

RESEARCH ACTIVITY: Deductive reasoning

For each of the following, try to think up two of your own examples. For one set of examples, try to use premises or a conclusion that contradicts what most people are likely to believe. Test your examples on your friends to see if they make more errors on this type of task. Reasoning theorists such as Byrne (1989) would predict that they will do so, because in many reasoning experiments participants are greatly influenced by such contextual information, which is not strictly relevant to logical deduction.

1. Affirmation of the consequent

Example from the textbook (see Eysenck & Keane, 2015, p. 596):

Premises

If Susan is angry, then I am upset.

I am upset.

Conclusion

Therefore, Susan is angry.

2. Modus ponens

Example from the textbook (see Eysenck & Keane, 2015, p. 596):

Premises

If it is raining, then Nancy gets wet.

It is raining.

Conclusion

Nancy gets wet.

3. Modus tollens

Example from the textbook (see Eysenck & Keane, 2015, p. 596):

Premises

If it is raining, then Nancy gets wet.

Nancy does not get wet.

Conclusion

It is not raining.

4. Denial of the antecedent

Example from the textbook (see Eysenck & Keane, 2015, p. 596):

Premises

If it is raining, then Nancy gets wet.

It is not raining.

Conclusion

Therefore, Nancy does not get wet.

Reference

Byrne, R.M.J. (1989). Suppressing valid inferences with conditionals. *Cognition*, 31: 61–3 [doi: 10.1016/0010-0277(89)90018-8].