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Reasoning and Pragmatics: the Case of *Even-If*

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1 Introduction

Researchers interested in the psychology of reasoning often regard pragmatics as being somehow less worthy of interest than 'actual reasoning'. Pragmatic factors are often regarded as extraneous variables that interfere with people's ability to compute logical inferences. Another view is that there are separate associative and symbol-manipulating systems for thinking (Evans and Over, 1996; Stanovich, 1999; Sloman, 1996). Under this view, the symbol-manipulating or logical system is often seen as more interesting or more characteristic of higher forms of thought than is the associative or pragmatic system. Although there are notable exceptions to these views (see Sperber, Cara and Girotto, 1995; Hilton, 1995), their preponderance is understandable given the way in which research on the psychology of reasoning has developed since the 1960s when Peter Wason first demonstrated the influence of extra-logical factors on people's thinking. Although he was motivated in this by his disagreement with Piagetian views about thinking, Wason's work had a consequence that he could not have foreseen. By saying that thinking was NOT logical, Wason helped to shape the development of paradigms in the field where performance was measured against the yardstick of logically correct performance.

  More recently, an interest in pragmatics has started to emerge in work on reasoning. For example, Rumain, Connell and Braine (1983), Byrne (1989) and others have thrown light on the invited inferences underlying people's performance on conditional reasoning tasks. Similarly, recent work by Barrouillet, Grosset and Lecas (2000) has examined how the ability to resist these pragmatically invited inferences develops. Research has also begun to examine reasoning from everyday conditional assertions and the influence that people's knowledge of the speaker has on the inferences drawn (see, for example, Evans and Twyman-Musgrove, 1998).

Work on logical quantifiers too is very interesting in pragmatic terms. Language researchers (Moxey and Sanford. 1993) have pointed out that the meaning of linguistic quantifiers is, to a large extent, pragmatically determined. Experimental work on syllogistic reasoning (Newstead, 1995) has shown that whilst people do make Gricean errors in their interpretation of logical quantifiers, these errors do not play a large role in deductive reasoning tasks involving quantified premises. Most recently, Noveck (2001) has neatly demonstrated how the tendency to make Gricean errors in the interpretation of logical quantifiers develops over time. The finding that children are more logical in their interpretation of quantifiers than are adults nicely turns most reasoning researchers' conception of the relationship between logic and pragmatics on its head, with pragmatic competence shown to succeed logical competence.

Our interests lie squarely in the study of pragmatic inference. To that end, in this chapter we will describe two experiments that examine the inferences that people draw from everyday conditional utterances and the communicative intentions that they ascribe to utterers of such statements. In so doing we hope to demonstrate how the methodologies and paradigms traditionally used by reasoning researchers, far from being confounded by pragmatic factors, can be used to shed light on wholly pragmatic inferences. Thus, we hope to make the case that these methods can be invaluable to practitioners of the new discipline of Experimental Pragmatics.

The plan of the chapter is as follows. We begin by reviewing the philosophical and linguistic literature pertaining to *even-if*, focusing initially on accounts of *even*. We then present two experiments that examined the inferences that people draw from *even-if* assertions containing arbitrary content (Experiment 1) and realistic content (Experiment 2) as a test of the intuitions derived from the linguistic literature. The findings are discussed in the light of the reviewed literature and recent empirical and theoretical work in the field of human reasoning. Finally, we discuss our methodological approach in a wider context relating to the fields of both human reasoning and Experimental Pragmatics.

2 The case of *even-if*

Any analysis of *even-if* must begin with an understanding of the function that *even* on its own serves in the language. Consider, for example, the following assertion:

(1)   Even Hilary distrusts Bill.

There is a general consensus in the literature that *even* serves to pick out an extreme position, that is, 'is less probable, more surprising, contrary to expectation and so forth – in a contextually determined range of alternatives'