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The role of mood marking in complex sentences

A case study of Australian languages¹

Abstract. This study investigates the role of mood markers in the semantic composition of complex sentence constructions, on the basis of a sample of Australian languages. The question of mood marking in complex sentences is theoretically significant because it involves a clause-internal category that plays a crucial role in the semantics of a construction above the level of the individual clause. Previous work on mood in complex sentences has shown that presence of mood marking in one of the component clauses tends to correlate with a feature of non-actualization on the level of the complex sentence. In this paper, I argue that this semantic generalization actually obscures a number of constructionally relevant distinctions, because there are two additional factors that determine the precise role of the mood marker in the complex sentence: (1) the presence or absence of specifically relational markers like conjunctions and (2) the semantically schematic or specific nature of these markers. In constructions without relational markers, mood markers do not strictly speaking encode the complex sentence relation, but pragmatically trigger it. In constructions with relational markers, on the other hand, mood markers and relational markers jointly encode the complex sentence relation, but their relative contribution depends on a principle of functional trade-off.

Introduction. In the analysis of complex sentence constructions, we can make a basic distinction between two broad categories of markers that contribute to the semantic specification of the complex sentence relation. On the one hand, there are markers like conjunctions or complementizers, which can be called relational markers: these are generally found only in complex sentences and thus serve as specialized markers for labeling complex sentence relations like causal, conditional or temporal relations. On the other hand, there are also intra-clausal markers like tense, aspect and mood markers: by specifying component clauses for particular temporal or modal features, these markers can equally contribute to the semantics of complex sentence relations, but unlike conjunctions they are not specialized in complex sentences. Intra-clausal markers are part of the internal structure of the simple clauses that make

up a complex sentence, and their basic function lies outside the domain of complex sentence formation: tense serves to locate a particular event in time, aspect defines its internal temporal structure, and mood encodes the speaker's assessment of its plausibility or desirability.

Given the essentially intra-clausal function of such categories, how exactly do they contribute to the composition of complex sentence meaning? In spite of the extensive literature on tense/aspect/mood categories and on complex sentence constructions, this is a question that has not really received much attention. For a category like mood, for instance, we have a good idea of its semantics in independent clauses (Bybee et al. 1994, Van der Auwera & Plungian 1998, Elliott 2000) and its distribution in complex sentences (Bybee et al. 1994:225–230, Givon 1994), but there is no explicit model of how the modal features marked by mood categories contribute to the composition of the complex sentence meaning, and how they interact with the semantics of specifically relational markers. In this paper, I try to develop a more explicit account of the status of mood marking in complex sentences. Specifically, I show that mood markers can play a number of constructionally rather different roles in the composition of complex sentence meaning, depending on parameters like the presence or absence of relational markers in the same construction, and the semantic specificity or schematicity of these relational markers. I investigate this with a systematic study of mood use in complex sentences in a sample of Australian languages. The languages of Australia are particularly interesting for this purpose, because they typically have rich systems of mood marking with extensive uses in complex sentence constructions, combined with relatively poor systems of relational marking, both in terms of number and semantic specificity of relational markers (see Dixon 2002:86–87).

Although the data in this study are taken from Australian languages, the model developed here has more general implications for the study of complex sentences. On the one hand, it can contribute to a fuller understanding of the constructional basis of complex sentence semantics, which has been somewhat biased towards the role of relational rather than intra-clausal types of marking, possibly because of the relative importance of conjunction-like marking in better-studied European languages. The data investigated here show that intra-clausal marking can have a very high functional load relative to relational marking, and that more generally there is a functional trade-off between the two types of marking, with semantic schematicity in the relational domain correlating with semantic specificity in the modal domain. On the other hand, the proposed typology also contributes to a better understanding of the

notion of complex sentence construction as such, which has traditionally been a rather elusive category to define in formal terms. Semantically, the crucial feature seems to be the presence of a complex sentence relation that joins two individual clauses, but I show that this feature can result from two fundamentally different formal mechanisms. The relation can either be encoded within the construction by some specialized relational marker, often in combination with intra-clausal marking as further semantic specification, or else it can be pragmatically triggered by the intra-clausal properties of clauses which are otherwise in juxtaposition, without any relational marking.

The study is structured as follows. In section 2, I discuss the data on which the analysis is based and deal with a number of methodological problems, such as the criteria used to delineate relational and intra-clausal types of marking. In section 3, I outline the distribution of mood markers in complex sentences in the sample, and investigate a first generalization about the function of mood, based on the suggestion in the literature that mood generally marks non-actualization. I show that the distribution of mood markers in the sample basically confirms this tendency, but that there are also a few surprising uses of mood that show the need to go beyond this generalization. In sections 4 and 5, I refine the proposed generalization in two ways. In section 4, I examine the semantic contribution of the individual mood markers in more detail by looking at their use in independent clauses, and I show that there is a correlation between the specific subtype of non-actualization they mark in independent contexts (e.g. epistemic, deontic or counterfactual modality) and the general semantic profile of the complex sentence in which they are used. This suggests that mood markers serve to adduce an appropriate feature of non-actualization to the complex sentence. In section 5, I investigate how this interacts with the semantic contribution made by relational markers in the complex sentence, and I show that in the majority of cases there is a functional trade-off between the two types of marking, one of them adducing a more schematic and the other adducing a more specific semantic feature. I also deal with the problematic case of constructions that do not contain any relational marking, arguing that in such cases the complex sentence relation is pragmatically triggered by intra-clausal properties of the component clauses.

2. The data.

2.1. A sample of Australian languages. The data-base used to investigate the interaction between relational and intra-clausal marking is a sample of twenty Australian languages. As in most traditions, the study

of complex sentences in Australian languages has focused primarily on the relational aspects of the constructions. A number of theoretical issues that have received a lot of attention in this perspective include, for instance, the “adjoined” rather than “embedded” status of subordinate clauses (Hale 1976, Nordlinger 2006), phenomena of switch-reference (e.g. Austin 1981, Wilkins 1988), or the use of case markers to mark interclausal relations (Dench & Evans 1985). By contrast, the role of the internal structure of the individual clauses in the complex sentence construction has received far less attention, not only in the theoretical literature but also in grammars of specific languages, where the treatment of clause combining is typically driven by questions relating to interclausal rather than intra-clausal organization. Still, a few authors have singled out mood marking as one aspect of intra-clausal organization that is important in the analysis of clause combining in Australian languages. Thus, for instance, Merlan (1981) has shown how the marking of subordination in Mangarayi and a number of neighboring languages is formally related to the marking of mood in main clause contexts, McGregor (1988) has demonstrated that in Gooniyandi certain semantic categories of complex sentence relations require particular mood types in one of the constituent clauses, and conversely Evans (1993, 2007) has shown how some types of mood categories diachronically originate in complex sentence constructions.

The analysis in this study is based on data from twenty Australian languages, listed in table 1 below, together with the basic sources that were used for each language in the sample. The languages are distributed evenly across the Pama-Nyungan/non-Pama-Nyungan division (ten Pama-Nyungan (PN) and ten non-Pama-Nyungan (NPN), the latter based on the most recent classification in Evans 2003), but in other respects the sample is largely a convenience sample, based on the size and quality of the description of mood marking and complex sentence constructions in the available sources.

2.2. Distinguishing mood markers from relational markers. A basic methodological problem that should be tackled first is how to distinguish between mood markers and relational markers in complex sentences. In principle, the distinction is fairly easy to make: given that relational markers like conjunctions are specialized markers of interclausal relations whereas mood markers belong to the internal structure of the component clauses, the two can be distinguished on the basis of their potential to occur in independent clauses. Specifically, an element in a complex sentence construction can be regarded as marking a mood

Table 1. Languages used in this study

Arabana- (PN) Wangkangurru	Hercus (1994)	Mangarayi (NPN)	Merlan (1981, 1982)
Arrernte (PN)	Wilkins (1988, 1989)	Marrithiyel (NPN)	Green (1990)
Djambarrpuyngu (PN)	Wilkinson (1991)	Martuthunira (PN)	Dench (1988, 1995)
Djaru (PN)	Tsunoda (1981)	Ngiyambaa (PN)	Donaldson (1980)
Dyirbal (PN)	Dixon (1972)	Nyangumarta (PN)	Sharp (1998)
Gaagudju (NPN)	Harvey (2002)	Nyulnyul (NPN)	McGregor (1994, n.d.)
Gooniyandi (NPN)	McGregor (1988, 1990)	Rembarrnga (NPN)	McKay (1975, 1988)
Gumbaynggir (PN)	Eades (1979)	Wambaya (NPN)	Nordlinger (1998)
Guugu Yimidhirr (PN)	Haviland (1979)	Wardaman (NPN)	Merlan (1994)
Kayardild (NPN)	Evans (1988, 1995)	Yawuru (NPN)	Hosokawa (1991)

category when it can be used in independent clauses with a typically modal function, for instance expressing some kind of judgment about the plausibility of the proposition (epistemic) or about the desirability of the SoA (State of Affairs) (deontic) described in the clause (see Verstraete 2001 for more detailed criteria to determine modal function, and the discussion in section 4 below).

For instance, the verb in conditional and purpose constructions in Djaru is typically marked by a category that is labeled “purposive” in Tsunoda (1981:84–87), as is the case for the verb *man-gu* (take-PURP) in the protasis or conditional clause in (1) below.

- (1) *wagurra-n guli ma-lu nyangga-rna-nggu*
 not-2SGNOM angry talk-**PURP** *nyangga-1SGNOM-2SGACC*
dyinggiri-nggu man-gu
 laughter-INST take-**PURP**
 ‘Don’t talk wild (even) if I make you laugh (lit. ‘catch with laughter’)’ (DJARU; Tsunoda 1981:163)²

At first sight, the terminology used by the author seems to suggest an analysis as a relational marker, since the label *purposive* is traditionally used for a type of complex sentence relation. If we look at the main clause uses of this marker, however, it turns out that it can have various modal meanings in main clause contexts (Tsunoda 1981:84–87), both in the epistemic domain (futurity, intention) and in the deontic domain (exhortation, permission, obligation): the deontic use is illustrated in the main clause verb *ma-lu* (talk-PURP) in (1) above. If this “purposive” marker has typically modal meanings in independent clause contexts, this shows that it can be regarded as a mood marker rather than a relational marker. In fact, the construction in (1) also contains a relational marker with the element *nangga*, which marks “consequential connection” (Tsunoda 1981:163–165) between clauses, for instance in conditional and temporal-anterior constructions.

Although this criterion allows for a clear distinction in most cases, there is one case where it runs into trouble. Evans (1993, 2007) has shown that there is a cross-linguistically common pattern of development whereby elements that were originally subordinators (i.e. relational markers) develop a modal meaning through a process of “insubordination”. This is a process in which subordinate clauses come to be used as independent clauses through ellipsis of the main clause, and modal meanings that were pragmatically associated with the complex sentence construction as a whole ‘rub off’ onto the subordination marker, which thus acquires an additional modal meaning in independent contexts. A well-known example from English is the independent use of *if*-clauses to signal a polite request, illustrated in (2a) below together with its more typical complex sentence use in (2b).

- (2) (a) If you could come in, sir.
 (b) If you could send me the results before Wednesday, I’d be most grateful.

This type of development is of course problematic from the perspective of this study, because what is diachronically a conjunction in structures like (2b) can also be used in independent clauses with modal meanings as in (2a), and could therefore equally well be counted as a mood marker from a synchronic-structural point of view. When confronted with cases like this in the sample, I have taken into account the frequency and markedness of the use in question: if the use in independent clauses is infrequent and distributionally restricted, the marker is regarded as a relational marker with incipient modal uses through insub-

ordination, but without full modal status. In the sample, this problem is especially relevant for a number of participial and other non-finite categories: the main function of such categories seems to be relational, since their distribution is largely restricted to complex sentence contexts, but in some cases they can also marginally be used in an independent clause with modal meanings. For instance, the purposive participle in Arabana-Wangkangurru, apart from its most frequent use in complex sentences of purpose, illustrated in (3a), can also be used marginally in a main clause on its own, with a deontic meaning of exhortation, as in (3b) below.

- (3) (a) antha yuka-rnda puntyi mani-lhiku
I go-PRES meat get-PUR
'I am going to get some meat' (ARABANA-WANGKANGURRU;
Hercus 1994: 190)
- (b) arimpa kudnala-lukei! Wadlhu ngurku-nga
we.two.INC sleep-PUR place good-LOC
'Let's camp in this good spot (here)!' (ARABANA-WANGKAN-
GURRU; Hercus 1994: 182)

The opposite situation is also found: in some cases, there are no recorded main clause uses of a particular marker—which means that it cannot be an intra-clausal marker in the sense in which we use the term here—but in all other respects it looks like a mood marker rather than a relational one. The apprehensional construction in Dyirbal, for instance, in which the secondary clause describes a possible but undesired consequence of the main clause, uses a verb marked with the affix *-bila* in the secondary clause, as in (4) below.

- (4) galga nyadyum nyara buralbila dyigubinagu
PRT light-NEG.IMP light-NOM see-bila djigubina-ERG
nganadyina marbambila
we(PL)-O frighten-bila
'Don't light [the fire], lest [Dyigubina spirit] sees the light, and
Dyigubina might [com and] frighten us all' (DYIRBAL; Dixon 1972:
113)

In his description of this element, Dixon (1972:112–113) does not list any uses in independent clauses, like the otherwise typical use in short warnings, which implies that it could be interpreted as a relational marker marking an interclausal relation rather than a mood marker marking a modal meaning. In spite of this distributional restriction,

however, there are also some reasons to regard this as a mood marker: not only does it attach to the verb just like other tense-aspect-mood inflections in Dyirbal, but in almost all other languages in our sample apprehensive clauses can also be used independently with modal meanings, most typically in warnings (see (17a) below). Given the similarities with mood markers, this situation can probably best be interpreted as a mood marker that has become specialized in complex sentence use, which will be referred to as 'dependent mood' in what follows. Like the 'insubordinate conjunction' illustrated in (2), elements that were originally mood markers and become exclusively associated with complex sentences are probably not unusual cross-linguistically: one obvious example is the subjunctive in French, whose main clause uses have become more and more restricted and which is now almost restricted to complex sentence contexts.

Apart from these more or less problematic patterns of development, the distinction between mood marking and relational marking is generally quite easy to make in the sample. In the following sections, therefore, I use this central distinction to develop a typology of mood marking in complex sentence constructions. I return to the diachronic patterns discussed here in the concluding section, showing how they can serve as diachronic 'loopholes' between the construction types that can be distinguished on the basis of various combinations of mood and relational marking.

2.3. Summary of the data. The basic information about mood marking and relational marking used in this study is presented in a cumulative table as an appendix to this paper. For every language in the sample, the types of complex sentences that use mood marking are listed in the second column, and for every complex sentence type the information about mood marking and relational marking is listed in columns three to six. Columns three and four deal with mood, providing the author's label for the category in column three, and a standardized representation of the semantics of the category in main clauses in column four, the basis of which is explained in more detail in section 4 below. If the mood marker is formally composite, i.e. if it consists of a combination of two different markers, the semantically more general one is listed first, with the more specific one added between brackets. Columns five and six deal with relational marking, again providing the author's label in column five and a standardized representation of its meaning in column six.

The terminology used by the authors, especially for the mood categories, shows considerable variation, even for categories that express the same type of meaning. In determining the modal status of a particu-

lar marker, I did not primarily rely on the labels used by the authors: some labels (like *irrealis*) cover semantically quite different types of mood in different grammars, and conversely some mood types (like the one expressing speaker-desire) fall under quite different labels in different grammars. To avoid reification of labels, I checked the precise range of modal meanings for every marker I looked at, and summarized this information using the standardized system of modal categories in column four of the appendix, explained in more detail in section 4 below. In some cases, the two sets of terminology overlap: to avoid confusion, I will henceforth use lower case for the authors' labels and small caps for my own.

3. The distribution of mood markers in complex sentences. To determine the role of mood markers in complex sentences, we first need to look at their distribution in the domain of clause combining. In section 3.1, I show that the distribution of mood markers in complex sentences largely conforms to a functional generalization in terms of non-actualization, in line with the general literature on the semantics of mood (see, for instance Mithun 1995, Elliott 2000). The sample also contains a number of constructions that do not conform to this generalization, however: there are instances of conditional and apprehensive constructions that do not contain mood marking, and there are two types of temporal constructions that do contain mood marking. In section 3.2, I discuss these exceptions in more detail, showing that an explanation in terms of non-actualization needs refinement, by taking into account the semantic contribution of other types of marking, like relational markers.

3.1. Expected patterns of mood marking. In general, the distribution of mood marking in the sample seems to conform to a generalization in terms of non-actualization, as also proposed in Mithun (1995) and Elliott (2000) for mood marking in simple clauses. As shown in the appendix³, there are three types of complex sentences which almost consistently use mood categories in one or both of their component clauses: purpose, apprehensional and conditional constructions, illustrated respectively in (5), (6) and (7) below.

- (5) maying-gu wii ban.giyi
 person-ERG fire+ABS burn+PAST
 girrbadja-dha=lu wirring-girri
 kangaroo+ABS-LING.EVID=3ERG cook-PURP
 'The person burnt a fire (expressly) so that she could cook a kangaroo' (NGIYAJMBAA; Donaldson 1980:284)

- (6) walmathi karn-da rajurri-n ba-yii-nyarra
 on.topNOM grass-NOM walk-NEG.IMP bite-M-APPR
 yarbuth-iiwa-nharr!
 snake-VALL-APP
 'Don't walk across the grass, in case you get bitten by a snake' (KAYARDILD; Evans 1995:509)
- (7) bujun birdij-ba nu-gi-we wonggo
 If find-PS 2NSG-AUX-FUT NEG
 nunu-bu-n-guya
 IRR2NSG-hit-PRES-DU
 'If you find it, you mustn't kill it' (WARDAMAN; Merlan 1994:294)

In the Ngiyambaa purpose construction in (5), the verb in the purposive clause is marked with a category labeled 'purposive', which in independent clauses expresses a deontic modal meaning (for instance hortative or imperative; Donaldson 1980:162), and can therefore be considered a mood category. Similarly, the verb in the Kayardild apprehensive clause in (6) is marked with a category labeled 'apprehensive', which in independent clauses expresses that the event in question is considered possible but undesirable by the speaker (Evans 1995:264–265). Finally, the auxiliary in the Wardaman conditional construction in (7) is marked with a category labeled 'future', which in independent clauses expresses epistemic modal meanings (Merlan 1994:179–181). In all three cases, therefore, the verb of one of the constituent clauses in the complex sentence is marked by a mood category, which has typically modal meanings in independent clauses.

Semantically, the three categories of purpose, condition and apprehension are of course not unrelated: they share the general semantic feature that one of the clauses describes a non-actualized event. With conditional constructions, this is a consequence of the more specific feature of supposition: the event described in the conditional clause is not actualized because it invokes a hypothetical world. Thus, for instance, 'finding the animal' in (7) is not encoded as actually taking place, but rather as a possible event that is discussed to consider a related course of action, i.e. not killing the animal in question. With purpose constructions, the feature of non-actualization is due to the fact that the purposive clause invokes a desired world: again, 'cooking the kangaroo' in (5) is not described as actualized, but rather as a desired event that is intended by the agent of the action described in the main clause, i.e. the person who lights a fire. With apprehension constructions, finally, the feature

of non-actualization is a consequence of the fact that the apprehensive clause invokes an undesired world: 'being bitten by a snake' in (6) is again not described as taking place in the actual world, but rather as an undesirable event that can be avoided by the action described in the main clause, viz. keeping off the grass.

Thus, the types of complex sentences that typically contain mood marking can be captured schematically by saying that one of the clauses in the construction is construed as not actualized. This suggests that the semantic motivation for modal marking of one or both of the constituent clauses in the construction lies with the feature of non-actualization: whenever the semantics of a complex sentence construction implies that one SoA is not actualized, this will be marked with a mood category. The relevance of this semantic feature is also reflected in the behavior of complex sentence constructions that typically do not take mood marking. Causal and temporal constructions, for instance, which presuppose actualization, are generally not marked with mood categories. The temporal clause in (8) below, for instance, presupposes actualization of the falling: accordingly, we do not find any mood category in this temporal clause.

- (8) injalk-uk wurl-uk ngurrngurr inaari
 he:fell-LOC water-LOC drown he:speared
 'When he fell in the water he drowned.' (NYULNYUL; McGregor 1994:45)

3.2. Unexpected patterns. Although the majority of the cases in the sample conform to the tendencies outlined in the previous section, there are also some unexpected patterns, which suggest that a generalization in terms of non-actualization may need some refinement. A first type of exception concerns temporal constructions. In general such constructions presuppose actualization and do not use mood marking, as in (8) above, but there are two types of temporal construction where we do find mood marking. On the one hand, clauses that serve as temporal adverbials to a future main clause can take mood categories just like purpose, condition and apprehension constructions, as illustrated in (9) and (10) below. The subjunctive future in the Gooniyandi temporal clause in (9) has epistemic and deontic meanings in main clause contexts (McGregor 1990:545–548, 552–553), and the desiderative-intentional in the Mangarayi temporal clause in (10) has epistemic meanings (Merlan 1982:147–148). On the other hand, there are also 'temporal endpoint' constructions like the ones in (11) and (12), where one clause denotes

the intended temporal endpoint of the SoA described in the main clause (typically glossed as 'until'). Again, the clause denoting the temporal endpoint is marked with mood categories just like purposive, conditional and apprehensional constructions: the purposive marker in the Arrernte endpoint clause in (11) has deontic meanings in main clause contexts (Wilkins 1989: 236), and the nonpast marker in the Arabana-Wangkangurru endpoint clause in (12) has both epistemic and deontic meanings (Hercus 1994:183–184).

- (9) middi laandi-ya-woondi miga-ya bijbilarni
 sun up-SUBJ-FUT+VC that-LOC I:will:emerge
 'I'll get there when the sun is high' (GOONIYANDI; McGregor 1990:435)
- (10) ya-ø-yang-gu-wana (w)a-nga-maya-wu
 IRR-3SG-go-DI-ABL IRR-1SG/3SG-cook-DI
 'After he goes I want to cook it' (MANGARAYI; Merlan 1982:21)
- (11) re artne-pe-kwete-artne-ke, m-ikwe
 3SGS cry-FREQ-still-RDP-PCc mother-3KINPOSS
 petyalpe-tyeke-kerte.
 come.back-PURP-PROP
 'He kept on crying until his mother returned.' (ARRERENTE; Wilkins 1989:196)
- (12) antha wanti-nta unpa thika-nha-nga
 I wait-REFL you return-NP-LOC
 'I am waiting until you get back.' (ARABANA-WANGKANGURRU; Hercus 1994:270)

What the constructions in (9) and (10) have in common is that the event that serves as a temporal reference point for the main clause is presupposed but not actualized because it denotes a future situation: the speaker uses an event that is not yet realized to situate another event. In this sense, the non-typical use of mood marking in these temporal constructions is motivated by a feature of non-actualization just like in purposive, conditional and apprehensional constructions. For the 'intended endpoint' constructions (11) and (12), the overlap with the domain of non-actualization goes even further than mood marking on the verb. In these cases, the complex sentence construction as a whole is formally almost identical to the purpose construction in the same language, except for the addition of a case marker to mark the endpoint relation (propiative—a case marking possession or accompaniment—in (11) and locative in (12)). Functionally, these constructions are a grey area be-

tween purpose and temporal constructions: unlike genuine purpose constructions like (5) above, the event in the main clause does not have an enabling or causing relation to the event in the mood-marked clause (the waiting in (12) does not bring about or even enable the return), but unlike genuine temporal constructions like (8), (9) and (10) above, the event does not only serve to temporally situate the other event, but also to denote its endpoint as intended by the agent of the main clause (the boy in (11) and the speaker in (12)). In conclusion, what the constructions illustrated in (9)–(12) above show is that although temporal adverbials are not inherently non-actualized like purpose, condition or apprehension clauses, in certain contexts there can be significant functional overlap with the domain of non-actualization, with corresponding presence of mood marking.

A second type of exception are constructions that semantically involve non-actualization but do not contain any instance of mood marking. This is the case for two languages in the sample: conditional constructions in Martuthunira and apprehensional constructions in Mangarayi both have non-actualized SoAs, but do not mark the corresponding clauses with mood categories, as shown in (13) and (14) below: the conditional clause in (13) is marked with a past tense, and the apprehensive clause in (14) is marked with a present tense, neither of which has modal uses in main clauses.

- (13) ngayu ngurnu muyi-i nhawu-lha wii wanthala,
 1SG.NOM that.ACC dog-ACC see-PAST if somewhere
 ngayu nhuwa-minyji nyimi-i ngurnaa muyi-i.
 1SG.NOM spear-FUT rib-ACC that.ACC dog-ACC
 'If I saw that dog anywhere, I'd spear that dog in the ribs.' (MARTUTHUNIRA; Dench 1995:180)
- (14) barrgji ø-rnama barlaga nya-way-(y)i-n
 hard 2SG-hold.IMP lest 2SG-fall-MP-PRES
 'Hold on tight lest you fall.' (MANGARAYI; Merlan 1982:147)

In section 5, I will argue that the problem presented by these structures is theoretically interesting; although non-actualization favors mood marking, it does not enforce it, because there is a competing principle that results from the interaction between mood marking and relational marking. It is not a coincidence that the structures in (13) and (14) use conjunctions that are semantically specialized in conditional and apprehensive relations, respectively (*wii* in (13) and *barlaga* in (14)). This illustrates a functional trade-off between mood marking and relational

marking, in the sense that semantic specificity in the domain of relational marking can license semantic schematicity or even absence of information from the other domain. In this perspective, non-actualization is a necessary but not a sufficient condition for mood marking, because the job can also be done by relational marking.

4. The specific semantic contribution of mood marking. Given that mood is generally found in complex sentences that involve non-actualization, the second question is how exactly the mood marker contributes to this semantic feature of non-actualization. To answer this question, we have to look in more detail at the specific semantic content of the mood marker as such, which can be determined independently from the complex sentence context by looking at their meaning in independent (main) clauses. In this section, I show that the independent meaning of a mood marker, as reflected in its use in main clause contexts, generally correlates with the semantic profile of the complex sentence type in which it is used.

4.1. Epistemic, deontic and apprehensive modality. Mood markers with epistemic, deontic and apprehensive meanings in main clauses show a clear correlation with specific types of complex sentences: as shown by the data in the appendix, these three categories are not distributed randomly, but occur primarily with one semantic category of complex sentence. Mood markers with deontic meanings in main clauses are found almost exclusively in purpose constructions, as illustrated by the imperative mood in Gumbaynggir, which marks desired actualization in main clauses like (15a) below, and is found in complex sentences of purpose like (15b). Mood markers with epistemic meanings, on the other hand, are found almost exclusively in conditional constructions, like the potential mood in Wardaman: in main clauses, this mood marks the speaker's estimate that actualization is possible, as illustrated in (16a), and in complex clauses it is found in conditional constructions, as shown in (16b). Apprehensive mood markers, finally, are found exclusively in apprehensive constructions, as shown by the irrealis marker in Yawuru, which marks an SoA as possible but undesirable in main clause contexts, as in (17a), and is found in apprehensive complex sentences, as shown in (17b).

- (15) (a) biyamba yarrang widyiirr giili
 eat-IMP DEM meat-O now
 'Eat that meat now!' (GUMBAYNGGIR; Eades 1979: 300)

- (b) ngadyiinga ngurraang dungaarr baya
brother.in.law-O give-PST honey-O FAC.CONJ
gulaadu ngambiila
3SG-A drink-IMP
‘Brother-in-law was given honey so that he would drink’
(GUMBAYNGGIRD; Eades 979:322)
- (16) (a) gurru yanggun-di-yan lurrbu yiwarna
later 3-3SG/3NSG-bring-POT home another-ABS
gandawag
moon-ABS
‘He may bring them back later, next month’ (WARDAMAN;
Merlan 1994:179)
- (b) bujun yayinyjaga warljub ngawun-gege-ma-yan
if 3IRR-3SG-go-FUT inside 1SG/3SG-scold-POT
‘If he goes inside I might scold them’ (WARDAMAN; Merlan
1994:179)
- (17) (a) ngarli+mi-ya-ngara wula-ni.
wet+2-IRR-AUX(become) water-ERG
‘You might get wet in the rain.’ (YAWURU; Hosokawa 1991:
§4.3.3.4)
- (b) milimili-gun wal-a-ma mi-ya-ma-lar’dyi.
paper-LOC 2FUT-EN-put 2-IRR-INT-forget(REFL)
‘Write it down, lest you should forget it.’

The analysis in the previous section showed that the complex sentence constructions with mood markers generally have a feature of non-actualization in their semantic structure. The correlation between the independent meaning of a mood (as reflected in its use in main clauses) and the complex sentence type in which it is used suggests that the contribution of mood markers to complex sentence interpretation can be described more specifically than just marking non-actualization: mood categories in complex sentences mark one of the clauses in the construction for a subtype of non-actualization that is appropriate to the complex sentence relation in question. Thus, the purpose construction in (15b) above involves desired actualization of the SoA in the secondary clause: from the perspective of its deontic meaning in main clauses (see 15a), the role of the imperative mood marker can be described more precisely as marking the secondary clause for a feature of desirability. The same applies to the conditional and apprehensive constructions in (16b) and (17b) above, in which the complex sentence relations involve possible and undesired actualization, respectively. From

the perspective of their epistemic and apprehensive uses in main clauses (see 16a, 17a), the contribution of the potential and irrealis markers can be described more precisely as marking one of the SoAs in the construction for epistemic possibility and undesirability.

As argued in the previous section, however, this is only part of the story, because mood markers often co-occur with relational markers in complex sentences. In section 5 below, I will show how the modal features adduced by mood markers interact with specific relational markers in the composition of the complex sentence meanings of purpose, apprehension and condition.

4.2. Potential modality. Apart from the epistemic, deontic and apprehensive markers discussed in the previous section, there is also a more schematic type of mood marker in the sample, which simply marks an SoA as potential in the future, without specifying whether it is desirable (deontic), undesirable (apprehensive) or merely possible (epistemic). As shown in the appendix, this type is found in a large number of languages in the sample: for instance, the potential verbal inflection *-thu(ru)/-nangku(ru)* in Kayardild, which is used in complex sentences of purpose, can be found in independent clauses in contexts of possibility, as in (18), marking the occurrence of an SoA as being expected, or in deontic contexts, as in (19), marking the SoA as proscribed (Evans 1995:258–260).

- (18) niya bukawa-thu mungkiji-wu dulk-u
 3SGNOM die-**POT** own-MPROP country-MPROP.
 ‘He will die in his own country’ (KAYARDILD; Evans 1995:258)
- (19) ngurruwarra-wan-da yakuri wungi-i-nangku
 fishtrap-ORIG-NOM fishNOM steal-M-**NEG.POT**
 ‘Fish from fishtraps must not be stolen’ (KAYARDILD; Evans 1995:259)

The distribution of this type of mood in complex sentences is wider than that of the more specific markers: as shown by the data in the appendix, it is found in purpose constructions, conditional constructions and in apprehensive contexts. This is in tune with its more schematic type of modal meaning, and can be regarded as another manifestation of the correlations outlined in the previous section. Given that potential modality covers both epistemic and deontic meanings, it is not surprising that it can be used in typically deontic contexts like purpose constructions, in typically epistemic contexts like conditional constructions, and in more

hybrid contexts like apprehensional constructions (see Lichtenberk 1995 on the intermediate status of apprehensive modality).

4.3. Counterfactual modality. The last type of mood to be discussed is one that marks counterfactuality in main clause contexts. This category is somewhat different from the other categories in that its semantic structure is more complex: counterfactual mood signals that something did not happen in spite of expectations to the contrary. Thus, it typically combines a modal component (something was possible/desirable/intended) with a component of polarity-reversal (but in the end did not happen). Consider, for instance, the examples in (20)–(22) below. What they all have in common is that they combine the typical polarity reversal with a component of past potentiality, either epistemic, as in (20), deontic, as in (21), or dynamic (agent-oriented meanings, such as ability or intention), as in (22).

- (20) *yoowooloo-ngga marni-wa gard-ja-yooni*
 man-ERG sister-his hit-SUBJ-IRR+VC
 ‘The man might have hit his sister (though I know he didn’t)’
 (GOONIYANDI; McGregor 1990:548)
- (21) *wamut-Ø kuya Ø-rtith-mə karrə?*
 name-NOM should 3min.S-return-PST.CF but
ka-warna-nura ngangkalala
 3min.S-CONT-sit+PRS place
 ‘Wamut should have come back, but he is still at Ngangkalala’
 (McKay 1975: 244)
- (22) *mawun-du mangarri ngarn-ngi*
 man-ERG food eat-POT
 ‘The man wanted to (or tried) to eat food, but he did (or could) not’
 (DJARU; Tsunoda 1981:87)

In terms of the basic scheme of modal meanings, the component of polarity reversal that these structures have in common belongs to the epistemic domain, irrespective of the specific nature of the past modal component. Even in constructions with a deontic modal component like (21), the counterfactual statement of non-occurrence is still concerned with the reality status of the SoA rather than its desirability: polarity reversal is a matter of epistemic judgment (“but it did not happen”) rather than deontic (“but it should not happen”). Given the basically epistemic nature of the component of polarity reversal, it is not surprising that counterfactual markers are found predominantly in conditional con-

structions, as shown by the data in the appendix. In this sense, they can be regarded as the past-tense counterpart of the pure epistemic markers discussed in the previous section (see further Verstraete 2006).

In addition to the predominant use in conditional constructions, counterfactual markers are also found more marginally in past purpose and apprehension constructions: the Djambarrpuyngu structure in (23) uses a combination of irrealis particle and fourth inflection, which expresses counterfactuality in main clauses, and the Rembarrnga construction in (24) uses a past counterfactual mood. This seems strange at first sight, because in these constructions there is usually no indication of a counterfactual judgment, i.e. that the wood did fall off contrary to expectations in (23), or that the soldiers did not follow the track in (24).

- (23) mǎrr balang ngayi yaka dharpa+ny galkirri+nya
 so.that **IRR** 3sg NEG tree+PROM fall+4th
 be+ngur+nydja garramat+ngur+nydja
 INDEF+ABL+PROM top+ABL+PROM
 ‘(she drove slowly) so that the wood would not fall from the back
 (of the truck)’ (DJAMBARRPUYNGU; Wilkinson 1991:§7.4.2.3)
- (24) yara-warna-warn?-mǎrn? pi-kan thuram-kan
 laug.S-CONT-wait-PST.CONT man-DAT soldiers-DAT
 yerenpe-warnta-wa-nǎ wattǎ-wala
 laug.IMPL+3aug.A+REL-tracks-follow-PST.CF behind-ABL
 ‘We were waiting for the men, the “soldiers” (i.e. avengers), to fol-
 low our tracks’ (REMBARRNGA; McKay 1975:344)

These more marginal associations are a consequence of the semantically mixed nature of counterfactual moods, i.e. the fact that they combine polarity reversal with past modality. The structures in (23) and (24) highlight the past modal component rather than polarity reversal: the role of the mood markers in these structures is to mark the event in the secondary clause (e.g. ‘not falling off the truck’ in (23)) as a desirable or undesirable one from the past perspective of the agent of the main clause. But what about the component of polarity reversal in these structures? As argued elsewhere (Verstraete 2006), this component has a special status in that it typically originates as an implicature of a combination of past and modality by Gricean principles. Stating that something was possible, desirable or intended in the past is epistemically weaker than stating that it actually happened, and therefore implicates the negative of the stronger expression by the Gricean principle of informa-

tiveness (“if the speaker knew the SoA actually happened, they would have said so rather than saying it was possible”). There is independent evidence for this analysis (Verstraete 2006 outlines the arguments), and one advantage is that it can explain the variable status of the feature of polarity reversal: if it is an implicature, then it should also be cancellable, with truly counterfactual uses as well as past modal ones. This variation is found not only in simple clauses (see further in Verstraete 2006), where so-called counterfactual markers can sometimes also mark past potentiality without polarity reversal, but also in complex sentences, of which (23) and (24) are good examples.

In this sense, the association of counterfactual mood markers with both conditional and purposive/apprehensive constructions again confirms the correlation between mood semantics and complex sentence meaning. Counterfactual mood has both a past modal component and a component of polarity reversal, each of which is highlighted by an association with a different category of complex sentences.

Table 2 below summarizes the general correlation between the independent semantics of mood markers, as reflected in their use in independent clauses, and the general semantic profile of the complex sentence in which they are used. Black indicates typical correlations, grey less typical but nonetheless significant ones.

Table 2. Mood semantics and complex sentence semantics

	Epistemic	Deontic	Apprehensive	Counterfactual	Potential
Condition					
Purpose					
Apprehension					

As I will argue in the following section, however, these more specific semantic correlations do not yet fully explain the role of mood markers in complex sentences. The semantic features adduced by the mood markers do not in themselves create the complex sentence interpretation, but interact in various ways with relational markers to determine the complex sentence relation.

5. Role of moods in complex sentences. The analysis in the previous section suggests that mood markers contribute to the semantic specification of the complex sentence by marking one or more of the clauses in the construction for an appropriate feature of non-actualization. In this

section, I show that the contribution of mood crucially also depends on the presence and nature of relational markers, like conjunctions, which explicitly mark a semantic relation between the individual clauses in the construction.

5.1. The role of mood in constructions with relational markers. In complex sentences with relational markers, the role of mood can be accounted for compositionally, with mood and relational marker jointly contributing to the semantic specification of the interclausal relation. In general, there appears to be a functional trade-off between the semantic contribution of the two types of markers. If the relational marker is semantically vague (section 5.1.1), covering a whole range of semantic types of complex sentences, the mood marker has a relatively high functional load and will typically be semantically specific. In these cases, mood serves to single out one type of complex sentence relation within the range covered by the vague relational marker, by marking one of the clauses for the feature of non-actualization that is typically associated with that type of relation. If the relational marker is semantically specific, on the other hand (section 5.1.2), i.e. restricted to a particular type of complex sentence relation, the functional load of the mood is relatively low. Accordingly, this is also the only construction type where mood marking can be absent in contexts of non-actualization.

5.1.1. Mood as specifier for a vague relational marker. As shown in the appendix, in the majority of complex sentence constructions in our sample the relational marker is vague, i.e. not restricted to one type of complex sentence but occurs with a whole range of interclausal relations. In these cases the mood marker usually serves as a semantic specifier: by marking one of the clauses for a specific type of non-actualization, the mood marker picks out one specific subtype of interclausal relation from the range covered by the vague relational marker.

The best-known case of a vague relational marker for Australian languages is of course the so-called “generalized relative clause”, first identified in Hale (1976). This is a type of relational marker that occurs in many Australian languages and typically covers a whole range of relations, including NP-relative, temporal, conditional, causal and sometimes even contrastive ones. With such general relational markers, the modal feature adduced by mood markers can single out one semantic domain from among the domains covered by the relational marker. In Rembarrnga, for instance, there is a generalized relative clause marked by a specific category of pronominal prefixes to the verb (glossed as REL), which covers both NP-relative clauses and various types of adverbial

clauses, like the temporal adverbial in (25) below. McKay (1975:331–333, 1988) notes that use of the past counterfactual tense in the generalized relative clause triggers a conditional interpretation, as in (26) below. In terms of the analysis of mood categories in the previous section, the role of this counterfactual marker is to add a modal feature to the construction by marking one of the clauses for counterfactuality, and thus to single out a conditional interpretation from the range of interclausal relations covered by the generalized relative clause.

- (25) bud birri-yabbah-manjma bi barr-yabbah-na
climb they+REL-two-went people they-two-saw
‘When they went up the hill they saw people’ (REMBARRNGA;
McKay 1988:9)
- (26) yerre-yabbah-banəma nunda yarranba-yabbah-bunə
her+we+REL-two-leave+PST.CF her us+they-kill+PST.CF
‘If we two had left her, they would have killed us’ (REMBARRNGA;
McKay 1988:9)

The same role of mood can be observed with other relational markers that are not as general as the generalized relative clause described above but still cover more than one semantic category. The subordinator *bäy* in Djambarrpuynu, for instance, covers both temporal and apprehensional constructions (Wilkinson 1991:§12.2.3.3), as illustrated in (27) and (28) below. What distinguishes the apprehensional construction from its temporal counterparts, however, is the use of the irrealis particle in combination with second inflection, an instance of potential modality in our classification, as in (28).

- (27) bäy-nha ngayi wäwu-thi-na-n ngukthu-rr-nha
until-SEQ 3SG unaware-INCH-3rd-SEQ swallow-3rd-SEQ
bala ngarra djawar?yu-rr-nha
then 1SG spear-3rd-SEQ
‘Once it drank, thinking it was safe, I speared (it)’ (DJAMBARR-
PUYNGU; Wilkinson 1991:§12.2.3.3)
- (28) nhängu bulu ngamatha-ng ngunhi-yi mala-ny
see+2nd again do.well-2nd TEXTD-ANA PL/group-PROM
djimindi-ny nhungu balang bäy-nha gara
fish.spear-PROM 2SG+DAT IRR until-SEQ spear
yätj-thi
bad-INCH+2nd
‘Look at your fish-spear again carefully lest the spear be no good.’
(DJAMBARRPUYNGU; Wilkinson 1991:§12.2.3.3)

5.1.2. Mood as co-specifier with a specific relational marker. When the relational marker is restricted to one semantic type of complex sentence, the functional load of the mood marker is obviously lower. The modal feature added by the mood does not serve to pick out a semantic category from a larger range of categories covered by a vague relational marker, but can instead be regarded as co-specifying the semantics of the complex sentence construction together with a specific relational marker. This is the case, for instance, in Gumbaynggir, where the generalized relative marker *-ndi/-andi* has specific placement rules in conditional contexts (attaching to the focused element in the construction) and can therefore be regarded as a relational marker that is specific to conditional contexts (Eades 1979:322–323). The semantic specificity of this relational marker harmonizes with clause-internal marking of the modal domain that is appropriate to conditional contexts: the conditional marker always co-occurs with a verb in future inflection, as in (29) below, which is an instance of potential modality in our categorization

- (29) giduurrandi ngiinda birraw guluunaygu
 sand-O-ndi 2sg-A dig-FUT rain-FUT
 'If you dig in the sand it will rain' (GUMBAYNGGIR; Eades 1979: 323)

From the perspective of the lower functional load of mood in this context, it is not a coincidence that those instances of conditional and apprehensional constructions in our sample that do not use mood marking, still use a semantically specific relational marker. Conditional clauses in Martuthunira can occur without modal marking, as illustrated in (30) below where the conditional clause is marked with a normal past tense, but they do use a specific conditional conjunction *wii* (Dench 1995:180). The same applies to apprehensional constructions in Mangarayi, which use a present tense rather than a modal marker, but again have a specifically apprehensional relational marker *balaga*, as in (31) below (Merlan 1982:147).

- (30) ngayu ngurnu muyi-i nhawu-lha wii want hala,
 1SG.NOM that.ACC dog-ACC see-PAST if somewhere
 ngayu nhuwa-rninyji nyimi-i ngurnaa muyi-i.
 1SG.NOM spear-FUT rib-ACC that.ACC dog-ACC
 'If I saw that dog anywhere, I'd spear that dog in the ribs.' (MARTUTHUNIRA; Dench 1995: 180)

- (31) barrgji ø-mama barlaga nya-way-(y)i-n
 hard 2SG-hold.IMP lest 2SG-fall-MP-PRES
 ‘Hold on tight lest you fall.’ (MANGARAYI; Merlan 1982:147)

A similar phenomenon is found on a smaller scale with conditional constructions in Yawuru. In most languages in our sample, there are two mood choices for conditional constructions, one associated with simple supposition and another associated with counterfactual supposition. Yawuru, however, allows the same mood choice in both cases (“future”, an instance of potential modality, in the conditional and the consequent clause), with the distinction between simple supposition and counterfactuality marked by specific relational markers (Hosokawa 1991: §10.6.7.1).

In general, therefore, absence of mood categories (or use of semantically non-specific mood) in contexts where other languages in the sample typically use mood categories (or use semantically more specific mood) can be explained in terms of a trade-off between the semantic specificity of relational markers and of modal markers in specifying the semantics of the interclausal relation.

5.2. The role of mood in constructions without relational markers.

The presence of relational markers like conjunctions is crucial to ensure that the data under investigation form a complex sentence construction, because they indicate that the individual clauses are joined into a complex construction by an interclausal relation. In constructions with relational markers, therefore, the role of moods can be accounted for compositionally, as shown in the previous section. In addition to the constructions investigated in the previous section, however, our sample also contains a relatively large number of constructions without any relational marker, as shown in column six in the appendix. In such cases, the role of the mood in determining the complex sentence interpretation becomes more difficult to account for. Given that there is no relational marker, the two clauses are simply juxtaposed and the only feature that distinguishes them from any other sequence of main clauses is an aspect of the clause-internal structure, viz. the presence of mood marking. Because of the crucial role of clause-internal structure in determining complex sentence semantics, I investigate these structures in more detail in this section, suggesting that there are basically two possibilities for analyzing such constructions.

5.2.1. Purpose constructions. The Djaru constructions in (32) and (33) below both exemplify a construction that is glossed as a complex sen-

tence of purpose but does not contain any relational marker to designate an interclausal relation of purpose. From the perspective of this study, the only thing that sets them apart from other sequences of individual clauses is the presence of deontic moods in the clause that is translated as the purpose clause (“purposive” in (32), which in spite of its label is not a relational marker but can be used independently with deontic meanings—see section 2.2. above—and “hortative” in (33)). In spite of the absence of any relational marker, however, the constructions as a whole are still glossed as purpose constructions by Tsunoda (1981:171–172), which raises the obvious question: what is it that justifies an interpretation of these construction with an interclausal relation of purpose?

- (32) mawun-du biny-a nyila gunyarr gurn.ga biny-a
 man-ERG hit-PST that dog dead hit-PST
 dyumba-jumba-lu wagurra maja-rra bardaji jan-gu
 ever-RDP-CLC not again-CLC up go-**PURP**
 ‘The man hit and killed the dog for good, so that it never got up again’ (DJARU; Tsunoda 1981:171)
- (33) mawun-du bulumanu widy bung-an gudyi-muwa
 man-ERG bullock scrape-PRES bone-ONLY
 nyinang-gurra
 stay-**HORT**
 ‘A man scrapes a bullock, so that only the bone remains’ (DJARU; Tsunoda 1981:172)

In order to answer this question, it is necessary to look in some more detail at the basic semantic features of purpose relations. Apart from the status of the purposive clause as a desired SoA, discussed in the previous section, a second crucial feature seems to be the binding of this desirability judgment to the agent of the main clause. Thus, for instance, in the Yawuru purpose construction in (34) below, it is the agent of the main clause event (the person who mixes the tobacco with ashes) who aims at the realization of the desired event (so as to be able to enjoy the hot taste of the tobacco) in the secondary clause. Presumably, the mood marker in the purposive clause in this structure (future, an instance of potential mood in our classification) can be linked up with the marking of a desirability judgment, while the dative relational marker can be linked up with the binding of this desirability judgment to the agent in the main clause. In Ngiyambaa, the meaning of the relational marker *-dhan* in purpose constructions is even described explicitly in terms of such an agent-binding feature: according to Donaldson (1980:

285), it serves to mark that it is “the expressed personal intention of the subject or agent of the first clause that it should do so [i.e. that the event of the second clause should take place, JCV]”, as in (35) below.

- (34) dyubagi kayukayu+nga-na-ngama bulkar-gun,
 tobacco(ABS) soft+1-TR-AUX(put(FUT)) ashes-LOC
 wanydyi nga-na-ga-lurra-yi.
 soon 1-TR-FUT-burn-DATPURP
 ‘I’ll mix the chewing tobacco leaves with ashes (lit. “making tobacco soft in ashes”) so that I can later enjoy the hot taste of it.’
 (lit. “so that I will burn [it]”; “burn” here means ‘to extract a hot taste’) (YAWURU; Hosokawa 1991:§10.6.3.1)
- (35) ngadhu yana-nha gurunga-girri-djan=dhu
 I+NOM go-PRES swim-PURP-LING.EVID=1NOM
 ‘I am going [expressly] so that I can swim’ (NGIYAMBAA; Donaldson 1980:284)

If a relational marker is necessary to establish binding of the desirability judgment to the agent of the main clause, then what is the status of purpose-glossed constructions without relational markers, like the Djaru constructions in (32) and (33) above? Essentially, there seem to be two possibilities here. One possibility is that in spite of the apparent absence of relational markers, the two clauses are actually integrated via intonation, with intonational information taking over from segmental information as a relational marker. If we look at other languages where intonational patterns are better described than in Australian languages, the use of intonation as a marker of integration in clause combining is well-established (compare, for instance, Haiman & Thompson 1984, König 1995, Couper-Kuhlen 1996), including for the distinction between purpose and result constructions (Palmer 1987). In this perspective, a similar role of intonation would not be implausible for some of the purposive-glossed constructions without relational markers in our sample. As already mentioned, there is not enough information on the intonation of complex sentences in our sample to support this hypothesis, but it may be significant that Schultze-Berndt (2002) provides evidence for the importance of intonational integration as a relational marker in a related domain, viz. the interpretation of multi-predicate expressions in Jaminjung and some other Australian languages.

A second possible analysis for constructions without relational markers is that the interclausal relation is not encoded at all in the construction, but simply a pragmatic effect of the presence of a deontic mood

in the clause glossed as the purpose clause, which is otherwise independent of the other clause in the construction. At first sight, there is one argument which pleads against such a 'pragmatic effect' analysis for constructions like (32) and (33): in contexts of syntactic independence for the clause glossed as the purpose clause, the deontic judgment marked by the mood is bound to the speaker, the default situation in independent clauses (Verstraete 2001), which precludes the binding to the main clause agent that is a necessary prerequisite for a purposive interpretation. Specifically, this would imply that a construction like (32) should be literally translated as "The man hit and killed the dog for good, it should/will never get up again" and (33) as "A man scrapes a bullock, let only the bone remain", both of which of course no longer allow purpose interpretations because the desirability judgment is bound to the speaker rather than the main clause agent. As suggested by Eva Schultze-Berndt (p.c.), however, it is not unlikely that in these cases the secondary clause is intonationally construed as a quotation from the main clause agent that motivates the action described in that main clause. This type of quotational construction implies independence of the mood-marked clause (there is no quoting verb in the main clause that can serve as a matrix) while at the same time furnishing a pragmatic link with the agent of the main clause, and could thus serve as the source of the pragmatic effect of a purposive relation in structures like (32) and (33). Again, the information on intonation in complex sentence constructions in the sample is too scarce to test the validity of this analysis, but at least it does not seem implausible given what we know about the marking of quotation, which is often effected by intonational means (see, for instance, McGregor 1997:257–258, Klewitz & Couper-Kuhlen 1999; specifically on Australian languages Heath 1984:602–603, Evans et al. ms; more generally about the diachronic and typological links between quotative and purposive constructions Heine & Kuteva 2002:265–267).

5.2.2. Apprehensional constructions. In general, apprehensional constructions without relational markers like the Arrernte construction in (36) below seem to be semantically very similar to the purpose constructions analyzed in the previous section.

- (36) arrentye re lengkiwe-lhe-tyerte, arrpenhe-le
 demon 3SGS hide-REFL-REM.P.HAB, other-ERG
 re-nhe are-ketye.
 3SG-ACC see-AVER
 'The demon used to hide himself for fear of someone seeing him.'
 (ARRERENTE; Wilkins 1989:240)

As with purpose relations, binding of the undesirability judgment in the apprehensional clause to the agent of the main clause is an important semantic feature in the interpretation of apprehensional relations: the SoA marked as undesirable is what the agent of the main clause SoA tries to avoid. An interesting source of evidence for this similarity is the fact that apprehensional constructions in Ngiyambaa allow the same type of agent-binding marker as purpose constructions (see example (35) above), with the same semantic effect. Thus, Donaldson (1980:286) argues that the effect of using the suffix *-dhan* in the apprehensional construction in (37) below is to mark the "intention of the actor", showing that "the action denoted by the main verb is known to be motivated by fear of the possible event indicated by the [apprehensive-marked, JCV] clause" (Donaldson 1980:286). Something similar appears to be the case in apprehensional constructions in Martuthunira, where the distinction between accusative and locative relational markers for the apprehensional clause marks the degree of responsibility of the main clause agent for the undesirable event that would result from the action described in the main clause (Dench 1995:250)

- (37) ngidja-l-waadji-djan ngurra wama-ra
 rain-CM-**FEAR-LING.EVID** camp+ABS build-PRES
 'Expressly for fear of (it) raining, (he) is building a camp.'
 (NGIYAMBAA; Donaldson 1980:286)

Given the parallelism between purpose and apprehension constructions, apprehension constructions without relational markers like (36) above allow the same two analyses as presented in the previous section for purpose constructions. Either the interclausal relation of apprehension marked by 'lest' in the translation is encoded compositionally by a combination of an apprehensive mood marker and an intonational marker rather than a conjunction, or it is a pragmatic effect of the presence of an apprehensive mood in the secondary clause, which is independent from the main clause but pragmatically linked to its agent in a quotational construction.

Apart from structures like (36) above, however, there is a second category of apprehensional constructions without relational markers, for which binding of the undesirability judgment to the agent of the main clause does not seem to be a prerequisite for apprehensional interpretation. The construction in question consists of an imperative followed by a clause in apprehensive mood that provides a motivation for the suggestion made in the imperative, by pointing out possible undesirable consequences. Thus, for instance, the Arrernte construction in

(38) below consists of an imperative that warns the interlocutor against climbing trees, and an apprehensive-marked clause that points out falling as a possible undesirable consequence. Unlike with (36), which describes actions of a non-speech act participant, for this subtype of apprehensional constructions there is no need to posit binding of the undesirability judgment to the agent of the main clause (in this case the interlocutor) as part of the interpretation. Rather, the judgment of undesirability concerning the possibility of falling in (38) can be bound directly to the speaker, and this speaker-judgment can be interpreted transparently as providing a motivation for his or her advice not to climb trees. In this sense, the absence of relational markers in (38) can be regarded straightforwardly as reflecting a purely paratactic construction, with two syntactically independent clauses without any interclausal binding of modal categories, encoded or pragmatically triggered.

- (38) arne-ke antye-tyele atnye-ketye.
 tree-DAT climb-NEG.IMP fall-AVER
 'Don't climb trees, you could fall. (ie. lest you fall)' (ARRERNTE;
 Wilkins 1989:240)

In conclusion, therefore, we can say that the nature of the agent in the main clause determines the analysis of apprehensional constructions without relational markers. Constructions like (36) describe actions of a non-speech act participant and require binding of the undesirability judgment to the main clause in order to create an apprehensional interpretation. For these constructions the same two analyses seem to be available as for purposive constructions. Constructions like (38), on the other hand, serve to give advice to the interlocutor and do not require binding of the undesirability judgment to the main clause. For these structures, a straightforward analysis as paratactic constructions is the most plausible one, with the undesirability judgment in the second clause bound to the speaker rather than the agent of the main clause, and serving as a motivation for his or her advice to the interlocutor in the main clause.

5.2.3. Conditional constructions. While purposive and apprehensional constructions are sufficiently similar to be dealt with along the same lines, conditional constructions require separate treatment. Unlike with purpose and apprehensional constructions, what we usually find in conditionally-glossed structures without relational markers is that both of the clauses in the structure are marked with mood (as also observed in

Blake 1987:144), usually but not necessarily identical categories. For instance, the Wambaya structure in (39) contains future markers (epis-temic mood in terms of our categorization) in both clauses that make up the construction, which according to Nordlinger (1998:219) triggers a conditional interpretation. Similarly, the Gooniyandi structure in (40) also consists of two mood-marked clauses, one marked as subjunctive irrealis and another marked with irrealis potential (both instances of counterfactual mood in our classification).

- (39) yurndu-j-ba ny-u banjanganinma nyurrunyurru
hit-TH-FUT 2SG.A-FUT tail.III(ACC) chase
gunu-ny-u
3SG.M.A-2O-FUT
'If you hit his tail, he'll chase you' (WAMBAYA; Nordlinger 1998: 219)
- (40) barlanyi mila-ya-ala mangaddi
snake see-SUBJ-IRR+(1sg)NOM+VC not
mood-gila-rni
step:on-IRR+(1sg)NOM+VC-POT
'Had I seen the snake, I wouldn't have stepped on it' (GOO-NIYANDI; McGregor 1990:432)

What these structures show is that in constructions without a relational marker specifying a conditional relation, symmetrical presence of mood markers in the two clauses that make up the construction can serve as a pragmatic trigger for a conditional interpretation. Given what we know about conditionals in languages with better-studied intonation systems, however, it would not be surprising if the double modal marking in these structures also requires a specific intonational contour to trigger a conditional interpretation. Thus, for instance, Bolinger (1989: 172–182) has demonstrated for English conditional structures without relational markers like *you want me, come and get me* or *just crack a joke, he gets mad at you* that the intonational phrasing of the two clauses relative to each other is a crucial factor in deriving the conditional interpretation. In this perspective, a similar role of intonation for structures like (39) and (40) above does not seem implausible. Again, the information in our sample is scarce, but in this case there are two descriptions which seem to point towards this possibility. McGregor (1990:431–435) notes how conditional clauses without relational markers in Gooniyandi typically have a fall-rise intonation contour (which is in fact characteristic of a number of subordinate clauses in that lan-

guage, which typically do not have any segmental relational markers). Similarly, Hosokawa (1991: 476) argues that in Yawuru a rising intonation is typical of conditional clauses which otherwise do not contain any relational markers.

6. Conclusion and future directions. The basic purpose of this study was to investigate the role of intra-clausal marking in the semantic composition of complex sentence constructions, on the basis of a case study of mood marking in Australian languages. It was shown that the presence of mood in one of the component clauses generally correlates with a feature of non-actualization in the complex sentence, as claimed in previous work on mood in complex sentence, but it was also shown that this generalization covers a number of quite distinct construction types, based on a number of additional principles. The first principle relates to the distinction between constructional encoding and pragmatic triggering of complex sentence relations. The semantic presence of such a relation is a defining feature of a complex sentence, but this can be the result of two fundamentally different formal mechanisms. If there are relational markers to encode a relation between the two clauses, the construction can be described in a transparent compositional way, with varying semantic contributions from mood marking and relational marking. If there are no relational markers, however, the relation is not strictly speaking encoded by any element of structure, but pragmatically triggered by intra-clausal properties of the component clauses, such as the presence of a special mood category. The second principle relates to the interaction between relational markers and mood markers, in that the semantics of relational marking can influence the presence and type of mood marking in a construction. Semantically specific relational markers can license absence of mood marking, even where it is motivated by independent principles such as features of non-actualization, whereas semantically vague relational markers typically need semantically specific mood marking to pick out the right type of interclausal relation.

Table 3 below summarizes the different constructional roles for mood markers in complex sentences, with references to the relevant examples for each construction type. In addition to the three basic types distinguished in this study, the table can also incorporate the two types of diachronic developments discussed in section 2, viz. the development of relational markers to mood markers (insubordination), and the development of mood markers to relational markers (dependent mood). When these developments coincide with loss of the original function, they can effectively serve as loopholes between the different structural

categories of the typology, with mood markers and relational markers switching functions.

Table 3. Summary of construction types

	Type	Mood marker	Relational marker	
Dependent mood ↑	(30)–(31)	–	+	↓ Insubordination
	(26), (28)–(29)	+	+	
	(32)–(33)	+	–	

Given the focus on Australian languages in this study, the results do not necessarily reflect cross-linguistically valid tendencies. Still, the analysis outlines a number of specific hypotheses for further cross-linguistic research. First, this study has put forward an explicit model with a number of hypotheses about the role of mood in clause combining, for instance concerning the role of non-actualization as a determinant of mood marking, and the functional trade-off between mood markers and relational markers. Second, the analysis has also pointed towards a number of gaps in the analysis of clause combining. One area that definitely requires more research is the role of intonation in complex sentence constructions: questions that should be looked at in more detail include the way intonation can take over from conjunctions as a relational marker, and the way it interacts with mood marking in pragmatically triggering complex sentence interpretations. These issues are not only relevant for Australian languages, where they are definitely under-studied, but also for better-described languages, where the role of intonation in complex sentences is often a blind spot in the description. Finally, some of the hypotheses put forward here might also be linked up with more general typological questions. The division of labor between intra-clausal and relational marking in complex sentence constructions, for instance, could be looked at as a typological parameter, classifying languages depending on whether they rely more heavily on conjunction-like marking in clause combining, like the Germanic and the Romance types, with large sets of relational markers with very specific meanings, or whether they rely more heavily on intra-clausal marking, like the Australian type, with relatively restricted sets of semantically schematic relational markers but large and complicated systems of mood marking. If this hypothesis can be confirmed in larger-scale typological studies, it could serve as a structural alternative to

theories that explain the availability of large sets of semantically specific relational markers (as typically found in some Indo-European languages) in terms of extra-linguistic factors like literacy and the greater semantic precision required in written language (see, for instance, Raible 1992:191–221).

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APPENDIX: Cumulative Table

Abbreviations:

2nd column: Purp = purposive, Cond = conditional, Appr = apprehensional,

Temp = temporal

3rd column: P = protasis, A = apodosis

4th column: see section 4 in the paper

Language	Type	Mood	Mood type	Relational marking	Relational type
Arabana-Wangkangurru	Purp	Nonpast	Potential	No	—
	Appr	Lest	Apprehensive	No	—
	Temp	Nonpast	Potential	Locative marker	Non-specific
	Purp	Purposive(no aux)	Deontic	No	—
Arrente	Cond	P: — A: Hypothetical	— Potential	Switch-reference marking on P	Non-specific
		P: <i>peke</i> (nonpast) A: Hypothetical	Epistemic Potential	—	—
		P: <i>peke</i> (past) A: Hypothetical	Counterfactual Potential		
	Appr	Aversive	Apprehensive	Optional ablative marker	Non-specific
	Temp	Purposive(no aux)	Deontic	Proprietary marker	Non-specific
	Purp	Future(1 st infl) Irealis(4 th infl)	Epistemic Counterfactual	Purposive subordinator <i>märr</i>	Specific
Djambarrupuyngu	Cond	P: Future(1 st /2 nd nfl) A: Future(1 st /2 nd nfl)	Epistemic	Generalized subordinate marker (<i>ngunhi</i>)	Non-specific

(Appendix Continues)

Language	Type	Mood	Mood type	Relational marking	Relational type	
					Conditional subordinate marker (<i>nguli</i>)	Specific
Djaru	Appr	P: Irrealis(4 th infl) A: Irrealis(4 th infl)	Potential	'Temporal endpoint' subordinate marker (<i>báy</i>)		Non-specific
	Temp	Future(1 st /2 nd infl)	Epistemic			
	Purp	Purposive Hortative	Potential Deontic	No		—
	Cond	P: Purposive A: Purposive/ imperative P: Potential A: Potential	Potential Potential/ Deontic Counterfactual	'Consequential connection' marker <i>nangga</i> (temp & cond)		Non-specific
	Temp	Purposive	Potential			
Dyirbal	Purp	Purposive	Deontic	No		—
	Appr	-bila	Dependent	No		—
Gaagudju	Cond	P: Future A: Future P: Evitative A: Evitative P: Past Irrealis A: Past Irrealis	Potential Epistemic Counterfactual	Optional subordinate marker on the protasis		Non-specific
	Appr	Evitative	Epistemic	"Sequential" conjunction <i>baleeru</i> (temporal, apprehensional)		Non-specific

Language	Type	Mood	Mood type	Relational marking	Relational type
Gooniyandi	Cond	P: Subjunctive (irrealis) A: Potential(irrealis) P: Subjunctive (future) A: Future	Counterfactual	No	—
			Counterfactual Potential		
	Appr	Definite present	Apprehensive		
	Temp	Subjunctive(future)	Potential		
Gumbaynggir	Purp	Future/purposive	Potential	No	—
		Imperative	Deontic	Facilitative conjunction <i>baya</i> (until, purpose)	Non-specific
	Cond	P: Future A: Future	Potential	Conditional marker (= generalized subordinate marker — <i>ndi</i> with specific placement rules)	Specific
Guugu Yimidjirr	Purp	Purposive	Potential	No	—
	Cond	P: Contrafactual A: Contrafactual	Counterfactual	No	—
	Appr	Cautionary Precautionary	Apprehensive Dependent	No	—
Kayardild	Purp	Potential (+/-) Desiderative (+)	Potential Deontic	Complementizing case in odd pivot conditions	Non-specific

 (Appendix *Continues*)

Language	Type	Mood	Mood type	Relational marking	Relational type
		Hortative (—)	Deontic	No	—
	Cond	P: Desiderative A: Desiderative	Deontic Deontic	Complementizing case in odd pivot conditions	Non-specific
		P: Precondition A: Actual P: Precondition A: Potential	Dependent — Dependent Potential	No	—
	Appr	Apprehensive	Apprehensive	Complementizing case in odd pivot conditions (with some exceptions)	Non-specific
	Cond	P: Desiderative-intentional(zero/present irrealis) A: Present irrealis P: Desiderative-intentional(Past negative) A: Past negative	Epistemic Epistemic Counterfactual Counterfactual	No	—
Mangarayi	Temp	Desiderative-intentional(present irrealis)	Epistemic	Ablative marker	Non-specific
	Cond	P: Future irrealis A: Future irrealis	Potential	Sequence marker nganan in protasis (source case in nominal domain)	Non-specific

Language	Type	Mood	Mood type	Relational marking	Relational type
Martuthunira		P: Non-future irrealis A: Non-future irrealis	Counterfactual		
	Appr	Apprehensive	Apprehensive	No	—
	Purp	Purposive	Deontic	Complementizing case in a switch-reference system (with additional semantic value)	Non-specific
	Appr	Lest	Apprehensive	Complementizing case	Non-specific
Ngiyambaa	Purp	Purposive	Potential	Dative marker (SS)	
	Cond	P: Counterfactual A: Counterfactual	Counterfactual	'Linguistic evidence' marker (always with DS, marking explicit intention with SS)	Non-specific
	Appr	Lest	DED	No	—
	Temp	Irrealis	Potential	Optional 'linguistic evidence' marker	Non-specific
Nyangumarta	Purp	Purposive advisory	Deontic	Generalized subordinate marker	Non-specific
	Cond	P: Contrafactual (present) A: Contrafactual (present) P: Contrafactua (past) A: Contrafactual (past)	Potential	No	—
			Counterfactual	No	—

(Appendix Continues)

Language	Type	Mood	Mood type	Relational marking	Relational type
Nyulnyul	Purp	Future	Potential	Applicative marker on the verb	Non-specific
	Cond	P: Future	Potential	Optional postposition <i>karr</i> (‘uninstantiated’) on the verb	Non-specific
		A: Future	Potential		
		P: Irrealis(nonpast)	Potential		
		A: Irrealis(nonpast)	Counterfactual		
		P: Irrealis(past)			
	A: Irrealis (past)				
	Appr	Irrealis(nonpast)	Potential		
Temp	Future	Potential			
Rembarrnga	Purp	Intent(past/past counterfactual) Intent(present)	Counterfactual	Optionally dative marker	Non-specific
	Appr	Mene Mene + Past counterfactual	Epistemic Apprehensive + counterfactual	Optionally dative marker	Non-specific
		P: Future A: Future P: Past counter-factual A: Past counter-factual	Potential Potential Counterfactual	Generalized subordinate marker	Non-specific
	Purp	Future-aux	Epistemic	Conjunction <i>ngaba</i>	Specific
	Cond	P: Future-verb (future-aux)	Epistemic	No	—

Language	Type	Mood	Mood type	Relational marking	Relational type
Wardaman		A: Future-aux P: Non-actual A: Non-actual	Epistemic Counterfactual		
	Appr	Hypothetical	Apprehensive		
	Cond	A: Future P: Potential/future A: Irrealis(past) P: Irrealis(past)	Potential Epistemic/Potent. Counterfactual	Conjunction <i>bujun</i> in initial position (+optionally generalized subordinate marker)	Specific
		A: Irrealis(present) P: Irrealis(present/ zero)	Potential Potential/Appr		
Yawuru	Appr	Irrealis(zero)	Apprehensive	Conjunction <i>bujun</i> in postverbal position	Specific
	Purp	Future	Potential	Optional dative marker	Non-specific
	Cond	P: Future A: Future/Irrealis	Potential Potential/Appr	Simple suppositional conjunction <i>narli-yirr</i>	Specific
		P: Future/perfective A: Future	Potential/— Potential	Contrafactual conjunction <i>narli-nyurdany</i>	Specific
		P: Imperfective A: Future P: Future A: Future	— Potential Potential Potential	Rising intonation	Non-specific
	Appr	Irrealis	Apprehensive	Optionally conjunction <i>marli-nyurdany</i> (cause or negative condition)	Non-specific
	Temp	Future	Potential	Sequential marker	Non-specific

ENDNOTES

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² The abbreviations used in the glosses are: ABL ablative, ABS absolutive, ACC accusative, APPR apprehensive, AUX auxiliary, AVER aversive, CF counterfactual, CLC clitic, CM conjugation marker, DAT dative, DEM demonstrative, DI desiderative-intentional, DU dual, EN epenthetic nasal, ERG ergative, FREQ frequentative, FUT future, HORT hortative, IMP imperative, INC inclusive, INCH inchoative, INST instrumental, IRR irrealis, KINPOSS kin possessor, LING EVID linguistic evidence, LOC locative, M middle, MP mediopassive, MPROP modal proprietive, NEG negative, NOM nominative, NP nonpast, NSG nonsingular, ORIG origin, PC past completive, POT potential, PRES present, PROM prominence, PROP proprietive, PRT particle, PS particle suffix, PURP purposive, RDP reduplication, REFL reflexive, SEQ sequential, SUBJ subjunctive, TEXT text deictic, TH thematic, VALL verbal allative, VC verbal classifier, VD verbal dative.

³ When a particular type is not mentioned for a language, this usually means that there is no information on relevant (finite) structures in the grammar. In a small number of cases, there is information on the relevant structure, but it does not use mood marking: these cases are mentioned explicitly in the text.

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