3.4.1.6 for a more detailed discussion of the relationship between rigidity and personality growth). It comprises 25 statements answerable with "right" or "wrong". A scale score is yielded by summing up all answers (2 points per "right", 1 point per "wrong"). High scores reflect a high level of behavioral rigidity. Internal consistency in the present study was satisfactory (Cronbach's alpha: .81).

6.3.3 Adjustment

Global judgments of life satisfaction, as well as three of the PWB-scales, and four NEO-scales were used to assess well-being and adjustment.

6.3.3.1 Life Satisfaction

To assess life satisfaction, two single items were used: “How satisfied are you with your past life in general?” and “How satisfied are you with your present life in general?” Questions could be answered on a rating scale ranging from 1 (“not at all”) to 5 (“very satisfied”). A mean score was generated from the two single items. In the present sample, the internal consistency (Cronbach’s Alpha) was .60. Life satisfaction is often considered to be the trait indicator of subjective well-being, and its cognitive component as opposed to positive and negative affect. A global assessment of life satisfaction through the use of a single-item scale is quite common in previous literature (Diener, 1994; Eid & Diener, 2004; Pavot & Diener, 1993) and has been proven equally valid when compared to multiple item scales. Test-retest correlations are even higher for global judgments of SWB. For example, Pavot and Diener (1993) found a two months test-retest correlation of $r = .82$ for global life satisfaction judgments. Similarly, it has been shown that the variance due to occasion-specific variability only amounts to 7% to 12% (Deinzer, Steyer, Eid, Notz, & et al., 1995), corroborating the notion of life satisfaction as a relatively stable parameter.

6.3.3.2 Psychological Well-being: Autonomy, Environmental Mastery, and Self-Acceptance

Ryff’s measure of PWB has been introduced above (section 6.3.2.2). In order to assess the psychological underpinnings of well-being, the PWB scales of environmental mastery, self-acceptance, and autonomy were used. All scales exhibit satisfactory internal consistencies (Table 27). Positive relations were not included, because it seemed to be of relevance for both personality growth and well-being: The ability to have intimate relationships and to commit oneself to the goals of others is clearly a characteristic of a mature personality (Allport, 1937/1961; Heath & Heath, 1991; Maslow, 1994), but at the same time represents an important prerequisite for adjustment.

6.3.3.3 Neuroticism, Extraversion, Agreeableness, and Conscientiousness

From the NEO-PI-R (see section 6.3.2.3), the scales measuring neuroticism, extraversion, and agreeableness were chosen as indicators of adjustment. The neuroticism scale is intended to measure a personality trait that is marked by a tendency to engage in neurotic behavior, thoughts and feelings, such as anxiety, emotional instability, and a depressive mood. Extraversion, in contrast, is primarily intended to measure outgoingness and ease in handling social interactions. Neuroticism, as mentioned above (section 6.2.4), is commonly used as an indicator of low levels of subjective well-being and negative emotionality, just as extraversion has consistently been shown to be a correlate of positive

affect and high levels of subjective well-being (Compton, 1998; Costa & McCrae, 1980; Elliot & Thrash, 2002; Fujita, 1991). The internal consistencies of both scales were satisfactory, $\alpha_{\text{neuroticism}} = .75$, $\alpha_{\text{extraversion}} = .55$.

Additionally, feeling good and being satisfied should not be felt on account of others, but in accordance with other's needs and social roles. Therefore, agreeableness, measuring the capability of interacting with others in a sincere, balanced, and capable way, was included as a further indicator of adjustment. Its internal consistency in the present study was acceptable, $\alpha_{\text{Agreeableness}} = .42$. Moreover, conscientiousness, being an indicator of foresightedness, orderliness, and achievement, was adopted as a further indicator of adjustment because it provides a more abstract parameter of the ability to adapt, independent from the ability to handle social interactions. As such, it also appears to be a parameter of high diagnostic value when it comes to the present concept of adjustment. Its internal consistency was good, $\alpha_{\text{conscientiousness}} = .70$.

6.3.4 Intelligence

Because personality growth is often associated with cognitive development (e.g., P. B. Baltes & Smith, 1990; Kunzmann & Baltes, 2003a; Maciel et al., 1994; Staudinger et al., 1997; Staudinger, Maciel, Smith et al., 1998; Sternberg, 1985, 1990; Sternberg & Ruzgis, 1994), the assessment of intelligence was vital within the framework of the present study. A further reason to assess intelligence was its key role in identifying age differences. Although there are gross differences between younger and older adults in terms of fluid intelligence, crystallized intelligence tends to maintain the same level or can even increase far into old age (e.g., P. B. Baltes, Dittmann-Kohli, & Dixon, 1984). The two components of intelligence, crystallized and fluid intelligence, were measured by the vocabulary subscale of the Hamburg-Wechsel Intelligence Test (Wechsler, 1982) and the Raven Advanced Progressive Matrices (Raven, 1971) respectively.

6.3.4.1 Fluid Intelligence

To assess fluid intelligence a shortened version of the *Advanced Progressive Matrices* (first 18 items of set II) were used (APM, Raven, 1971), which have been proved useful especially with regard to age comparisons (e.g., Lindenberger & Baltes, 1996; Staudinger et al., 1997). The test comprises 18 matrices that have to be completed according to logical reasoning, and contain no written language. Answers are given in multiple-choice format. This version of APM takes 15 minutes to complete (speed condition). Scores are given according to the number of correct answers. The test is one of the best-validated instruments in intelligence testing (e.g., Kline, 1993) and has frequently been used in the

context of lifespan developmental research (e.g., P. B. Baltes & Kliegl, 1992; P. B. Baltes, Kliegl, & Dittmann-Kohli, 1988). Because it is a speed test, internal consistency is no meaningful parameter. Likewise, there was no repeated measurement of fluid intelligence, so the test-retest-correlation in the present sample is not known.

6.3.4.2 Crystallized Intelligence

To assess crystallized intelligence, the vocabulary subscale from the HAWIE was employed (Wechsler, 1982). An individual setting is needed to complete the test: participants are asked to explain a total of 52 increasingly more difficult words given by the experimenter, one after another. The test is interrupted if the participant is unable to explain five words in a row. According to the coding instructions provided by Wechsler, correct explanations are counted as 2, partly correct answers as 1, and incorrect answers as 0 points. The sum of points represents the final score. The test is a well-validated measure of crystallized intelligence also with regard to older persons, and is highly reliable (e.g., Matarazzo, 1972; Staudinger et al., 1997).

6.3.5 Life Experience and Experience Processing

In the process of personal growth, life events, and the ways of experiencing and reflecting on them exert an important influence. These two facets were assessed in the present study. One questionnaire dealt with styles of life review and self-reflection; another was intended to assess life events in different domains of life.

6.3.5.1 Styles of Life Review and Self-Reflection

To measure quality and quantity of self-reflection, four items were included to measure self-knowledge from the self attention questionnaire (SAM, Hoyer & Kunst, 2001), six items used in the MIDMAC- survey (cf. eg., Staudinger, Maciel, Smith et al., 1998), and eight items from the life review questionnaire (Staudinger, 2001). Most items are answerable on a 4-point rating scale ranging from “not at all” to “very much”, four items from the Life-Review questionnaire about the frequency of self-reflection can be answered using a 5-point scale ranging from “hardly ever” to “very often” (Appendix A12). Scales measured by the questionnaire comprise *self knowledge* (*Cronbach's* $\alpha = .74$), *learning from the past* (*Cronbach's* $\alpha = .50$), *ignoring past and future* (*Cronbach's* $\alpha = .53$), and *perceived use and frequency of thinking about self* (*Cronbach's* $\alpha = .76$).

6.3.5.2 Life Events

To assess *life events*, an inventory by Staudinger (1989) based on the Psychiatric Epidemiology Research Interview (PERI) Life Event Scale by Dohrenwend and colleagues (Dohrenwend, Krasnoff, Askenasy, & Dohrenwend, 1978) was used (Appendix A13). The scale listed specific events from eleven areas (childhood; school/education; professional life; love/partnership; own children; family; home/accommodation; law/delinquency; finances, social relationships/friendship; health). For each event, participants are asked whether they have experienced the specific event (+1 point), and – if yes – whether they have gained insight through it (+1 point). This aspect was introduced by Staudinger because it was assumed that personal meaning of a life event is even more important than its mere occurrence in an individual's life. Points can be summed up with regard to specific domains and across domains. In order to have the option of comparing domain-specific life events, in addition to absolute scores, relative scores were computed for each domain by setting the number of checked items in each domain in proportion to the total number of items with regard to this domain. Building on these relative scores, a principal component analysis with Varimax rotation was performed that yielded three factors with an Eigenwert higher than unity (Appendix A14, Table 5): (1) close life context: one's own welfare and significant others (own children, partnership, family, health), (2) wider life context: institutional environment (delinquency, profession, finances, accommodation); and (3) former life context (childhood, school, social relationships). Internal consistency with regard to all three scales was satisfactory, $\alpha_{\text{close life context}} = .71$, $\alpha_{\text{wider life context}} = .71$, $\alpha_{\text{former life context}} = .70$. Mean scores for each scale were computed.

Table 27 summarizes the measures used for the assessment of each of the five areas of psychological functioning, that is, personality growth, adjustment, intelligence, life events, and self- and life reflection.

6.3.6 Demographics

Prior to testing, participants were asked to complete a demographic questionnaire (Appendix A10). The questionnaire comprised questions concerning age, gender, education, profession, life satisfaction, and health. Results that are relevant for the present study are reported in Table 16 and Table 17.

Table 27 gives an overview of the measures used in the present study and information about the internal consistency of the scales.

Table 27.
Overview of Measures Used in the Present Study

Constructs	Method	α
Personality growth		
Ego Development	Washington University Sentence Completion Test (Loevinger, 1998), 36 items	.62 ^a
Psychological Well-being		
Personal growth	PWB Scale (Ryff, 1995), 9 items	.73
Purpose in life	PWB Scale (Ryff, 1995), 9 items	.63
Big Five personality		
Openness to experience	NEO-PI-R (Borkenau & Ostendorf, 1989), 5 items	.27
Self-related wisdom	Self-related wisdom (Mickler & Staudinger, 2004)	
Psychological mindedness	California Psychological Inventory, 22 items	.53
Behavioral rigidity	Rigidity Scale (Krampen, 1977), 25 items	.81
Adjustment		
Life Satisfaction	2 items	.60
Psychological Well-being		
Autonomy	PWB Scale (Ryff, 1995), 9 items	.59
Environmental mastery	PWB Scale (Ryff, 1995), 9 items	.77
Self-acceptance	PWB Scale (Ryff, 1995), 9 items	.65
Big Five Personality		
Neuroticism	NEO-PI-R (Borkenau & Ostendorf, 1989), 5 items	.77
Extraversion	NEO-PI-R (Borkenau & Ostendorf, 1989), 5 items	.56
Agreeableness	NEO-PI-R (Borkenau & Ostendorf, 1989), 5 items	.42
Conscientiousness	NEO-PI-R (Borkenau & Ostendorf, 1989), 5 items	.70
Intelligence		
Fluid Intelligence	Advanced Progressive Matrices (Raven, 1971), 18 items	
Crystallized intelligence	Hamburg-Wechsler Intelligenztest für Erwachsene, Vocabulary Subscale (Wechsler, 1982), 52 items	
Life Events and Self- and Life Reflection		
Styles of Self- and Life Reflection		
Self-knowledge	Self Attention Scale (Hoyer & Kunst, 2001), 4 items	.74
Learning from the past	MIDMAC survey (e.g., Staudinger et al., 1998), 2 items	.50
Ignoring past and future	MIDMAC survey (e.g., Staudinger et al., 1998), 4 items	.53
Perceived use and frequency of self-reflection	Life Review Questionnaire (Staudinger, 2001), 8 items	.76
Life Events		
Close life context	Life Event Scale (Staudinger, 1989)	.71
Wider life context	Life Event Scale (Staudinger, 1989)	.71
Former life context	Life Event Scale (Staudinger, 1989)	.70

^aCohen's Kappa is reported here.

Additional to the single measures, domain scores were computed. For this purpose, all scales listed under a certain predictor domain were z-standardized and averaged. For example, the domain score for intelligence is computed by z-standardizing fluid and crystallized intelligence scores and subsequently computing their average.

6.3.7 Data Screening: Missing Value Analysis, Dealing with Outliers

Prior to analyses, the variables above and the variables involved in measuring SCM were examined for accuracy of data entry, missing values, and fit between their distributions and the assumptions of multivariate analysis.

Only ego development had missing values on 5.7% of the cases – 5% generally is regarded as the highest acceptable amount of missing values (Tabachnick & Fidell, 2001). Separate variance *t* tests showed no systematic relationship between missingness on ego development and any of the other variables, $p > .05$. A closer analysis revealed that the reason for missing data in eight cases was the lack of a rating by one judge. Because interrater reliability was sufficiently high (75% rater consensus), deriving scores for these cases by the available judge rating was considered an acceptable solution for estimating the missing value. Two cases had to be eliminated from analyses involving SCM or SCA, because two of the variables needed to compute the similarity score were missing. Since the number of units of measurement is very low anyway, two out of 10 variables missing is not acceptable, and no similarity score was computed for these participants.

Ten cases with extreme *z* scores (i.e., *z*-value in excess of 3.29, e.g., Tabachnick & Fidell, 2001) were found to be univariate outliers, one of them through Mahalanobis distance was additionally identified to be a multivariate outlier with $p \leq .01$. The following paragraph gives a short description on how outliers were dealt with.

With regard to the SCM similarity score, there were two cases lying outside the normal range: one of these cases was excluded from analyses involving the SCM similarity score because his/her extremely low score (SCM similarity score = -1.00; $z = -4.77$) seemed to be due to the fact that the person had only provided two self-aspects, which varied extremely little. The other case had an extremely high score (SCM similarity score = .98; $z = 3.43$). However, the high score seemed to be due to a true correspondence between the person's profile and the SCM similarity score. For this reason, the case was retained, yet to avoid distortion of analyses, the case was assigned the highest value that did not produce an outlier (Tabachnick & Fidell, 2001).

Univariate outliers were found with regard to PWB personal growth, PWB self-acceptance, and NEO agreeableness. One person was found to have extremely low scores both on PWB self-acceptance and NEO agreeableness, which corroborated the assumption that the score was not an artifact and had to be retained. Again, the scores were replaced by less extreme scores in the described fashion.

Distributions of all variables were checked for normality using the Kolmogorov-Smirnov test (for a complete overview of scale statistics, see Appendix A15, Table 6 and 7). Significant deviances from

normality were detected for life satisfaction, fluid intelligence, crystallized intelligence, ego development, PWB personal growth, self-knowledge, ignoring past and future, learning from the past and perceived use and frequency of self-reflection. Deviations from normality can be compensated by scale transformations, which, however, make the interpretation of results more difficult. Transformation, therefore, is primarily recommended in cases where scales are not meaningful by themselves or not well-known (Tabachnick & Fidell, 2001). In contrast, most of the tests where normality was violated in the present data are widely used. Additionally, inferential statistics used in the present study are resistant to violations of normality (*idem*). Hence, non-transformed data were used in the analyses.

7 Results

In correspondence with the classification of the hypotheses, this part is separated into two major complexes. First, hypotheses concerning age differences in self-concept components will be addressed. The second section will deal with the hypotheses regarding personality growth. SCM will be located with respect to the previously identified four domains of psychological functioning (i.e., personality growth, adjustment, intelligence, and experience). As an additional validation of the concept, SCM will be compared with SCA. A last section deals with the joint operation of the two parameters, building on the analyses of Helson and Srivastava (1997) and Labouvie-Vief (2003) presented above (see 3.1.5 and 3.1.6).

7.1 An Age Group Comparison of Self-Concept Components

In the following, analyses used to test hypotheses on each component will be presented. All analyses in this part have been computed with SPSS, version 12.0.1 for Windows. In all cases, one-way between-subject ANOVAS were used to test for age differences.

7.1.1 Age Differences in Number of Self-Aspects

No differences in number of self-aspects were expected between younger and older adults. Indeed, the respective analyses show that the number of aspects and the number of aspect categories – the two parameters that represent complexity of content – hardly differ between age groups: young adults on average listed 6.88 ($SD = 2.71$), and older adults 6.92 ($SD = 2.25$) self-aspects, $F_{1/167} = .01$; $p > .10$; $\eta^2 = .00$ (see Figure 17). Number of self-aspects ranged from 2 to 12. Similarly, for aspect classes, no differences existed when compared with number of aspect classes generated by younger adults. Younger persons' self-aspects could be sorted, on average, into 5.61 ($SD = 2.09$) different categories, and older adults' into 5.59 ($SD = 1.59$), $F_{1/165} = .00$; $p > .10$; $\eta^2 = .00$ (see Figure 17). Hence, the hypothesis that number of self-aspects does not vary between age groups can be confirmed.

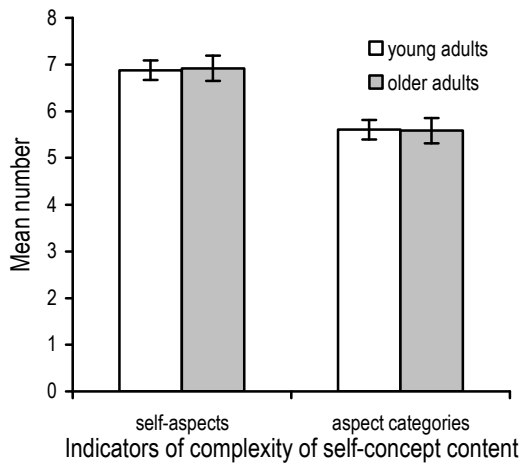


Figure 17. Indicators of self-concept complexity (number of self-aspects) across age groups (Means and Standard Errors)

Examining correlations of variables of complexity with chronological age *within* age groups yielded no significant results, indicating that there did not exist an age-related loss or gain of complexity within the age groups, either.

7.1.2 Age Differences in Similarity of Self-Aspects

In terms of similarity of self-aspects, it was assumed that older adults would exhibit higher scores than younger adults. Integration consisted of two facets: the average intercorrelation between the adjective ratings across self-aspects (SCD), and the number of adjectives that applied equally across all aspects (“core-self”). Results showed that the size of the coreself indeed differs strongly between age groups in the expected direction (see Figure 18): whereas younger adults only rated 15.3% ($SD = 12.99$) of the 40 attributes equally across self-aspects, older adults did so in 30.5% ($SD = 15.33$) of the 40 cases, $F_{(1/159)} = 46.95$, $p \leq .01$, $\eta^2 = .23$. In terms of SCD, age-discrepancy was similarly high (see Figure 18): for younger adults, the mean intercorrelation between self-aspects was $r = .53$ ($SD = .19$), whereas for older adults, the respective correlation was $r = .68$ ($SD = .20$), $F_{(1/163)} = 23.73$, $p \leq .01$, $\eta^2 = .13$.⁷² Thus, the hypothesis that older adults showed higher levels of similarity of self-aspects is confirmed by the findings.

⁷² To compute mean correlations, Pearson correlations coefficients were transformed into Fisher-z-standardized scores. Results were re-transformed into Pearson correlation coefficients.

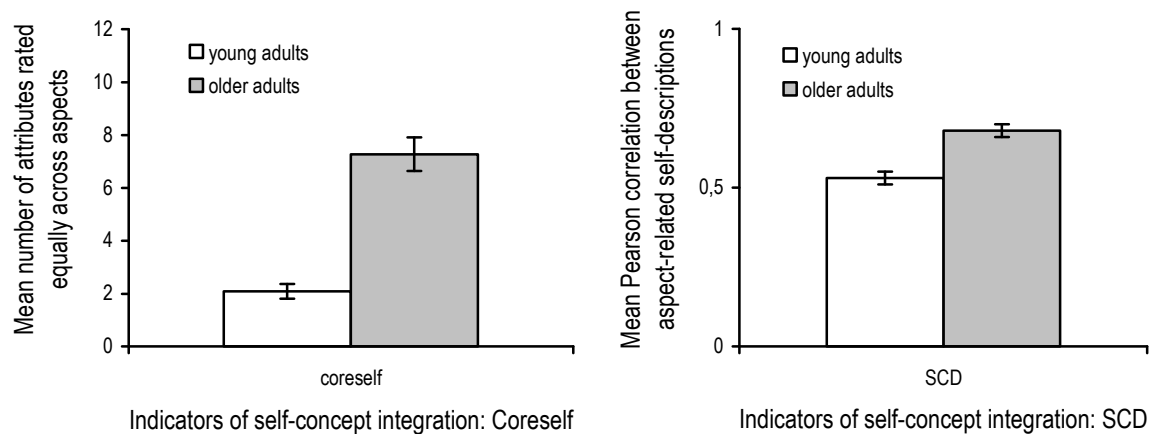


Figure 18. Indicators of similarity of self-aspects across age groups

Of the two indicators of integration, *coreself* did indeed correlate significantly with chronological age within the age group, that is, in older adulthood, the tendency to describe oneself along the same dimensions, independent from the context, still seems to be increasing, $r = .22$, $p \leq .05$. In contrast, no within-group correlation with age was found for SCD.

7.1.3 Age Differences in Affect Balance

It was expected that younger adults would exhibit higher levels of affect balance in their self-concept than older adults. As an index of affect balance, in the present study, the difference between the mean rating across positive and negative self-descriptive attributes was computed. Hence, low scores imply a high balance between positive and negative self-related affect. A significant difference between the age groups was found. As can be seen from Table 28, older adults' affect balance was significantly lower than younger adults' affect balance. On close examination, this effect appeared to be due to higher mean scores for self-descriptive attributes with a negative connotation in the younger sample, whereas means in terms of positive self-descriptors hardly varied.

Table 28.
An Age Comparison on Three Affect-Related Aspects of the Self-Concept

	younger adults		older adults		<i>F</i>	<i>df</i>	η^2
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
affect balance ^a	1.35	0.67	1.76	0.60	16.52**	1/164	.09
positive self-descriptors (1-5) ^b	3.71	0.41	3.77	0.52	.61	1/165	.00
negative self-descriptors (1-5)	2.37	0.39	2.01	0.39	33.91**	1/164	.17

^a Lower scores indicate higher levels of affect balance.

^b Numbers in brackets indicate the theoretical range of the respective construct.

** $p < .01$

Thus, older adults did not seem to have gained in positive self-referent affect, but instead seemed to have decreased in negative self-referent affect when compared with younger adults. Also

note the pattern of age differences in standard deviations: standard deviations of negative self-descriptors are the same for old and young adults, whereas standard deviation for self-descriptors associated with positive affect are higher for older adults, $p \leq .10$ (Levene's test), perhaps hinting at a trend towards higher emotional complexity in terms of positive emotions in old age. Age differences in affect balance and self-descriptors associated with positive/negative affect are illustrated in *Figure 19*.

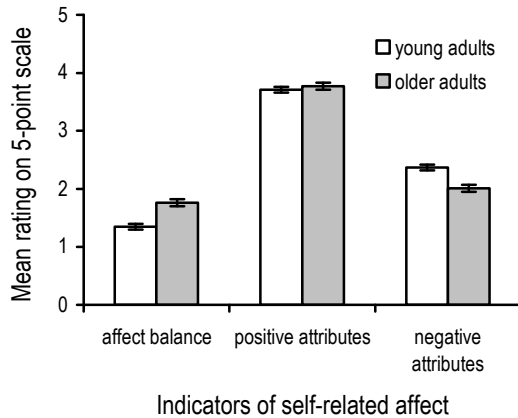


Figure 19. Indicators of affect balance and positive / negative self-related affect across age groups (Means and Standard Errors).

Note. Higher scores reflect lower levels of affect balance.

Within age group correlations of affect-related variables (i.e., affect balance score, pos./neg. means, pos./neg. variance) and chronological age yielded no significant results. Thus, the finding that higher age is associated with a lower level of affect balance and a lower level of experiencing negative self-referent affect clearly does only apply when comparing both age groups, but not when making comparisons within the age groups.

7.1.4 Age Differences in Self-Esteem

In terms of self-esteem, it was assumed that older adults would show higher scores than younger adults. Self-esteem was operationalized by the average positivity/negativity-rating across all self-aspects a participant had listed. Results corroborated the assumption (see *Figure 20*). Older adults' mean self-evaluation on the 5-point rating scale was 3.71 ($SD = .65$), whereas the score for younger adults was only 3.27 ($SD = .54$). Thus, in accordance with the hypothesis, age differences in self-esteem were significant in the expected direction, $F_{(1/163)} = 22.39$, $p \leq .01$, $\eta^2 = .12$.



Figure 20. Indicator of self-esteem (Means and Standard Errors)

Against the hypotheses, no significant age trajectories could be identified when regarding the correlations between self-esteem indices and age within age groups. Thus, even people older than 60 did not seem to decrease strongly in self-esteem.

7.1.5 Age Differences in Value Orientation

It was supposed that older adults would show a less self-centered value orientation than younger adults. Indicators for self-centered value orientation was the average 5-point rating on two value scales characterizing self-transcendent, and universalistic values, respectively. Findings confirmed the assumptions (see Figure 21). On the universalism scale, younger adults exhibited a mean score of 4.33 ($SD = .40$), whereas older adults' average rating was 4.54 ($SD = .34$). The difference was significant, $F_{(1/166)} = 13.41$, $p \leq .01$, $\eta^2 = .08$. Similarly, there was a significant age difference with regard to the benevolence scale, where younger adults had a mean score of 4.44 ($SD = .40$) and older adults a mean of 4.64 ($SD = .34$), $F_{(1/166)} = 10.85$, $p \leq .01$, $\eta^2 = .06$. Hence, in line with the hypothesis, older adults showed a stronger self-transcendent and altruistic value orientation than did younger adults (see Figure 21).

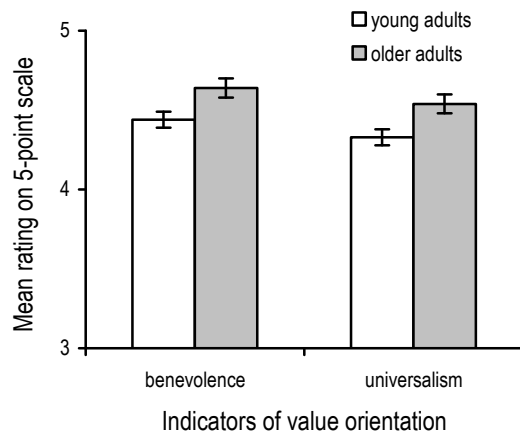


Figure 21. Indicator of self-esteem (Means and Standard Errors)

No significant correlation emerged when correlating the two value orientation indicators with chronological age, indicating that within each age group, a tendency towards benevolence and universalism is relatively stable.

Table 29 gives a short numerical overview of the results obtained with regard to the five components of the self-concept (and the indicators used to compute them) examined in this study. The third column from the right gives a summary of the expected and the actual results in terms of age differences. As can be seen from their concordance, results matched our expectations.

Table 29.
Results Obtained for the Five Self-Concept Dimensions

Self-concept component	Total				Young		(exp) / emp	Old	
	Min	Max	M	SD	M	SD		M	SD
Complexity									
number aspects	2	12	6.90	(2.46)	6.92	(2.24)	(=) =	6.88	(2.71)
number aspect categories	1	11	5.60	(1.83)	5.61	(1.59)	(=) =	5.60	(2.09)
Self-concept integration									
SCD (invers; Pearson <i>r</i>)	.01	.92	.60	(.34)	.52	(.30)	(<) <	.68	(.34)
coreself (% consistently rated)	.00	60.00	22.43	(16.05)	15.21	(12.99)	(<) <	30.51	(15.33)
Affect balance									
Δ positive minus negative self-attribute rating ^a	-0.47	3.09	1.53	(.67)	1.35	(.67)	(>) >	1.76	(.60)
Self-esteem									
mean across aspects	1.80	5.00	3.48	(.63)	3.27	(.54)	(<) <	3.71	(.65)
Value orientation									
benevolence	3.18	5.00	4.53	(.39)	4.44	(.42)	(<) <	4.64	(.33)
universalism	3.14	5.00	4.43	(.38)	4.33	(.40)	(<) <	4.54	(.34)

^a High scores indicate low levels of affect balance and vice versa.

7.1.6 Age Differences in the Content of Self-Concept Descriptions

Since in previous studies, great consistency has been found in terms of self-concept content, it was assumed that all differences between younger and older persons in the present sample would be rather small. Nevertheless, slight differences were expected with respect to some areas. First, it was expected that older persons in contrast to younger persons would list more self-aspects that had to do with their immediate situation (e.g., health, finances), and their immediate social environment (e.g., family and partner), whereas younger persons would refer more often to other interaction partners (friends, colleagues, etc.). Additionally, more self-transcendent issues (e.g., peace, environmental issues; categories), and less self-centered issues were expected to occur among the self-aspects of the elderly. Finally, it was predicted that older adults would refer, more often than younger adults, to past events and periods of their life (e.g., childhood, youth, ...). No specific hypotheses were stated concerning the frequency of mentioning profession or profession-related aspects or general statements in one's self-concept.

Since participants differed with regard to the number of self-aspects they generated, absolute frequencies would be misleading. Therefore, the frequency scores were transformed into percentage scores, indicating the likelihood that a certain self-aspect might occur among the total number of self-aspects. These percentages were then compared across age groups. *Figure 22* gives age differences in mean percentage of each category in the self-descriptions, sorted according to the size of the percentage.

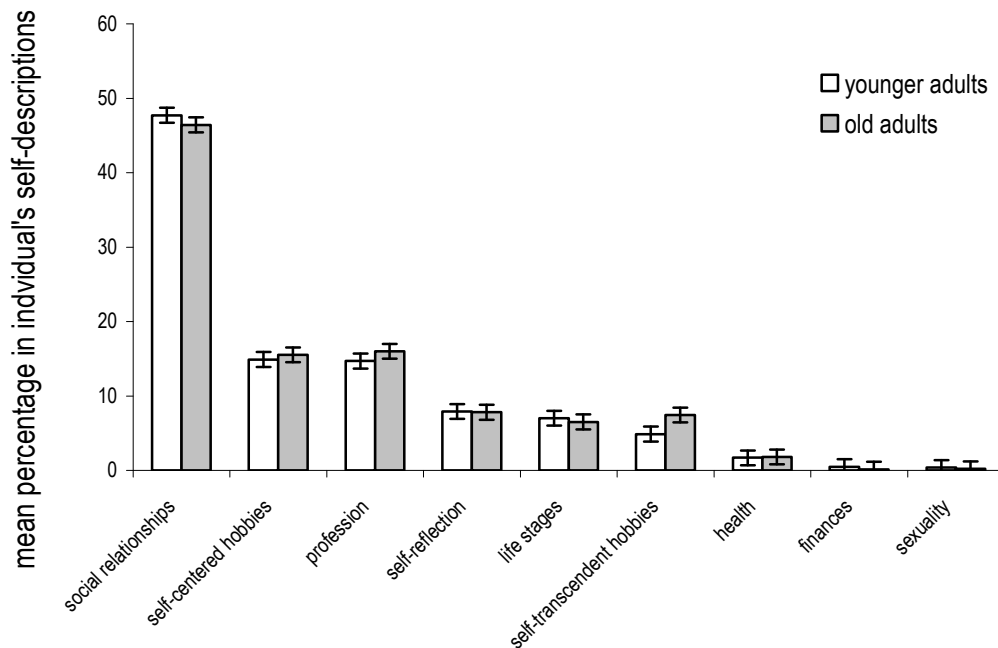


Figure 22. Frequency of self-aspects in age group comparison

Note. The x-axis provides the title of each category in the order of relative percentage size. The y-axis represents the average percentage to which each aspect appears in self-descriptions.

Age differences were found in the percentages each aspect claimed with regard to the total of aspects generated by a person (see Figure 22). Differences were examined based on aspect categories. There were no significant differences in terms of the overall rank order in the frequency that different categories appeared in younger and older adults' self-concepts (*Mann-Whitney U* = 269, $p = .30$). However, after applying the Bonferroni-correction for multiple testing, there were some significant differences when testing the average frequency that each self-aspect was referred to in a univariate way. The four most frequently mentioned self-aspects that both younger and older adults referred to were family, friends, profession, and partnership. In terms of these four, there were *no* significant differences between age groups. Regarding contacts other than close interaction partners, again age differences were not significant. In contrast to these results, it was assumed that older people, more often than younger people, would refer to close persons in their interactive network like family or their partner.

It was expected that age differences would be found in terms of self-transcendent and self-centered issues. This could be confirmed only in terms of self-transcendent categories. When testing for multivariate differences in terms of *self-transcendent* aspects by entering all respective aspects in one MANOVA of variance, age differences became significant at the 5%-level, $F_{1/167} = 2.0$, $p \leq .05$. In contrast, no significant difference emerged when examining age differences concerning *self-centered* issues in a multivariate way. Thus, older people tended to show more concern in their self-description

for domains beyond their immediate interest, but did not differ from younger adults in the pursuit of more self-centered needs. When testing univariate age differences in these two domains, only the categories “house and garden” and “pets” showed significant age differences in the hypothesized direction, house and garden: $F_{(1/167)} = 9.4, p \leq .01$; pets: $F_{(1/167)} = 5.0, p \leq .05$. Finally, it was assumed that older adults would more than younger adults tend to refer to past events and periods of their life (e.g., childhood, youth,...), which was not confirmed by the results.

In sum, when examining categories that appeared in the self-concept of younger and older adults, there were only a few differences between age groups in terms of the importance given to different domains. This was not only corroborated by comparing the overall rank order of percentages that individual domains claimed within self-descriptions, but also when comparing the shares of self-aspects in a univariate way. The only age difference found referred to the importance of self-transcendent themes. Accordingly, older adults are more likely than younger adults to name issues or activities of a self-transcendent nature as aspects of themselves.

Taken together, when examining age differences in the self-concept of younger and older adults with regard to the five self-concept components and in terms of the content of the self-concept, the following pattern emerged: In line with hypotheses, older and younger adults did not differ in the complexity of aspects. Thus, the total number of self-aspects as well as the number of categories these self-aspects could be sorted into was equal across age groups. Furthermore, concordant with expectations, older adults' self-concept was significantly more integrated than the self-concept of younger adults: This did apply when comparing the similarity across self-aspects in terms of rank order by computing the average aspect intercorrelation as well as when measuring the similarity of self-aspects by counting the number of adjectives that were rated the same across all aspects. As expected, a greater degree of affect balance was found among younger adults, that is, they tended more than older adults to describe themselves in a positive way to the same degree as in a negative way. This age difference came about through a reduced tendency of the older people to describe themselves in a negative way, whereas the tendency to describe oneself positively did not change with chronological age. Also in line with the hypotheses, older adults were found to have a significantly greater amount of self-esteem than younger adults. Finally, the hypothesis that older adults would tend, more than younger adults, to hold self-transcendent values was confirmed: both universalism as well as benevolence were significantly more pronounced in the self-concept of older adults. Hardly any differences between the self-concept of older and younger adults were found in terms of the content of aspects perceived as part of the self-concept.

7.2 Validation of SCM as an Indicator of Personality Growth

The SCM prototype is characterized by the following pattern of self-concept components, as illustrated before in *Figure 8*. As a reminder, contents are depicted again in the following figure.

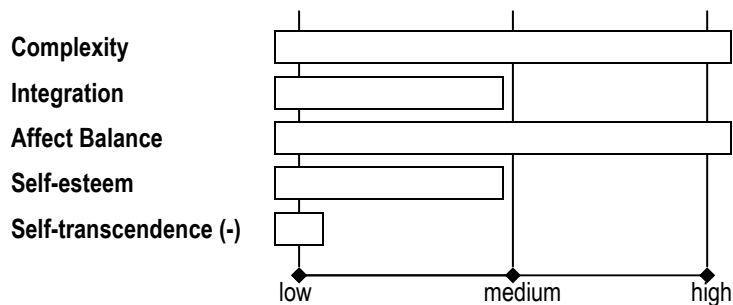


Figure 23. Illustration of the SCM prototype.

In the following, hypothesized relationships between SCM⁷³ and various domains of psychological functioning will be examined. Based on the theoretical assumptions reported earlier (section 3.4), it was assumed that the validity of SCM as an indicator of personality growth would be demonstrated if SCM would show

- *no relation with adjustment-related measures*
- *a strong positive relation with growth-related measures*
- *a slight positive relation with intelligence*
- *a moderate positive relation with life events*
- *a moderate positive relation with self- and life reflection*
- *no relation with chronological age*

The sample used in the present study comprised younger and older adults, but no middle-aged individuals. Thus, the age distribution in the present sample was discontinuous. Because of the discontinuous age distribution in the present sample, age was recoded as a dummy variable, that is, age of a person was only expressed by a binary variable indicating the belongingness of an individual to one of the two age groups.

The following section is divided into four parts. First, hypotheses concerning the domain-specific relationships of SCM will be tested. Second, a multivariate approach will be taken by identifying the unique and common shares of variance explained by these five predictors through commonality analysis. Third, a commonality analysis will be performed on SCA to identify whether the combination of predictors accounting for variance in SCM and SCA, respectively, is indeed different from one another and in line with the hypotheses. Fourth, levels of SCM and SCA of an individual will be considered

⁷³ In the following, whenever SCM or the *SCM similarity score* is mentioned, it will refer to an individual's self-concept similarity score with the SCM prototype as assessed by ICC (see Excursus).

conjointly. A conjoint consideration of levels of SCM and SCA might enable predictions that are not possible when SCM or SCA are considered in isolation.

7.2.1 Domain-Specific Relationships between SCM and Predictor Variables

In line with the hypotheses, relationships that will be tested encompass six domains of psychological functioning, namely chronological age, personality growth, adjustment, intelligence, life events, and self- and life reflection. To test the hypotheses, it seems not always best to consider the relationship of SCM with each domain in isolation. For example, relationships of SCM with personality growth and with adjustment are contrasted with each other to test whether SCM would indeed be related significantly only with personality growth and not with adjustment. Furthermore, life events and self- and life reflection will be considered simultaneously, because in addition to a direct relationship between SCM and self- and life reflection, this variable is supposed to moderate the relationship between SCM and life events.

Domain-specific analyses, at the same time, serve to identify the key variables for each domain, which are subsequently admitted to commonality analysis, to enable a regression model with the least possible amount of overlapping predictive variance.

Examining relationships between SCM and predictors when there is a covariation of chronological age with certain predictors of SCM, as well as a covariation of chronological age with SCM will lead to a distortion of results. There are two possibilities to control for age in these analyses. Either age is entered as a first variable in each of the regression analyses before entering the other variables, or the standardized residuals of SCM are used from a regression analysis with SCM as the dependent variable and age (as a dummy variable) as predictor (Appendix B2, Table 9). In the following analyses, the second approach is chosen, that is, standardized residuals of SCM will be used, that is, a SCM score from which the influence of age is partialled out. Essentially, both solutions yield the same results, the only difference being that the first approach requires the completion of a regression analysis in advance.

7.2.1.1 *SCM and Chronological Age*

As mentioned before, a regression analysis of age on SCM does not only serve to test the hypothesized relationship between SCM and age; it also results in a SCM score in which the influence of age is partialled out, and thus can be used in the following analyses. Table 8 in Appendix B1 gives an overview of zero-order correlations between all study variables. SCM scores are listed at the bottom of the table. As expected, zero-order correlations between SCM and age are not significant, $r = .04$.

Likewise, univariate regression on SCM with age (dummy variable) as a predictor yielded no significant results. Thus, as expected, SCM was not significantly related to chronological age. This is also reflected in age group means of SCM (Appendix A15, Table 7).

7.2.1.2 SCM and Personality Growth vs. SCM and Adjustment

It was expected that other measures of personality growth would exhibit a strong link with SCM, and that this relationship would be significantly higher than the link between SCM and adjustment. Zero-order correlations (Appendix B1, Table 8) were mostly consistent with this pattern: a number of personality growth measures show a significant correlation with SCM, whereas this is not the case for any variable indicating adjustment. In more detail, self-related wisdom and ego development relate very strongly to SCM, whereas other measures of personality growth did not exhibit a significant relationship with SCM. None of the adjustment variables correlate significantly with SCM.

To be able to draw a direct comparison between the relationship of SCM with personality growth and the relationship of SCM with adjustment, sequential regression was employed. Two analyses were performed: in one analysis, personality growth measures were entered as a first block, prior to adjustment measures as a second block; in another analysis the blocks were entered vice versa. With the first step, it was possible to see whether SCM could be significantly predicted by the variables of either of the sets, respectively. As expected, SCM could be significantly predicted by personality growth variables but not by adjustment variables (Table 30). With the second step, it was possible to identify whether the variables of the second block could explain additional variance beyond the variance explained by the variables of the first block. In line with the assumptions, adding personality growth variables to variables of adjustment resulted in a significant increment of R^2 , whereas this was not the case when adjustment variables were entered as second block (see Table 30).

Table 30.
Sequential regression of Personality Growth Variables and Adjustment Variables on SCM

Overall model		R^2	F	df	ΔR^2	ΔF	Δdf
Model 1	Step 1 ^a : Adjustment variables	.04	.77	8/133	.04	.77	8/133
	Step 2: Personality growth variables	.29	3.46**	15/126	.25	6.28**	7/126
Model 2	Step 1 ^a : Personality growth variables	.27	7.10**	7/134	.27	7.10**	7/134
	Step 2: Adjustment variables	.29	3.46**	15/126	.02	.46	8/126

Variables (Step 2)	β	t	r^c
Personality growth			
Ego Development	.20**	2.48	.26**
Self-related wisdom	.44**	5.50	.45**
Openness	.04	.51	.11
Personal growth	-.04	-.39	.09
Purpose in life	.05	.52	.13
Psychological Mindedness	-.02	-.16	.05
Behavioral rigidity	.14	1.26	.03
Adjustment			
Life satisfaction	.09	.83	-.03
Autonomy	-.00	-.04	.03
Environmental mastery	-.15	-1.18	-.05
Self-acceptance	-.02	-.19	.02
Neuroticism	-.00	-.03	.01
Extraversion	.04	.43	.07
Conscientiousness	.15	1.32	.09
Agreeableness	-.06	-.67	-.05

Note. Lowest tolerance was .40. ^a The SCM score controlled for age was used in this analysis.

^c controlled for age

** $p \leq .01$.

To test whether the specific variances explained by each of the two domains (25% by personality growth variables vs. 2% by adjustment variables) were significantly different, multiple squared correlations of the second step (ΔR^2) were transformed into correlation coefficients by square root extraction. The resulting correlation coefficients were Fisher-z transformed and a t-test for two dependent correlations was employed to test their difference (Cohen, Cohen, West, & Aiken, 2003; Uitenbroek, 1997). As expected, the difference was significant, $t(163) = -5.72, p \leq .01$.

7.2.1.3 SCM and Cognitive Variables

Two cognitive variables were assessed in the present study, namely fluid and crystallized intelligence. It was assumed that SCM would be related with fluid, but not with crystallized intelligence. In contrast to these expectations, zero-order correlations were found to be insignificant for either of the intelligence scores.

It was hypothesized that a certain level of fluid intelligence was needed for SCM, but that beyond this level, differences in the level of intelligence would have no influence on the level of SCM. In other words, a linear relationship with SCM was assumed only for lower levels of fluid intelligence, but not for higher levels. Zero-order correlations can only test for linear components in a relationship and

therefore, the fact that zero-order correlations are not significant does not answer this question yet. Instead, a sequential regression was performed with the linear term of fluid intelligence entered in the first step and the squared term of fluid intelligence in the second step (Cohen et al., 2003). However, neither the linear term, $\Delta R^2 = .00$; $F_{(1/166)} = .33$, nor the squared term, $\Delta R^2 = .01$; $F_{(1/166)} = .65$, could significantly predict SCM (see Appendix B2, Table 10, for a detailed summary of results).

7.2.1.4 SCM, Life Events and Reflection on Life and Self

Several hypotheses were made with regard to the influence that life events and self- and life reflection would have on the emergence of SCM. First, life events and self- and life reflection were both supposed to have a moderate positive relation with SCM. Furthermore, the influence of self- and life reflection on SCM was assumed to be higher for individuals with low levels of neuroticism. Age was assumed to be another moderator of the relationship between self- and life reflection and SCM: self- and life reflection was assumed to be more conducive to SCM for older adults. Finally, it was hypothesized that the relationship between life events and SCM with regard to the entire sample would be moderated by the tendency to engage in life- and self reflection: Life events were expected to be stronger linked to SCM in those persons who tended to strongly engage in life reflection.

Zero-order correlations indicate that, indeed, variables of self- and life reflection, as well as life event variables were related to SCM (Table 31): among life events, events of former life showed the strongest and the only significant relationship to SCM. In contrast, self- and life reflection was significantly correlated with SCM on three variables, namely with regard to learning from the past, ignoring past and future (reversed) and perceived frequency and use of reflection. Notably, self-knowledge was not significantly related with SCM.

Table 31.

Intercorrelations of Self- and Life Reflection Variables, Life Events, and SCM

	1	Self- and Life Reflection				2	Life Events			SCM ^a
		1a	1b	1c	1d		2a	2b	2c	3
1. Life and Self-Reflection										
1a Self-knowledge		.56**								
1b Learning from the past		.76**	.41**							
1c Ignoring past and future (inv.)		.63**	.02	.34**						
1d Frequency /perceived use of life-/self-reflection		.62**	.06	.23**	.32**					
2. Life Events										
2a life events close context		-.01	-.16*	.01	.02	.11	.85**			
2b Life events wider context		-.01	-.09	.01	-.01	.06	.83**	.57**		
2c Life events former context		-.05	-.13	.02	-.03	.03	.82**	.54**	.51*	
3. SCM^a										
		.26**	.07	.21**	.17*	.24**	.14	.13	.03	.18*

Note. Grey areas indicate areas of convergent validity, that is, coefficients for which high correlations are expected.

^a the influence of age was partialled out from this SCM score – that is, correlations are controlled for age

** $p \leq .01$; * $p \leq .05$

Similar results are obtained when performing domain-specific linear regressions with variables of life events / self- and life reflection as predictors of SCM: variables of self- and life reflection do account for a significant share of 9% of the variance in SCM, $R = .30$, $p \leq .01$, when entering them together in a regression equation predicting SCM (see Appendix B2, Table 12 & 13). To a less significant degree, variables of life events are also of importance for predicting SCM, $R^2 = .04$, $R = .20$, $p \leq .10$ (see Appendix B2, Table 12). Furthermore, zero-order correlations indicated that life events and self- and life reflection were mostly uncorrelated with each other (see Table 31). In other words, according to these results, life events do not necessarily seem to induce processes of life and self-reflection, neither does the tendency to think about oneself or one's life have anything to do with the number of life events one experiences. Furthermore, the variance of SCM explained by life events is relatively low and entirely up to former life events, whereas the degree to which an individual engages in self- and life reflection is much more strongly related to his or her level of SCM.⁷⁴

Was the relationship between life events, self- and life reflection and SCM moderated by other variables? A first hypothesis stated that engaging in self- and life reflection would mainly be conducive to SCM for those with low levels of neuroticism, whereas for those with high levels of neuroticism, a high degree of thinking about themselves and their life would rather be a pathological symptom, and thus, not beneficial for SCM. In fact, zero-order correlations showed that, among all self- and life reflection variables, one (namely, self-knowledge) was significantly related to neuroticism, $r = .34$, $p \leq .01$ (see Appendix B1). To test the hypothesis, that the effect of self- and life reflection on SCM was moderated by neuroticism, a median split was performed along levels of neuroticism (cut point: 2.5), resulting in two groups characterized by relatively high / relatively low levels of neuroticism, respectively. For each of these groups, a linear regression was performed with self- and life reflection as predictors, entered together as a block, and SCM as criterion. As the results show, the expectations were not confirmed (see Table 32). In fact, the reverse was true: the relationship between variables of self- and life reflection and SCM was only significant for those with high levels of neuroticism, $R^2 = .17$, $R = .42$, $p \leq .01$, whereas for those with low levels of neuroticism, it did not seem to make a difference whether they engaged in reflection or not, $R^2 = .06$, $R = .25$, $p > .10$. As expected, another way to test moderation effect, namely by entering the interaction term of neuroticism and self- and life reflection after the simple terms of both variables in a stepwise regression on SCM yielded a significant increment in variance, $\Delta R^2 = .03$; $\Delta F_{(1/159)} = 5.65$ (see Appendix B2, Table 14 for a detailed summary).

⁷⁴ Since the effect of mediation requires that the predictor and mediator are correlated (e.g., Baron & Kenny, 1986), and this was not the case in the present study, no effect of mediation is expected; that is, self- and life reflection is not assumed to mediate the effect of life events on SCM.

Table 32.

Regression of Life Events on SCM^a. A Comparison of Individuals with high Levels of Neuroticism vs. individuals with low Levels of Neuroticism

	R^2	F	df
Group 1: low levels of neuroticism (n = 82)	.06	1.34	4/78
Group 2: high levels of neuroticism (n =75)	.17	3.72**	3/84

Variables	β	t	r
Group 1 (low levels of neuroticism)			
perceived frequency/use of self- and life reflection	.13	1.02	.13
self knowledge	-.09	-.74	.03
learning from the past	.26	2.00*	.22*
ignoring past and future (reversed)	-.09	-.68	.08
Group 2 (high levels of neuroticism)			
perceived frequency/use of self- and life reflection	.26	2.25*	.33*
self knowledge	.04	.30	.08
learning from the past	.07	.54	.22
ignoring past and future (reversed)	.23	2.05*	.30*

^a The influence of age was partialled out from this SCM score

* $p \leq .05$

Chronological age was assumed to operate as a further moderator of the relationship between self- and life reflection and SCM: older adults were assumed to benefit more from engaging in self- and life reflection. Zero-order correlations gave a somewhat inconsistent picture of the relationship between age and self- and life reflection. Thus, although older people were more likely than younger adults to think that they knew themselves better, r (self-knowledge, age) = .17, $p \leq .05$, the tendency to think frequently about the past and oneself and to perceive it as useful was more common among younger adults, r (perceived frequency/use of self-reflection) = -.19, $p \leq .05$.

In fact, the hypothesis of older age being positively associated with the influence of self- and life reflection on SCM was not corroborated by the findings of separate regression analyses for younger and older adults. The reverse was the case: for younger adults, 15% the variance of SCM were explained by self- and life reflection, $R = .39$, $p \leq .01$, whereas this did not apply to older adults, $R^2 = .10$, $R = .32$, $p > .10$. Thus, thinking about oneself and one's life apparently helped younger adults to progress in terms of SCM, whereas older adults hardly benefitted from engaging in self- and life reflection, at least not concerning their levels of SCM. A summary of the results is given in Table 33. No regression equation with the product term was performed because the age variable had a binary scaling format.

Table 33.

Regression of Self- and Life Reflection on SCM^a. A Comparison of Older and Younger Adults

	R^2	F	df
Group 1: younger adults (n = 85)	.15	3.53**	4/81
Group 2: older adults (n =73)	.10	1.98	4/69

Variables	β	t	r
Group 1 (younger adults)			
perceived frequency/use of self- and life reflection	.18	1.57	.29
self knowledge	-.05	-.41	-.05
learning from the past	.03	.27	.14
ignoring past and future (reversed)	.27	2.28*	.34*
Group 2 (older adults)			
perceived frequency/use of self- and life reflection	.15	1.17	.22
self knowledge	-.06	-.45	.13
learning from the past	.29	1.97*	.29*
ignoring past and future (reversed)	-.05	-.42	.08

^a The influence of age was partialled out from this SCM score** $p \leq .01$; * $p \leq .05$

To test whether the tendency to engage in self- and life reflection would moderate the relationship between life events and SCM, the (z-standardized) sum score of life- and self-reflection was dichotomized by a median-split (cut point: .12 of the z-standardized score) to identify groups with a high/low engagement in self- and life reflection. Separate linear regressions of the life event scores on SCM were performed for each of the two levels with the three life event variables entered as a block (for testing moderation effects see, e.g., Baron & Kenny, 1986). It was expected that life events would only show significant links with personality growth when engagement in self-reflection and life reflection was high, that is, only for those above the median. Results are illustrated in Table 34.

Table 34.

Regression of Life Events on SCM^a. A Comparison of Individuals with High Levels of Reflection vs. those with Low Levels of Reflection

	R^2	F	df
Group 1: level of life and self-reflection low (n = 68)	.01	.12	3/65
Group 2: level of life and self-reflection high (n =87)	.11	3.35**	3/84

Variables	β	t	r
Group 1 (experience processing low)			
Life events close context	.07	.37	.07
Life events wider context	-.07	-.38	.01
Life events former context	.05	.31	.05
Group 2 (experience processing high)			
Life events close context	.11	.89	.19
Life events wider context	-.14	-1.20	.05
Life events former context	.31	2.53**	.30**

^a the influence of age was partialled out from this SCM score** $p \leq .01$; * $p \leq .05$

As expected, life events do only have an effect on SCM when they come together with a high degree of self- and life reflection (see Table 34): they explain a sizeable 11% of the variance in SCM

when levels of self- and life reflection are high, $R = .34$, $p \leq .01$, whereas no significant share of variance in SCM is explained by life events when levels of self- and life reflection are low, $R = .07$, $p > .10$. Testing the difference between the explained variance of life events as described above (by extracting correlation coefficients from both R-squares and testing their difference; see section 3.4.2), yielded a highly significant result, $t = -2.30$, $p \leq .01$. In addition, former life events, that is, events experienced during childhood, in school or with social acquaintances outside the family, seem to have the strongest influence on SCM.

This time, entering the product term of the predictor and the moderator variable after entering simple terms yielded no significant result, that is, the product term did not explain an additional significant portion of variance. However, using product terms in regression is contentious, because measurement errors come to bear and reduce power in testing interactive effect (Busemeyer & Jones, 1983). Therefore the significance of variance explained by the interaction term should be interpreted with caution and does not allow the conclusion that the moderation effect is not significant.

7.2.2 Using Commonality Analysis to Identify Unique and Common Shares of Explained Variance in SCM

To get an overall picture of the linkage between the various domains of psychological functioning and SCM, a commonality analysis (e.g., Amado, McLean, & Kaufman, 2003; Jernstedt, 1980; Lindenberg & Pötter, 1998; Pedhazur, 1982, 1997) was performed. Commonality analysis serves to break down the explained variance in multiple regression analysis into the proportion of explained variance associated with each independent variable uniquely, and the proportion of explained variance associated with the common effects due to combinations of independent variables.

Key predictors for each set of predictors were identified using the results of the preceding regressions performed separately for each domain (sections 7.2.1.2, 7.2.1.3, and 7.2.1.4). To avoid overlapping variance, only those variables were included in the commonality analyses that had showed up as significant predictors of SCM in the regressions per domain either by predicting significant ($p \leq .05$) amounts of variance or by showing significant zero-order correlation with SCM ($p \leq .05$). Results of regression analyses of those domains for which no regression analyses had been computed (at least for the overall sample), are shown in Appendix A15. Table 29 comprises an overview of those variables included in and excluded from the commonality analysis.

Table 35.
Results of Linear Regression Analysis on SCM per Predictor Domain

	β	Including all variables of subset (initial solution)		After elimination of non-significant variables	
		% explained	R	% explained	R
Personality growth		27	.52**	24	.49**
Self-related wisdom	.37	–	–	–	–
Ego Development	.16	–	–	–	–
Self- & life reflection		4	.03#	4	.04*
Learning from the past	.17	–	–	–	–
Ignoring past & future	-.01	–	–	–	–
Perceived frequency/use of reflection	.08	–	–	–	–
Life Events		1	.1	0	0
Life events, former context	.05	–	–	–	–

Note. Reported is the percent of explained variance by each domain before and after the exclusion of irrelevant variables from the regression equation (see Appendix B3). β s are provided for those variables that were identified as significant, and refer to the equation where all non-significant predictors are removed from the regression equation. When entered in a regression together with the other predictors, life events did not contribute a significant share of variance in explaining SCM. Furthermore, after removing the two nonsignificant predictors of life events, the share of variance explained by life events was reduced to zero. However, this might be due to an overlap with predictors entered earlier into the regression equation. For the commonality analysis, life events were retained to check whether the domain could still account for significant shares of unique variance, which cannot be tested when using sequential regression.

** $p \leq .01$; * $p \leq .05$; # $p \leq .10$

Some of the hypotheses about the relationship of SCM with other domains of functioning could be tested with this step: For example, in line with the hypotheses, adjustment variables as well as chronological age did not predict significant amounts of variance in SCM. Contrary to the expectations, intelligence did not significantly account for variance in SCM, either. Thus, these variables were not considered in the commonality analysis.

It was expected that personality growth variables could account for the highest share of variance in SCM. The two remaining sets of variables, that is, self- and life reflection and life events were also expected to explain significant amounts of variance.

The commonality analysis was performed with three sets of variables (personality growth, life events, experience processing), requiring six different models of hierarchical regression. The results of each of these hierarchical regressions are presented in Appendix B4, Table 18. The reported portions of explained variance per step (Appendix B4, Table 18) were used to compute the common and unique shares of predictive variance (Appendix B4, Table 19). Results are depicted in Table 36.

Table 36.
Commonality Analysis Summary

Component	1 Personality Growth		2 Self- and Life Reflection		3 Life Events	
	R ²	% variance	R ²	% variance	R ²	% variance
Unique (1)	.23	22.9				
Unique (2)			.09	9.5		
Unique (3)					.03	3.1
Common (1,2)	-.06	-5.6	-.05	-5.6		
Common (1,3)	-.03	-2.9			-.03	-2.9
Common (2,3)			-.02	-1.5	-.02	-1.5
Common (1,2,3)	.02	1.5	.02	1.5	.02	1.5
Total	.16	15.9	.04	3.9	.00	0.2
Unique	.23	22.9	.10	9.5	.03	3.1
Common	-.07	.7	-.06	-5.6	-.03	-2.9

Note. The sum of the columns equals the R² of that particular predictor (see Appendix B2, Table 19) and the sum of all the unique and common components equals the multiple R² of the regression equation.

As can be seen from Table 36, commonality analysis in this case resulted in some components obtaining negative values. These negative values should not be interpreted as a variable's ability to explain less than 0% of the variance (Pedhazur, 1982). Instead, the presence of a negative value occurs when unique effects are larger than simple effects and thereby it is usually attributed to the presence of supressor effects (Amado et al., 2003; Cohen et al., 2003; Lindenberg & Pötter, 1998; Pedhazur, 1982, 1997) or a correlation pattern where some of the correlations among the predictor variables are positive and some are negative (Amado et al., 2003; Pedhazur, 1982, 1997). Amado and colleagues (2003) recommend treating negative commonalities as zero. Hence, in the following, negative commonality is regarded as zero.

The findings are summarized in Figure 24. Of the total variance of self-concept-maturity, 27 % could be explained by the six predictors (2 personality growth + 3 self- and life reflection + 1 life events), $R = .52$, $p = .00$ (see Appendix B4 for detailed results when including all predictors in the regression equation).

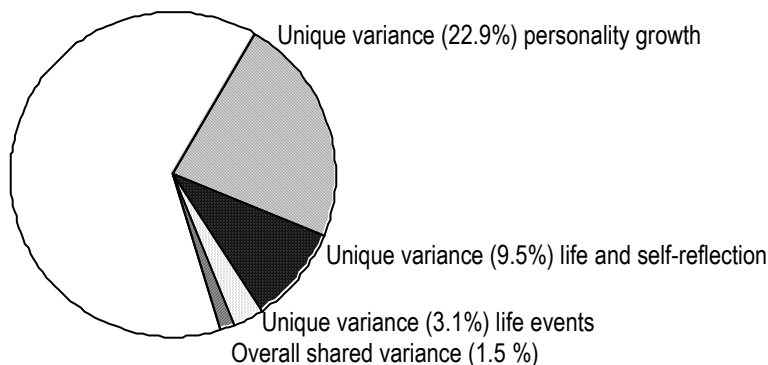


Figure 24. Shares of variance of the SCM profile explained by the personality growth, life and self-reflection, and life events.

Note. Lowest tolerance was .78. The illustration mainly serves to illustrate the shares of variance explained by the three components in proportion to each other and not the overall share of variance explained. When interpreted in this latter way, it is misleading because it only depicts positive shares of variance when 10% of the variance explained is negative.

The largest share of unique variance – 22.9% – was accounted for by personality growth measures. An additional significant share of variance was accounted for by life and self-reflection (9.5%). Additionally, life events explained a significant portion of variance (3.1%). Thus, the hypotheses were mostly confirmed through commonality analysis. Personality growth measures not only account for the largest share of unique variance, but also for the largest share of explained variance overall. Life events, and, even more, self- and life reflection, are further significant predictors of SCM. Furthermore, age and measures of adjustment did not appear to be significant predictors of SCM. In contrast to the hypotheses, intelligence was also irrelevant for predicting levels of SCM.

In sum, the findings on the relationships between SCM and predictors yielded the following. Adjustment was unrelated to SCM. This was reflected in zero-order correlations as well as in regression analyses when adjustment variables were used as predictors of SCM. Furthermore, personality growth variables were the strongest predictor of SCM, not only when compared to adjustment, but also when compared to all other predictors examined here. Life events and self- and life reflection both were moderately related to SCM, again showing in zero-order correlations as well as in sequential regressions. In the commonality analysis, self- and life reflection appeared to be considerably more important than life events, accounting for the second highest share of unique variance. Additionally, self- and life reflection moderated the relationship between SCM and life events: The effect of life events on SCM was significantly higher when the degree of engagement in self- and life reflection was high. The assumption that individuals with high levels of neuroticism would not benefit from self- and life reflection was not confirmed. Even the opposite was the case: self- and life reflection seemed to help individuals with high levels of neuroticism to accomplish SCM, whereas this was not the case for those with low levels of neuroticism. An important additional result of the commonality analysis was that suppressor variables were probably operant in the relationship of SCM and predictors, rendering shared portions of variance negative.

7.3 Does the SCA Profile Indicate Adjustment?

As explained before (section 6.3.1.2.3), to verify the idea of the profile, and to make sure that it was the specific hypothesized pattern of self-concept components, and not their combination per se that predicted personality growth, an alternative profile was constructed. This profile was not supposed to be indicative of personality growth, but of adjustment (self-concept adjustment SCA). This ideal profile, in turn, is characterized by a specific pattern of self-concept-constituents, as illustrated in Figure 10 (displayed again here for better understanding).

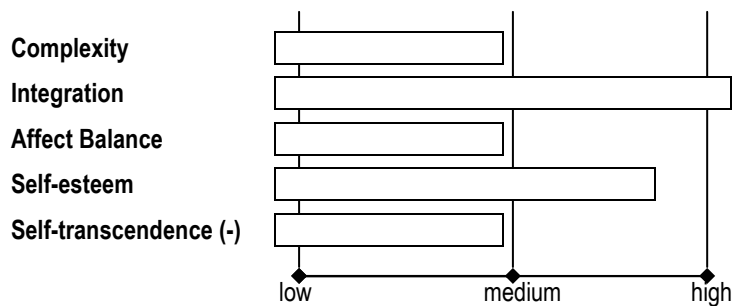


Figure 10 (repeated depiction). Illustration of the SCA profile

It was hypothesized that, in case the profile of the self-concept was indeed a valid method to conceive trajectories of development such as personality growth and adjustment, constructing a profile different from the SCM profile with an emphasis on adjustment instead of growth, the relationships of this profile with other predictors should markedly differ from those of the SCM profile. Without going too much into detail, for example, it would be plausible that the SCA profile showed significant relationships mainly with adjustment variables and all other variables that are important for the emergence of adaptivity, such as chronological age, self- and life reflection and life events. In contrast, important variables for the emergence of personality growth should show considerably weaker linkages with the SCA profile.

In this section, evidence will be presented for the psychometric location of SCA in relation to standard measures of the six domains of personality growth, adjustment, intelligence, life events, self- and life reflection, and age. The analyses performed were equivalent to those performed on SCM. Thus, only the main results, that is, the zero-order correlations and the results of the commonality analysis are reported here.

Again, before performing tests on the validation of SCA, its relationship with chronological age was tested. Zero-order correlations gave a first hint at the strong relationship of age and SCA (see Appendix B1, Table 20). This relationship was confirmed by a regression analysis (see Appendix B5, table 20): age (dummy variable) as a single predictor of SCA could account for 15% of its variance, $R = .39$, $F_{(1/167)} = 30.23$, $p \leq .01$. Again, age was controlled for in the following analysis by using standardized residuals from this regression analysis. All of the regression analyses employed to identify key variables of each domain to be entered into the commonality analysis (Appendix B6) therefore used the score of SCA from which the influence of age was partialled out, thus rendering the entry of the age variable into the regression equation as a first step prior to other variables redundant.

The examination of zero-order correlations does fit the expected pattern very well. Thus, among personality growth variables, only the one which is probably closest to the concept of adjustment anyway, namely PWB purpose in life, was significantly correlated with SCA. In contrast, all of the adjustment variables except life satisfaction and conscientiousness were significantly correlated

with SCA, mostly on the 1% level. From the entire rest of the variables, only self-knowledge correlated significantly with SCA. It was notably the only variable among the reflection variables that did not exhibit a significant zero-order correlation with SCM. Thus, the pattern of zero-order correlations of SCA is almost a mirror-image of zero-order correlations of SCM, lending strong support to the assumption that SCA will differ from SCM in its relations with other predictors in a predictable way.

Again, linear regression analyses for each predictor domain were used to identify multivariate relationships in one domain, and the scales with the most predictive power in each set. Results are summarized in Table 37.

Table 37.
Results of Linear Regression Analysis on SCA per Predictor Domain

	β	Including all variables of subset (initial solution)		After elimination of non-significant variables	
		% explained	R	% explained	R
Adjustment		20	.44**	17	.41**
NEO extraversion	.23**	–	–	–	–
NEO agreeableness	.33**	–	–	–	–
Life Events		5	.22*	4	.21*
Life events, former context	-.23**	–	–	–	–
Life events, wider context	.19*	–	–	–	–
Age	.39**	15	.39**	–	–

Note. Reported is the percent of explained variance by each domain before and after the exclusion of irrelevant variables from the regression equation. β s are provided for those variables that were identified as significant, and refer to the equation where all non-significant predictors are removed from the regression equation.

** $p \leq .01$; * $p \leq .05$

Again, as a more specific investigation of explained variance in ASC, hierarchic regression was performed to serve as a basis for commonality analyses. Findings are summarized in detail in Table 38 and illustrated in Figure 25. Of the total variance of the SCA similarity scores, 30.8% could be explained by the 5 predictors (2 adjustment + 2 life events + 1 age, see Table 37), $R = .56$, $p = .00$.

Table 38.
Commonality Analysis Summary: Unique and Common Shares of Variance of SCA.

Component	1 Adjustment		2 Life Events		3 Chronological Age	
	R ²	% variance	R ²	% variance	R ²	% variance
Unique (1)	.11	11.4				
Unique (2)			.01	1.4		
Unique (3)					.12	11.7
Common (1,2)	.03	2.7	.03	2.7		
Common (1,3)	.03	3.3			.03	3.3
Common (2,3)			.01	.9	.01	.9
Common (1,2,3)	-.01	.0	-.01	.0	-.01	-.6
Total	.17	16.8	.04	.0	.15	15.3
Unique	.11	11.4	.01	1.4	.12	11.7
Common	.05	5.4	.00	.3	.04	3.6

Note. The sum of the columns equals the R² of that particular predictor (see Appendix B6, Table 27) and the sum of all the unique and common components equals the multiple R² of the regression equation.

Consistent with the hypotheses, the largest shares of unique variance were explained by adjustment (11.4%) and age (11.7%). Additionally, life events could explain a sizeable portion of variance (1.4%), as well as shared effects, which could explain a portion of 6.3% in explained variance.

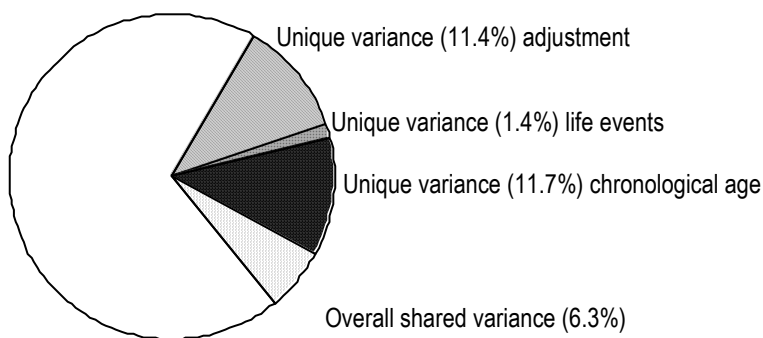


Figure 25. Shares of variance of SCA explained by three domains of psychological functioning

Note. Lowest tolerance was .71.

In sum, the results of the commonality analysis demonstrated that (a) 30.8% of the variance in SCA were accounted for by the measures from the two domains of psychological functioning (adjustment, life events) and age; and (b) that adjustment and age did contribute the largest amounts of unique variance. Thus, variance in SCA is, to a great extent, due to variance in age, adjustment, and life events. Notably, as found in the domain-specific regression analysis (Appendix B5, Table 25), the effect of life events was mostly negative. These results differ strongly from the partitioning of variance in SCM and are in line with the expectations.

7.4 Conjoint Operating of SCM and SCA

To see whether the two profiles, although consisting of the same constituents, indeed could provide two separate diagnostic dimensions, and also to compare the implications of the two profiles, both of them are regarded conjointly in the following analyses. As the first step, the correlation between the two scores was computed. Determining the covariation of two correlation coefficients in cases where two characteristics from one sample are correlated with a third characteristic of the same sample is possible by computing CV_1 (Meng, Rosenthal, & Rubin, 1992; Steiger, 1980). The correlation between SCM and SCM similarity scores was $r = -.17$, $p \leq .05$, the correlation when age was partialled out was $r = -.34$, $p \leq .01$. Thus, the scores are moderately correlated. However, the correlation is not so high that it would not be possible to consider them as two dimensions of personality.

Four classes of individuals were identified by (1) median-splitting participants according to (a) their level of SCM and (b) their level of SCA, and (2) crossing the dichotomized categories.

	SCM -	SCM +
SCA -	<i>dys-functional</i> $n = 30$	<i>growing</i> $n = 53$
SCA +	<i>self-protective</i> $n = 53$	<i>integrated</i> $n = 31$

Figure 26. Classification on the basis of conjoint consideration of levels of SCA and SCM (median-split scores)

Group labels are partly adopted from Labouvie-Vief (2003). + = high level; - = low level

Of the entire sample, about equal percentages are to be found in the “imbalanced” groups (i.e., in which one dimension is high and one is low. Also almost equal – yet considerably lower -- percentages are in the extreme groups (i.e., in which both dimensions assume high scores).

Several hypotheses were made with regard to the four groups. One set of hypotheses concerns the distribution of the two age groups across the four SCM/SCA groups. It was expected that more older than younger adults would fall into the self-protective group and the integrated group. With regard to the growing group, it was expected that both age groups would be represented to an equal degree.

Figure 27 gives age distributions in terms of the four groups. To present absolute numbers of individuals would be misleading, because there are more younger adults ($n = 89$) than older adults ($n = 78$) included in the analysis. Therefore, the figure depicts the percentage of each age group that fall into each group. (For example, if 9 out of the 89 younger adults would be characterized as Growers, the percentage depicted here would be approximately 10%.)

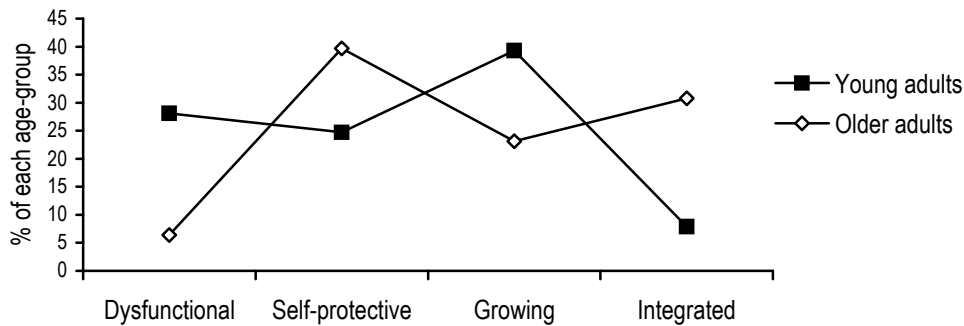


Figure 27. Distribution of self-concept types among younger and older adults in the present sample. Depicted is the percentage per age group belonging to each of the four groups.

In terms of three of the groups, expectations regarding age distributions were mostly confirmed: First, in general, age groups distributed significantly differently across the four types of self-concept styles, $\chi^2 = 29.03$, $p \leq .01$. Additionally, hypotheses referring to each of the groups were confirmed in two of the three hypothesized cases: indeed, more older than younger adults were found in the integrated group and the self-protective group. However, it was not expected that more younger than older adults would fall into the growing group. Instead, it was assumed that both age groups would be represented to an equal degree. No hypotheses were made with regard to the dysfunctional group, where more younger than older adults were found.

Comparable data is available from a study by Labouvie-Vief mentioned earlier (e.g., 2005), in which not types of the self-concept, but emotion regulation styles, namely affect complexity vs. affect optimization, were considered as the two dimensions along which individuals could be described. Although of course there are certain conceptual (e.g., emotion regulation styles vs. self-concept types) and methodological differences (different sample characteristics, different cut-offs) between Labouvie-Vief's study and the present study, the two are comparable in a certain way. Like in the present sample, the two dimensions outlined by Labouvie-Vief correspond to the two basic developmental trajectories of personality growth and adjustment. Thus, individuals with high levels on the dimension of self-complexity are expected to be found on higher stages of ego development, and to be more open to new experiences, whereas the ones scoring high on the dimension of affect optimization were supposed to show more positive levels of hedonic tone and a higher level of life satisfaction. Likewise, Labouvie-Vief was interested in age distributions of the sample with regard to the four types emerging from a crossing of the two emotion regulation styles. Hence, comparing the two studies might present an additional means to validate the present approach. Figure 28 again gives the percentage of younger and older adults that can be classified as a certain type of emotion regulation according to Labouvie-Vief.

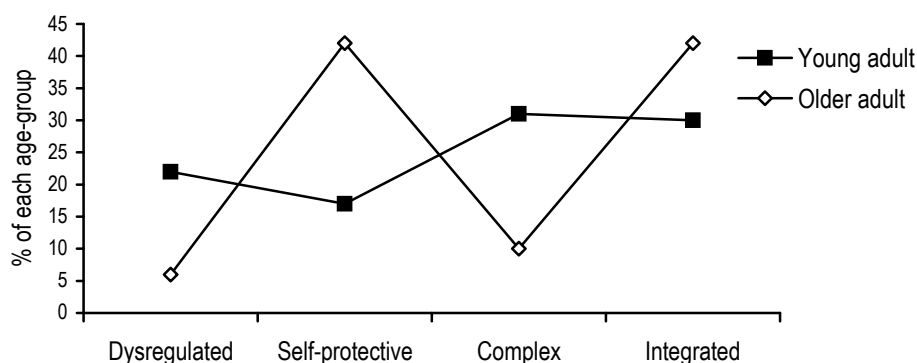


Figure 28. Distribution of emotion regulation styles among younger and older adults in the sample of Labouvie-Vief (2003)

Judging by mere face value, the two charts do bear considerable similarity with each other: older adults' distribution in both samples resembles an "N"-shape, and younger adults' distribution follows an almost symmetrical pattern, although this tendency is more pronounced in the present sample. In fact, age differences in Labouvie-Vief's sample are characterized by a relative flatness of the profile emerging from the younger adults' distribution as compared to the very peaky shape formed by older adults' distribution, whereas the two age distributions seem to be almost mirror-images of each other in the present sample.

The impression is corroborated by the results of a chi-square-test: When compared across studies, the distribution of the younger sample does not significantly differ from each other ($\chi^2 = 12$, $df = 9$; $p = .21$), as well as the distribution of the older sample ($\chi^2 = 8$, $df = 6$; $p = .24$). The biggest differences seem to be the percentages of older adults found among the self-protective and growing (or: complex) group. In Labouvie-Vief's sample, there is a stark difference in the frequency of older adults of each type, with many individuals in the self-protective group and very few individuals in the growing (= complex) group. Although the same trend can be found in the present sample, differences between the two groups are not as pronounced.

The four self-concept types were further examined regarding their scores on the predictor domains. Hypotheses were only formulated regarding variables of adjustment and variables of personality growth, whereas the relationship with other variables was only investigated in an exploratory manner. It was expected that those groups characterized by a high level of SCM (growing, integrated) should show a significantly higher mean level of personality growth than the other groups. Likewise, for groups with high levels of SCA (self-protective, integrated) it was assumed that they would score significantly higher than the other two groups on variables of adjustment.

A MANOVA was performed using the (four-graded according to the four possible patterns) self-concept style as a fixed factor. Dependent variables were the five domains of psychological functioning,

i.e., their respective mean scores as presented in Appendix A15, Table 6 (i.e., adjustment, personality growth, intelligence, life events, self- and life reflection). Indeed, on all five domains significant differences between the groups could be found, most pronounced in the domains of adjustment and self- and life reflection. Means and standard deviations of personality scores are depicted in Table 39.

Table 39.

Differences between the Four Self-Concept Types in Terms of Five Domains of Psychological Functioning

	Dysfunctional (n = 30)		Self-Protective (n = 53)		Growing (n = 53)		Integrated (n = 31)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Personality growth, $F_{3/153} = 2.09^{\#}$	-.11	.71	-.10	.62	.16	.53	.01	.52
Adjustment, $F_{3/153} = 8.05^{**}$	-.27	.49	.16	.67	-.21	.58	.30	.60
Intelligence, $F_{3/153} = 1.87^{*}$.11	.64	-.17	.83	.14	.71	.04	.73
Life events, $F_{3/153} = 2.09^{\#}$	-.22	.65	-.11	.79	.23	.97	-.05	.79
Self- & life reflection, $F_{3/153} = 3.78^{**}$	-.29	.73	-.07	.73	.10	.52	.24	.49

Note. Domain scores were averaged across z-standardized scores. Hence, the parameters of z-distribution apply (i.e., sample mean = 0, SD = 1).

$^{**} p \leq .01$, $^{*} p \leq .05$, $^{\#} p \leq .10$

With regard to personality growth, a marginal difference was found between groups, with the growing group ranking at the top, and dysfunctional and self-protective groups scoring equally low. To test the difference as specified in the hypothesis (= dysfunctional and self-protective vs. growing and integrated), a univariate analysis of variance was performed on personality growth with the group type as the independent factor using MANOVA. A planned contrast on the four groups in the specified way revealed a significant difference, $t = 1.97$, $p \leq .05$, confirming the hypothesis.

The highest adjustment scores were found among the integrated, followed by the self-protective, and dysfunctional and growing individuals ranking relatively low. Again, the hypothesized group difference (dysfunctional and growing vs. self-protective and integrated) was tested via a planned contrast in MANOVA, $t = 4.85$, $p \leq .01$, lending strong support to the hypothesis.

A significant difference was also found in intelligence scores across the four groups: Here, mainly the self-protective group did deviate from the others in a negative direction. There were marginally significant differences in the experience of life events. The contrast between the growing and the dysfunctional group is especially elucidating, with a relatively high score of life events among the growing, and low scores among the dysfunctional group. Self- and life reflection was most predominant among the integrated, whereas the dysfunctional exhibited disproportionally low levels of self- and life reflection.

In line with our assumptions – and the ones by Labouvie-Vief – the growing (= complex) seem to be the ones who strive most for personal growth and explore their possibilities, but at the same time seem to pay the price through reduced well-being. The self-protective, though showing relatively high scores with regard to the dimension of adjustment, exhibit only very mediocre scores with regard to

personality growth and intelligence. The integrated, though not scoring highest on all dimensions, seem to be the ones who found the best compromise, whereas the dysregulated seem to fail on all of the dimensions.

8 Discussion

The main goal of the present study was to create a new instrument of personality growth, and to validate this instrument in an age-heterogeneous sample by using established measures of various domains of psychological functioning as predictors. Furthermore, a vital concern of this study was to construct an indirect measure in order to avoid the problem of social desirability that is inevitably associated with the measurement of growth.

The present approach attempted to realize the idea of an indirect measurement by assessing levels of personality growth via the self-concept. It was assumed that the self-concept because of its central status as an organizing element in the mediation of self-environment interaction would be predetermined to operate as an indicator of growth. Necessarily following from this approach, two sets of hypotheses emerged that guided the empirical part of the study: First, as a precondition of measuring personality growth via the self-concept, a valid measurement of the self-concept had to be ensured. It was argued that, provided the measure could indeed assess the self-concept in a systematic and accurate way, age differences identified in the present sample with regard to self-concept components should replicate extant findings about age differences in the self-concept. Hence, in one set of hypotheses, based on a review of current theories and findings, age differences were specified in terms of five dimensions of the self-concept. The second set of hypotheses was to validate the instrument as an indicator of personality growth, and to assess its convergent and discriminant validity with other measures of growth as well as with measures of adjustment, intelligence, life events, and self- and life reflection. In a third section of the empirical part of the study, we examined whether predictions made in terms of personality growth and adjustment could also be extended to derive predictions about the conjoint functioning of personality growth and adjustment, again with the help of the newly created instrument, and again examining developmental trajectories in a comparison of young and old. Hence, following this logic the findings, in terms of age differences, will be discussed in the first section, while results having to do with the validation of SCM will be discussed in the second section. Any implications of the findings will be discussed subsequently on a more general level.

8.1 Age Differences

Hypotheses were made in terms of differences in level of complexity, level of integration, affect balance, self-esteem and value orientation between younger and older adults.⁷⁵ The results mostly

⁷⁵ In the hypotheses about age differences, two of these terms were labeled slightly differently, namely the number of self-aspects, instead of self-concept complexity, and the similarity of self-aspects instead of self-concept integration. However, to

confirmed these hypotheses. Thus, consistent with these hypotheses, no age differences were found in terms of the *complexity* of the self-concept: Younger and older adults on average named an equal number of self-aspects, belonging to an equal number of categories. Second, findings clearly corroborated the expectation that older adults would show a significantly higher degree of self-concept *integration* (or certainty about their identity) than younger adults. With regard to *affect balance* in the self-concept, concordant with assumptions, it was found that older adults tended to have lower affect balance on the account of a decrease in negative self-related affect. Furthermore, as predicted, their *self-appraisal* was significantly more positive than that of younger adults. Clearly in line with the hypotheses were also the results in terms of *value orientations*: Older adults affirmed self-transcendent values significantly more strongly than younger adults. Additionally, an analysis was performed examining frequency of specific content-categories to answer the question whether self-relevant themes differed between younger and older adults. However, against the expectations, with regard to the content categories, almost no age differences were found. The only age difference found was that older persons referred with a greater frequency to self-transcendent issues and activities when asked for relevant self-aspects.

In sum, when bringing results about age differences together, a tentative conclusion might be the following: older adults do not assume fewer roles or identities than younger adults; however, they perceive themselves in a more consistent manner across these identities, indicating that they seem to have, in a way, “found themselves”, and – as the more positive evaluation of themselves shows – have managed to accommodate to this knowledge quite well. Still, it would be premature to qualify the development of the self-concept as self-protective, at least not self-protective to a degree that it implies an unbalanced focus on one’s own needs: For as the results in terms of value orientation signify, older adults are *more*, not *less* other-centered than younger adults. Whereas in contrast, themes that are spontaneously defined as part of the self do not differ between younger and older adults, and mostly revolve around persons or roles related to the close social context, as well as to the domain of profession and work.

In the following paragraphs, a closer look will be taken at each of the age differences: what do they mean, and which conclusions can be drawn in terms of ontogenetical development or generational differences?

bring the results together with the rest of the findings, it seems more appropriate to use the same labels in the discussion of both sets of hypotheses.

8.1.1 Complexity of the Self-Concept

In terms of the number of self-aspects, or *self-concept complexity*, results were in line with hypotheses, such that no age differences were found: The spontaneously listed number of self-aspects was the same across age groups, and there were no differences in the average number of categories these aspects belonged to. As mentioned before, the results do however defy those theories of development in old age that proclaim a disengagement from roles and formerly important domains of life (e.g., Cummings & Henry, 1961). Also, the findings cast some doubt on the notion that significant changes in life circumstances are reflected in the self-concept. Why is it that studies on the quantity of self-aspects, life-domains, and roles yield such contradictory findings? And is old age not characterized through several major changes? And if so, why do such decisive changes not extend to self-conceptions?

Firstly, the age of the sample can be held accountable. The “older” adults in the present study were around 67 years old, and therefore clearly belonged to the group of the “younger” elderly, whose day-to-day activities are not yet seriously affected by the functional losses that mark very old age. However, most self-aspects mentioned by the participants do not concern activities, which indeed might have changed relatively little over the time. Instead, most of the self-domains mentioned deal with roles, and persons associated with a close social environment (such as mother, partner, children, friends...). Hence, the lack of impairment, which distinguishes the studied group of older individuals from the “oldest” elderly, does not hold as an argument as to why fewer aspects had not been named by them, in comparison to the younger adults. Another explanation for the apparent lack of sensitivity of the self-concept as an indicator of change has been provided by the continuity-theory of aging (e.g., Atchley, 1989; Brandtstädter & Greve, 1994; P. G. Coleman, Ivani-Chalian, & Robinson, 1999). According to authors in this field of research, it seems unlikely that significant self-descriptors cease to be of importance even when situations change. Thus, self-definitions and identities are supposed to provide an important source of continuity as people age. For example, for someone who has assumed for a long time the role of a partner, this partnership will continue to play an important role for his/her self-description, even after the death or divorce of the spouse (see Troll & Skaff, 1997 for similar evidence). Similarly, it appears to be in line with the continuity theory of aging that a profession – although belonging to the past for many older adults – still was mentioned spontaneously as an important domain for self-definition by many of them, often with the same frequency as in the case of young adults. Carstensen and Freund even point out that the self might be one of the few domains where age is associated with *no loss* (Carstensen & Freund, 1994). For example, in the Berlin Aging Study, although there was indeed found an age-graded reduction of self-defining domains, the effect is entirely

accounted for by subjects' degree of mobility (Carstensen & Freund, 1994), implying that all domains, that are *not* affected by external restrictions that come with age, remain unchanged. Likewise, Greve and Wentura propose that apparent age-related changes that are dictated by the environment (i.e., decreasing health, fewer possibilities) might threaten an individual's sense of competence of control. Hence, instead of accepting these changes, their significance is played down, and they are subjectively perceived only to concern marginal aspects of one's life or oneself (Greve & Wentura, 2003). For example, if an athletic person loses his/her mobility, the importance of athletic ability to his/her self-understanding will persist, yet will now refer to another conglomerate of traits and behaviors, such as "enjoying to be outdoors" or "liking to watch athletic events". Thus, the self-aspect, which by objective standards might not exist anymore, is retained in the self-concept, yet with a somewhat changed underlying definition.

In sum, there seem to be two main reasons why number of self-aspects did not decrease with age: First, the older adults in the present sample were not seriously restricted yet in the pursuit of their interests, their habits, and their day-to-day activities. Second, and more importantly, the findings of the present study can lend yet another piece of support to the notion that self-definition is not very sensitive towards external environmental changes, such as retirement or the loss of significant persons: The analysis of change in the content of self-defining categories indicates that, in line with the continuity theory of aging, roles once assumed remain important sources of the self-definition, independently from whether they still correspond to real-life experiences of the present. Losing life domains thus is not associated with a removal of a self-aspect, but only with its re-definition.

As a final critical note to this point, however, one might consider a third explanation for the apparent lack of changes in older adults' self-concept: Given the present infrastructure and societal set-up that elderly people currently are facing in our society, there might simply be a lack of potential new definitions that are available once people enter old age: After all, to "retire" is mostly still literally associated with a "retirement" and disengagement from public life; In our society, older people might simply not be given enough chances to start up new projects and to conquer new life domains for themselves. Being deprived of the possibility to assume new roles and acquire new skills, older adults as a consequence might necessarily hold on to their extant identities. Hence, the lack of change in the self-concept to some part might be a continuity that is forced upon an individual by the social and societal environment. Clearly, future studies are needed to disentangle the effects of "wanting to stay the same" and "having to stick with what one's got" because of environmental and cultural constraints. For example, it would be interesting to examine whether older adults who, after their retirement, pursued something new (e.g. a new quasi-professional domain), tend to list more self-aspects than those who maintained living their life as before their retirement. Such an examination could also clarify

whether or not newly adopted self-aspects only replace prior self-aspects, and thus whether do, or do not, necessarily cause an increase of self-aspects: after all, there might also be a certain set point of self-aspects for every individual, beyond which no further self-aspects are acquired, and old aspects are only replaced by newly gained aspects. Ideally, however, the question whether a lack of change in the number of self-aspects is caused by replacing or by retaining self-aspects can only be solved by applying a longitudinal design, in which not only the change in number, but also the change in the kind of self-aspects taking place within a certain period of time are compared intraindividually.

8.1.2 Affect Balance

It was expected that, due to an age-correlated tendency to optimize affect, younger persons would show higher levels of affect balance than older individuals. Affect balance was assessed by subtracting the mean score of negative attributes associated with oneself with the mean score of positive attributes perceived as self-descriptive. The results of the present study give support to the expectation: Younger participants' balance in self-related emotions exceeded the one of older people, due to a higher tendency of younger people to associate negative emotions with themselves.

The results resemble the ones yielded by studies examining the level or frequency of negative affect across the life span. Accordingly, various evidence points to a decrease of negative emotions with age (e.g., Carstensen et al., 2000; Mroczek & Kolarz, 1998). However, positive affect has often been shown to take a similar course over the lifespan, indicating a general decrease in intensity and frequency of emotion over the lifespan, not specific to negative affect (Mroczek & Kolarz, 1998; Pinquart, 2001). In fact, current opinions claim that these "changes" might not be changes at all, but – since mostly assessed by cross-sectional data – reflect cohort effects brought about by the lower predisposition to report affective experiences in older cohorts (Magai, 2001). This argument does not hold for the present study, because individuals were not asked to make statements about their affect. Still, the predicted age differences in negative hedonic tone prevailed, whereas patterns of reduced positive affect were not replicated, thus making another explanation seem more likely: As Carstensen argues in her socio-emotional selectivity theory (e.g., 1999), older adults presumably are indeed more inclined than younger adults to seek and to maintain positive affective experiences and to avoid negative ones – whereas younger adults are much more keen on gaining new experiences even at the cost of positive affect. The fact that older adults decreased in terms of negative affect but used equally positive attributes to describe themselves is an additional interesting result. If replicated, this pattern would warrant the assumption that older people learn to avoid negative situations and to downregulate

negative feelings rather than that they learn to seek positive situations and experience positive emotions more distinctly, as socio-emotional selectivity theory would suggest.

Implications of this result with regard to lifespan development seem to be somewhat twofold. On the one hand, the finding provides yet another indicator for an age-related improvement in affect and self-regulation implying a more adaptive strategy to cope with affect-eliciting events and situations: Broad evidence illustrates the capacity of older persons to be more at ease with their own weaknesses (Dittmann-Kohli, 1990, 1991), to cope more successfully with negative life experiences (e.g., Charles, Mather, & Carstensen, 2003; Kennedy, Mather, & Carstensen, 2004; M. J. Lerner & Gignac, 1992), and to downregulate negative feelings more effectively (Gross et al., 1997; Lawton et al., 1992). On the other hand, the trend is in line with studies that point toward a decrease in complexity of affect (Labouvie-Vief, 2003, 2005; Labouvie-Vief & Medler, 2002) or an increase in passive-avoidant affect-regulation styles (Blanchard-Fields et al., 2004). Thus, the finding can be regarded as a metaphor for the dilemma between growth and adjustment: Although it seems important to maximize positive affect and well-being, it might frequently cost the ability to maintain a complex and differentiated viewpoint.

8.1.3 Self-Concept Integration

In terms of *integration*, there was – as predicted – a strong age-related trend towards a higher integration in old adulthood. No matter which people they interact with or what situations they find themselves in: Older adults seem to have discovered their key strengths and weaknesses and their most relevant characteristics in the course of their life, and this knowledge seems to offer a reliable frame of reference as situations change. They – or at least, their views of themselves – do not change with different contexts. Two methods were employed to assess the degree of integration, namely the average intercorrelation between aspects and their absolute similarity as reflected in attributes rated consistently across all self-aspects, and both yielded results strongly corroborating this trend.

The higher degree of self-concept integration among older adults is somehow a mirror-image of the diversification of identity taking place in adolescence (Harter, 1999; Harter, Bresnick, Bouchey, & Whitesell, 1997), where self-aspects do not only multiply, but where the conflicts between those various self-aspects make themselves felt (Harter & Monsour, 1992). As mentioned before, one explanation for the significantly higher levels of integration among older adults is simply that older adults had much more opportunities to collect information about themselves, making them more secure about their identity (cf. also Markus, 1983; Markus & Herzog, 1991; Zucker, Ostrove, & Stewart, 2002).

But there is more to this result: Staying the same independently from what or whom one is facing also indicates great self-confidence, and autonomy from what others might say. Thus, it seems

that older adults are less likely than younger persons to seek the approval of everyone. This assumption is in line with results indicating that older people (1) show greater autonomy from the approval of others (Ryff, 1995; Sheldon, Houser-Marko, & Kasser, in press) and engage less in self-monitoring than younger individuals (Reifman, Klein, & Murphy, 1989), (2) rely on temporal rather than on social comparison in evaluating themselves (Filipp & Mayer, in press), (3) show a smaller distance between actual and ideal self (Brandtstädter et al., 1993; Cross & Markus, 1991; Ryff, 1991), and (4) are more accepting towards themselves (Dittmann-Kohli, 1990; Nehrke, Hulicka, & Morganti, 1980). As they feel more content and satisfied with themselves, they seem to demand the same by their social environment, namely to accept and appreciate them how they are. Less energy is invested in exploring the views of others, and trying to adapt to their expectations. Again, these results can be integrated with the findings of socio-emotional selectivity theory (e.g., Carstensen et al., 1999; Lang & Carstensen, 2002). According to this theory, older adults use different heuristics than younger adults in choosing interaction partners. Thus, as we become older, the need for distraction, for new experiences, and for information-seeking, decreases. Instead, positive affect as the outcome of interaction gathers up in importance (cf. also Ferring & Filipp, 1999). As a consequence, older adults will show a stronger tendency to seek predominantly out the company of those persons who make them feel good, resulting in a reduced necessity to adjust to different expectations, and, as a consequence, in a reduced cross-situational variability of behavior.

It is assumed that these well-documented age differences in social interaction preferences have an impact on the degree of self-concept integration. First, facing new contacts, and confronting situations in which one assumes new communication roles, challenges one's self-worth. After all, whereas the interaction with well-known and loved interaction partners will cause positive feelings, this is by no means the case for new contacts. In comparison to interaction with familiar and close persons, new contacts might – next to the positive outcomes they of course might have – lead to self-doubts, feelings of failure, of not being competent and not being liked. Thus, older adults are more likely to receive a constant positive feedback by their interaction partners, whereas younger adults have a higher relative probability of leaving a social encounter unhappily, with a sense of disparagement and worry. In short, given the age differences in the preferences of social interaction partners, social encounters will tend to give affirmation to the self concept with regard to older adults, but increase self-doubts and insecurity in younger adults. Second, encountering unfamiliar situations necessarily calls for an ability to adapt one's behavior and one's attitudes, and thus, will foster variance within the self-concept across contexts and situations. Older adults, in contrast, tend to create life environments for themselves that are themselves low in variance. They will pursue situations and interactions that are characterized by familiarity and pleasantness, thus reducing the variability of their life domains (Greve,

2005a; Roberts & Caspi, 2003). As a consequence, fewer possibilities exist for skills of adaptation and adjustment to come into being: Older adults have created themselves environments in which they can stay the same across contexts (simply because the contexts do not differ greatly and because they are well-known) and are even likely to receive positive feedback for the way they are. Hence, for older persons it might be less *necessary* to adapt to interaction partners, and fewer doubts are raised whether changes are needed, because older adults' interaction partners represent a selection of people that have proven to be accepting and appreciative towards oneself, and thus, grant a positive emotional outcome of the interaction. Additionally, it is likely that the preference for the familiar and pleasant does not only apply to social contexts, but in a more general way, thus reinforcing the two mechanisms fostering self-concept integration.

Again, one could alternatively interpret the higher levels of integration in a less positive light. Drawing once more on the differentiation between the "I" and the "Me", it might in fact be the case that the "Mes" of younger people do not vary any more than the "Mes" of older people as contexts change. Preference for consistency in various studies has been shown to increase with age (e.g., S. L. Brown, Asher, & Cialdini, 2005; Conley, 1984a, 1984b) and at the same time, the ability to process complex information is on the decline (Bacelar, 1999; Labouvie-Vief & Medler, 2002). Thus, seeking for consistency, continuity and reduction of complexity, older peoples' "Is" might only *perceive* themselves as less diverse across contexts, attesting *less* and not higher differentiation in their thinking, because actually extant divergences in one's behavior are not realized as such or are screened out intentionally. The consistency bias mostly refers to the perceived concordance of incoming information with pre-existing attitudes, cognitions, and beliefs. However, consistency also implies the consistency *within* an existing thought system. The evidence of the present study provides evidence of a positive age-trend at least with regard to this latter kind of consistency. Older adults *do* seem to have a greater inclination for consistent information as compared to younger adults.

However, finding a solution for these competing assumptions about the age-related increase in self-concept integration would probably only be possible by comparing self-report ratings, with observer ratings. If indeed the greater continuity of themselves across situations would be only in their own minds, observer ratings of the differences of old and young people across different situations should not differ. That is, older people should be rated to act and behave in different situations just as differently as younger adults do.

A final explanation for the higher self-perceived transsituational consistency of older as compared to younger adults is that their environment usually changes only marginally, whereas the environment of younger adults undergoes a great deal of change. Roberts and Caspi labeled this phenomenon "cumulative continuity" (2003; Roberts & DelVecchio, 2000). Accordingly, the individual

through the realization of goals and intentions achieves an ever-increasing continuity or stability of his or her environment in the course of his or her life. The space of actions and decisions at a later point in life thus increasingly narrows and depends on actions and decisions taken earlier. Thus, given that behavioral variation to a great part is caused by variation of contextual demands and changing environments, and given that this variation steadily decreases through the individual's own volitional efforts, it follows only natural that there is less variation in older people's behavior or personality. However, as Greve (2005a) points out, with the de-normatization of life courses and the acceleration of the succession of changes throughout life in modern society, the intra-individual consistency as demonstrated in the findings of the present study might decline as well when it comes to future generations.

Taken together, there are four possible explanations for the higher levels of integration in older people. First, older persons might simply know themselves better, drawing on a richer and more varied set of past experiences. Second, older people might care less about the expectations of others in general, and as a consequence, adapt less to the anticipated requirements of a social situation. This tendency in turn might be reinforced by a greater selectivity of interaction partners: those who surround higher-aged adults might be persons who have proved to be accepting and appreciative companions in the past, making intense adaptation processes redundant, whereas those who surround younger people might be the ones who can provide the highest amount of new experiences. Third, older and younger people in fact might not differ in terms of the amount they change from one context to another; older persons might only perceive it this way because they have lower abilities of tolerating complex and ambiguous stimuli and, as a consequence, a stronger consistency bias in their perception. Fourth, the intentional shaping of life through the individual necessarily brings about less variability in environmental demands with increasing age, and might also effect in a lower degree of trans-situational behavioral variance. Future studies that examine the issues of self-knowledge, autonomy, and the need to reduce complexity within a lifespan framework, are required to get a better idea about the underlying mechanisms of the age-related increase in self-concept integration.

8.1.4 Self-Esteem

In concordance with the predictions, older adults showed higher levels of self-esteem than younger adults. Again, it was mentioned before that evidence on this topic is quite diverse, ranging from negative age-trends to findings that diagnose higher levels of self-esteem in old age. Again, one might ask why the evidence is so mixed (e.g., Pinquart, 1997). The reasons for these ambiguities seem not to be entirely solved yet. What can be said with certainty, however, is that the method of assessment

plays a crucial role. Frequently, self-esteem is assessed on a holistic level, yet has been shown to be a composite of multiple self-evaluations (Harter, 1990). Thus, the present approach, to measure self-esteem through averaging self-appraisal across aspects, seems to be a valid way of getting a grasp on the construct (for a short review on the topic see Kernis & Goldman, 2003). However, there are two factors that might possibly distort the validity when assessing self-esteem in this way: First, participants were asked for an appraisal of relevant self-aspects. For example, a participant might be asked to rate the quality of the self-aspect "I with my family". The participant might evaluate this aspect in a negative way; However, this does not necessarily imply whether the person perceives herself as being "not good at" being with the family; Instead, the person might blame the other members of the family for the negative valence of the family-domain. Another person might perceive the self-aspect "work" as very negative, because he/she feels bored and not fulfilled by the work. Thus, when blaming other persons or circumstances for the malfunctioning of a certain life-domain, this life-domain might be perceived in a negative light, while not being a source of a reduction in self-esteem. As a consequence, with the present way of assessing self-esteem, sometimes rather the evaluation of a life-domain might have been assessed, and not the way the person perceives his-/ or herself with regard to this domain. This problem might be solved by a slight modification of the instruction so that it gets clearer that not the domain, but the person herself/himself is the subject of the evaluation. Another problem with this method of self-esteem-assessment by letting participants evaluate self-generated domains is, that once a self-aspect is regarded as strongly negative by a person, this aspect might simply be effaced from one's view, and thus not be defined as part of the self any more (i.e. "compartmentalization", Showers, 1992). It has not yet been determined whether life-domains or experiential contexts that are intentionally skipped or avoided influence self-esteem in a negative way: On the one hand, a person might feel that he/she has failed with regard to this life-domain. On the other hand, once removed from one's life, the specific context does not continue to exert a negative influence on self-appraisal.

In sum, expectations about age differences of self-esteem were fully confirmed by the results. However, a slight improvement of the instrument might be to clarify the subject of the evaluation, and to emphasize that the person should evaluate himself/herself rather than a certain life domain. On the other hand, this caveat does not present an extremely profound constraint to the validity of the results. Thus, findings that certify the multi-facetedness of self-esteem lend credit to the present method of assessment (Eid & Diener, 2004; Harter, 1990). Last but not least, the higher levels of self-esteem found in older, as compared to younger, adults replicate the findings of multiple other studies (for a review see Robins et al., 2002; Ryff, 1995).

Positive self-attributions increase with age, leading to a more positive global self-evaluation. Does this pattern suggest that the tendency to self-enhance increases with age? Not necessarily. In

chapter 2, it was suggested that the inclination to prefer positive self-referent information (self-enhancement principle) in combination with the universal proclivity towards information that is consistent with one's self-beliefs (consistency principle) implies that positive information about oneself is especially resistant to change, and is more likely to be accepted, despite being inconsistent with one's prior belief, than negative information. As an example, an individual might abandon the negative self-belief of being bad at conversation after experiencing several situations defying this notion. In contrast, an individual might cling to the positive belief of being good at convincing others despite experiencing evidence to the contrary. Likewise, an individual might be more likely to accept a hitherto defied self-attribute in the case that it was positive, rather than in the case it was negative. For example, someone might be more prone to come to believe that he/she is good at chess than that he/she is bad at chess against his/her prior conviction when experiencing according feedback several times. Thus, given that positive self-attributes simply have a higher likelihood to "survive", it is only natural that older people appraise themselves more positively than younger people. Hence, the finding only demonstrates that people seem to be susceptible to a positivity bias throughout their life. In contrast, the hypothesis, as to whether the positivity bias changes in salience over the life-span, could only be tested by assessing age differences and the reaction towards *new* positive and negative information.

8.1.5 Value Orientation

In terms of *value orientation*, it was expected that older people would exhibit a greater proclivity towards self-transcending values, whereas younger adults would score higher with regard to self-centered values. This trend was clearly supported by the data. However, since value orientation is a psychological dimension that seems highly susceptible to the influences of culture and society, the effect obviously has to do not only with age effects, but also with cohort effects. Among all the components investigated, value orientation seems to be the one that is most prone to cultural influences. Consequentially, it seems especially important, in terms of these results, to investigate them through a longitudinal design, or with regard to different cohorts (for some current examples, see e.g., Bauer & McAdams, 2004; Kasser, Koestner, & Lekes, 2002; Sheldon, 2005).

What seems additionally noteworthy in terms of these results is that there was a relatively high correlation, $r = .22$, $p < .01$, between the endorsement of self-centered values and the endorsement of self-transcendent values, which is opposed to the theoretical conception of self-transcendence and self-enhancement as two poles of one continuum. Given that this assumption is true, the results would point out that the questionnaire may be susceptible to a confirmation bias: irrespective of the kind of

values in question, people tend to rate the importance of them either as generally high, or as generally low.

The findings concerning the age trajectories of the six self-concept components are summarized in Figure 29.

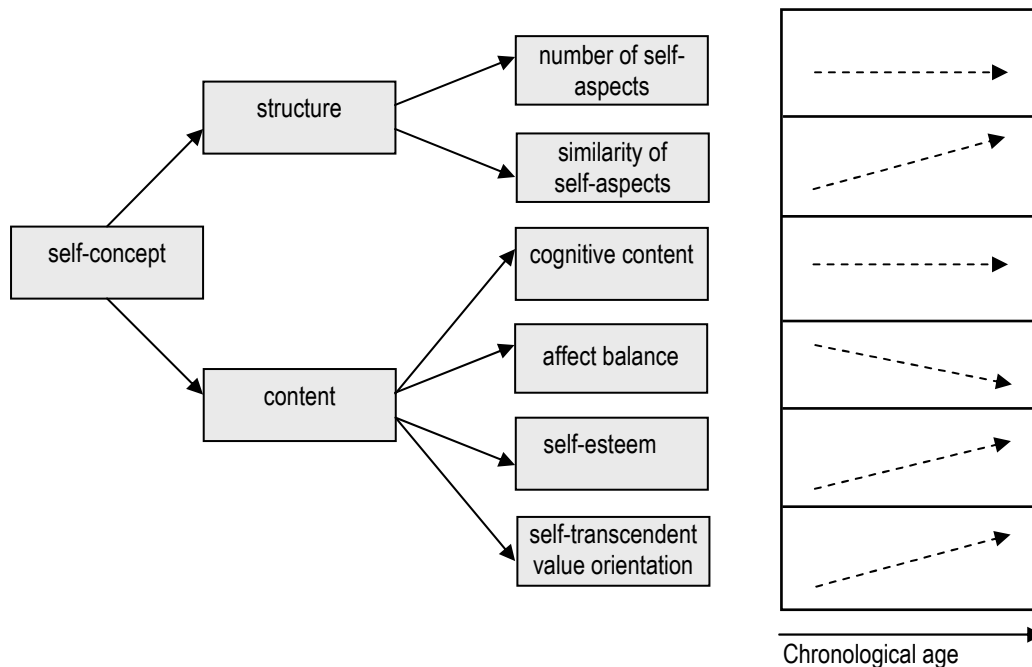


Figure 29. Age trajectories of six self-concept components. Illustration of the findings

Of course, these findings are only based on cross-sectional data, and middle-aged adults were omitted. Hence, the figure only illustrates age differences between younger and older adults, and conclusions with regard to the trajectories of the six components can be made only tentatively. For example, based on the findings, it seems that certain self-concept components are likely to increase throughout adulthood, namely the similarity of aspects, self-esteem and the emphasis on self-transcendent values. Other components of the self-concept may tend rather to decrease; especially the degree of affect balance. In contrast, number of aspects assumes a stable (or possibly, when potential trajectories during middle adulthood are taken into account, a curvilinear) trajectory throughout the adult years, just as the content of self-aspects does not seem to change considerably. Applying the templates of the basic functions of the self-concept – namely organization, motivation, and protection – to these findings, a tentative interpretation might be that self-concept functions shift in their salience throughout life. Thus, those facets primarily indicative of *self-organization* (e.g., complexity of the self-concept) remain stable, (at least as long as there is not a considerable decrease in cognitive functions), those facets mainly indicative of *protection* become more important (e.g., self-esteem, affect [im]balance), and the facets that primarily represent *motivation* undergo a change from being self-centered

to being other-centered (e.g., value orientation). In fact however, each of the five components reflects *all* three functions to a certain degree, and therefore this interpretation is certainly debatable, depending on how much one associates a self-concept component with a certain self-concept function.

Assuming that the findings are no cohort effects and that they can be replicated in future longitudinal studies, what does this pattern imply for the self-concept in old age? According to the present analyses, older peoples' self-concept in comparison to younger peoples' self-concept seems to be characterized through: (1) a more positive colouring – as apparent in higher self-esteem and the stronger endorsement of positive self-attributes, (2) a more consistent self-view across contexts – as apparent in a higher inter-correlation of self-descriptions across contexts and more consistently rated self-attributes, (3) a more self-transcendent value orientation, and (4) an unchanged complexity of the self-concept as apparent in an equal number of spontaneously generated self-aspects and classes into which these self-aspects can be sorted.

It seems that older adults in the course of their lives through continuous striving have accomplished to create an environment where they feel content and at ease with themselves without having to make too great an effort to adjust and re-adjust their behavior to changing people and environments. It also seems that their age does not make them feel limited (yet?) in the number of important life domains they invest in. Throughout life, they appear to have learned to develop a more lenient view, not only towards themselves, but also towards the world in general, showing in a more self-transcendent value orientation.

In short, from an adjustment point of view, the self-concept of older adults can be evaluated very positively: Older adults have formed a concept of themselves that seems to be in line with what they want and feel like and, yet, fully in accordance with social norms. From a personality growth point of view, however, this self-concept might entail certain drawbacks. Secure of and content with what they are, and living in a familiar environment built up according to their goals and desires, older adults might have deprived themselves of possibilities to discover new sides about the world and themselves, to deal with ambiguities, and to gain new perspectives. Although at first sight, these strivings do not seem to be in line with the developmental tasks of older age – namely to come to terms with one's life – they seem to be vital to accomplish personality growth as defined in the present work. Thus, perhaps the turmoil and climate of change characteristic of young adulthood might, in certain respects, provide a more fertile breeding ground for personality growth than the familiar and reliable "niche" of life that many older people have established for themselves. On the other hand, the fact that older adults do not have to grapple any more with the question of their identity and their goals and values might also make them less susceptible to becoming defensive against new, contradictory and possibly self-threatening information. From their secure point of view, they might theoretically have a better chance to evaluate

incoming information in a more objective and calm way. The challenge of old age thus might be to keep this secure vantage point without trying to efface any information that is not part of the familiar picture, which could very well prove to be a challenge within the comfortable and familiar environment one has so strenuously built up around one's self. .

8.2 A New Measure of Personality Growth: SCM

The main purpose of this study was to create a new and indirect measure of personality growth. This section will discuss whether or not this goal was accomplished according to the validation results. The first section will address the preconditions of arriving at a valid measurement of personality growth in the present study. Thus, we will examine whether or not the indirect measure used in this study compensated for the risks associated with a direct measurement of personality growth. In the second section, results of the validation of SCM will be discussed to decide whether or not they can be regarded as a valid indicator of personality growth. Additionally, since the use of profiles is especially contentious in psychological research, a third section will address the necessity of applying a profile in the present approach.

8.2.1 Avoiding the Problems Associated with Direct Measures through Using an Indirect Measure: Mission Accomplished?

It was argued that by using an indirect measure, a number of problems associated with direct assessment of personality growth could be avoided. To examine whether or not this really was the case in the present study, the table depicted in section 1, with the lists of parameters that might reduce the validity of results, will be reviewed; this time with regard to the measure used in the present study (see Table 40). Again, a high salience of parameters implies that they put the validity of a measure at risk, whereas a low salience implies that the parameters do not cause systematic deviances between test results and true scores.

Table 40.

Overview of Parameters that can Reduce the Validity of the Results in Direct Assessment and Degree to which they Apply to the Present Assessment of Personality Growth

Sources of false test answers	Concrete parameters causing false answers	Salience in measuring PG ^a	
		low	high
Judgment competence	Item clarity		
	abstractness	x	
	complexity	x	
	not commonly used	x	
Judgment performance	Ignorance of item normativity		x
	Unconscious tendencies		
	positivity bias	x	x
	self-consistency bias ^b		
	...		
	Faking test results		
	social desirability	x	x
	personal relevance of test result	x	
	relevance of consequences of test result	x	

The present measurement of personality growth was operationalized as an instrument that measured five components of the self-concept. As summarized by the table, there are only three parameters that became salient in this measurement, and only one of those applies to all self-concept components assessed: ignorance of item normativity applies to all self-concept components that were assessed. However, since the assessment that no one single self-concept component is required to form a statement beyond the intra-personal level (such as is required, e.g., for giving an accurate rating on the item 'I am a smart person'), the high degree of salience of this parameter in the present assessment did not affect its validity. Positivity bias and social desirability, in contrast, did probably have an effect on the testing of some of the components that were assessed. Thus, primarily the value scale is susceptible to social desirability biases and positivity biases. However, it is important to note that items assessing self-transcendent values in the present scale were mixed with items addressing self-serving values, and that test items were in a random order. For some items dealing with self-serving items, a positive rating was not socially desirable, for example for items such as 'social power', control over others, 'dominance', or 'wealth', Material possessions, and 'money'. Hence, a person that would be likely to attempt to evoke a desirable impression of himself/herself cannot simply rate all values on a high level, but would have to reflect before giving a rating to a question. This circumstance might – at least to some degree – compensate for the social desirability of the scale.⁷⁶

⁷⁶ The present study did not include a test of social desirability, which would have allowed testing the association with the affirmation of self-transcendent values. However, the study comprised a scale that assessed a kind of social undesirability, namely the ability to criticize others and to deny them wishes, that is to say; undesirable truth (Interpersonal Competence Questionnaire [ICQ], Riemann & Allgoewer, 1993; Thanks to the authors for providing us with a German version of the ICQ). The association between this scale and the self-transcendence scale was $r = .15$, indicating that there was no significant relationship between self-transcendent value orientation and social undesirability.

Furthermore, it is possible that the instructions suggested to participants that it was desirable to produce a very high number of self-aspects. However, thinking of self-aspects that are not presented is not so easy. Furthermore, listing a higher number of self-aspects implies taking more time to complete the questionnaire, because participants are asked to describe themselves in terms of each aspect. For these reasons, it is unlikely that participants consciously gave false answers when asked to generate self-aspects.

By and large, the indirect measurement used in this study could compensate for the disadvantages associated with direct measures. Hence, using an indirect approach instead of a direct measurement seems to have paid off in regard to the present study.

8.2.2 Personality Growth as the Most Important Predictor of SCM

The main purpose of this study was to create a new and indirect measure of personality growth. This goal was accomplished according to validation results. It was argued, that whether or not SCM would be capable of assessing personality growth, could be identified by examining its relationship with various domains of psychological functioning. The assumption was that if SCM did indeed exhibit the same relationship with other psychological domains as – drawing on extant theories and findings – were personality growth variables in general, the aim of the study would be accomplished. A precondition for validating the instrument's ability to assess personality growth, however, was that it could provide a valid measure of the variable that was considered to be the “bridge” to personality growth, namely the self-concept. The successful replication of age differences throughout five different components of the self-concept as discussed above indicated that the measure did accomplish this purpose.

To validate the capability of SCM to measure personality growth, predictions about its localization in the psychometric space were made by reviewing literature on the various concepts and interactions of personality growth and other domains of psychological functioning. Thereby, predictions were ventured about the relationship between SCM, and six domains of psychological functioning. First, it was assumed that SCM, among all interrelations with other domains, would show the highest associations with the domain of personality growth as assessed by established measures. In contrast, variables from the domain of adjustment – which were considered to operate as counterparts to personality growth in the conceptualization of positive developmental trajectories – were expected to have no predictive power in explaining variance of SCM. Following this logic, chronological age, that according to the literature is a vital concomitant of adjustment but not of personality growth, was also not supposed to show significant relations with SCM. It was further hypothesized that SCM would not

be entirely independent from cognitive components, and that this characteristic would be reflected in a moderate relationship with measures of intelligence. Likewise, moderate links were also assumed to exist between SCM and the domains of life events, and self- and life reflection, respectively. In addition, self- and life reflection were predicted to moderate the relationship between life events and SCM, such that the effect of life events on SCM would be higher, if the propensity to engage in self- and life reflection was high. Likewise, chronological age and neuroticism were supposed to act as moderators in the relationship between self- and life reflection, and SCM: older persons, and those with low levels of neuroticism, were assumed to benefit to a greater degree from engaging in self- and life reflection in terms of their levels of SCM.

The results of the validation by and large confirmed the hypotheses. The results supported all of the specified assumptions, with the exception of the predictions made in terms of intelligence. Also, predictions were not entirely confirmed with regard to life events. Although the assumption that self- and life reflection would moderate the effect of life events on SCM was confirmed, life events could not significantly account for levels of SCM if no third variable was considered. Age and neuroticism, as expected, interacted with the effect self- and life reflection had on growth, yet in the opposite direction: thinking about oneself and life were less, rather than more important, for older people with regard to their levels of SCM, just as an individual's tendency to reflect about oneself and about life was more highly associated with SCM if the level of neuroticism was high instead of low.

The result that personality growth of all domains would be the most important predictor of SCM was fairly robust across analyses: zero-order correlations were largest between SCM and variables of personality growth; domain-specific regressions yielded the strongest results when using personality growth variables as predictors, and personality growth variables were shown to contribute the largest share of variance when considered in concert with all other variables in a commonality analysis.

The influence of other domains of functioning, as expected, was found to be far less important for the prediction of SCM: chronological age and adjustment had no share in predictive variance of SCM and self- and life reflection could account for only a moderate amount of variance in SCM. Against expectations, intelligence did not exhibit a significant relationship with SCM.

The latter result might be due to the fact that SCM, unlike other personality growth measures, relies less on assessment methods that require cognitive abilities. Thus, instruments that have been shown to show a significant association with intelligence, such as Loevinger's measure of ego development (e.g., 1976), Labouvie-Vief's method to measure affect complexity (e.g., 2005) or Mickler's instrument to assess self-related wisdom (2005), use written language (e.g., sentence completions, think-aloud protocols, or answers to open-ended questions) as basis for personality growth ratings. These kind of instruments are likely to confound the assessment of intellectual abilities

with the expression of developmental achievements (Lubinski & Humphreys, 1997): First, instruments that rely on language inevitably run the risk of mistaking the level of linguistic complexity and sophistication as measures of the intended developmental indicators, rather than the content that is conveyed by a certain text passage. Secondly, these, and related, instruments seek to identify developmental changes in reasoning about intra-personal processes, inter-personal conflicts, morality and similar constructs. Because reasoning is a salient component of these assessment procedures, it is not far-fetched to assume that intelligence plays a significant role in the test result (Cohn & Westenberg, 2004). When completing the self-concept instrument used in the present study as an indicator of personality growth, individuals only once had to self-generate verbal information: they had to list a number of aspects important for themselves or their lives. First, this assessment is unlikely to be influenced by the level of cognitive abilities because intelligence variables, like speed, memory, and reasoning seem completely irrelevant to the completion of this task. Secondly, even though certain cognitive variables might manifest in the terms chosen for self-aspects, this will have no importance for the final test results. Self-aspects are only analyzed in terms of their number, and the variety of categories they can be sorted into; therefore, linguistic characteristics do not affect their coding.

Identifying the variables that accounted for the predictive power of personality growth on SCM yielded somewhat surprising results: Among all considered variables, only self-related wisdom and ego development were found to explain significant shares of variance in SCM. However, the influence of these two variables was fairly strong. Furthermore, self-related wisdom and ego development are among the best validated constructs of personality growth. Still, the exceptional status of the two variables in the present study makes one wonder what sets them apart from the other measures applied in the study. Identifying the characteristics that differentiate self-related wisdom and ego development from the other measures in turn, would make it possible to arrive at even more precise descriptions about the location of SCM in the semantic space of psychological functioning.

First, it is informative to consider that the exceptional status of self-related wisdom and ego development is also reflected in other analyses. Thus, in principal component analyses with Oblimin rotation⁷⁷ comprising all variables of personality growth and adjustment used in this study, self-related wisdom and ego development were found to cluster together on one factor, on which no other variables came to lie, explaining about 8% of the overall variance. Thus, statistically as well, self-related wisdom and ego development seem to have something in common that is not shared by the other variables of personality growth. The most apparent difference of ego development and self-related wisdom from the other variables of growth is that they, too, are indirect measures of growth: ego development is

⁷⁷ Oblimin rotation was used because it was assumed that a number of the included variables, especially the PWB variables, would relate to growth as well as adjustment. Hence, factors were not assumed to be entirely orthogonal.

assessed by a sentence completion technique and self-related wisdom is based on an other-rating of think-aloud protocols dealing with self-relevant topics. All other variables under the heading of personality growth, the two PWB scales, NEO openness, psychological mindedness and behavioral rigidity, in contrast, rely on self-reports. In the introduction to this work it was stated that a main advantage of indirect measures is that they avoid problems of social desirability. An example of this is that the PWB scales, and psychological mindedness to a great part, capture attitudes, goals, preferences and conscious self-conceptions. Thus, they heavily rely on conscious attitudes and behaviors – which are in turn heavily informed by what is regarded as appropriate or desirable within the social environment. Being indirect measurements, SCM, self-related wisdom and ego development, circumvent this problem because they primarily build on mechanisms, stereotypes, and conceptions, of which the individual might be less aware – at least in the situation of testing. Also, the PWB and psychological mindedness scales might predispose an individual to perceive the world and oneself in a certain way, for example, to be motivated by direct attention to the inner, psychological aspects of oneself and others (as measured by psychological mindedness), and to make a constant attempt to develop further (as measured by personal growth). In other words, these variables measure motivational predilections and domains of interest. Thus, the scales will indeed measure the likelihood of engaging in psychological thoughts and acting on opportunities to learn, but they do not necessarily assess the success of these attempts (McCallum & Piper, 1990, 1997). Further differences are, for example, that NEO openness and behavioral rigidity seem to be behavioral dispositions, and, as such are not very malleable. In contrast, the triade of SCM, self-related wisdom, and ego development represents developing aspects of the personality, and their ontogenesis seems to vitally depend on, among other factors, the interaction with one's environment and others, as well as the reflection about this interaction.

Hence, the differences between the relationship of SCM and ego development / self-related wisdom, and the relationship of SCM with other variables of personality growth underline, once again, the necessity of an indirect approach. At the very least, indirect measures seem to tap into, not necessarily more, but different, components of growth than direct methods do, perhaps particularly on those components that are subtler and better masked through social conventions.

As expected, SCM was significantly related also to variables measuring self- and life reflection and to life events. Self- and life reflection emerged as a relatively strong predictor of SCM, showing significant zero-order correlations and simple regression results. In commonality analysis, self- and life reflection was demonstrated to be the second most important predictor of SCM after personality growth. As discussed above (section 3.4.5), self- and life reflection has been much more frequently studied with a focus on adjustment, and only seldomly been examined in terms of its effects on personality growth.

However, the few studies that have dealt with the relationship between self- and life reflection and personality growth, such as the ones by Taft and Nehrke (1990), who reported an increased level of ego-integrity after a life review intervention, or the ones of by Giltinan (1990), who diagnosed higher levels of self-actualization in her sample after engaging in regular life-review sessions, confirm a positive relationship between thinking about life and self and personality growth. However, *life review* seems to be more unequivocally related to positive outcomes, whereas *self-reflection* clearly has more twofold implications for growth because of its negative relation with adjustment variables.

Among life events, life events of the past (i.e., in childhood and adolescence) clearly revealed the strongest relationship with SCM. A higher subjective importance assigned to events experienced relatively early in life is a common finding in literature on autobiographic memory (e.g., Jansari & Parkin, 1996; Neisser & Libby, 2000). Whether the life events of adolescence and young adulthood also have a higher *objective* impact on personality change and growth than events occurring at other stages in life is not entirely solved yet. There are some results pointing in that direction, for example, a finding by Ardelt (2000) that wisdom in old age was significantly related only to the environment of adolescence, and not to other antecedents. In any case, life events seem to leave considerably deeper imprints when they are not only remembered, but evaluated and analyzed, which was indicated in the present study by the significant moderating effect of self- and life reflection on the relation between personality growth and life events.

Old age and neuroticism were supposed to be further moderators of the relationship between self- and life reflection and SCM. Although, indeed these variables turned out to moderate the relationship significantly, the results were opposite to the expectations: Younger adults benefited more from self- and life reflection than older adults, and individuals with high levels of neuroticism did so in comparison to individuals with low levels of neuroticism.

Age differences in the effect of self- and life reflection were supposed to be the other way round because life review is commonly considered to be a life task reserved to older adulthood, and because there is vast evidence on the benefits of life review in terms of adaptive and – although considerably less – in terms of personality growth variables when it comes to old age (for a review see Staudinger, 2001). However, when considering the reasons for the results, it might be that the very reason that was supposed to account for stronger relations between self- and life reflection and SCM among older adults might come to bear in the other direction. Thus, if indeed self- and life reflection are normative among older adults, or, at least, more so than among younger adults, than there should be less variance of this variable in older persons than in younger persons. Indeed, testing the differences between variances by Levene's test of equality of variances yielded significant result in the expected direction at least with regard to the frequency of self- and life reflection (a subscale of the scale

“perceived use and frequency of self- and life reflection”): M (older adults) = 3.17, SD = .67, M (younger adults) = 3.37, SD = .80, $F_{(1/159)} = 4.27$, $p < .05$. Hence, frequency of self-reflection in young adulthood seems to be a more appropriate variable to single out those with high developmental potential. Self- and life reflection thus is a more appropriate predictor of SCM with regard to young adulthood. Another point is that older adults may be “over-trained” in the action of life-review. Frequent pursuit of an intellectual task will eventually lead to its automatization. Self- and life review, as a consequence, might be performed on well-beaten pathways. The more familiar the memory of an event is, the less one tends to think about the reasons, consequences, and context of the event. Thus, older adults are less likely to engage in reminiscence rather than in self-reflection as explained in section 3.4.5. As a consequence, older adults might benefit from engaging in self- and life reflection in terms of their adjustment, but not necessarily in terms of their growth, whereas for younger adults, who do not employ over-used templates in order to think about themselves and their personal past, engaging in self- and life reflection appears more likely to pay off in terms of their levels of growth.

Similar findings, that indicate a higher importance of age-non-normative variables in contrast to age-normative variables in predicting variables of personality growth, have been reported in a study by Staudinger and Pasupathi (2003) examining correlates of wisdom-related performance in adolescence and adulthood: in this study, wisdom in adolescents showed an especially strong relationship with skills and capabilities that were *not* normative for their age group in contrast to the relatively low predictive power exerted by age-normative variables.

Testing the moderation effect of neuroticism yielded, against expectations, that for individuals with higher levels of neuroticism, the relationship between SCM and self- and life reflection was stronger. In contrast, it was assumed that a high level of self- and life reflection in neurotic individuals would be an indicator of pathological behavioral tendencies rather than assets for growth. The pattern found however refutes this interpretation. Self- and life reflection do not seem to point to pathological tendencies in individuals with high level of neuroticism, which was corroborated by zero-order correlations between self- and life reflection variables and neuroticism in individuals with high levels of neuroticism. In this sub-sample, zero-order correlations between neuroticism and reflection variables were not significant. These findings in general seem to hint at different strategies to attain SCM. For some of the individuals, engaging in self- and life reflection does not help their advancement in terms of growth. For them, other variables to facilitate growth seem to be of higher relevance; such as variables that help them to enlarge their horizons (e.g., actively seeking interesting environments and partners with whom to interact, overcoming challenges in the real world, solving conflicts with others). In contrast, people with neurotic tendencies might lack certain resources that non-neurotic individuals might have at their disposition, and thus, their strategy to compensate for this lack is to expand their

inner worlds, to fight inner conflicts, and to compensate for the lower number of events and changes they might have encountered by thinking about them more intensely. Of course, the reverse might also be the case. High levels of personality growth might generally motivate individuals to think more about conflicts, ambiguities, and problems. This is especially the case for neurotic individuals, while in terms of the level of self- and life reflection of non-neurotic individuals, it does not seem to matter how mature they are.

The discriminant validity of the instrument was assessed by examining its relationship with the variables of adjustment. Assessing discriminant validity is important to refute alternative interpretations of a construct (Popper, 1959). Verifying a relationship between a construct and the subject it was supposed to measure, by no means implies that the construct is not at the same time related to another subject to whom it should not be related. For example, after having verified the relationship between SCM and personality growth, one could still hold the assumption that SCM might be related to positive developmental trajectories in general, and thus, might also relate significantly to variables of adjustment. In this study, it was assumed that the dimensions of personality growth and adjustment were orthogonal, and thus, that the level of adjustment and chronological age would be irrelevant to the level of personality growth as assessed by SCM. At least, this has been reported for other constructs of personality growth such as ego development (e.g., Hauser, 1976, 1993; Manners & Durkin, 2000, 2001), self-related wisdom (Mickler, 2005), and integrated thought (Labouvie-Vief, 2003). In fact, the results of the analyses documented with great consistency that SCM showed no association at all to any of the variables of adjustment used in this study. This finding is in full concordance with the extant literature.

Summing up the results, SCM indeed seems to be a feasible alternative to grasp personality growth as defined in the beginning. It showed all the relations that were expected for personality growth, except being significantly related to intelligence.

In terms of the profile constructed to reflect a maximum degree of adjustment (SCA), it was predicted that there would be positive relations with the domains of adjustment, competence, and experience, while the highest relations would be clearly identifiable for the domain of adjustment. Furthermore, it was expected that SCA would show a significant link to chronological age, such that older persons would show higher SCA-scores than younger persons. Results were mostly in line with the predictions. As predicted, age was found to be significantly linked with SCA. Results of the commonality analysis mostly verified the assumptions. Thus, the four domains, for which positive relations with SCA had been expected indeed accounted for significant portions of explained variance in SCA. Consistent with the hypotheses, the domain of adjustment provided the largest share of unique variance. Additionally, age showed a considerable degree of shared variance with SCA.

In a final analysis, the attempt was made to bring together the idea of a profile reflecting personality growth, and one that would indicate adjustment: specifically, examined was the way in which the two age groups would distribute across the four types of groups emerging from a crossing of both dimensions. This procedure is similar to the approaches of Helson and Srivastava (2001), or Labouvie-Vief & Medler (2002). Similar to the categorization of four different types used in these studies, participants of the present study were divided into four groups according to their conjoint levels of SCM (high vs. low) and SCA (high vs. low).

There was a moderate negative correlation between the two profiles, implying that the two could not be regarded as fully orthogonal dimensions. Still, taking into account the considerable differences of predictive patterns in the two profiles, it seemed warranted to regard the two constructs as indicating two dimensions along which the self-concept could be described.

The four groups of individuals identified by crossing SCM and SCA were labeled

- dysfunctional (low levels on SCA and SCM)
- self-protective (high levels of SCA, low levels of SCM)
- growing (low levels of SCA, high levels of SCM)
- integrated (high levels on SCA and SCM)

From the predictions and findings cited above, some predictions about age distributions followed logically. Thus, since chronological age is related to adjustment, older people were expected to outweigh younger people in the self-protective group, that is, where adjustment was emphasized at the cost of personality growth. Likewise, more older than younger adults were assumed to be sorted into the integrated group, again because of their higher probability to attain high SCA at equal chances of accomplishing SCM – as personality growth is unrelated to chronological age. Younger adults were assumed to prevail in the dysfunctional group, because they had fewer chances to identify their priorities and important motives than older adults, and thus, might not have moved yet in either of the two directions of positive development. Finally, given that personality growth is unrelated to age, the complex group (where there was an emphasis on personality growth on the account of adjustment) was predicted to contain equal numbers of younger and older adults. Results almost fully corresponded to these expectations. Only the age distribution in the complex group, where a higher amount of younger adults than older adults existed, was against expectations.

This age distribution is strikingly similar to the one found by Labouvie-Vief (e.g., 2005), where the classification of groups was based on affect regulation styles (affect complexity and affect optimization); again one of them being more prone to adjustment, the other more prone to personality growth. A comparison of the two distributions yielded no significant differences between the two studies.

8.2.3 The Profile as an Indispensable Element in the Assessment of Personality Growth via the Self-Concept

Recently, the discussion about the use of profiles has gained in momentum in the field of personality trait diagnostics. The debate has mainly concerned the issue of whether personality types provide an incremental gain to the conventional measurement of personality traits by the assessment of separate personality dimensions, such as the Big Five personality traits (e.g., Asendorpf, 2003; Asendorpf et al., 2001; Rammstedt et al., 2004). There are different positions on the question whether or not profiles are preferable, or at least capable of adding new insights to the conventional method of classifying and describing differences in individuals based on personality trait dimensions. However, even though the incremental usefulness of personality types in comparison to personality dimensions is contentious, it seems unwarranted to jump to the conclusion that the profile approach in this study is redundant as well. The personality trait discussion, in short, touches upon the question of whether or not, classifying individuals based on their specific empirical configuration of personality traits into clusters of similar configurations, adds a value above and beyond the characterization of individuals by personality dimensions.

One argument that is often used against the use of profiles in personality psychology is that the approach is not guided by theory, but that it is based solely on the empirical observation of consistent and systematic similarities in the configuration of personality dimensions in certain sub-samples (e.g., Asendorpf, 2003). In contrast, the main reason for adopting the similarity of profiles as a measure of personality growth in the present study was of a theoretical nature. Thus, as reflected in many of the reviewed theories of personality growth, personality growth is a multidimensional construct that can be characterized with regard to motives, cognitions, and affect, and on the level of structure as well as on the level of content. Moreover, these different domains and levels are supposed to interact. For instance, a high complexity of thought is not necessarily beneficial from a growth perspective. Instead, complexity is an indicator of growth *only* if this complexity is used in the service of certain motives. Hence, a meaningful indicator of the self-concept by using the self-concept could only be constructed by considering a number of variables in concert instead of considering them in isolation. Thus, in contrast to the use of profiles in the trait context, the present approach follows a top-down strategy by deriving concrete predictions solely based on theoretical assumptions.

A second argument that is proffered against using profiles in personality psychology is that there is no incremental gain in using configurations of dimensions instead of dimensions for the description of personality. In the present approach, the use of univariate measurement, or a

combination of univariate measures, was not even a viable alternative. First, it was expected, that certain aspects of the self-concept would only be beneficial given that other aspects of the self-concept would assume a certain level. Thus, a multiplicative rather than an additive relation between the elements was assumed. Also, because for some aspects, a high level was expected to be advantageous, whereas for others, a medium or low level was assumed to be conducive to attaining personality growth, using a profile seemed the only appropriate way to depict this conglomerate of multiplicatively connected linear and non-linear assumptions also for methodological reasons. In sum, there was no alternative in the present study to using profiles, and this conclusion follows necessarily whether one reasons on a theoretical or on a methodological level.

8.3 Using the Functions of the Self-Concept as the Anchoring Points of an Integrative Framework of Lifespan Developmental Dynamics

This section tries to integrate the various aspects of this work, that is, the basic functions of the self-concept, age differences with regard to the five components of the self-concept, and the concepts of adjustment and personality change, in one framework. To do so, basic ideas about the dialectics of human development, that were proffered in the various theories of personality growth as presented in section 3.1, will be reviewed with a focus on the role of the self-concept. In other words, in what way can the self-concept contribute to the understanding and explanation of overarching principles and mechanisms of adult psychological development?

According to various theories of personality growth (e.g., Erikson, Labouvie-Vief, Loevinger, Maslow), development throughout human ontogenesis can be described along the changing interaction dynamics between self and other (for a detailed discussion see Baltes et al., 1998). It is argued here that the self-concept can be considered as an interface governing these interactions, and at the same time – following from the human ability to self-reflect – as its own self-corrective. That is, the self-concept does not only select certain environments for interaction, regulate self-presentation in the face of different interaction contexts and interaction partners, and provide a screen for filtering incoming information in terms of its relevance and compatibility; it is also susceptible to modifications induced by the mental process of reflecting upon all these ways of interactions and their results.⁷⁸ The basic

⁷⁸ In a similar vein, Loevinger believed that ego development could be described along the four dimensions of impulse control, interpersonal mode, conscious preoccupation, and cognitive style (see Table 5). It is argued here that all of these dimensions bear importance for self-other interaction. Thus, conscious preoccupation determines which interaction environments are selected, and the way information is filtered; the cognitive style informs which kind of information is assimilable at all, and impulse control as well as interpersonal mode are manifestations of the ways of self-other interaction,

functions underlying the ways in which the self-concept governs self-other interactions are – as mentioned in section 1.1 – organization, motivation, and protection. Of course, the evolving “governing style” of the self-concept depends on many other parameters, among them the possibilities and restraints dictated by the external environment, by one’s physical constitution, or by cognitive resources. However, despite its complex causal structure, it is argued here that the way in which the self-concept governs self-other interaction – that is, the ways in which organization, motivation, and protection are realized – can be described along two basic dimensions, namely along the lines of adjustment and growth.

As summarized in section 3.2, we encounter this fundamental dichotomy in various theories of personality growth. Thus, when reflecting upon the present classification of SCM and SCA, a number of related concepts come to mind. Does juxtapositioning the present categories of SCM and SCA, and the various classifications found in the literature, allow for any further-reaching implications? The following section represents some reflections that might come to mind when considering the various concepts in concert. Figure 30 gives an illustration of the various classifications addressing the dichotomy of personality growth and adjustment as discussed in this work.

Maslow, 1968		Helson & Srivastava, 2001	
	deterred by growth	attracted to growth	
deterred by security			environmental mastery low
attracted to security			environmental mastery high
			personal growth low
			personal growth high
			<i>depleted</i>
			<i>seekers</i>
			<i>conservers</i>
			<i>achievers</i>

Labouvie-Vief & Medler, 2002		Present concept	
	affect complexity low	affect complexity high	
affect optimization low	<i>dysregulated</i>	<i>complex</i>	self-concept adjustment low
affect optimization high	<i>self-protective</i>	<i>integrated</i>	self-concept adjustment high
			<i>dysfunctional</i>
			<i>growing</i>
			<i>self-protective</i>
			<i>integrated</i>

Figure 30. Four operationalizations of the adjustment/growth dichotomy and emerging typologies

It was argued in the beginning of the section that the two dimensions of adjustment and growth are fundamental when considering lifespan developmental trajectories of individuals. But what is it that

reflecting styles of self-presentations, ability of the person to be in control of the interaction (e.g., decides of how much he/she wants to disclose to others) and his or her flexibility to adjust to different interaction partners.

determines in which of the four states an individual is located? Why are individuals striving towards growth or towards security, or towards both? Does the accumulated evidence on the four conceptions entail any further implications than those that were derived when considering findings related to only one concept?

The first important variable when answering this question is chronological age. When considering the standing of individuals of different ages with regard to the dimensions of adjustment and growth, many authors have argued on different levels for an increasing salience of the adjustment dimension. Thus, it has been argued that with age, due to declining resources, individuals would increasingly adopt a focus of maintenance instead of one of gains (P. B. Baltes et al., 1998; P. B. Baltes, Reese, & Lipsitt, 1980). For example, within the paradigm of the selection, optimization, and compensation research framework (P. B. Baltes, 1991, 1997; P. B. Baltes & Baltes, 1996), it has been found that motives and actions associated with compensation tend to increase with age, on the account of the ones that are linked to goal selection (Freund & Baltes, 2000; Heckhausen & Schulz, 1993).⁷⁹ Similarly, Freund and Ebner in a recent publication have provided evidence that the focus of life goals with increasing age shifts from promoting gains to balancing losses (Freund & Ebner, 2005). Labouvie-Vief also argues for an age-related increase of a protective orientation, yet – as opposed to the aforementioned authors – derives this conclusion mainly from the evidence on cognitive decline associated with older age (Labouvie-Vief, 2003, 2005; Labouvie-Vief & Medler, 2002; Labouvie-Vief & Zhang, 2003). The author argues that older adults' cognitive resources would not be sufficient to deal with high levels of complexity, thus necessarily inducing attempts to reduce the complexity of stimuli. In short, older adults are likely to have a higher focus on adjustment. Thus, in the four typologies provided in Figure 30, they have a higher tendency than younger adults to be found in the cell on the lower left, in the group of the self-protective. After disentangling the relationship of the adjustment dimension with agency and relatedness, the increasing sense of autonomy found among older adults (Ryff, 1995; Sheldon et al., in press) does not clash with an increased adjustment focus: older adults tend not just to be higher in their need for relatedness, but also in their need for autonomy. For example, although older adults showed higher levels of self-protective psychological tendencies (i.e., lower affect balance, higher self-esteem), in the present study, older adults felt less susceptible to being influenced by different self-contexts, as reflected in their higher levels of self-concept integration, indicating a greater independence from other people's opinions about oneself.

⁷⁹ Similar results have been yielded within studies using different research paradims, for example, the lifespan theory of control (e.g., Heckhausen & Schulz, 1995), the assimilation-accomodation theorem (e.g., J. Block, 1982), or the model of the aging self (e.g., Brandtstädter & Greve, 1994; Greve, 2005b; Greve & Wentura, 2003).

Younger adults in the present study – as well as in the study by Labouvie-Vief (e.g., 2005) – were more likely than older adults to have growth needs that exceeded their needs for adjustment, falling within the growing group. One precondition that might account for this finding is the developmental life task younger individuals are facing. In other words, what might facilitate the accomplishment of personality growth for younger individuals, but might rather hinder them on their way to reaching adjustment, is their desire to learn, to extend their horizons and to overcome boundaries – and possibly break social rules – that might have blocked their horizons so far. This is consistent with past research, for example findings collected within the research framework of socio-emotional selectivity theory (for a summary see Carstensen et al., 1999). It has been found in these studies that younger adults prefer interaction situations which are likely to offer new information and new insights (i.e., with unfamiliar, interesting persons), rather than interaction situations that were likely to induce positive affect (i.e., with familiar and liked persons). In other words: their desire to gain new insights about themselves and the world exceeded their desire to feel well.

An intriguing result of the present study was that older adults were much more likely than younger adults to be high in regard to both dimensions, that is, growth as well as adjustment (again, these results resemble the findings by Labouvie-Vief). This result might demonstrate that it is not only the outlook of a limited lifetime period that makes older adults increasingly seek positive interactions as they age. As the results show, older adults are frequently able to reconcile the realization of their need for growth with the satisfaction of adjustment needs – an achievement which is seldomly accomplished by younger adults. Thus, in younger adulthood, adjustment and growth might frequently strike individuals as an either-or decision, and in having to choose between those two, younger adults more often opt for growth – perhaps even in a desire to find out whatever it is that makes them feel secure and protected, that is, due to a lack of ability to satisfy their need for adjustment.⁸⁰ In contrast, having lived long might finally facilitate insight as to how both needs can be reconciled.

⁸⁰ That it does not simply suffice to avoid challenges and to hole up in a seemingly protected and well-sheltered environment to satisfy one's need for a life in harmony with oneself and one's social environment (i.e., a high level of adjustment) has been impressively documented by the results of the study by Helson and Picano (1990) mentioned in section 3.4.4: In this study, a subgroup of highly qualified female college graduates that chose to forfeit their professional ambitions and to become housewives and mothers was examined in terms of their personality development on a variety of variables at their graduation and 20 years after their graduation. Among other findings, it was shown that this subgroup of women clearly decreased in well-being, and showed increases on a variable assessing impulse control to a degree that seemed to be maladaptive according to the authors. Thus, seeking out a secure environment does not seem to be the key to the pathway leading to adjustment and security – otherwise, no decreases on variables measuring adjustment would have been found. Instead, the findings suggest that strategies to enhance one's adjustment or to gratify one's needs for security just as the ways on how to satisfy one's need for growth have to be learned, and do not come automatically when choosing a seemingly apt environment for the satisfaction of either need. For accomplishing a sense of being comfortable "in one's shoes", probably, a sense of self-efficacy in overcoming risks and dangers is vital – an asset, however, that can only be acquired in a less secure environment.

What else can inform an individual's standing with regard to the four groups identified? Certainly, the present state can also influence the probability of change in a certain direction. It is assumed that remaining in a certain group (or moving “backwards”, that is, shifting from either group into the group of the dysregulated, or from the integrated group into one of the others), consumes fewer resources than shifting “forwards” from one state to another, furthermore it is assumed that states that are characterized by a high level of personality growth possibly require more resources than other states. Thus, when individuals are very low on both internal and external resources, it is assumed that they will fall back into the next lower state, when they are in positions with high levels of growth (that is, in the growing group). However they may remain in their present state, if they are in groups with high levels of adjustment (that is, the self-protective group; the integrated group has high levels of growth as well as adjustment, and therefore, the two assumptions cancel each other out). Being in a group with high levels of adjustment (i.e., self-protective or integrated) furthermore, is assumed to be subjectively more rewarding than being in another group. Hence, all individuals might strive towards reaching one of these states. That some individuals are to be found among groups with high levels of growth therefore at first sight might seem to be contradictory: who would be keen on making changes that produce greater levels of inconvenience? It is argued that individuals might not really choose what is important to them. People with a high desire to expand their knowledge, to acquire new information, and for being challenged, most likely will not end up in a group characterized predominantly by a high protective and maintenance focus (i.e., the self-protective). They will be driven to expand their knowledge and insights beyond the present scope. Critical life events might be an important element of triggering this desire for individual expansion, because they provide a glimpse on the matters one has missed so far. However, as it was documented above, life events only lead to increases in personality growth if they match certain characteristics of the individual, that is, if they are reflected upon and analyzed to a certain degree. Also, it is important to note that the likelihood for encountering critical life events is much higher for those with higher needs for growth than adjustment: Someone with a high need for adjustment will strive to maintain the status quo once he found an environment that can accommodate his or her needs. In contrast, someone with a high level of growth needs will continually attempt to test his/her limits, thus being much more likely to encounter critical life events like difficulties and failures.

Many more speculations can be made with regard to the dynamics between the four groups, but they would require a completely new circle of generating hypotheses, and therefore fall beyond the scope of the present work. However, the dynamics and characteristics of the four groups are certainly an intriguing issue with regard to future research. Whereas in the approaches presented above, the focus was on the characterization of the groups, it would be interesting to use the typologies as independent variables in a quasi-experimental design, deriving hypotheses, for example, with regard to

the likelihood and direction of changes, behavioral tendencies or behavior in an experimental setting. Moreover, it would be interesting to also include middle-aged and very old adults to study the implications of the typologies.

8.4 Outlook

It was the primary aim of the present study to establish a new and indirect measure of personality growth. It was assumed that the self-concept, as an element that regulates and governs interactions between person and environment, and that can reflect upon its functions and adapt them accordingly, would be an ideal indicator of personality growth. In greater detail, it was argued that by assessing an individual's self-concept, information would be gained about (1) the way a person organizes knowledge about him-/herself and the world, (2) the motivations that guide his or her thoughts, feelings, and actions, and (3) the degree to which a person has built up protective mechanisms. Five components of the self-concept were identified that reflected the way these functions operated within an individual. Certain age trends might be identified in terms of the three functions, such that those facets primarily indicative of self-organization (e.g., complexity of the self-concept) remain stable (at least as long as there is not a considerable decrease in cognitive functions), those facets mainly indicative of protection become more important (e.g., self-esteem, affect [im-]balance), and the facets that mainly represent motivation undergo a change from self-centered to other-centered (e.g., value orientation; note, however, that each of the components reflects *all* three functions to a certain degree). Furthermore, it was argued that the ways in which a person has realized these three functions in his/her self-concept would allow conclusions about his/her level of personality growth and adjustment/security.

It would be certainly interesting to pursue the work on the self-concept within this wider lifespan developmental research frame. Whereas the present study only provides a *static* picture of the relationship between the self-concept and personality growth, embedding the self-concept in the developmental framework would provide the prerequisites to study the *dynamics* of self-concept development. Current self-concept research focuses on isolated phenomena, and deals with these phenomena mostly in the context of a rather narrow theoretical frame. Instead, regarding phenomena of self-concept development as expressions of basic developmental processes will certainly foster the understanding of the dynamics underlying self-concept changes. Moreover, studying the self-concept in this way is imperative to research on personality growth. A reduction of personality growth to a specific domain will never accomplish what a holistic perspective can accomplish: to integrate insights about

development in personality, self-concept, and cognition in an effort to determine the underlying dynamics of lifespan development.

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Appendix A.

Recruitment and Measurement

Appendix A1. General Instructions at Group Sessions and Order of Questionnaires in the First Session

Begrüßung

- Begrüßen und Vorstellen; betonen, dass diese Studie, an der sie jetzt teilnehmen, Teil der eigenen Forschungsarbeit ist
- Bedanken für die Bereitschaft zur Mitarbeit
- grobe Zusammenfassung des Projekts: Projekt am Lehrstuhl für Entwicklungspsychologie der Lebensspanne, d.h. wir beschäftigen uns mit Abläufen und Dingen, die für jedes Lebensalter wichtig sind
- in diesem Projekt geht es um Lebensrückblick, d.h. wie Menschen über sich selbst rückblickend nachdenken, daher hat das Projekt auch den Titel „Selbstwissen“, also das, was man über die eigene Person für Gedanken hat, und was man über sich selbst weiss
 - Ihre Mitarbeit ist uns ganz wichtig, weil wir nur dadurch neue wissenschaftliche Erkenntnisse über den Lebensrückblick sammeln können, die es in der Forschung bisher noch nicht gibt
- grober Überblick: diese Sitzung findet in der Gruppe statt, an den nächsten beiden Terminen werden Sie dann in Einzelgesprächen teilnehmen. diese Sitzung dauert ca. 2 ½ Stunden. Damit Sie sich nicht wundern: Bei den Fragebögen, die in dieser Sitzung bearbeitet werden, kommt das Thema Lebensrückblick noch gar nicht so vor; hier geht es uns eher darum, allgemein etwas über Ihre Einstellungen und Meinungen zu erfahren. Das Thema Lebensrückblick wird dann das Thema der folgenden Sitzungen sein
- Anonymität: jeder Fragebogen wird immer nur mit Codenummer versehen, d.h. wir beziehen die Ergebnisse gar nicht auf Einzelpersonen, sondern wollen damit zu Erkenntnissen kommen, die Menschen im allgemeinen betreffen

1. Allgemeines

- Fb auf Vollständigkeit in der Beantwortung prüfen
- Datum und ST-ID auf jeden Fb eintragen
- Angst nehmen durch die Betonung auf Spaß
- Angst nehmen durch die Betonung auf keine individuelle Auswertung

2. Überblick über die Fb. Sitzung geben

Wir werden heute insgesamt 11 Fb bearbeiten.

Die Fb sind unterschiedlicher Art. Es gibt einige Fb, die zeitbegrenzt sind und andere, die von Ihnen ohne bestimmten Zeitumfang bearbeitet werden können. Entsprechend dieser Einteilung werden wir zuerst die Zeitbegrenzten lösen und anschließend die anderen.

2a Zeitbegrenzte Fb

Inhaltlich geht es hierbei um die Erfassung ganz unterschiedlicher Themen. Das Thema bei jedem dieser Fragebögen wird am Anfang ganz klar gesagt.

Wir hoffen; daß diese Fb für sie interessant sind, und daß Sie auch ein bißchen Spaß haben werden.

2b Fb ohne Zeitbegrenzung

Die Fb ohne Zeitbegrenzung beinhalten im wesentlichen Aussagen und Fragen zu Einstellungen und Interessen.

Schön wäre es, wenn Sie die Fragen möglichst spontan beantworten – also nicht so lange darüber nachgrübeln, sondern: Spontaneität ist wünschenswert.

Während dieser Phase können Sie gern noch eine Tasse Kaffee oder Wasser trinken.

Jetzt beginnen wir mit erst mal mit dem demographischen Fragebogen, wo wir Sie bitten würden, ein paar Fragen zu Ihrer Person zu beantworten. Danach kommen dann zwei zeitbegrenzte Fragebögen. Nun nehmen Sie aber erst mal den Biographischen Fragebogen zur Hand und beantworten die dort gestellten Fragen.

1. Demographie	3 Minuten
----------------	-----------

Jetzt beginnen wir mit dem

2. Raven	15 Minuten
3. Linville	30 Minuten

Der nächste Fragebogen ist ohne Zeitbegrenzung. Bevor beginnen, möchte ich Ihnen noch kurz etwas zur Bearbeitung sagen.

4. Loevinger	
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Jetzt erhalten Sie noch 7 Fb nacheinander; die auch ohne Zeitbegrenzung sind. Bevor Sie anfangen, möchte ich Sie noch auf eine Besonderheit hinweisen: In vielen der Fragebögen werden Sie dazu aufgefordert werden, zu beurteilen, inwieweit ein Satz ein Satz auf Sie zutrifft. Das geht meistens von „trifft nicht zu“ bis „trifft sehr zu“. Dabei gibt es auch verneinte Sätze. Ein Beispiel wäre: „Ich bin kein Freund von neuen Situationen, in denen ich meine altvertrauten Gewohnheiten ändern muss.“ Wenn Sie diesem Satz also zustimmen, heisst das, dass Sie tatsächlich „kein Freund von solchen Situationen“ sind. Wenn Sie hingegen sagen, dieser Satz trifft nicht für Sie zu, dann hiesse das, dass Sie ein Freund von solchen Situationen sind. Ist verständlich geworden, was ich meine?

Gut, dann beginnen wir jetzt mit dem ersten Fragebogen. Beantworten Sie bitte die Sätze immer so spontan wie möglich. Lesen Sie dazu die Beschreibung auf den Fb gründlich durch.

5. Krampen	
6. Werte	
7. Ryff	
8. Rückblick	
9. Neo-FFI	
10. ICQ	
11. CPI	

4. Anmerkung zum allgemeinen Verhalten:

Angst nehmen: - durch Betonung auf "Spaß"

- zeitbegrenzte Aufgaben können nicht vollständig gelöst werden
 - da Umfang extra hoch bzw. die Zeit extra niedrig angesetzt wurde. Diese Begrenzungen sind notwendig zur Vergleichbarkeit.

persönliche Ergebnisse können (wenn nachgefragt) geliefert werden, normalerweise gibt es nur Gruppendaten. Bei besonderem Interesse Bereitschaft zum persönlichen Gespräch nach Abschluß der gesamten Studie signalisieren.

bei Verweigerung: - beruhigen; freundlich überreden

- zugeben, daß es schwer ist, nochmal Wichtigkeit für unsere Studie hervorheben (Wissenschaftlichkeit d. Ergebnisse wird damit gestützt)
- eventuell Ausstieg akzeptieren und auszahlen

Appendix A2. Examples of Articles Advertising the Project in the Local Newspapers (Two Examples)

Dresdner Neueste Nachrichten, 07/03/2002

Neues Projekt der TU Dresden: Mit 75 Jahren, da fängt das Leben an

Mensch ist nach der Pubertät nicht „fertig“ / Gesprächspartner gesucht: 30 Euro Verdienst

Mit 75 Jahren, da fängt das Leben an. Vorher natürlich auch schon. Eigentlich in jedem Lebensalter. Das jedenfalls ist ein relativ neuer Ansatz der so genannten positiven Psychologie, die damit im Gegensatz zur traditionellen Psychologie steht. Die ging bislang davon aus, dass der Mensch nach der Pubertät praktisch „fertig“ ist und keine weitere Entwicklung mehr stattfindet. Ein neues Forschungsprojekt der TU Dresden geht im Rahmen des neuen Forschungsfokus der Frage nach, inwieweit wir uns im Laufe des Lebens verändern – oder eben nicht.

Prof. Ursula Staudinger, Entwicklungspsychologin an der TU Dresden, und ihre Mitarbeiterin Jessica Dörner und Charlotte Mickler haben es auf zwei Altersgruppen abgesehen: Personen zwischen 25 und 35 sowie 65 und 75 Jahren. In drei zwei- bis dreistündigen Gesprächen wollen die

Forscher herausbekommen, welche Rolle Gespräche und Nachdenken bei der Persönlichkeitsentwicklung spielen. Dafür werden noch Probanden gesucht. Alle Angaben bleiben natürlich anonym, sagt Jessica Dörner. Als kleinen materiellen Anreiz gibt's eine Aufwandsentschädigung für 30 Euro.

Die traditionelle Forschung glaubt, dass nach dem jungen Erwachsenenalter nicht Entwicklungs-, sondern Abbauprozesse im Vordergrund stehen. „Wir gehen davon aus, dass während des gesamten Lebens Prozesse des Wachstums und des Verlustes Hand in Hand gehen“, betont Prof. Staudinger. „Auch in der Kindheit und Jugend gibt es schon Verluste und bis ins hohe Alter hinein können Gewinne erzielt werden.“

Die Dresdner verfolgen einen jungen Zweig der modernen Psychologie, der immer populärer wird. Es gehe darum, wie die Psychologie „po-

sitive“ oder „wünschenswerte“ Aspekte des Menschen verstärken könne, anstatt nur „negative“ oder „unerwünschte“ zu vermeiden. Im Zentrum dieser positiven Psychologie stehe die Frage, wie Menschen besser leben und sich selbst sowie ihre Persönlichkeit weiterentwickeln können, erläutert Jessica Dörner. Man gehe davon aus, dass jeder Mensch Potentiale und Wachstumsmöglichkeiten besitze, die er entfalten könne – und zwar in jedem Alter.

Das neue TU-Projekt läuft zwei Jahre und wird mit 18 000 Euro von der Deutschen Forschungsgemeinschaft (DFG) unterstützt. Insgesamt sollen 200 Bürger befragt werden. Wer an einer Befragung teilnehmen möchte, wendet sich wochentags zwischen neun und 13 sowie 14 und 18 Uhr bei Jessica Dörner (Tel. 0351 / 463 39 112) oder bei Charlotte Mickler (-30 116). *Ralf Redemund*

Sächsischer Bote, 05/02/2002

Wie verändern wir uns im Laufe des Lebens?

Entwicklungspsychologische Institut der TU Dresden sucht Teilnehmer für Untersuchungsprojekt

Menschen entwickeln sich und wachsen in ihrer Persönlichkeit über das ganze Leben – meint Professor Ursula Staudinger, Entwicklungspsychologin an der Technischen Universität Dresden (TUD). In einem neuen Projekt beschäftigt sie sich zusammen mit den beiden wissenschaftlichen Mitarbeiterinnen Jessica Dörner und Charlotte Mickler damit, welche Rolle Gespräche und Nachdenken bei der Persönlichkeitsentwicklung spielen.

Die Dresdner Entwicklungspsychologinnen vertreten eine in der heutigen Psychologie (noch) ungewöhnliche Perspektive, die aber immer populärer wird: Die Beschäftigung damit, wie die Psychologie „positive“ oder „wünschenswerte“ Aspekte des Menschen verstärken können, anstatt „negative“ oder „unerwünschte“ zu vermeiden.

Schwerpunkt dieser sogenannten positiven Psychologie ist die Frage, wie Menschen besser leben und sich

selbst und ihre Persönlichkeit weiterentwickeln können. Man geht davon aus, dass jeder Mensch Potentiale und Wachstumsmöglichkeiten besitzt, die er entfalten kann.

In diesen Forschungsbereich fällt nun auch das gegenwärtig laufende Forschungsprojekt zur Persönlichkeitsentwicklung. In drei zwei- bis dreistündigen Sitzungen wollen die Forscher herausbekommen, welche Rolle Gespräche und Nachdenken bei der Persönlichkeitsentwicklung

spielen. Dafür werden vor allem noch Probanden im Alter von 20-40 gesucht, ein paar Plätze stehen auch noch für 60-80jährige Personen zu Verfügung. Wer bei diesem Projekt der Entwicklungspsychologin mitmachen möchte, melde sich wochentags zwischen 9-13 und 14-18 Uhr bei Jessica Dörner oder Charlotte Mickler (Telefon 463-39112). Als kleinen materiellen Anreiz gibt es eine Aufwandsentschädigung von 30 Euro. *J.D.*

Appendix A3. Differences between Linville's Measure of Self-Complexity (1985, 1987) and the Self-Concept Measure Used in this Study

This part of the appendix describes differences of the presently applied method from the procedure as used by Linville, and explains why these changes had to be introduced.

Choice of Adjectives and Positivity /Negativity Rating of Aspects.

Linville's list of adjectives used to describe oneself comprises 20 positive, 12 negative, and 1 neutral adjective (Woolfolk, Novalany, Gara, Allen, & Polino, 1995) and were taken from a pool of adjectives generated in a prior study by a student-only sample (Linville, 1987). There are two caveats against this procedure.

First, considering the age of participants in the present study, it seemed problematic to provide only adjectives that student-aged individuals used to describe themselves as possible self-descriptors. Instead, it had to be ensured that adjectives would be relevant to all age groups. However, not only Linville's, but most available adjective lists were generated by student-only samples (e.g., Raffaelli-Mor et al., 1999).

Second, since Linville did not consider positivity or negativity of the self-concept as a relevant variable, the affective connotation of the adjectives did not seem to matter. However, there is some evidence that the affective connotation of adjectives is indeed an important factor with regard to the way self-complexity works. For example, Woolfolk and colleagues (1995) found that "negative self-complexity" (the self-complexity index when only negative adjectives are considered) does not show a negative, but a positive relation with depressive symptoms. Similar results were provided by Morgan and Janoff-Bulman (1994), where negative self-complexity was even identified as a general indicator for poorer adjustment. Findings by Showers, Abramson, and Hogan (1998) suggest that the affective connotation of self-aspects moderates the relationship between self-concept structure and psychic health: accordingly, high self-complexity *only* buffers stress if the self-concept in general is positive and there is only a low level of stress. The best self-regulators in this study (i.e., the ones with lowest vulnerability towards depression) were the ones who either assigned lower importance to negative self-aspects or isolated ("compartmentalized") them from their other self-concept when faced with stress. In sum, the evidence suggests that the relationship between self-complexity is only conducive to well-being if the self-concept is positive. Although the dependent variable that is of interest here is not well-being but personality growth, the findings highlight the importance of considering affective connotation in order to get a complete picture of the features of the self-concept that are relevant to psychological functioning. A second reason for including affective connotation in the present questionnaire was that self-concept appraisal was one of the variables that should be assessed.

Therefore, two strategies were adopted to control positivity and negativity of self-aspects and the age-dependency of the adjectives used as self-descriptors. First, in line with suggestions by Rafaeli-Mor et al. (1999) and Woolfolk et al. (1995) adjectives were used that were balanced out in terms of their positive and negative connotations: that is, half of them had a positive and half of them had a negative connotation. Affective connotation of these adjectives was confirmed by a previous study (Diehl, Hastings, & Stanton, 2001), where self-descriptive adjectives were obtained by a sample of 158 adults aged 20 to 88 years, together with a statement about the perceived positive or negative value of each of the adjectives. To control for the age-dependency of attributes, only those adjectives were considered that had been generated by the group of 20-40-year olds and the group of the 60-80 year-olds. Out of this adjective pool, only the most common words were used for the present study, and only those whose affective connotation was judged unanimously positive or negative by all participants.⁸¹ The final list of words comprised a total of 40 adjectives, 20 of them with a positive, 20 of them with a negative meaning (see Table 41). Table 41 gives an overview of adjectives used in three different approaches. Adjective connotation of the adjectives is provided by a "+" (positive), "-" (negative) or 0 (neutral) after each word.

Table 41.

A Comparison of Positive and Negative Words Used in Three Different Self-Concept Inventories (in Alphabetical Order)

Linville's self-complexity inventory (1985, 1987)		Raffaeli-Mor's self-complexity inventory (1999)		The present self-concept inventory	
Affectionate +	Conformist -	Active +	Avoiding -	Comfortable +	Angry -
Assertive +	Impulsive -	Competitive +	Boring -	Caring +	Annoyed -
Competitive +	Insecure -	Concentrated +	Clumsy -	Feeling close +	Argumentative -
Emotional +	Lazy -	Confident +	Confused -	Concerned +	Avoiding -
Humorous +	Not studious -	Conscious +	Dependent -	Content +	Critical -
Imaginative +	Rebellious -	Considerate +	Discontent -	Cooperative +	Disappointed -
Individualistic +	Reserved -	Content +	Dishonest -	Excited +	Distant -
Industrious +	Unorganized -	Creative +	Egoist -	Outgoing +	Frustrated -
Mature +		Friendly +	Immature -	Friendly +	Guarded -
Organized +	Quiet 0	Happy +	Insecure -	Happy +	Impatient -
Outgoing +		Helpful +	Irresponsible -	Helpful +	Distant -
Playful +		Honest +	Lonely -	Honest +	Irritated -
Reflective +		Independent +	Mean -	Loving +	Jealous -
Relaxed +		Interested +	Nervous -	Open +	Judgmental -
Soft-hearted +		Mature +	Pessimist -	Patient +	Moody -
Sophisticated +		Optimist +	Quiet -	Proud +	Resentful -
Unconventional +		Pleasant +	Sad -	Relaxed +	Reserved -
		Relaxed +	Stressed -	Sharing +	Sarcastic -
		Reliable +	Uncaring -	Supportive +	Tense -
		Secure +	Unfriendly -	Talkative +	Unhappy -
		Self-secure +	Unintelligent -	Understanding +	Upset -
		Smart +	Unmotivated -		

⁸¹ I would like to thank Manfred Diehl for making data collected in his work group available for the analysis of word frequency in young and old age groups. Many thanks also to Lisette Morris for her help in translating the words into German.

As a second step to control for positivity/negativity, along with a procedure first applied by Showers et al. (1998) and Woolfolk et al. (1995), participants were asked to assign a global positivity-/negativity rating to the self-aspects. Also, they were asked to rate the importance of each self-aspect, as the findings by Showers et al. (1998) indicate that the affective connotation of a self-aspect matters as a direct function of its importance. Here, the importance rating was mainly introduced to ensure that participants did only list subjectively important self-aspects, and that it was therefore justified to combine all positivity/negativity-ratings to a single self-esteem rating.

Card Sorting vs. –Rating

As depicted above, participants in the Linville studies were given a set of cards with adjectives and were instructed to form groups. This kind of procedure at first glance appealed to us, because it seemed apt to stimulate the creativity of people since they sort the cards before even thinking of the meaning of the groups.

In pilot studies, the Linville card sorting procedure was compared with a checklist methodology, as suggested similarly, for example, by Morgan and Janoff-Bulman (1994) or in a similar way by Cohen, Pane, and Smith (1997). Based on the observations made in the pilot studies, for various reasons the checklist methodology proved to be more useful for the present purposes. First, it was possible to avoid the problem of adjective-dependency in the creation of subselves: thus, participants were not asked to provide self-aspects *after* the adjective-grouping, but *before* they even saw the adjectives. Second, as is the case for any dichotomous answering-format, participants were reluctant to agree or disagree in an absolute fashion; by using the checklist format, rating scales were provided for each adjective; thus, participants could decide about the degree to which an adjective was self-descriptive for them, rather than fully affirm or dismiss it. Third, participants' self-descriptions in the different self-aspects were more independent from each other as compared to those in the sorting procedure. Since they received a new checklist for every self-aspect, they did consider their previous self-descriptions far less in the card-sorting format when describing themselves in terms of a self-aspect. Fourth, the supposed advantage of the card-sorting list did not become salient, because participants were arranging all the cards next to each other in front of them, thus building a kind of checklist for themselves rather than forming piles. Fifth, the checklist procedure minimizes the inter-individual variance in conducting the task; the cards could be used in various ways, whereas this was not the case for the checklist. Thus, variance attributable to different task procedures could be ruled out.

Value Orientation as a Part of Self-Concept Assessment

One aspect that could not sufficiently be assessed by the Linville-measure, although it was a component of the hypothesis, was the conative facet of self-concept content: the ethical values that guided action and self-perception. Although the listed self-aspects might give some hint as to the value orientation of an individual, this will probably only be true for some participants and not for others. For example, individuals thinking about themselves in a more abstract fashion are more likely to list self-transcendent themes such as “giving support” or “environmental issues” as self-aspects. The degree of abstractness, however, has nothing to do with value orientation. Therefore, it was decided to apply yet another questionnaire in order to separately assess conative facets of self-concept content: The Schwartz Value Survey (SVS, Schwartz, 1992) to measure value attitudes was adopted for this purpose (Appendix A4).

In sum, the modifications of the Linville questionnaire make it possible not only to assess all self-concept facets that were of relevance for this study, but at the same time combined advantages of open-ended and reactive instruments: On the one hand, participants had to think themselves of self-aspects that characterized them; on the other hand, the list of adjectives devised to rate oneself was the same for every self-aspect and thus made statistical comparison easier.

Appendix A4. Instruction to the Self-Concept Questionnaire

In dieser Studie sind wir daran interessiert, wie Sie sich selbst beschreiben. Bevor Sie sich die Bögen vor Ihnen selber ansehen, erkläre ich Ihnen erst einmal, was Ihre Aufgabe sein wird. Bitte hören Sie sich diese Anleitung bis zum Ende an, das ist ganz wichtig. Beginnen sie bitte nicht vorher mit dem Ausfüllen der Bögen.

Die Aufgabe besteht für Sie aus zwei Schritten.

In einem **ersten Schritt** möchte ich Sie bitten, für Sie wichtige Bereiche oder Aspekte von sich selbst aufzuschreiben. Verwenden Sie dafür die vor Ihnen liegende erste Seite.

WARTEN. NÄCHSTEN SATZ LANGSAM LESEN; PAUSEN MACHEN

Diese Bereiche können zum Beispiel Rollen sein, die sie im Alltag innehaben, z.B. *Partnerin* oder *Sohn*, das können verschiedene Personengruppen sein, von denen Sie ein Teil sind, wie z.B. *Freundeskreis* oder *Kollegen*, es könnten aber auch Leistungsbereiche gemeint sein wie *Sport* und *Arbeit* oder Stimmungen, die Sie manchmal haben, z.B. *gestresst* oder *in Hochform*. Das braucht sich auch nicht unbedingt auf die Gegenwart zu beziehen; auch Lebensbereiche aus Zukunft oder Vergangenheit können wichtig sein, z.B. *Kindheit* oder *zukünftiger Job*. D.h. mit einem „Aspekt von Ihnen“ oder einem „Lebensbereich“ kann alles mögliche gemeint sein, die genaue Definition hängt von Ihnen selber ab.

Schreiben Sie bitte so viele Aspekte auf, wie Sie wünschen, und tun sie das so lange, bis Sie denken, Sie haben die wichtigen. Natürlich könnte man dies unendlich oft tun, wir wollen jedoch nur das, was bedeutsam für Sie ist. Wenn Sie das Gefühl haben, daß es anstrengend wird, neue Aspekte zu finden, ist es wahrscheinlich genug.

Die rechte Spalte brauchen sie erstmal nicht zu beachten.

Nehmen Sie sich also zunächst etwas Zeit für diesen ersten Schritt. Warten Sie aber bitte noch, bis ich mit dieser Anleitung ganz fertig bin, ich sage Ihnen dann bescheid, wenn es losgeht.

Haben Sie dazu noch Fragen?

Der **zweite Schritt** besteht dann darin, dass Sie sich selbst in Bezug auf jeden einzelnen dieser Aspekte oder Lebensbereiche beschreiben. Blättern Sie jetzt bitte einmal weiter auf die folgende Seite.

Für jeden Lebensbereich gibt es eine solche Seite, auf der Sie sich in diesem Bereich beschreiben können. Die leere Zeile oben dient dazu, den jeweiligen Bereich hier einzutragen. Haben Sie z.B. als erstes den Bereich „Partnerschaft“ auf der ersten Seite notiert, so tragen Sie „Partnerschaft“ hier in die obere Zeile ein.

Auf dem unteren Teil der Seite sehen Sie zwei Spalten mit Eigenschaften. Sie sollen nun für jede dieser Eigenschaften ankreuzen, wie sehr diese in dem jeweiligen Bereich auf Sie zutrifft. Bei unserem Beispiel würden Sie also bei jeder Eigenschaft ankreuzen, wie sehr diese im Bereich „Partnerschaft“ auf Sie zutrifft. Wenn Sie z.B. finden, die Eigenschaft „froh“ trifft in diesem Bereich „sehr“ auf Sie zu, dann kreuzen Sie dort die 5 an. Die Erklärung für die Zahlen 1-5 finden Sie direkt über den Eigenschaften.

Auf den folgenden Seiten geht es dann genauso weiter. Nur tragen Sie jeweils in der oberen Zeile einen anderen Bereich ein, und beurteilen eben bei jeder Eigenschaft immer nur, wie sehr diese in diesem Bereich auf sie zutrifft. Bitte machen Sie so lange weiter, bis Sie sich in Bezug auf alle Lebensbereiche und Aspekte, die Sie auf der ersten Seite eingetragen haben, beschrieben haben. Falls die Blätter nicht ausreichen, melden Sie sich bitte.

Versuchen Sie bitte immer, sich darauf zu konzentrieren, wie Sie in dem jeweiligen Bereich sind, und kreuzen Sie dann an, wie sehr eine Eigenschaft in diesem Bereich auf Sie zutrifft .

Denken Sie bitte daran, daß Sie sich selbst beschreiben und nicht die Menschen im allgemeinen. Sie haben für die Aufgabe jetzt 25 Minuten Zeit. Beginnen Sie bitte mit dem ersten Schritt, also damit, für Sie wichtige Bereiche und Aspekte von sich aufzuschreiben.

Haben Sie noch Fragen dazu?

Falls Nachfrage, dass Eigenschaften auf einen Bereich nicht passen: Das kann gut sein, dass einige Eigenschaften im Zusammenhang mit einem Bereich einfach nicht passen. Gehen Sie trotzdem bitte alle Eigenschaften durch, auch wenn sie dann bei den meisten „nicht zutreffend“ ankreuzen müssen.

NACH 12,5 MINUTEN

Die Hälfte der Zeit ist jetzt um. Sie haben noch 12 ½ Minuten Zeit

NACH 20 MINUTEN

Sie haben jetzt noch 5 Minuten Zeit. Ich würde Sie bitten, die Aufgabe bis dahin abzuschließen.

NACH 25 MINUTEN

Gut, vielen Dank. Nun bitte ich Sie, noch einmal die erste Seite zur Hand zu nehmen. (KURZ WARTEN). Nun möchte ich alle diejenigen, welche den Bereich Freundschaft oder Freundeskreis NICHT in irgendeiner Weise hier aufgelistet haben, darum bitten, dies jetzt zu tun. Schreiben Sie also in die nächste leere Zeile den Begriff „Freundschaft“. Nehmen Sie anschließend noch einen von den anderen Bögen mit den Eigenschaftswörtern zur Hand, und beschreiben Sie sich in Bezug auf diesen Bereich, genauso, wie Sie es bei den anderen Bereichen getan haben. Warten Sie damit aber bitte noch kurz, weil ich vorher noch eine andere Anweisung geben werde.

Und das betrifft jetzt auch wieder alle Personen. Nehmen Sie zunächst wieder die erste Seite zur Hand, dort, wo Sie die Bereiche eingetragen haben. (KURZ WARTEN)

Bei jedem Bereiche auf der ersten Seite sehen Sie rechts daneben noch ein Kästchen. In diesem Kästchen stehen die Buchstaben W und B, und jeweils dahinter ein Zahlenstreifen.

Der Buchstabe W steht für Wichtigkeit, und hier sollen Sie ankreuzen, wie wichtig Ihnen dieser Bereich jeweils ist. Ist der Bereich z.B. der Wichtigste Ihres Lebens, oder spielt er nur eine Nebenrolle?

TAFEL AUFKLAPPEN (Gruppensitzung) bzw. ZETTEL VORLEGEN (Einzelsitzung); UND AM ZAHLENSTREIFEN ERKLÄREN Die Zahl 1 bedeutet dabei „unwichtig“, die Zahl 2 „eher unwichtig“, die Zahl 3 bedeutet „unentschieden“, die Zahl 4 „eher wichtig“ und die Zahl 5 „wichtig“. Ist das in etwa klar?

B steht für Bewertung, und hier sollen Sie angeben, wie problematisch bzw. unproblematisch Sie diesen Bereich momentan für sich bewerten.

AN TAFEL bzw. ZETTEL ERKLÄREN: Die Zahl 1 bedeutet „problematisch“, die Zahl 2 „eher problematisch“, die Zahl 3 „unentschieden“, die Zahl 4 „eher unproblematisch“ und die Zahl 5 „unproblematisch“. Es geht dabei nicht um eine Bewertung von Ihnen in diesem Bereich, sondern wie sie die Rolle dieses Bereiches für Ihr Leben bewerten. Ist das z.B. ein Bereich, der Ihnen eher Magenschmerzen bereitet, oder können Sie aus dem Bereich selber Kraft schöpfen?

Geben Sie Ihre Bewertung spontan ab, d.h. denken Sie einfach nicht lange nach.

Ist das klar? Gut, dann würde ich Sie bitten, jetzt Ihre jeweilige Bewertung abzugeben.

Appendix A5. Self-Concept Questionnaire

Bitte notieren Sie hier wichtige Bereiche Ihrer Person oder Ihres Lebens (z.B. Rollen, Personengruppen, Leistungsbereiche, zukünftige/vergangene Lebensbereiche...)

Sie brauchen nicht alle Zeilen auszufüllen – Notieren Sie vielmehr nur diejenigen Bereiche, die für Sie bedeutsam sind. Sobald Sie Mühe haben, an neue Bereiche zu denken, ist es wahrscheinlich genug. Die rechte Spalte brauchen Sie zunächst nicht zu beachten.

1. _____	W: 1—2—3—4—5 B: 1—2—3—4—5
2. _____	W: 1—2—3—4—5 B: 1—2—3—4—5
3. _____	W: 1—2—3—4—5 B: 1—2—3—4—5
4. _____	W: 1—2—3—4—5 B: 1—2—3—4—5
5. _____	W: 1—2—3—4—5 B: 1—2—3—4—5
6. _____	W: 1—2—3—4—5 B: 1—2—3—4—5
7. _____	W: 1—2—3—4—5 B: 1—2—3—4—5
8. _____	W: 1—2—3—4—5 B: 1—2—3—4—5
9. _____	W: 1—2—3—4—5 B: 1—2—3—4—5
10. _____	W: 1—2—3—4—5 B: 1—2—3—4—5
11. _____	W: 1—2—3—4—5 B: 1—2—3—4—5
12. _____	W: 1—2—3—4—5 B: 1—2—3—4—5

Bereich: _____

Bitte geben Sie für jede der folgenden Eigenschaften auf der nebenstehenden Skala an, wie sehr diese **in diesem Bereich** auf Sie zutrifft. Bitte antworten Sie zügig und spontan. Die Skalenpunkte bedeuten:

1-----2-----3-----4-----5			
trifft nicht zu	trifft kaum zu	trifft mittelmäßig zu	
		trifft ziemlich zu	
		trifft sehr zu	
froh	1—2—3—4—5	frustriert	1—2—3—4—5
ungeduldig	1—2—3—4—5	fürsorglich	1—2—3—4—5
entspannt	1—2—3—4—5	launisch	1—2—3—4—5
verärgert	1—2—3—4—5	eifersüchtig	1—2—3—4—5
zurückhaltend	1—2—3—4—5	unglücklich	1—2—3—4—5
gesprächig	1—2—3—4—5	verständnisvoll	1—2—3—4—5
aufgewühlt	1—2—3—4—5	offen	1—2—3—4—5
streitlustig	1—2—3—4—5	unterstützend	1—2—3—4—5
ehrlich	1—2—3—4—5	enttäuscht	1—2—3—4—5
hilfsbereit	1—2—3—4—5	distanziert	1—2—3—4—5
fühle mich verbunden	1—2—3—4—5	stolz	1—2—3—4—5
kritisch	1—2—3—4—5	nehme Anteil	1—2—3—4—5
fühle mich befangen	1—2—3—4—5	vorsichtig	1—2—3—4—5
liebervoll	1—2—3—4—5	kooperativ	1—2—3—4—5
kontaktfreudig	1—2—3—4—5	sarkastisch	1—2—3—4—5
gereizt	1—2—3—4—5	nachtragend	1—2—3—4—5
zufrieden	1—2—3—4—5	fühle mich wohl	1—2—3—4—5
urteile über andere	1—2—3—4—5	freundlich	1—2—3—4—5
geduldig	1—2—3—4—5	fühle mich zuständig	1—2—3—4—5
aufgebracht	1—2—3—4—5	gehe unangenehmen Dingen aus dem Weg	1—2—3—4—5

Appendix A6. Example of a Completed Questionnaire⁸²

Participant X									
Friends (Importance 5, Emot. Appraisal 4)		Childhood (Importance 5, Emot. Appraisal 2)		As young woman (Importance 3, Emot. Appraisal 5)		Working as nurse (Importance 2, Emot. Appraisal 4)		Youth (Importance 4, Emot. Appraisal 4)	
upset	++	upset	0	upset	-	upset	++	upset	0
excited	-	excited	0	excited	--	excited	-	excited	0
aloof	--	aloof	++	aloof	-	aloof	--	aloof	+
honest	0	honest	+	honest	+	honest	0	honest	+
jealous	0	jealous	0	jealous	--	jealous	0	jealous	++
relaxed	0	relaxed	--	relaxed	0	relaxed	0	relaxed	-
disappointed	+	disappointed	-	disappointed	++	disappointed	+	disappointed	-
friendly	+	friendly	-	friendly	0	friendly	+	friendly	0
happy	--	happy	+	happy	0	happy	--	happy	0
frustrated	-	frustrated	-	frustrated	+	frustrated	-	frustrated	--
tense	--	tense	0	tense	-	tense	--	tense	0
close	+	close	+	close	--	close	+	close	--
At ease	-	At ease	++	At ease	0	At ease	-	At ease	++
committed	+	committed	-	committed	--	committed	+	committed	0
caring	-	caring	0	caring	--	caring	-	caring	0
patient	0	patient	--	patient	+	patient	0	patient	++
avoiding	-	avoiding	-	avoiding	++	avoiding	-	avoiding	0
irritated	0	irritated	+	irritated	++	irritated	0	irritated	0
talkative	0	talkative	-	talkative	++	talkative	0	talkative	+
helpful	+	helpful	0	helpful	++	helpful	+	helpful	+
extraverted	++	extraverted	-	extraverted	0	extraverted	++	extraverted	+
cooperative	0	cooperative	+	cooperative	0	cooperative	0	cooperative	0
critical	++	critical	++	critical	0	critical	++	critical	-
moody	-	moody	--	moody	+	moody	-	moody	--
loving	--	loving	++	loving	++	loving	--	loving	+
nachtragend	0	nachtragend	--	nachtragend	-	nachtragend	0	nachtragend	-
sharing	--	sharing	--	sharing	--	sharing	--	sharing	0
open	--	open	--	open	--	open	--	open	0
sarcastic	+	sarcastic	0	sarcastic	0	sarcastic	+	sarcastic	+
proud	+	proud	0	proud	--	proud	+	proud	-
argumentative	++	argumentative	+	argumentative	+	argumentative	++	argumentative	++
impatient	--	impatient	0	impatient	0	impatient	--	impatient	--
unhappy	+	unhappy	+	unhappy	0	unhappy	+	unhappy	--
supporting	-	supporting	0	supporting	--	supporting	-	supporting	+
judgemental	0	judgemental	0	judgemental	+	judgemental	0	judgemental	+
annoyed	0	annoyed	-	annoyed	++	annoyed	0	annoyed	+
understanding	0	understanding	--	understanding	-	understanding	0	understanding	--
guarded	+	guarded	++	guarded	--	guarded	+	guarded	0
contended	0	contended	0	contended	--	contended	0	contended	0
reserved	--	reserved	-	reserved	--	reserved	--	reserved	+

⁸² Items are in the same order for each aspect. When administering the questionnaire, however, to avoid for sequence effects, participants received different forms with different item order for each aspect as far as possible. Four different forms with different item-sequence were available.

Appendix A7. Value Questionnaire

Diese Befragung beschäftigt sich mit Ihren Werten, Gefühlen und Meinungen.

Zunächst möchten wir Sie bitten, sich selbst folgende Frage zu stellen: "Welche Werte sind für mich wichtig als Leitprinzipien meines Lebens, welche sind für mich weniger wichtig?"

Der Fragebogen enthält eine Liste mit Werten. Nach Nennung eines jeden Wertes ist in Klammern eine kurze Erläuterung gegeben, die Ihnen helfen mag, den Sinn eines Wertbegriffs zu verstehen. Die Liste ist keineswegs vollständig, d.h. es ist gut möglich, dass Sie persönlich wichtige Werte nicht wiederfinden. Es geht uns jetzt aber nur um Ihre Einschätzung der hier aufgelisteten Werte.

Schätzen Sie ein, wie wichtig jeder Wert für Sie als ein Leitprinzip in Ihrem Leben ist.

1 unwichtig	2 eher unwichtig	3 unent- schieden	4 eher wichtig	5 unwichtig
GLEICHHEIT (gleiche Chancen für alle)				
			1	2 3 4 5
SOZIALE MACHT (Kontrolle über andere, Dominanz)				
			1	2 3 4 5
HILFSBEREITSCHAFT (sich für das Wohlergehen anderer einsetzen)				
			1	2 3 4 5
EIN ANREGENDES LEBEN (aufregende Erfahrungen)				
			1	2 3 4 5
SELBSTERKENNTNIS (Lernen, sich selbst zu verstehen)				
			1	2 3 4 5
VERGNÜGEN (Erfüllung von Wünschen)				
			1	2 3 4 5
VERANTWORTUNGSBEWUSSTSEIN (zuverlässig, verlässlich sein)				
			1	2 3 4 5
EHRGEIZ (hart arbeiten, zielstrebig sein)				
			1	2 3 4 5
WEISHEIT (ein reifes Verständnis des Lebens)				
			1	2 3 4 5
REICHTUM (materieller Besitz, Geld)				
			1	2 3 4 5
NACHSICHT (bereit sein, anderen zu vergeben und zu verzeihen)				
			1	2 3 4 5
EIN ABWECHSLUNGSREICHES LEBEN (erfüllt mit Herausforderungen, Neuem und Veränderungen)				
			1	2 3 4 5
EINE WELT DER SCHÖNHEIT (Schönheit der Natur und der Künste)				
			1	2 3 4 5
DAS LEBEN GENIEßEN (Freude am Essen, Erotik und Vergnügungen)				
			1	2 3 4 5

Schätzen Sie ein, wie wichtig jeder Wert für Sie als ein Leitprinzip in Ihrem Leben ist.

1 unwichtig	2 eher unwichtig	3 unent- schieden	4 eher wichtig	5 unwichtig
EHRlichkeit (ehrlich und aufrichtig sein)				
1	2	3	4	5
EINFLUSS (Einfluss auf Menschen und Ereignisse ausüben)				
1	2	3	4	5
SOZIALE GERECHTIGKEIT (Ungerechtigkeiten beseitigen, sich um die Schwachen kümmern)				
1	2	3	4	5
AUTORITÄT (das Recht zu führen und zu bestimmen)				
1	2	3	4	5
LOYALITÄT (verlässlich gegenüber meinen Freunden und Gruppen)				
1	2	3	4	5
WAGEMUT (Abenteuer und Risiken suchen)				
1	2	3	4	5
TOLERANZ (gegenüber verschiedenen Ideen und Überzeugungen)				
1	2	3	4	5
FÄHIGKEITEN HABEN (kompetent, effektiv und effizient sein)				
1	2	3	4	5
REIFE LIEBE (tiefe emotionale und geistige Intimität)				
1	2	3	4	5
ERFOLG (Ziele erreichen)				
1	2	3	4	5
UMWELT SCHÜTZEN (die Natur schützen)				
1	2	3	4	5
DAS ÖFFENTLICHE ANSEHEN BEWAHREN (das Gesicht wahren)				
1	2	3	4	5
WAHRE FREUNDSCHAFT (enge, unterstützende Freunde)				
1	2	3	4	5
SELBSTACHTUNG (Glauben an den eigenen Wert)				
1	2	3	4	5
EINE WELT IN FRIEDEN (frei von Krieg und Konflikt)				
1	2	3	4	5
SOZIALE ANERKENNUNG (Achtung, Zustimmung durch andere)				
1	2	3	4	5
EIN SINN IM LEBEN (ein Zweck im Leben)				
1	2	3	4	5
EINHEIT MIT DER NATUR (Einpassung in die Natur)				
1	2	3	4	5
INNERE HARMONIE (im Frieden mit mir selbst)				
1	2	3	4	5

Appendix A8. Manual for the Classification of Self-Aspects into Categories

Rater-Instruktion für die Kategorisierung der Selbstaspekte
--

(sich vorstellen, danken, Formalia wie Bezahlung/Verträge klären)

So, nun zu **Deiner Aufgabe**. Du wirst ja Worte kategorisieren in bestimmte vorgegebene Kategorien. Die Worte, die Du kategorisieren sollst, stammen aus einer Studie, in der Menschen gebeten wurden, wichtige Aspekte von sich und ihrem Leben zu nennen. Hier, ich zeige Dir mal genau, worum die Menschen in der Studie gebeten wurden, das kannst Du Dir einmal in Ruhe durchlesen.

(Instruktion Linville erster Teil zeigen)

Deine Aufgabe wird Dir sicher erleichtert, wenn Du einen **Eindruck** davon bekommst, was unsere Probanden genau tun sollten. Deswegen würde ich Dich als erstes gern bitten, dass Du nun **selber diese Aufgabe einmal machst**, so wie Du es eben gelesen hast. Ich lasse Dich dafür jetzt erst einmal 10 Minuten alleine. Ich werde mir das, was Du aufgeschrieben hast, später gar nicht angucken; es geht nur darum, dass Du einen Eindruck davon bekommst, was unsere Probanden tun sollten.

(Linville Blatt 1 geben, Instruktion dalassen, 10 Minuten rausgehen)

So, jetzt hast Du sicher eine erste Vorstellung davon, was man **grundsätzlich an Selbstaspekten** so erwarten kann. Du weißt jetzt, was Dir selbst eingefallen ist, und damit Du noch einen genaueren Eindruck bekommst, zeige ich Dir jetzt einmal, was fünf Probanden als Antwort auf die Aufgabe aufgeschrieben haben. Diese Ergebnisse stammen aus einer Vorstudie und gehören noch nicht zu den Bögen, die Du später kategorisieren sollst.

(5 Beispielbögen; darüber sprechen, welche Aspekte häufiger auftauchen und welche allgemeineren Kategorien man in allen 5 Bögen wieder finden kann, selbst Kategorien finden lassen)

Genau, und genau so sind wir nun bei allen Fragebögen vorgegangen, und haben mit Hilfe schon bestehender ähnlicher Kategoriensysteme ein **eigenes Kategoriensystem** entwickelt. Das **zeige** ich Dir jetzt einmal.

(Kategoriensystem zeigen und erklären)

Gut, ich glaube, jetzt sind wir so weit, dass wir das selber einmal ausprobieren können. Ich gebe Dir jetzt einfach mal Bögen von fünfzehn weiteren Probanden, und würde Dich bitten, die **aufgelisteten Aspekte unseren Kategorien zuzuordnen**. Ich mache das Gleiche, und anschließend **vergleichen** wir einmal und diskutieren unsere Einschätzungen. Falls Du Dir einmal ganz unsicher bist, kannst Du aber auch fragen. Noch ein Hinweis: Es ist wahrscheinlich am leichtesten, wenn Du erst darüber nachdenkst, in welche von den Oberkategorien der Begriff passen würde. Wenn Du Dich dann für eine

Oberkategorie entschieden hast, denkst Du darüber nach, in welche Unterkategorie man den Begriff einordnen könnte.

(Bögen und Stift geben; darauf hinweisen, dass man Kategorie einfach daneben schreiben kann; anschließend vergleichen und Unklarheiten besprechen)

Sehr gut! Dann kannst Du jetzt die einzelnen **Bögen kategorisieren**. Das passiert auf dem Computer *(mit der Datenmatrix vertraut machen)*. Denke auch daran, Dir solche **Wörter aufzuschreiben**, bei denen Du Dir unsicher bist, so dass Du sie in der gleichen Weise kategorisieren kannst, wenn sie noch einmal vorkommen.

Appendix A8 (continued). Manual for the Classification of Self-Aspects into Categories

Nr	Name Bereich	Beispiele & Sonderfälle	Oberbereich
1.	Familie	Kinder, Sohn, Beziehung zu Sohn, Rolle als Mutter	1. Soziale Beziehungen
2.	Partner	Partnerschaft, Freundin, Liebe	
3.	Freunde/Bekannte	Freundeskreis, Bekannte, Freundin	
4.	andere soziale Kontakte	Kollegen , Frauentreff	
5.	Berufs- o. Berufsäquivalent	Studium, Beruf, Architekt, Hausfrau, Schule	2. Beruf
6.	Sportl. Aktivitäten	Sport, Wandern, Tanzen	3. Hobbies I: hedonistisch, selbstbezogen
7.	Sonstige Freizeitaktivitäten, Hobbies	Auto, Rollenspielen, Fernsehen, Alltag, Freizeit	
12.	Reisen	Urlaub, Reisen	
14.	Interessengebiete, Kultur & Zeitgeschehen	Kultur, Geschichte, Medien, Geologie, Lesen, Aktuelles, Fremdsprachen, Gespräche	
15.	Musik & Kunst	Musikliebhaber, kreative Tätigkeit, Fotografie	4. Hobbies II: selbst-transzendend, altruistisch
8.	Polit. & soz. Engagement	Verein, Ehrenamt, Politik , polit. Engagement	
9.	Haus & Garten, Pflanzen	Pflanzenliebhaber, Wohnung, Haus	
10.	Tiere	Katze, Tierliebhaber	
11.	Umwelt & Natur	Umweltschutz, Naturliebhaber	
16.	Religion & Kirche	Gemeinde, Kirchvorsteher	5. Sexualität
13.	Sex	Sexualität	
17.	Gesundheit	Körperbewusstsein, gesunde Ernährung, Vollwertkost	6. Gesundheit
18.	Finanzen, Materielles	Sorge um Geld, Finanzen	7. Finanzen
19.	Ziele, Bestandteile d. Lebensphilosophie	Ehre, Lachen, Andere glücklich machen, Weiterlernen, Heimat, Alter, Alleinsein, Bildung	8. Geistige Beschäftigung mit sich selbst, selbstbez. Gedankeninhalte
20.	Beschäftigung m. eig. Verg.heit / Zukunft	Nachdenken, Lebensgeschichte aufschreiben	
21.	Eig. Besonderheiten	Langsamkeit, Drogenprobleme, Sensibilität, glücklich	
22.	Lebensereignisse	Jobsuche, Arbeitslosigkeit, Krieg, Diplom, Wende	9. Biographisches
23.	Lebensabschnitte	Schule , Kindheit, 1. Ehe,	
24.	Allgemeingültige Angaben	allgemeine Stimmung, Stimmungen, psych. Situation	10. Allgemeine Aussagen

Appendix A9. Preparatory Analyses

Table 42.

Descriptive Statistics of SCM Components: Minimum, Maximum, Means, Standard Deviations, Skewness, and Kurtosis for the Entire Sample (N = 169)

	Minimum	Maximum	Mean	SD	Skewness (SE)	Kurtosis (SE)
Complexity of content						
Number of aspects	2.00	12.00	6.89	2.46	.40 (.19)	-.38 (.37)
Number of aspect categories	2.00	11.00	5.59	1.83	.36 (.19)	.39(.37)
Integration						
Average aspect correlation (SCD, invers) ^a	.01	1.56	.70	.34	.35 (.19)	-.39(.37)
% adjectives rated the same across aspects	.00	60.00	22.42	16.04	.41 (.19)	-.79(.38)
Affect Balance						
Δ variance pos./neg. attribute ratings	-.47	3.09	1.54	.67	-.20 (.19)	-.15(.37)
Self-esteem						
Average pos./neg. rating across aspects	1.80	5.00	3.48	.63	-.23 (.19)	-.24(.38)
Value Orientation						
Universalism	3.00	5.00	4.42	.38	-.88 (.19)	.87(.37)
Benevolence	3.14	5.00	4.53	.39	-1.14 (.19)	.38(.37)

^aScores are fisher-z transformed.

Table 43.

Screening SCM Components for Normality

	Kolmogorov-Smirnov Z
Complexity of content	
Number of aspects	1.91**
Number of aspect categories	1.78**
Integration	
Average aspect correlation (SCD, invers) ^a	.72
% adjectives rated the same across aspects	1.13
Affect Balance	
Δ variance pos./neg. attribute ratings	.56
Self-esteem	
Average pos./neg. rating across aspects	.94
Value Orientation	
Universalism	1.39*
Benevolence	1.78**

^aScores are fisher-z transformed.

** $p \leq .01$; * $p \leq .05$

Appendix A10. Demographic Questionnaire**Biographischer Fragebogen**

Codenummer: _____	Alter: _____	Geschlecht: m <input type="checkbox"/> w <input type="checkbox"/>
--------------------------	---------------------	--

Schulart:	mit Abschluss?
Hauptschule <input type="checkbox"/>	ja <input type="checkbox"/> nein <input type="checkbox"/>
Real- (Mittel-), Handelsschule oder POS <input type="checkbox"/>	ja <input type="checkbox"/> nein <input type="checkbox"/>
Gymnasium / Fachoberschule oder EOS / ESOS <input type="checkbox"/>	ja <input type="checkbox"/> nein <input type="checkbox"/>
Hochschul-/Universitätsstudium <input type="checkbox"/>	ja <input type="checkbox"/> nein <input type="checkbox"/>
Ausbildungszeit insgesamt, d.h. an Schule, Hoch-, Berufs-, Fachschule (ggf. inkl. Lehre):	_____ Jahre

Familienstand:	verheiratet <input type="checkbox"/>	geschieden/getrennt <input type="checkbox"/>
	ledig <input type="checkbox"/>	verwitwet <input type="checkbox"/> feste Partnerschaft <input type="checkbox"/>
	Anzahl der Kinder? _____	
	Wie lange leb(t)en Sie in einer Ehe / Partnerschaft? _____Jahre	

Haushalt:	alleinstehend <input type="checkbox"/>
	alleinlebend im Heim <input type="checkbox"/>
	zusammenlebend mit Ehe-/Lebenspartner <input type="checkbox"/>
	in Wohngemeinschaft (außer Familie) <input type="checkbox"/>
	Wie viele der Kinder leben im Haushalt? _____
	Welche anderen Personen leben im Haushalt? _____

Berufstätigkeit	vollzeitbeschäftigt <input type="checkbox"/>	teilzeitbeschäftigt <input type="checkbox"/>
	arbeitslos <input type="checkbox"/>	nicht berufstätig <input type="checkbox"/>

zusätzl. Angaben	Rentner(in) <input type="checkbox"/>	Student(in) <input type="checkbox"/>
	in Berufs(aus)bildung <input type="checkbox"/>	

Berufsgruppe	(Falls mehr als eine Kategorie zutrifft, numerieren Sie bitte die jeweiligen Berufsgruppen entsprechend der zeitlichen Reihenfolge durch und kreuzen Sie den Beruf, den Sie am längsten ausgeübt haben, zusätzlich an.)
	Inhaber/in und Geschäftsführer/in von größerem Unternehmen <input type="checkbox"/>
	Mittlere und kleinere selbständige Geschäftsleute/Handwerker <input type="checkbox"/>
	Freier Beruf (Arzt, Rechtsanwalt, etc.) <input type="checkbox"/>
	Leitende/r Angestellte/r <input type="checkbox"/> Nichtleitende/r Angestellte/r <input type="checkbox"/>
	Beamte/r des höheren oder gehobenen Dienstes <input type="checkbox"/>
	Beamte/r des mittleren oder einfachen Dienstes <input type="checkbox"/>
	Landwirt/in <input type="checkbox"/> Facharbeiter/in mit abgelegter Prüfung <input type="checkbox"/>
	Arbeiter/in <input type="checkbox"/> in Ausbildung <input type="checkbox"/>
	Sonstige Berufsbezeichnung: _____

Hat sich Ihre Lebenssituation in jüngster Vergangenheit stark verändert?

ja ☐ nein ☐

Wenn ja, durch welche/s Ereignis/se?

In welchem Ausmaß fanden Sie Ihr bisheriges Leben geistig fordernd?

1-----2-----3-----4-----5

geistig
gar nicht
fordernd

geistig
wenig
fordernd

geistig
mittelmäßig
fordernd

geistig
ziemlich
fordernd

geistig
sehr
fordernd

Wie zufrieden sind Sie mit Ihrem bisherigen Leben?

1-----2-----3-----4-----5

nicht
zufrieden

wenig
zufrieden

mittelmäßig
zufrieden

ziemlich
zufrieden

sehr
zufrieden

Wie zufrieden sind Sie gegenwärtig mit Ihrem Leben?

1-----2-----3-----4-----5

nicht
zufrieden

wenig
zufrieden

mittelmäßig
zufrieden

ziemlich
zufrieden

sehr
zufrieden

Wie würden Sie Ihren Gesundheitszustand einschätzen?

1-----2-----3-----4-----5

schlecht

mittelmäßig

gut

sehr gut

ausgezeichnet

Appendix A11. Self-Related Wisdom Task (SRW) and Exemplary Answers

Bitte denken Sie darüber nach, wie Sie als Freund sind.

- Bitte **beschreiben Sie**, wie Sie als Freund sind. Was sind für Sie typische Verhaltensweisen? Wie verhalten Sie sich in schwierigen Situationen? Fallen Ihnen dazu konkrete Beispiele ein?
- Finden Sie **Erklärungen**. Was sind die Ursachen dafür, dass Sie sich typischerweise so verhalten oder in bestimmte Situationen geraten? Warum verhalten Sie sich in schwierigen Situationen so?
- Geben Sie **Bewertungen** ab. Wie bewerten Sie Ihr Verhalten als Freund? Wie sehen Sie Ihre Stärken und Schwächen? Was könnte man vielleicht verändern?

Answer 1 (highest SRW score)

Hm – also gut, dann versuch ich erst mal ein paar allgemeine Eigenschaften von mir aufzuzählen – von mir als Freundin. Ich kann hier versuchen, mich möglichst genau zu beschreiben. Aber so genau kennt man sich ja selbst witzigerweise auch nicht und man hat vor allem einen ganz bestimmten Blick auf sich selbst. Erschwerend kommt auch noch hinzu, dass man ja auch nicht auf Ewigkeit so bleibt wie man ist. Ich verändere mich ja, so dass ich mich aus meiner Sicht und für die gegenwärtige Phase schildern kann. Also, ich denk mal, dass ich ein offenes Ohr habe für die Probleme meiner Freunde. Stimmt das denn? Wenn ich mich jetzt mal aus den Augen meiner Freunde betrachte, denke ich, dass die mich auch so sehen, zum Teil zumindest. Ich versuche Ratschläge zu geben, ich finde es wichtig, in einer Freundschaft, einfach zu helfen, wenn Hilfe gebraucht wird. Dass man auch seine eigenen Angelegenheiten zurückstellt, allerdings sollte man das auch nur bis zu einem gewissen Grad tun, denn man kann sich ja nicht ganz selbst aufgeben. Das ist für mich schon ein Wert, andere zu achten, aber auch sich selbst. Ab und zu denke ich ganz allgemein darüber nach, nach welchen Richtlinien ich eigentlich handle, also was ich als gutes Verhalten bezeichnen würde. Damit ist natürlich nie ganz fertig, denn die Verhältnisse verändern sich und man muss dann auf völlig Unvorhergesehenes reagieren, das einem bisher noch nicht begegnet ist. Dann, versuch ich in Freundschaften auch zuverlässig zu sein, wobei ich schon da etwas an mir kritisieren könnte, dass ich nicht immer pünktlich bin, also [lacht] – dass ich mir vielleicht wirklich manchmal einfach zu viel vornehme und dass es dann passiert, dass man da mal etwas nicht ganz einhalten kann. Und obwohl ich es mir anders vornehme, passiert mir das doch immer wieder. Womit hängt das wohl zusammen?

Vielleicht habe ich das schon in meiner Familie gelernt, meine Mutter hatte auch dieses Problem. Aber damit will ich mich jetzt gar nicht rausreden, nur die Gründe zu kennen hilft manchmal wenn man etwas verändern will. Ich versuche, in meinen Freundschaften ausgleichend zu wirken, wenn es eine Belastung gibt, die auch zu überwinden. Ich weiß, nicht 100%, ob mir das bisher immer gelungen ist? Ich glaube schon, das höre ich auch von Anderen, dass das eine Stärke von mir ist. Eine gute Möglichkeit, finde ich, wenn es doch mal zu Spannungen kommt, ist Humor, ich finde oft in einer Situation, die eigentlich traurig ist, ist doch noch eine Art Situationskomik, und kann dann auch über mich selbst lachen. Es hilft schon manchmal, einen Witz zu machen, dadurch gewinnt man etwas Abstand, und einiges klärt sich so. Also, was ich auch sehr gerne mag in Freundschaften ist Spontaneität. Also, dass man jetzt nicht unbedingt alles immer nur plant sondern auch offen ist für plötzliche Entwicklungen und Möglichkeiten. Ich plane schon, dass muss man ja, auch wenn man nicht weiß, wie sich alles entwickelt denn wenn man nicht manchmal Termine abstimmt trifft man sich lange Zeit gar nicht mehr. Aber ich versuche dann, nicht so starr daran festzuhalten, und versuche offen und spontan zu sein. Ich mag Überraschungen eigentlich auch gerne, wenn man sich darauf einlässt, kann einem das viel nützen, dass man einiges Lernen kann. Beispielweise neulich war ich mit einer sehr guten Freundin verabredet und hatte mich auch schon auf den Abend gefreut und dann ruft sie kurz vorher an und sagt dass sie überraschend Besuch bekommen von außerhalb bekommen hat und ob sie den Besuch nicht mitbringen kann. Also mir hat es eigentlich nicht so gut gefallen, denn ich wollte mir ihr alleine reden,

aber ich habe das nicht gleich gesagt sondern wir haben uns dann zu dritt getroffen und es war ein sehr interessanter Abend.

Also, noch mal zu dem Thema von vorhin, auf andere eingehen und doch man selber bleiben. Ich versuche mich nicht allzu sehr mitziehen zu lassen von Ereignissen bei Freunden, wenn ich jetzt irgendwie was für mich persönlich wichtiges noch zu erledigen hab also – man kann jetzt nicht sagen Egoismus, aber ich versuch dann schon auch an mich zu denken. Ich versuche dann auch abzuwägen, was ist mir wichtiger, dass ich das, was ich mir selber vorgenommen habe zu schaffen oder anderen einen Gefallen zu tun. Das könnte man schon als Kritikpunkt sehen, ist ja gesellschaftlich nicht unbedingt akzeptiert, auch an sich zu denken. Aber ich finde das sehr wichtig, auf das eigene Gleichgewicht zu achten. Man muss selber wissen, wo man steht und jetzt nicht immer hin und her ziehen lassen von allen möglichen Leuten. Aber ich beziehe meine Freunde dann in solche Entscheidungen mit ein, das versuche ich zumindest. Ich könnte vielleicht noch mal verschiedene Freundschaften unterscheiden, die ich so im Laufe meines Lebens hatte. Einige meiner Freundschaften sind auch auseinandergegangen. Womit das zusammenhängt? Bis ins letzte kann man das im Nachhinein nicht sagen. Es könnte sein, dass das durch die Zeitumstände bedingt war, den Krieg, oder später das häufige Umziehen. Das ist in meiner Generation aber glaube ich nichts Ungewöhnliches. Aber es gibt auch gerade was Freundschaft angeht Gemeinsamkeiten mit anderen Generationen. Einige Probleme, die sind einfach menschlich, z.B. die Arbeitslosigkeit war früher auch sehr groß, und da haben andere schon darunter gelitten oder so Grundprobleme von Neid oder Treue.

Ich finde es wichtig, dass man mit Freunden auch Interessen teilt, ich interessiere mich für vieles, und ich fand immer, dass eine Freundschaft dadurch einen besonderen Glanz erhielt, wenn man sich über so etwas austauschen kann. Ich habe durch meine Freundschaften viel gelernt. Ich denke auch, dass Andere das bestätigen könnten. Andererseits ist es auch wieder ein gewisser Reiz, wenn man sehr unterschiedlich ist. Dass die Freunde Dinge aus einem ganz anderen Blickwinkel betrachten, kann sehr bereichernd sein. Eine Freundin von mir habe ich schon im Kindergarten kennengelernt. Dann sind wir umgezogen, in eine andere Stadt. War das der Grund, dass das auseinandergegangen ist? Wahrscheinlich ja. Aber gerade bei frühen Freundschaften kann es auch sein, dass man sich dann beim erwachsen werden auseinander entwickelt. Ich habe eigentlich meistens Freunde gehabt, auch wenn es durch die Bedingungen, durch die gesellschaftlichen Umstände, und auch was mir sonst passiert ist, z.B. ist mein Vater früh gestorben, dadurch sind wir zu meinen Großeltern gezogen, schwierig war. Es kann natürlich auch an mir liegen, dass die Freundschaften z.T. auseinander gegangen sind, natürlich habe ich da einen gewissen Einfluss darauf, aber die andere Person trägt auch einen Teil der Verantwortung. Bis ins Letzte kann man so was auch nicht aufklären, denke ich. Eine andere sehr gute Freundin von mir damals, die hat damals sehr schnell geheiratet, das ist der Lauf der Dinge. Wir waren damals so 20. Und da sind dann die Interessen ein bisschen auseinandergegangen, was eigentlich verständlich ist. Sie hat sich für den Weg des Kinder kriegens entschieden, während ich studiert habe. Trotzdem hatten wir noch das Gefühl, sich hundertprozentig aufeinander verlassen zu können. Später, als ich angefangen habe zu studieren, bin ich auch in ein ganz anderes Umfeld reingekommen und musste erst mal neue Freundschaften aufbauen. Einige Freundschaften sind auch über meinen Mann zustande gekommen, die von mir aus wahrscheinlich nicht entstanden wären, aber weil ich ihn einfach liebe, bin ich bereit, auch seine Freunde zu akzeptieren, auch wenn sie mir nicht immer hundertprozentig sympathisch sind.

Wenn ich so über meine Freundschaften zurückblicke, fällt mir ein, dass schon einmal eine sehr gute Freundin von mir gestorben ist. So was konfrontiert einen auch mit der eigenen Endlichkeit. Denn es kann einen ja auch ganz schnell selber treffen. Ich denke aber mittlerweile, dass das zum Leben gehört, das relativiert die Angst etwas. Wie ich als Freundin bin, hängt in gewissem Sinn auch von dem Grad der Freundschaft ab. Ich kann auch von mir sagen, dass ich mir die Freundschaften schon ziemlich genau aussuche. Ich habe auch einen eher kleinen Freundeskreis, dafür aber sehr tiefe Beziehungen. Meine Freundschaften sind intensiv, gekennzeichnet von viel Offenheit, Ehrlichkeit, Vertrauen und Beistand in schlechten Zeiten. Das macht mich glücklich. Es gibt natürlich auch immer Probleme, ich war oft schon sehr verzweifelt, mit meinen Freunden. Ich habe gelernt, dass es wichtig ist, meine Gefühle nicht zu unterdrücken, ich kann meinen Freunden gegenüber sehr offen sein. Schwierigkeiten muss man auch ansprechen. Andererseits muss man da immer auf die Situation achten, und schauen, wann man seine Gefühle ausdrückt, und wann eher nicht. Sich gegenseitig helfen und Neues entdecken, das finde ich einen wichtigen Punkt dabei. Ich verhalte mich glaube ich, wenn ich mit meinen Freunden zusammen bin, auch anders, als im beruflichen Kontext, oder mit meinem Partner. Mit Sicherheit kann ich das nicht sagen, ich glaube aber schon. Meine Freunde sind ein Teil von mir. Ich habe aber nicht das Gefühl, mich ständig mit einer Freundin treffen zu müssen, aber es ist mir eine große innere Freude, wenn wir uns sehen, und uns ohne Hintergedanken und Zurückhaltung über unsere Erfahrungen, Erlebnisse und Gefühle austauschen können. Von so intensiven Freundschaften kann man aber nicht so viele haben. Und ich kann mich aber auch nicht beklagen, also ich finde es ist eigentlich genau richtig so. Ich bin zufrieden mit meinen Freundschaften und ich denk mal, das ist das Wichtigste. Da ich nur so wenige Freunde habe, kann ich auch viel investieren. Meine Freundschaften sind mir sehr viel Wert, es ist ein Ziel von mir, dass ich meine Freundschaften aufrecht erhalte. Ich möchte gerne noch in vielen Jahren mit meinen Freunden Kontakt haben. Deshalb setze ich auch Prioritäten, damit ich meine Freundschaften aufrecht erhalten kann. Man kann sich nicht in allen Bereiche des Lebens maximal investieren. Es ist schon manchmal ganz schön schwierig, sich die Zeit einzuteilen, und dann habe ich schon manchmal den Konflikt, mit wem verbringe ich jetzt meine Zeit, Partner oder Freundin. Oder auch Pflichten, wie der Beruf, fordern Zeit. Ich wurde in Freundschaften auch schon mal ganz schön enttäuscht, da habe ich mich auch gefragt, ob ich Freunde nicht überbewerte. Manchmal muss man auch einsehen, wenn ein Ziel unerreichbar ist, wenn jemand einfach nicht mit einem befreundet sein will oder nicht paßt. Das anzuerkennen ist mir früher viel schwerer gefallen, da hatte ich mir eine Freundschaft in den Kopf gesetzt und dann musste das auch klappen. Normalerweise versuche ich

aber schon, viel zu tun, um meine Freundschaften zu pflegen, also ich rufe an, mache Vorschläge, organisiere Unternehmungen. Ich versuche auch immer zuzuhören, wenn ein Freund ein Problem hat. Ich denke schon, dass ich selbst beeinflussen kann, wie meine Freundschaften verlaufen, es kommt viel darauf an, wie man sich anderen gegenüber verhält. Immer stimmt das aber auch nicht, man kann manchmal wenig machen, wenn man sich auseinanderlebt, und die Interessen sich ändern. Außerdem kann es immer unvorhergesehene Ereignisse geben, auf die man keinen Einfluss hat, z.B. wenn jemand aus einem Grund wegziehen muss. Aber ich vertraue schon darauf, dass das klappen wird, ich bin da ganz optimistisch, dass meine Freundschaften halten werden auch zum Beispiel über Distanz. Manchmal ist es so, wenn man zu wenig Zeit hat, dass man sich bei manchen Leuten in letzter Zeit zu wenig gemeldet hat. Und da versuch ich dann, wenn wieder mal ein bisschen mehr Zeit ist, dann wirklich das auf jeden Fall nachzuholen. Auch umgekehrt, wenn ich merke von einem Freund habe ich lange nichts mehr gehört, dass ich dann versuche, da ein bisschen nachzuhaken. Ich mache da aber keine Vorwürfe, dass sie nicht angerufen haben, ich glaube es bringt nichts, da falsche Eitelkeit an den Tag zu legen. Man muss anderen auch den eigenen Spielraum zugestehen. Oft sind es auch äußere Umstände, die dazu führen, dass sich jemand nicht meldet, z.B. der Stress.

Man muss die Freundschaften pflegen, d.h. nicht immer passiv abwarten, bis der andere sich meldet, sondern auch selber mal anfragen und Vorschläge machen. Ich musste auch mit der Zeit lernen dass meine Freunde genauso wenig wie ich „Übermenschen“ sind, also damit meine ich ohne Fehler. Andererseits akzeptiere ich auch nicht alles, wenn die Person sich so verhält, dass es mir oder anderen richtig schadet, da ist bei mir eine Grenze. Dann überlege ich schon, hat es noch einen Sinn? Ich versuche dann, eine Erklärung für das Verhalten der Person zu finden, und abzuwägen, pro und kontra, bevor ich mich entscheide, ob ich die Freundschaft abbreche. Man kann das aber auch nicht mit Sicherheit begründen. Irgendwie muss man dann manchmal einfach intuitiv eine Entscheidung treffen, auch wenn es immer ein Risiko enthält. Ich war da schon mal sehr traurig darüber, dass so eine Freundschaft nicht mehr aufrecht zu erhalten war, das hat mir sehr verletzt. Es ist mir allerdings auch schon passiert, das wäre natürlich auch ein Kritikpunkt, dass ich schon mal zu schnell aufgegeben habe. Das mag damals aber auch an der Situation gelegen haben, ich hatte mich gerade von meinem Partner getrennt, und habe mich gedanklich mehr damit beschäftigt. Manche Entscheidungen stellen sich im nachhinein einfach als falsch heraus. Das versuch ich dann anzuerkennen und etwas daraus zu lernen. Ach ja, ich finde es wichtig, dass man in Freundschaften auch Kritik üben kann, dass man auch von den anderen Kritik bekommt, wo man einfach auch Denkanstöße hat, darüber nachzudenken. Es ist immer schwierig, darüber zu reden, wie andere einen wohl als Freundin finden, ich könnte mir denken, dass meine Freunde zum Teil finden, dass ich zu wenig Zeit für sie habe. Das wäre ein Kritikpunkt. Das hängt vielleicht auch damit zusammen, dass sie selber besser mit ihrer Zeit umgehen können, und daher mehr davon zur Verfügung haben. Aber ich versuche schon, mich in deren Situation hineinzuversetzen, und zu verstehen, was ihnen nicht gefällt. Wichtig ist, dass man die Situation des Freundes kennt, und nicht zu viel erwarten kann. Also z.B. eine Freundin von mir hat ein kleines Kind, und ich weiss, dass sie zur Zeit extrem im Stress ist, und da will ich sie nicht mit meinen ganzen Problemen belasten. Generell ist es mir einfach sehr wichtig, dass es meinen Freunden gut geht. Ohne Freunde wäre mein Leben viel leerer und ich wäre nicht der Mensch, der ich heute bin.

Answer 2 (lowest SRW score)

Also, ich denke ich weiß schon ziemlich gut über mich bescheid. Ich bin auf jedenfall eine zuverlässige Freundin, der man auch sagen kann, was man oder der man auch Dinge anvertrauen kann, die nicht weiter gesagt werden sollen. Ich gehöre nicht zu den Tratschen, sondern, wenn ich darum gebeten werde, behalte ich das auch für mich. Ich bin gern hilfsbereit, wenn ich irgendwie Kenntnis bekomme, dass ich irgendwo helfen kann und sei es nur ein Besuch, ein Begleitbesuch zum Arzt, um die Organisation eines Krankenzuges, was mir jetzt als Beispiel einfällt. Meine Freundin sollte möglichst auch gleiche Interessen haben wie ich, auch die gleiche Weltanschauung oder das wäre sehr günstig. Ich finde es nicht so schön, wenn man sich da unterscheidet, und bin auch mittlerweile nicht mehr bereit, sowas zu akzeptieren, wenn da jemand ganz konträre Ansichten mir gegenüber hat, da kann ich mich schon mal ganz schön drüber streiten. Die Weltanschauung des Menschen ist etwas sehr zentrales im Leben und prägt seinen Charakter. Diese Weltanschauung ist die Basis für jede Freundschaft. Eine richtige Freundschaft verbindet mich eigentlich nur zu einer Studienkollegin. Unternehmungen sind zentral in dieser Freundschaft. Ich stelle an mich selber einen sehr hohen Anspruch und erwarte das auch von den anderen und lasse mich auch nicht gerne schlecht behandeln. Dadurch kommen viele Leute nicht in Frage. Von Unzuverlässigkeit halte ich nichts, das zerstört Freundschaften und führt zur Demütigung der Interaktionspartner.

Ich hatte schonmal eine Freundin, die meinen Geburtstag häufiger vergessen hat, und sonst auch unzuverlässig war. Da habe ich dann kurzerhand die Freundschaft abgebrochen, da muss ich dann auch nicht mehr viel überlegen. Das ist für mich dann ganz klar, mit manchen klappt es einfach nicht, da sind die Differenzen zu groß. Die Freundin von der ich vorhin gesprochen habe, lebt in Potsdam. Wir telefonieren mindestens dreimal in der Woche und informieren uns gegenseitig. Ohne Kontakt kann es keine Freundschaft geben. Dann hab ich hier außerhalb von Dresden noch eine Freundin. Ich würde besser sagen eine sehr gute Bekannte. Wir haben auch eine ganze Reihe von gemeinsamen Interessen. Aber in der Weltanschauung stimmen wir also nicht überein. Deshalb hat die Freundschaft ihre Grenzen. Und jetzt hab ich festgestellt, dass ich eigentlich viele Bekannte habe. Ja, mit der einen verreise ich, mit der anderen kann ich mich sehr gut austauschen.

Eine andere wieder ist also für Spaziergänge und kleine Wanderungen gut. Es sind verschiedene Freunde für verschiedene Zwecke. Ja, ein anderer Aspekt ist, dass ich in Freundschaften ziemlich misstrauisch geworden bin. Ich habe eine Kollegin gehabt die mich böse hintergangen hat und das war für mich keine leichte Sache. Ich konnte ihr das nie verzeihen.

So gekittete Freundschaften, das hat meiner Meinung nach keinen Sinn. Das kann aus Prinzip schon nicht funktionieren, das habe ich auch noch nie erlebt, dass das klappt, und ich will es auch gar nicht versuchen. Ja, hier in Dresden hat sich 's überhaupt nicht ergeben, dass man da eine Freundin gefunden hätte. Natürlich Kommilitonen, also Mitaspiranten mit denen hat man sich ausgetauscht aber mehr auch nicht. Ich habe eine Weile im Kindergarten gearbeitet, um mich auf mein zukünftiges Einsatzgebiet vorzubereiten. Da hat sich eine gewisse Freundschaft herausgebildet mit der ich auch sehr fröhlich sein konnte. Die Kinder hatten sich auch gut miteinander vertragen. Und der habe ich also auch sehr gerne Sachen abgegeben, die meine Tochter nicht mehr gebrauchen konnte. Und wir haben auch Kaffee zusammen getrunken, waren fröhlich aber das war eben auch alles. Eine richtige Freundschaft war das auch nicht.

Dann bin ich an die pädagogische Fachschule für Kindergärtnerinnen gekommen. Dort musste ich mich erst mal einfitzen. Musste noch nebenbei meine Aspirantur abschließen. Hab völlig neue Lehrgebiete zu bearbeiten gehabt. In meiner Fachgruppe waren nur Erzieherlinge die 's mir nicht gönnten, das war auf jedenfall der Grund, dass mich niemand mochte. Es war ganz klar, ich habe meinen Doktor gemacht und die anderen hatten es nicht geschafft. Da war also keine Freundschaft möglich.

Der Neid kann sehr viel zerstören, im Leben, das habe ich schon oft erlebt. Trotzdem, ich gehöre zu den fröhlichen und kontaktfreudigen Leuten. Und wenn so die richtigen Leute zusammen sind, da ergibt ein Wort das andere und dann gibt 's eigentlich immer viel Freude und Gelächter waren eigentlich auch viele mit mir zusammen nach irgendwelchen Feiern oder wir haben uns so mal getroffen. Ja, unterhaltsame und interessante Ereignisse kann ich deshalb also nur ganz wenige erzählen, sag ich jetzt einfach mal. Sehr unterhaltsam und interessant war 's immer mit meinen Sportfreunden. Ich war in einer Wandergruppe. Und am Wochenende bin ich wandern gegangen, um auch das Gehirn ein bisschen zu durchlüften. Da waren wir immer sehr fröhlich. Besonders interessante Ereignisse haben sich da auch nicht abgespielt. Das waren mehr Situationen an die ich mich nun wirklich nicht mehr erinnern kann. Unterhaltsam und interessant. Interessantes habe ich mit meinen zwei Reisebekannten oder Reisefreundinnen erlebt. Das war also einmal z. B. in London mit einer Reisebekannten oder Reisefreundin aus Berlin, die eben für mich eine Reisefreundin ist. Im wahrsten Sinne des Wortes.

Weil ich alleinstehend bin, hab ich niemanden, der mit mir das Doppelzimmer teilt und die hab ich also mal auf einer anderen Reise kennengelernt. So, also sehr unterhaltsam war es also z. B. bei „Harrods“, wo wir gerade nach wunderschönen Hüten langen wollten als da so ein Verkäufer angestapft kam und uns davon völlig abgehalten hat, trotz meiner Bitte, dass ich ein Foto machen darf. Das war also auch nicht möglich. Interessant war es auch bei „Madam Toussaud“. Ich wollte dort auf keinen Fall hin, aber Brigitte hat also dermaßen genervt und immer wieder versucht mich zu überreden. Ich hab gesagt, nein, ich will da nicht hin. Wir müssen drei Stunden anstehen. Selbst mein Enkelsohn hat schon so lange angestanden. Außerdem hab ich Hüftprobleme. Ich kann nicht so lange stehen. Aber sie hat so lange auf mich eingeredet. Ich wäre lieber auf ganz bestimmte Märkte dort gegangen. Aber ich habe dann klein beigegeben. Das ist auch eine Eigenschaft. Ich bin auch bereit, mich unterzuordnen und dem anderen zu sagen, gut okay, ich bin einverstanden. Also, ich war also einverstanden in dieses Wachsfigurenkabinett zu gehen, obwohl es mich nicht sehr interessiert hat. Da war es sehr dunkel in diesem Raum und da standen also so Singeridole und Sportidole herum, wie Boris Becker und die Beatles waren da also. Mehr kenne ich ja von diesen Leuten nicht. Mich interessiert das nicht so sehr. Da war also so eine Gartenbank und ich hab mich also auf diese Gartenbank gesetzt und hab gemerkt, dass mich irgendwas streift und hab mich natürlich umgedreht und da stand also so ein Wachsknabe hinter mir im karierten Anzug und ich bin also natürlich zusammengezuckt und Brigitte hat also gemeint, ich soll gefälligst aufpassen. Ich würde ihn noch kaputt machen, umschubsen und dergleichen. Und da hab ich dann gesagt, na weißt du, denkst du ich lass mich von so einem Wachsknaben antatschen. Und das war also ein besonders interessantes Ereignis [lacht]. Und wir haben dann aber auch wirklich beide lachen müssen über meine Äußerung und waren damit eigentlich so die einzig Fröhlichen.

Ich habe noch eine andere Bekannten, die ich auch durch eine Reise kennengelernt habe. Die wohnt in Leipzig. Das [lacht] war schon sehr lustig. Ilse und ich, wir waren den letzten Tag in Bali und wollten also mal noch für zwei Stunden an den Strand gehen, hatten aber kein Geld mitgenommen, weil wir nichts kaufen wollten und also uns praktisch auch schützen wollten. Naja, lange Rede, kurzer Sinn. Es war niemand zu sehen gewesen von solchen Händlern, aber dann waren eben doch welche da und wir haben auch alle beide was gekauft, obwohl wir kein Geld mit hatten. Unser Nachbar hat uns was geborgt und Ilse wurde dann noch bearbeitet einen Hosenanzug zu kaufen. Bluse und kurze Hose. Und das gefiel ihr auch aber sie war also der Meinung die Hose passt nicht und das ging also lange hin und her und letztendlich war sie dann selber sehr ärgerlich und hat gesagt, na dann, jetzt zieh ich das an und zeig dir das, dass mir die Hose nicht passt. Und das köstlichste daran war ja, dass eben die Hose gepasst hat und dass sie dann [lacht] wohl oder übel diesen Anzug nehmen musste.

Tja, interessante Ereignisse? Ich wüsste da jetzt keine weiteren zu nennen. Hm, interessante Ereignisse sind eben z. B. für mich gewesen die wöchentlichen oder die Wochenendwanderungen und auch kleine Fahrten ein- bis zweimal im Jahr, die ich mit dem Wanderklub oder Wanderverein gemacht habe. – Tja, wie bin ich noch als Freundin. Ich denke mal, ich bin sehr anspruchsvoll. Ich denk mal, dass eine Freundin einen eben auch über viele Jahre begleitet haben muss, so dass man also viele gemeinsame Grundlagen irgendwo hat und dass das entscheidend ist dafür, ob man miteinander weiterhin gut auskommt. Irgendwo diese Grundlagen die fehlen mir eben, wie ich also schon vorhin gesagt habe. Ja, um das noch mal zusammenzufassen. Also als Freundin möchte ich oder meine Freundin möchte also gleiche Interessensgebiete haben, wie

ich, so dass also da ein Gedankenaustausch möglich ist und dass man sich also auch gemeinsam solche Erlebnisse organisieren kann.

Ich habe zwei bekannte Damen für die es also ganz wichtig ist, wo sie was für wie viel Geld gekauft haben. Welche Schnäppchen sie gemacht haben wie die Verhältnisse zwischen anderen Leuten sind, irgendwelchen Bekannten - das interessiert mich absolut nicht. Das ist nicht mein Inhalt. Auch Menschen, die also nur über ihre Krankheiten reden das ist auch nicht mein Ding. So dass die also auch von vornherein ausfallen, obwohl sie sonst sicher sehr sympathisch sind. Ich hör mir auch Krankheitsgeschichten an, so ist das in keiner Weise aber immer nur damit konfrontiert zu werden, das gefällt mir nicht. Tja, also ich bin aufgeschlossen, ich lache gern, auch mal über Klamauk. Das ist mein Ding. Ich bin auch sehr harmoniesüchtig. Ich möchte also keinen großen Streit, sondern bei uns soll immer alles irgendwie in guten Bahnen laufen. – Ja, hilfsbereit bin ich, verantwortungsbewusst und ich laufe aber auch niemanden nach. Also da bin ich sehr stolz und wenn sich jemand abgesetzt hat, dann muss ich dem nicht hinterherlaufen. Ich denke schon oft darüber nach, ob ich die erste bin, die irgendwo einen Kontakt knüpft, da muss ein genaues Gleichgewicht bestehen, sonst fühle ich mich nicht wohl, sondern ausgenutzt. Wenn ich merke, dass von dem anderen dann nichts weiter entgegenkommt, immer muss ich mir das auch nicht antun, dass ich immer wieder diejenige bin, die Anstöße gibt. Ja, also das zur Problematik Freundinnen. Mir fällt es schwer zufrieden zu sein mit meinem Altersdasein. Ab und zu gibt es aber auch was Positives. Ich halte es für wichtig und das gibt mir auch Selbstbestätigung und darüber habe ich mich z. B. schon gefreut, dass ich einen Anruf bekam, in dem diejenige sich zu mir geäußert hat, wie sie unsere Theaterarbeit einschätzt und mich gebeten hat darüber keine weiteren Äußerungen zu machen und das ist für mich auch selbstverständlich. Dass sie mir da so bestimmte Dinge offenbart hat, das fand ich schon ganz gut. Das schmeichelt mir, wenn mich jemand gut findet. Ich bin in meinem Leben, was diese Sache anbetrifft schon zweimal enttäuscht worden. Das fand ich richtig hinterhältig, wenn ich also anderen gegenüber organisatorische Dinge mit bewältigt habe und ich dann so reingelegt werde, belogen werde. Das fand ich also echt nicht gut.

Appendix A12. Self- and Life Reflection Questionnaire

Die folgenden Fragen beziehen sich darauf, inwiefern Sie sich Gedanken über die Zukunft und Vergangenheit machen. Bitte benutzen Sie für Ihre Antwort eine Skala von 1 (trifft nicht zu) bis 4 (trifft zu), und kreuzen Sie an, welche Antwort am ehesten zutrifft.

	1 trifft nicht zu	2 trifft eher nicht zu	3 trifft eher zu	4 trifft zu
1. Ich bin mir über meine eigenen Pläne und Ziele sehr gut im Klaren	1	2	3	4
2. Erlebnisse aus meiner Vergangenheit zu deuten hilft mir herausfinden, wie ich mich in der Gegenwart entscheiden soll.	1	2	3	4
3. Ich erforsche gründlich meine Absichten	1	2	3	4
4. Es nützt nichts, über die Vergangenheit nachzudenken, weil sich ohnehin nichts ändern lässt.	1	2	3	4
5. Nachdem etwas unangenehmes passiert ist, denke ich darüber nach, wie ich es hätte verhindern können.	1	2	3	4
6. Ich glaube, ich kenne mich selbst sehr genau.	1	2	3	4
7. Ich versuche Dinge, die passiert sind, zu verstehen.	1	2	3	4
8. Ich hatte neue Einsichten in Geschehnisse der Vergangenheit.	1	2	3	4
9. Ich bin mir über meinen eigenen Pläne und Ziele sehr gut im Klaren.	1	2	3	4
10. Ich habe in der Gegenwart so viel zu tun, dass ich nicht über die Vergangenheit nachdenken kann.	1	2	3	4

Bitte beantworten Sie folgende Fragen ebenfalls auf der 4-stufigen Skala

1	2	3	4
trifft nicht zu	trifft eher nicht zu	trifft eher zu	trifft zu

Ich denke über mein Leben nach, ...

- | | | | | |
|---|----------|----------|----------|----------|
| 11. ...um mir klarer darüber zu werden, wer ich bin.. | 1 | 2 | 3 | 4 |
| 12. ...um Zwischenbilanz zu ziehen, also indem ich mich etwa frage, was ich erreichen wollte, was ich erreicht habe und was ich noch erreichen will.. | 1 | 2 | 3 | 4 |
| 13. ...um zu beurteilen, wie sinnvoll mein Leben war / ist. | 1 | 2 | 3 | 4 |
| 14. ...um zu verstehen, wie Leben überhaupt funktioniert. | 1 | 2 | 3 | 4 |

15. Wie oft denken Sie alleine über Ihr Leben nach?

- | | | |
|---|-------------|--------------------------|
| 1 | sehr selten | <input type="checkbox"/> |
| 2 | selten | <input type="checkbox"/> |
| 3 | manchmal | <input type="checkbox"/> |
| 4 | oft | <input type="checkbox"/> |
| 5 | sehr oft | <input type="checkbox"/> |

16. Wieviel bringt es Ihnen, wenn Sie das tun?

- | | | |
|---|-------------|--------------------------|
| 1 | nichts | <input type="checkbox"/> |
| 2 | wenig | <input type="checkbox"/> |
| 3 | mittelmäßig | <input type="checkbox"/> |
| 4 | viel | <input type="checkbox"/> |
| 5 | sehr viel | <input type="checkbox"/> |

17. Wenn Sie über Ihre Leben nachdenken, wie oft tun Sie das gemeinsam mit anderen?

- | | | |
|---|-------------|--------------------------|
| 1 | sehr selten | <input type="checkbox"/> |
| 2 | selten | <input type="checkbox"/> |
| 3 | manchmal | <input type="checkbox"/> |
| 4 | oft | <input type="checkbox"/> |
| 5 | sehr oft | <input type="checkbox"/> |

18. Wieviel bringt es Ihnen, wenn Sie das tun?

- | | | |
|---|-------------|--------------------------|
| 1 | nichts | <input type="checkbox"/> |
| 2 | wenig | <input type="checkbox"/> |
| 3 | mittelmäßig | <input type="checkbox"/> |
| 4 | viel | <input type="checkbox"/> |
| 5 | sehr viel | <input type="checkbox"/> |

Appendix A13. Life Events Scale

Hinweise zum Ausfüllen des Fragebogens

BITTE UNBEDINGT VORHER DURCHLESEN!

Auf den folgenden Seiten finden Sie eine Liste von Ereignissen aufgeführt, unterteilt nach Lebensabschnitten oder Lebensbereichen, die Menschen im Laufe ihres Lebens erleben können. Wir würden von Ihnen gerne wissen, welche dieser Ereignisse Sie schon erlebt und für sich als wichtig empfunden haben.

Versuchen Sie sich bitte in die jeweilige Lebensphase zurückzusetzen und sich an Ihr Leben in dieser Zeit zu erinnern. Vielleicht überlegen Sie jeweils zunächst, wo Sie zu dieser Zeit gelebt haben, was Ihre Ziele und Probleme waren, welche Personen in dieser Zeit für Sie eine Rolle gespielt haben.

Gehen Sie dann die vorgegebenen Ereignisse durch und machen Sie jeweils

in der ersten Spalte ein Kreuz, wenn Sie dieses Ereignis bisher (ein- oder mehrmals) schon erlebt haben.

in der zweiten Spalte ein Kreuz, wenn das Durchleben dieses Lebensereignisses Ihnen dazu verholfen hat, Einsichten über sich zu gewinnen.

In der Zeile "Sonstiges" haben Sie die Möglichkeit nicht aufgeführte Ereignisse, die für Sie aber von Bedeutung waren und/oder sind, einzutragen und entsprechend anzukreuzen. Danach gehen Sie bitte zum nächsten Lebensabschnitt und beginnen wieder zunächst damit, daß sie sich in diese Zeit zurück- bzw. hineinversetzen.

Versuchen Sie bitte, sich in jeden der Lebensabschnitte hineinzusetzen. Erinnern Sie sich an Ihr Leben in dieser Zeit.

Wo haben Sie zu dieser Zeit gelebt?

Was waren Ihre Ziele und Probleme?

Welche Personen haben für Sie eine Rolle gespielt?

Kindheit

	als wichtig erlebt	Einsichten über sich gewonnen
Bei Verwandten aufgewachsen	<input type="checkbox"/>	<input type="checkbox"/>
Im Heim aufgewachsen	<input type="checkbox"/>	<input type="checkbox"/>
Früher Tod eines der beiden Elternteile	<input type="checkbox"/>	<input type="checkbox"/>
Mit Stiefmutter oder -vater aufgewachsen	<input type="checkbox"/>	<input type="checkbox"/>
Probleme mit Gleichaltrigen	<input type="checkbox"/>	<input type="checkbox"/>
Probleme in der Pubertät	<input type="checkbox"/>	<input type="checkbox"/>
Spannungen/Streit zwischen den Eltern	<input type="checkbox"/>	<input type="checkbox"/>
Sonstiges:	<input type="checkbox"/>	<input type="checkbox"/>

Schule / Ausbildung

	als wichtig erlebt	Einsichten über sich gewonnen
Wiederaufnahme von Schule (Universität) oder Aus-/Weiterbildung nach längerer Pause	<input type="checkbox"/>	<input type="checkbox"/>
Wechsel von Schule/Universität oder Aus-/Weiterbildung	<input type="checkbox"/>	<input type="checkbox"/>
Abschluß von Schule/Universität oder Aus-/Weiterbildung	<input type="checkbox"/>	<input type="checkbox"/>
Probleme in Schule/Universität oder Ausbildung	<input type="checkbox"/>	<input type="checkbox"/>
Durchgefallen in Schule oder bei Prüfung	<input type="checkbox"/>	<input type="checkbox"/>
Kein Abschluß von Schule/Universität oder Aus-/Weiterbildung	<input type="checkbox"/>	<input type="checkbox"/>
Probleme mit oder während der Ableistung der Wehrpflicht	<input type="checkbox"/>	<input type="checkbox"/>
Sonstiges:	<input type="checkbox"/>	<input type="checkbox"/>

Berufstätigkeit	als wichtig erlebt	Einsichten über sich gewonnen
	<hr/>	<hr/>
Veränderungen Ihrer Arbeitszeit (Überstunden, Nebenbeschäftigung, nur noch Teilzeit, etc.)	<input type="checkbox"/>	<input type="checkbox"/>
Veränderungen der Arbeitsbedingungen an Ihrem Arbeitsplatz (neuer Vorgesetzter, neue Kollegen, Rationalisierung, Technisierung, etc.)	<input type="checkbox"/>	<input type="checkbox"/>
Wechsel des Arbeitgebers	<input type="checkbox"/>	<input type="checkbox"/>
Schwierigkeiten mit dem Vorgesetzten	<input type="checkbox"/>	<input type="checkbox"/>
Schwierigkeiten mit Kollegen oder Mitarbeitern	<input type="checkbox"/>	<input type="checkbox"/>
Eintritt in den Ruhestand	<input type="checkbox"/>	<input type="checkbox"/>
Durch Streik bedingte Arbeitsunterbrechung von einem Monat oder mehr	<input type="checkbox"/>	<input type="checkbox"/>
Eröffnung eines Geschäfts bzw. Unternehmens	<input type="checkbox"/>	<input type="checkbox"/>
Arbeitslosigkeit für länger als drei Monate	<input type="checkbox"/>	<input type="checkbox"/>
Erweiterung Ihres Geschäfts oder Unternehmens	<input type="checkbox"/>	<input type="checkbox"/>
Schließung Ihres Geschäfts oder Unternehmens	<input type="checkbox"/>	<input type="checkbox"/>
Anerkennung für außergewöhnliche Leistung am Arbeitsplatz	<input type="checkbox"/>	<input type="checkbox"/>
Umschulung in einen anderen Beruf	<input type="checkbox"/>	<input type="checkbox"/>
Kündigung des Arbeitsplatzes durch Arbeitgeber	<input type="checkbox"/>	<input type="checkbox"/>
Veränderungen der beruflichen Position innerhalb einer Firma	<input type="checkbox"/>	<input type="checkbox"/>
Geschäftlicher Mißerfolg in eigenem Geschäft, eigenem Unternehmen	<input type="checkbox"/>	<input type="checkbox"/>
Für längere Zeit aufgehört zu arbeiten	<input type="checkbox"/>	<input type="checkbox"/>
Sonstiges:	<input type="checkbox"/>	<input type="checkbox"/>

Liebesbeziehungen / Ehe	als wichtig erlebt	Einsichten über sich gewonnen
	<hr/>	<hr/>
Liebesbeziehung	<input type="checkbox"/>	<input type="checkbox"/>
Heirat/Wiederverheiratung, gemeinsame Wohnung mit Partner	<input type="checkbox"/>	<input type="checkbox"/>
Lösung einer langjährigen Beziehung	<input type="checkbox"/>	<input type="checkbox"/>
Deutliche Veränderung (Verbesserung/Verschlechterung) in der Beziehung zum Partner	<input type="checkbox"/>	<input type="checkbox"/>
Scheidung	<input type="checkbox"/>	<input type="checkbox"/>
Getrenntleben vom (Ehe-)Partner	<input type="checkbox"/>	<input type="checkbox"/>
Sie haben eine sexuelle Beziehung außerhalb der Partnerschaft	<input type="checkbox"/>	<input type="checkbox"/>
Ihr Partner hat eine sexuelle Beziehung außerhalb der Partnerschaft	<input type="checkbox"/>	<input type="checkbox"/>
Tod Ihres Partners	<input type="checkbox"/>	<input type="checkbox"/>
Erneutes Zusammenleben mit Partner nach Trennung	<input type="checkbox"/>	<input type="checkbox"/>
Sexuelle Probleme mit Ihrem Partner	<input type="checkbox"/>	<input type="checkbox"/>
Sonstiges:	<input type="checkbox"/>	<input type="checkbox"/>

Nachwuchs	als wichtig erlebt	Einsichten über sich gewonnen
Schwangerschaft und Geburt eines Kindes	<input type="checkbox"/>	<input type="checkbox"/>
Fehlgeburt	<input type="checkbox"/>	<input type="checkbox"/>
Schwangerschaftsabbruch	<input type="checkbox"/>	<input type="checkbox"/>
Tod eines Kindes	<input type="checkbox"/>	<input type="checkbox"/>
Beginn der Wechseljahre/Eintritt in die mittleren Lebensjahre	<input type="checkbox"/>	<input type="checkbox"/>
Komplikationen während der Geburt	<input type="checkbox"/>	<input type="checkbox"/>
Komplikationen während der Schwangerschaft	<input type="checkbox"/>	<input type="checkbox"/>
Geburt eines behinderten Kindes	<input type="checkbox"/>	<input type="checkbox"/>
Sie stellen fest, daß Sie (mit Ihrem Partner) keine Kinder bekommen können	<input type="checkbox"/>	<input type="checkbox"/>
Adoption eines Kindes	<input type="checkbox"/>	<input type="checkbox"/>
Austragen einer ungewollten Schwangerschaft/Vaterschaft für ein ungewolltes Kind	<input type="checkbox"/>	<input type="checkbox"/>
Wechsel in der verwendeten Verhütungsmethode	<input type="checkbox"/>	<input type="checkbox"/>
Sonstiges:	<input type="checkbox"/>	<input type="checkbox"/>

Familie	als wichtig erlebt	Einsichten über sich gewonnen
Auseinandersetzungen mit Verwandten	<input type="checkbox"/>	<input type="checkbox"/>
Alkoholismus oder psychische Krankheiten in der Familie	<input type="checkbox"/>	<input type="checkbox"/>
Kind hat Schwierigkeiten in Schule, Ausbildung oder Beruf	<input type="checkbox"/>	<input type="checkbox"/>
Kind gerät mit der Polizei oder dem Gesetz in Konflikt	<input type="checkbox"/>	<input type="checkbox"/>
Ihr Kind hat Schwierigkeiten in der Partnerschaft	<input type="checkbox"/>	<input type="checkbox"/>
Tod eines nahen Verwandten (Eltern, Geschwister, Großeltern)	<input type="checkbox"/>	<input type="checkbox"/>
Veränderungen in der Anzahl der Personen (außer Kinder und Partner), die in Ihrem Haushalt leben	<input type="checkbox"/>	<input type="checkbox"/>
Kind verläßt den Haushalt	<input type="checkbox"/>	<input type="checkbox"/>
Ernste Auseinandersetzungen in der Familie (außer mit Partner)	<input type="checkbox"/>	<input type="checkbox"/>
Arbeitslosigkeit des Partners	<input type="checkbox"/>	<input type="checkbox"/>
Partner tritt in den Ruhestand	<input type="checkbox"/>	<input type="checkbox"/>
Bruch mit Verwandten	<input type="checkbox"/>	<input type="checkbox"/>
Kind geht Partnerschaft ein oder heiratet	<input type="checkbox"/>	<input type="checkbox"/>
Selbstmord in der Familie	<input type="checkbox"/>	<input type="checkbox"/>
Beaufsichtigung Ihrer Kinder während des größten Teils des Tages durch andere Personen (außer Kindergarten oder reguläre Schule)	<input type="checkbox"/>	<input type="checkbox"/>
Partner gerät mit dem Gesetz in Konflikt	<input type="checkbox"/>	<input type="checkbox"/>
Sonstiges:	<input type="checkbox"/>	<input type="checkbox"/>

Wohnen		
	als wichtig erlebt	Einsichten über sich gewonnen
Umzug in der gleichen Stadt	<input type="checkbox"/>	<input type="checkbox"/>
Hausbau	<input type="checkbox"/>	<input type="checkbox"/>
Hauskauf/Kauf einer Eigentumswohnung	<input type="checkbox"/>	<input type="checkbox"/>
Umbau eines Hauses, einer Wohnung	<input type="checkbox"/>	<input type="checkbox"/>
Umzug in eine andere Stadt	<input type="checkbox"/>	<input type="checkbox"/>
Schwere Auseinandersetzungen mit Nachbarn	<input type="checkbox"/>	<input type="checkbox"/>
Sonstiges:	<input type="checkbox"/>	<input type="checkbox"/>

Straftaten / gesetzliche Angelegenheiten		
	als wichtig erlebt	Einsichten über sich gewonnen
Tätlicher Angriff durch eine andere Person	<input type="checkbox"/>	<input type="checkbox"/>
Beraubung, Diebstahl Ihres Eigentums	<input type="checkbox"/>	<input type="checkbox"/>
Verwicklung in einen Verkehrsunfall	<input type="checkbox"/>	<input type="checkbox"/>
Verwicklung in einen Prozess	<input type="checkbox"/>	<input type="checkbox"/>
Verbüßung einer Gefängnisstrafe oder Freiheitsentzug	<input type="checkbox"/>	<input type="checkbox"/>
Verurteilung durch ein Gericht	<input type="checkbox"/>	<input type="checkbox"/>
Sonstiges:	<input type="checkbox"/>	<input type="checkbox"/>

Finanzielle Situation		
	als wichtig erlebt	Einsichten über sich gewonnen
Größeren Kredit oder Hypothek aufnehmen (mehr als die Hälfte des Jahreseinkommens)	<input type="checkbox"/>	<input type="checkbox"/>
Plötzliche Veränderung (Verbesserung/Verschlechterung) Ihrer finanziellen Situation	<input type="checkbox"/>	<input type="checkbox"/>
Abhängigkeit von Sozialhilfe	<input type="checkbox"/>	<input type="checkbox"/>
Sonstiges:	<input type="checkbox"/>	<input type="checkbox"/>

Soziale Beziehungen und Freizeitaktivitäten		
	als wichtig erlebt	Einsichten über sich gewonnen
Einschneidende Veränderungen (Zunahme/Abnahme) in Ihren sozialen Aktivitäten	<input type="checkbox"/>	<input type="checkbox"/>
Halten eines Haustieres	<input type="checkbox"/>	<input type="checkbox"/>
Tod einer/s engen Freundin/es	<input type="checkbox"/>	<input type="checkbox"/>
Tod eines lieb gewonnenen Haustiers	<input type="checkbox"/>	<input type="checkbox"/>
Schwere Auseinandersetzung mit Freund/Freundin	<input type="checkbox"/>	<input type="checkbox"/>
Mitgliedschaft in Club, Verein oder Partei	<input type="checkbox"/>	<input type="checkbox"/>
Intensive Beschäftigung mit religiösen oder weltanschaulichen Fragen	<input type="checkbox"/>	<input type="checkbox"/>
Austritt aus der Kirche	<input type="checkbox"/>	<input type="checkbox"/>
Noch keinen Urlaub gemacht, der länger als zwei Wochen war	<input type="checkbox"/>	<input type="checkbox"/>
Längerer Auslandsaufenthalt (> 2 Monate) zusammen mit zumindest einem engen Angehörigen	<input type="checkbox"/>	<input type="checkbox"/>
Längerer Auslandsaufenthalt ohne engste Angehörige	<input type="checkbox"/>	<input type="checkbox"/>
Verlust eines für Sie persönlich wertvollen Gegenstandes	<input type="checkbox"/>	<input type="checkbox"/>
Erleben einer Naturkatastrophe oder eines Krieges	<input type="checkbox"/>	<input type="checkbox"/>
Sonstiges:	<input type="checkbox"/>	<input type="checkbox"/>

Gesundheit	als wichtig erlebt	Einsichten über sich gewonnen
	<hr/>	<hr/>
Krankenhausaufenthalt	<input type="checkbox"/>	<input type="checkbox"/>
Verletzung mit ambulanter Behandlung	<input type="checkbox"/>	<input type="checkbox"/>
Operation	<input type="checkbox"/>	<input type="checkbox"/>
Starke Veränderung (Verbesserung/Verschlechterung) Ihres Gesundheitszustandes, Ihrer körperlichen Verfassung	<input type="checkbox"/>	<input type="checkbox"/>
Übermäßiger Alkohol- oder Medikamentenkonsum	<input type="checkbox"/>	<input type="checkbox"/>
Veränderungen Ihrer Lebensweise (Rauchen, Alkohol, Ernährung)	<input type="checkbox"/>	<input type="checkbox"/>
Bleibende einschneidende Veränderung an Ihrem Körper durch Operation oder Verletzung	<input type="checkbox"/>	<input type="checkbox"/>
Falsche, mangelnde, fehlende medizinische Behandlung	<input type="checkbox"/>	<input type="checkbox"/>
Psychologische Beratung oder Therapie	<input type="checkbox"/>	<input type="checkbox"/>
Lebensbedrohung (Krieg, Krankheit, Unfall, etc.)	<input type="checkbox"/>	<input type="checkbox"/>
Umfassender Eingriff an Ihren Zähnen	<input type="checkbox"/>	<input type="checkbox"/>
Sonstiges:	<input type="checkbox"/>	<input type="checkbox"/>

Überprüfen Sie bitte, ob Sie alle Fragen beantwortet haben.

Appendix A14. Principal Component Analyses on PWB Scale and Life Event Scale

Table 44.
Principal Component Analysis of PWB scales

Scale	Factor	
	I ("Subjective Well-being")	II ("Personality growth")
Environmental Mastery	.86	
Self-acceptance	.78	.48
Autonomy	.72	
Personal Growth		.85
Purpose in Life	.50	.75
Positive Relations	.52	.61

Note. A principal components analysis with Oblimin rotation was performed. Variance explained: 64.0%; Eigenwerte (from left): 2.76; 1.10. Variables are ordered according to the factor they load highest on and the size of factor loading. Only loadings above .4 are listed.

Table 45.
Principal Component Analysis of Life Events

Scales	Factors		
	Close life context: Own welfare and significant others	Wider life context: Institutional environment	Former life context: Childhood/Youth
Own children	.87		
Partnership	.71		
Family	.67		
Health	.65		
Delinquency		.88	
Profession	.52	.63	
Finances		.57	
Accommodation		.47	
Childhood			.84
School			.76
Social relationships		.45	.57

Note. A principal components analysis with Varimax rotation was performed. Variance explained: 62.3%; Eigenwerte (from left): 4.58; 1.20; 1.10. Variables are ordered according to the factor they load highest on and the size of factor loading. Only loadings above .4 are listed.

Appendix A15. Descriptive Statistics of Study Variables

Table 46.

Descriptive Statistics of Study Variables I: Means, Standard Deviations, Skewness, and Kurtosis for the Entire Sample (N=169)

	Mean	SD	Skewness	SE	Kurtosis	SE
Self-concept indices						
SCM similarity score ^b	-.01	.45	-1.40	.19	6.98	.37
SCA similarity score ^b	.04	.46	.36	.19	.18	.37
Personality growth^a	-.00	.59	-.46	.19	-.25	.37
Ego Development	5.42	.80	.25	.19	.78	.38
Personal growth	3.99	.59	-.81	.19	.46	.37
Purpose in life	3.91	.52	-.46	.19	.01	.37
Openness	3.57	.55	.02	.19	-.01	.38
Self-related wisdom	3.79	1.01	-.29	.19	-.26	.38
Psychological Mindedness	33.75	2.91	-.11	.19	-.26	.38
Behavioral Rigidity	38.03	5.01	.03	.19	-.65	.38
Adaptivity^a	-.01	.63	-.19	.19	-.23	.37
Life satisfaction	3.69	.69	-.40	.19	.06	.37
Autonomy	3.54	.53	-.11	.19	.01	.37
Environmental mastery	3.73	.53	-.22	.19	-.21	.37
Self acceptance	3.62	.48	-.52	.19	.34	.37
Neuroticism	2.42	.75	.59	.19	.48	.38
Extraversion	3.56	.61	-.40	.19	-.08	.38
Agreeableness	3.95	.48	-.18	.19	-.48	.38
Conscientiousness	3.55	.65	-.31	.19	-.61	.38
Intelligence^a	.00	.76	-.64	.19	.10	.37
Fluid intelligence	11.65	5.10	-.46	.19	-.85	.37
Crystallized intelligence	55.69	14.42	-.84	.19	.40	.38
Self- and Life Reflection^a	.00	.65	-.54	.19	.31	.37
Self-knowledge	3.13	.55	-.33	.19	-.33	.38
Learning from the past	3.40	.46	-.69	.19	.08	.38
Ignoring past and future	1.94	.78	.58	.19	-.48	.38
Perceived use & frequency of self-reflection	3.28	.74	-.23	.19	-.18	.38
Life Events^a	-.01	.84	.63	.19	.25	.38
Life events close context	16.67	11.41	.91	.19	.69	.38
Life events wider context	13.83	1.34	1.05	.19	1.65	.38
Life events former context	2.76	12.88	.56	.19	-.08	.38

^a Listed are the unweighted means of the z-standardized scores of all scales belonging to the domain.

^b Raw scores are given, that is, the influence of age is not partialled out from the scores.

Table 47.

Descriptive Statistics of Study Variables II: Means and Standard Deviation per Age Group

	Younger Adults (n = 89)		Older Adults (n= 80)	
	Mean	SD	Mean	SD
Self-concept indices				
SCM similarity score ^b	-.03	.39	.01	.50
SCA similarity score ^b	-.13	.39	.23	.47
Personality growth^a	.22	.49	-.25	.61
Ego Development	5.51	.77	5.32	.76
Personal growth	4.13	.50	3.83	.64
Purpose in life	3.90	.48	3.93	.57
Openness	3.75	.54	3.37	.47
Self-related wisdom	4.03	.89	3.55	1.07
Psychological Mindedness	34.43	2.71	33.05	2.95
Behavioral Rigidity	35.69	4.25	40.85	4.35
Adaptivity^a	-.21	.62	.22	.57
Life satisfaction	3.49	.69	3.89	.66
Autonomy	3.42	.53	3.68	.50
Environmental mastery	3.55	.52	3.93	.47
Self acceptance	3.55	.53	3.70	.40
Neuroticism	2.60	.74	2.20	.70
Extraversion	3.67	.58	3.44	.63
Agreeableness	3.82	.53	4.09	.43
Conscientiousness	3.34	.62	3.78	.62
Intelligence^a	.17	.69	-.18	.79
Fluid intelligence	14.42	3.82	8.48	4.56
Crystallized intelligence	51.95	14.24	59.61	13.61
Self- and Life Reflection^a	.01	.61	-.01	.69
Self-knowledge	3.04	.54	3.23	.56
Learning from the past	3.37	.46	3.42	.46
Ignoring past and future	1.89	.73	2.03	.86
Perceived use & frequency of self-reflection	3.42	.71	3.15	.67
Life Events^a	-.02	.80	.01	.88
Life events close context	14.86	1.76	18.56	11.59
Life events wider context	14.06	9.92	13.48	1.16
Life events former context	22.29	12.80	19.23	12.79

^a Listed are the unweighted means of the z-standardized scores of all scales belonging to the domain.^b Raw scores are given, that is, the influence of age is not partialled out from the scores.

Appendix B.

Results

Appendix B1. Intercorrelations of Study Variables

Table 48.
Intercorrelation of Study Variables

	1	2	3	4	5	6	7	8	9	10	11	12	13
1. age (dummy: 1 = young; 2 = old)													
2. sex (1=male. 2 = female)	-.01												
3. personality growth (mean score)	-.39**	.13											
4. ego development	-.13	.20**	.51**										
5. PWB personal growth	-.25**	.09	.75**	.30**									
6. PWB purpose in life	.03	-.06	.49**	.21**	.42**								
7. NEO openness	-.35**	.11	.50**	.05	.23**	-.04							
8. self-related wisdom	-.24**	.22**	.58**	.28**	.24**	.13	.28**						
9. Psychological mindedness	-.24**	-.13	.67**	.14	.54**	.27**	.18**	.18*					
10. Behavioral rigidity	.52**	-.08	-.65**	-.18*	-.40**	.02	-.36**	-.27**	-.48**				
11. adaptivity (mean score)	.34**	-.04	.11	-.01	.18*	.51**	-.16*	-.04	.14	.21**			
12. life satisfaction	.28**	-.15*	.03	.04	.08	.18*	-.18*	-.05	.08	.01	.61**		
13. PWB autonomy	.25**	-.14	.07	.06	.15*	.27**	-.09	-.04	.10	.18*	.61**	.15	
14. PWB environmental mastery	.36**	-.01	-.01	-.03	.04	.39**	-.19*	-.14	.11	.27**	.82**	.48**	.44**
15. PWB self-acceptance	.15*	-.07	.24**	.04	.26**	.46**	-.06	.08	.18*	-.01	.78**	.55**	.41**
16. NEO neuroticism (invers)	.27**	-.16*	.15	-.04	.20*	.48**	-.14	-.04	.24**	.12	.81**	.50**	.48**
17. NEO extraversion	-.19*	.05	.22**	-.02	.23**	.36**	.09	.09	.06	-.06	.42**	.11	.17*
18. NEO agreeableness	.27**	.32**	-.05	-.02	-.02	.05	-.07	.04	-.10	.07	.43**	.18*	.00
19. NEO conscientiousness	.34**	.01	-.08	-.01	.00	.37**	-.14	-.11	-.02	.50**	.57**	.11	.42**
20. intelligence (mean score)	-.23**	-.06	.38**	.20**	.20**	-.03	.29**	.37**	.21**	-.38**	-.22**	-.01	-.08
21. fluid intelligence	-.58**	-.06	.41**	.11	.28**	.00	.27**	.32**	.29**	-.48**	-.25**	-.14	-.12
22. crystallized intelligence	.27**	-.03	.18*	.19**	.02	-.04	.17*	.25**	.05	-.10	-.07	.13	.00
23. self- and life reflection (mean score)	-.01	-.01	.34*	.22**	.33**	.30**	.24**	.15	.16*	-.01	.25	.12	.18*
24. self-knowledge	.17*	-.10	.03	-.04	.05	.40**	-.06	-.01	.02	.28**	.49**	.15	.42**
25. learning from the past	.06	-.12	.13	.09	.21**	.20**	.15*	.03	.04	.14	.18*	.02	.18*
26. ignoring past and future	.08	.12	-.32**	-.23**	-.24**	-.08	-.28**	-.11	-.17*	.22**	.03	-.04	.02
27. subj. frequency/use self-reflection	-.19*	.12	.39**	.29**	.34**	.09	.23**	.27**	.18*	-.24**	-.01	.09	-.11
28. life events (mean score)	.01	.07	.12	.12	.14	.09	-.01	.19*	.01	.05	.02	-.09	.05
29. life events. close context	.16*	.19*	.04	.15	.02	.08	-.07	.18*	-.07	.15	.07	-.07	.10
30. life events. wider context	-.03	-.05	.08	.04	.14	.13	-.06	.06	.02	.04	.04	-.15	.07
31. life events. former context	-.12	.01	.21**	.12	.21**	.01	.12	.23**	.07	-.09	-.07	-.02	-.06
32. SCM	.04	.01	.23**	.25**	.08	.13	.09	.44**	.03	.05	.03	-.01	.05
33. SCM without age ^a	.00	.01	.25**	.26**	.09	.13	.11	.45**	.05	.02	.01	-.02	.03
34. SCA	.39**	.11	-.07	-.12	.01	.18*	-.03	-.16*	-.02	.22**	.46**	.24**	.24**
35. SCA without age ^a	.00	.14	.08	-.08	.11	.18*	.11	-.08	.06	.03	.36**	.15	.15*

^a scores "without age" are derived by saving standardized residuals from a regression analysis with age as predictor and SCM and SCA, respectively, as criterion. ** $p \leq .01$; * $p \leq .05$; + $p \leq .10$;

Table 48. Intercorrelation of Study Variables (continued)

	14	15	16	17	18	19	20	21	22	23	24	25
1. age (dummy variable)												
2. sex (1=male, 2 = female)												
3. personality growth (mean score)												
4. ego development												
5. PWB personal growth												
6. PWB purpose in life												
7. NEO-Openness												
8. self-related wisdom												
9. Psychological mindedness												
10. Behavioral rigidity												
11. adaptivity (mean score)												
12. life satisfaction												
13. PWB autonomy												
14. PWB environmental mastery												
15. PWB self-acceptance	.56**											
16. neuroticism (invers)	.62**	.63**										
17. NEO-Extraversion	.17*	.31**	.26**									
18. NEO-Agreeableness	.28**	.28**	.24**	.04								
19. NEO-conscientiousness	.59**	.20**	.38**	.04	.16*							
20. intelligence (mean score)	-.24**	-.09	-.14	-.12	-.13	-.33						
21. fluid intelligence	-.30**	-.09	-.19*	.03	-.21**	-.29	.75**					
22. crystallized intelligence	-.06	-.03	-.01	-.22**	.03	-.21	.74**	.09				
23. self- and life reflection (mean score)	.25*	.14	.15*	.09	.09	.24**	.25	.19*	.18*			
24. self-knowledge	.44**	.29**	.34**	.15	.13	.53	-.10	-.06	-.10	.56**		
25. learning from the past	.16*	-.01	.14	.04	.11	.30	.15	.09	.12	.76**	.41**	
26. ignoring past and future	-.05	.01	.00	.07	.08	.08	-.38**	-.23**	-.32**	-.63**	.02	-.34*
27. subj. frequency/use of self-reflection	-.04	.08	-.09	.11	.07	-.14	.24**	.23**	.12	.62**	.06	.23*
28. life events (mean score)	-.15	.05	.08	.11	.02	.01	-.06	-.01	-.07	-.01	-.16*	.01
29. life events, close context	-.05	.06	.06	.03	.10	.09	-.15	-.18*	-.01	-.01	-.09	.01
30. life events, wider context	-.09	.05	.11	.18*	.01	.02	-.07	.05	-.14	-.05	-.13	.02
31. life events, former context	-.24**	-.02	.03	.10	-.09	-.11	.07	.13	-.01	.06	-.19*	.00
32. SCM	-.03	.03	.01	.06	-.04	.11	.14	.02	.16*	.26**	.07	.21**
33. SCM without age ^a	-.05	.02	-.01	.07	-.06	.09	.15	.05	.14	.26**	.06	.21**
34. SCA	.36**	.31**	.35**	.15	.42**	.28	-.18*	-.25**	.01	.10	.24**	.16*
35. SCA without age ^a	.24**	.28**	.27**	.25**	.34**	.15	-.10	-.02	-.11	.11	.18*	.15

^a scores "without age" are derived by saving standardized residuals from a regression analysis with age as predictor and SCM and SCA, respectively, as criterion. ** $p \leq .01$; * $p \leq .05$; + $p \leq .10$;

Table 48. Intercorrelation of Study Variables (continued)

	26	27	28	29	30	31	32	33	34	35
1. age (dummy variable)										
2. sex (1=male, 2 = female)										
3. personality growth (mean score)										
4. ego development										
5. PWB personal growth										
6. PWB purpose in life										
7. NEO-Openness										
8. self-related wisdom										
9. Psychological mindedness										
10. Behavioral rigidity										
11. adaptivity (mean score)										
12. life satisfaction										
13. PWB autonomy										
14. PWB environmental mastery										
15. PWB self-acceptance										
16. neuroticism (invers)										
17. NEO-Extraversion										
18. NEO-Agreeableness										
19. NEO-conscientiousness										
20. intelligence (mean score)										
21. fluid intelligence										
22. crystallized intelligence										
23. self- and life reflection (mean score)										
24. self-knowledge										
25. learning from the past										
26. ignoring past and future										
27. subj. frequency / use of self-reflection	-.32**									
28. life events (mean score)	-.02	.11								
29. life events, close context	.01	.06	.85**							
30. life events, wider context	.03	.03	.83**	.57**						
31. life events, former context	-.12	.22**	.82**	.54**	.51**					
32. SCM	-.17*	.23**	.15	.14	.03	.17*				
33. SCM without age ^a	-.17*	.24**	.14	.13	.03	.18*	.99**			
34. SCA	.09	-.07	.00	.09	.06	-.17*	-.29**	-.31**		
35. SCA without age ^a	.07	.01	-.01	.02	.07	-.12	-.34**	-.34**	.92**	

^a scores "without age" are derived by saving standardized residuals from a regression analysis with age as predictor and SCM and SCA, respectively, as criterion. ** $p \leq .01$; * $p \leq .05$; + $p \leq .10$;

Appendix B2. Domain-specific Relationships between SCM and Predictors: Regression Analyses

Table 49.
Regression of Chronological Age on SCM

	β	t	R^2	F	df
Chronological age	.06	.70	.00	.50	1/166

Table 50.
Regression of Fluid Intelligence (Non-Squared and Squared) on SCM^a

Fluid intelligence		R^2	F	df	ΔR^2	ΔF	Δdf
Full model							
Step 1	linear term	.00	.33	1/166	-	-	-
Step 2	linear term, quadratic term	.01	.65	2/165	.001	.96	1/166
Variables			β	t			r^c
Step 1	linear term		.04	.57			.04
Step 2	linear term, quadratic term		.37 -.34	1.09 -.98			

^aThe SCM score controlled for age is used in this analysis.

Table 51.
Regression of Intelligence Scores on SCM^a

	R^2	F	df
Entire set	.02	1.73	2/158
Variables	β	t	r^c
Crystallized intelligence	.35	.15	.11
Fluid intelligence	.02	-.01	.99

Note. ^aThe SCM score controlled for age is used in this analysis

Table 52.
Regression of Life Events on SCM^a

	R^2	F	df
Entire set	.04	2.21 ⁺	3/155
Variables	β	t	r^c
Life events close context	.08	.79	.13
Life events wider context	-.11	-.11	.03
Life events former context	.19*	2.00	.18*

Note. ^aThe SCM score controlled for age is used in this analysis;

* $p \leq .05$;

Table 53.
Regression of Life Reflection and Self-Reflection on SCM^a

	R^2	F	df
Entire set	.09	3.86**	4/155
Variables	β	t	r^c
Self-knowledge	-.02	-.28	.06
Learning from the past	.16*	1.79	.21**
Ignoring past and future	-.08	-.90	-.17*
Life events former context	.18*	2.15	.24**

Note. ^aThe SCM score controlled for age is used in this analysis;

** $p \leq .01$; * $p \leq .05$

Table 54.
Testing Moderation Effects of Neuroticism in the Relationship of Self- and Life Reflection and SCM^a

Full model	R^2	F	df	ΔR^2	ΔF	Δdf
Step 1 Self- and life reflection (SRLR)	.07	11.53**	1/161	.07	11.53**	1/161
Step 2 SRLR, NEO neuroticism	.07	5.93**	2/160	.00	.38	1/160
Step 3 SRLR, neuroticism, interaction term (SRLR x neuroticism)	.10	5.95**	3/159	.03	5.65*	1/159
Variables	β^b	t	r			
Step 1 Self- and life reflection (SRLR)	-.29	-1.19	.26			
Step 2 SRLR, NEO neuroticism	.03	.40	.01			
Step 3 SRLR, neuroticism, interaction term (SRLR x neuroticism)	.58	2.38*	.30*			

^aThe SCM score controlled for age is used in this analysis; ^b β - and t -scores refer to the final model

** $p \leq .01$; * $p \leq .05$

Table 55. Testing Moderation Effects of Self- and Life Reflection on the Relationship between SCM and Life Events

Full model		R^2	F	df	ΔR^2	ΔF	Δdf
Step 1	Self- and life reflection (SRLR)	.07	11.13**	1/155	.07	11.13**	1/155
Step 2	SRLR, life events	.09	7.35**	2/154	.02	3.40 [#]	1/154
Step 3	SRLR, life events, interaction term (SRLR x life events)	.09	5.18**	3/153	.01	.84	1/153

Variables		β	t	r
Step 1	Self- and life reflection (SRLR)	.22	2.44*	.26*
Step 2	SRLR, life events	-.19	-.52	.14
Step 3	SRLR, life events, interaction term (SRLR x life events)	.35	.92	.18

^aThe SCM score controlled for age is used in this analysis; ^b β - and t -scores refer to the final model

** $p \leq .01$; * $p \leq .05$

Appendix B3. Preliminary Analyses for Computing Commonality Analysis*Table 56. Simple R-Squares of Personality Growth, Self- and Life Reflection and Life Events to SCM (Model comprising all predictors)*

Variables	β^a	t	ΔR^2	ΔF	Δdf
Personality Growth			.27	6.70**	7/127
Ego development	.19	2.28*			
PWB personal growth	-.09	-.83			
PWB purpose in life	.08	.78			
NEO-Openness	.01	.09			
Self-related wisdom	.42	4.75**			
Psychological mindedness	.02	.18			
Behavioral rigidity	.19	1.86 [#]			
Life and Self-Reflection			.04	1.7*	4/123
Self knowledge	-.09	-.87			
Learning from the past	.14	1.52			
Ignoring past and future (invers)	-.06	-.65			
Frequency /perceived use of self-reflection	.11	1.19			
Life Events			.01	.51	3/120
Life events close context	.11	1.07			
Life events wider context	-.05	-.48			
Life events former context	-.08	-.77			
Full model			.32	3.96**	14/120

^a β -Values refer to the full model comprising all variables** $p \leq .01$; * $p \leq .05$; [#] $p \leq .10$.*Table 57. Simple R-Squares of Personality Growth, Self- and Life Reflection and Life Events to SCM (Model comprising all predictors included in the Commonality Analysis)*

Variables	β^a	t	ΔR^2	ΔF	Δdf
Personality Growth			.24	22.81**	2/143
Self-related wisdom	.37	4.67**			
Ego Development	.16	2.01*			
Life and Self-Reflection			.04	2.59*	3/140
Learning from the past	.17	2.21*			
Ignoring past and future (invers)	-.01	-.01			
Frequency /perceived use of self-reflection	.08	.93			
Life Events			.00	.41	1/139
Life events former context	.05	.64			
Full model			.27	8.58**	6/139

^a β -Values refer to the full model comprising all variables** $p \leq .01$; * $p \leq .05$

Appendix B4. Commonality Analysis with SCM as Criterion

Table 58.

R-Squares of Personality Growth, Self- and Life Reflection, and Life Events to SCM

Number of variables in model	R ²	Variables in model
1	.159 .039 .002	personality growth ^a (1) self- and life reflection ^b (2) life events ^c (3)
2	.239 .175 .041	1, 2 1, 3 2, 3
3	.270	1, 2, 3

Table 59.

Formulas and Results for Unique and Commonality Components of Variance of SCM (see Amado, McLean, & Kaufman, 2003)

Unique (1)	$= R^2_{y.123} - R^2_{y.23}$	$= .270 - .041$	$= .229$
Unique (2)	$= R^2_{y.123} - R^2_{y.13}$	$= .270 - .175$	$= .095$
Unique (3)	$= R^2_{y.123} - R^2_{y.12}$	$= .270 - .239$	$= .031$
Common (1,2)	$= -R^2_{y.3} + R^2_{y.13} + R^2_{y.23} - R^2_{y.123}$	$= -.002 + .175 + .041 - .270$	$= -.056$
Common (1,3)	$= -R^2_{y.2} + R^2_{y.12} + R^2_{y.23} - R^2_{y.123}$	$= -.039 + .239 + .041 - .270$	$= -.029$
Common (2,3)	$= -R^2_{y.1} + R^2_{y.12} + R^2_{y.13} - R^2_{y.123}$	$= -.159 + .239 + .175 - .270$	$= -.015$
Common (1,2,3)	$= R^2_{y.1} + R^2_{y.2} + R^2_{y.3} - R^2_{y.12} - R^2_{y.13} - R^2_{y.23} + R^2_{y.123}$	$= .159 + .039 + .002 - .239 - .175 - .041 + .270$	$= .015$

Appendix B5. Regression Analyses with Personality Growth, Adaptivity, Intelligence, Self- and Life Reflection and Life Events as Predictors of SCA

Table 60.
Regression of Chronological Age on SCA

Variables	β	t	R^2	F	df
Chronological age	.39	5.50**	.15**	30.23**	1/167

** $p \leq .01$.

Table 61.
Regression of Personality Growth Variables on SCA

	R^2	F	df
Entire set	.06	1.22	7/136

Variables	β	t	r^a
Self-related wisdom	-.14	-1.54	-.12
Ego development	-.09	-1.01	-.09
PWB purpose in life	.12	1.30	.13
PWB personal growth	.05	.47	.07
NEO openness	.12	1.32	.07
CPI psychological mindedness	.05	.43	.05
Behavioral rigidity	.07	.70	.05

Note. Lowest tolerance was .54

^aThe SCA score controlled for age is used in this analysis

Table 62.
Regression of Adaptivity Variables on SCA

	R^2	F	df
Entire set	.20	4.05**	8/155

Variables	β	t	r^a
Life satisfaction	-.02	-.23	.14
PWB autonomy	.04	.38	.15
PWB environmental mastery	.02	.17	.24
PWB self-acceptance	.06	.56	.27
NEO neuroticism	-.07	-.62	-.26
NEO extraversion	.19	2.41**	.24**
NEO conscientiousness	.04	.43	.16
NEO agreeableness	.30	3.76**	.35**

Note. Lowest tolerance was .37

^aThe SCA score controlled for age is used in this analysis

** = $p \leq .01$

Table 63.
Regression of Intelligence Variables on SCA

	R^2	F	df
Entire set	.01	.94	2/159
Variables	β	t	r^a
Fluid intelligence (Raven)	.02	.28	.01
Crystallized intelligence (Wechsler)	-.11	-1.37	-.11

Note. Lowest tolerance was .99

^aThe SCA score controlled for age is used in this analysis

** $p \leq .01$

Table 64.
Regression of Self- and Life Reflection on SCA

	R^2	F	df
Entire set	.06	2.36 [#]	4/156
Variables	β	t	r^a
Self-knowledge	.16	1.81 [#]	.20 [#]
Learning from the past	.10	1.13	.13
Ignoring past and future	.13	1.46	.09
subj. frequency & use of life reflection	.02	.20	.01

Note. Lowest tolerance was .70

^aThe SCM score controlled for age is used in this analysis

[#] $p \leq .01$

Table 65.
Regression of Life Events on SCA

	R^2	F	df
Entire set	.05	2.60*	3/156
Variables	β	t	r^a
Life events, close context	.07	.73	.03
Life events, former context	-.25	-2.62**	-.13**
Life events, wider context	.16	1.64 [#]	.07 [#]

Note. Lowest tolerance was .70

^aThe SCA score controlled for age is used in this analysis

** $p \leq .01$; [#] $p \leq .10$

Appendix B6. Commonality Analysis of SCA

Table 66.
R-Squares of Adaptivity, Life Events and Chronological Age on SCA

Number of variable sets in model	R^2	Variables in model
1	.168 .044 .153	adaptivity ^a (1) life events ^b (2) chronological age (3)
2	.191 .294 .194	1, 2 1, 3 2, 3
3	.308	1, 2, 3

^a adaptivity was represented only by NEO extraversion and NEO agreeableness

^b Life events were represented only by Life events, former context and life events, wider context

Table 67.
Formulas and Results for Unique and Commonality Components of Variance on SCA (see Amado et al., 2003)

Unique (1)	$= R^2_{y.123} - R^2_{y.23}$	$= .308 - .194$	$= .114$
Unique (2)	$= R^2_{y.123} - R^2_{y.13}$	$= .308 - .294$	$= .014$
Unique (3)	$= R^2_{y.123} - R^2_{y.12}$	$= .308 - .191$	$= .117$
Common (1,2)	$= -R^2_{y.3} + R^2_{y.13} + R^2_{y.23} - R^2_{y.123}$	$= -.153 + .294 + .194 - .308$	$= .027$
Common (1,3)	$= -R^2_{y.2} + R^2_{y.12} + R^2_{y.23} - R^2_{y.123}$	$= -.044 + .191 + .194 - .308$	$= .033$
Common (2,3)	$= -R^2_{y.1} + R^2_{y.12} + R^2_{y.13} - R^2_{y.123}$	$= -.168 + .191 + .294 - .308$	$= .009$
Common (1,2,3)	$= R^2_{y.1} + R^2_{y.2} + R^2_{y.3} - R^2_{y.12} - R^2_{y.13} - R^2_{y.23} + R^2_{y.123}$	$= .168 + .044 + .153 - .191 - .294 - .194 + .308$	$= -.006$

Declaration by Word of Honor

I hereby certify on my honor that this thesis is my own work and that I have completed it without undue help from third parties and without the use of any material other than permitted. Any thoughts and ideas taken directly or indirectly from others are highlighted as such. Neither this work in its present form nor any other work of its contents has been submitted to another German or foreign board of examiners so far.

Bremen, 30/05/2006

Jessica Dörner