

Experimental Pragmatics/ Semantics

Edited by

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Volume 175

Experimental Pragmatics/Semantics
Edited by Jörg Meibauer and Markus Steinbach

Preface

This volume is a collection of original papers on topical issues concerning various empirical and theoretical aspects of linguistic meaning. Its aim is to advance the current debate among theoretical and experimental linguists on the interface between pragmatics and semantics. All articles are versions of presentations given at the workshop “Experimental Pragmatics/Semantics”, held in February 2008 at the University of Bamberg, Germany. The workshop was part of the Annual Meeting of the German Linguistic Society (DGfS).

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Mainz & Göttingen, November 2010
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Introduction

Experimental research at the pragmatics/semantics interface

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Focusing on the semantics/pragmatics divide, the contribution of experimental pragmatics to pragmatic theory is discussed from a number of angles, ranging from implicature theory and theories of pragmatic enrichment to pragmatic acquisition, pragmatic impairment, and pragmatic processing. In addition, methodological issues are touched upon, and finally, the single contributions to this volume are introduced.

1. Introduction

Drawing the boundary between pragmatics and semantics – both being disciplines that deal with linguistic meaning – belongs to the most basic problems of modern linguistics. In recent years, a lively debate has emerged about that problem (see Bianchi 2004; Szabó 2005; Jaszczolt, to appear). Most researchers engaged in the debate relate their approaches to the fundamental work of Paul Grice, who made the by now classical distinction between ‘what is said’ and ‘what is implicated’ (Grice 1989). Numerous sophisticated approaches to the question of how that distinction should be spelled out have been put forward. However, the rough picture of the major camps involved in the debate is that we have the so-called **Neogriceans** on the one hand, and the **Relevance theorists** on the other. Neogriceans by and large tend to defend the conceptual value of Gricean maxims or principles (Levinson 2000; Horn 2004; Atlas 2005), while Relevance theorists argue against such maxims or principles and refer to general cognitive principles such as the Principle of Optimal Relevance (see Sperber & Wilson 1995; Carston 2002; Wilson & Sperber 2004). A more fine-grained sketch would include further important theoretical approaches provided, for instance, by Bach (1999); Recanati (2004); Jaszczolt (2005); Ariel (2008); Potts (2005).

Indeed, there are many differences in the pragmatic architecture of the rivalling camp’s approaches as well as in the coverage of empirical phenomena. But, quite surprisingly, Neogriceans as well as Relevance theorists go for the assumption

that propositional structures are systematically underdetermined and therefore are in need of enrichment. These processes of enrichment are of an essentially pragmatic nature, and hence pragmatics is conceived of as being able to influence semantics. Several terminological proposals are on the market to fix the phenomenon of pragmatically steered propositional enrichment: **explicature** (Carston 2002), **implicature** (Bach 1999; Garrett & Harnish 2007), **pragmatic intrusion** (Levinson 2000), or **intuitive content** (Recanati 2004). The detailed comparison of these proposals, or, more generally, the explicit/implicit distinction, is of course on the pragmaticist's research agenda. Insofar as **underdeterminacy** is taken as a serious linguistic phenomenon, there is an in-built tendency of the approaches mentioned to restrict the realm of truth-conditional semantics, or to downplay its importance. According to those approaches, there are truth-conditions or logical forms for sentences, but they occur only at a certain (intermediate) stage in the generation of the comprehensive meaning of an utterance.

The tendency sketched has of course provoked conjectures. For instance, some researchers defend a classical, minimalist approach to the truth conditions of a sentence, and consequently assume a more powerful apparatus for pragmatic interpretation (cf. Borg 2004; Cappelen & Lepore 2004; Bach 2005). **Minimalism** is thus opposed to **Contextualism**, understood as the persuasion that context influences semantics, not only in the case of indexicals but also in numerous further aspects. Regrettably, contributions to these debates are not always founded in large-scale empirical research. Very often, a rather restricted phenomenon serves as the 'evidence' for a certain view of the explicit/implicit distinction or a particular concept of the 'proper' semantics/pragmatics divide. It is obvious that the field will profit from more truly empirical exploration of the data.

With the advent of **experimental pragmatics** the scene has changed. Experimental pragmatics, as we understand it, is the application of psycholinguistic and neurolinguistic methods to the exploration of pragmatic phenomena (cf. also Katsos & Cummins 2010; Bezuidenhout 2010). When the focus is on the experimental research into the semantics/pragmatics distinction, we may very well speak of 'experimental pragmatics/semantics', thus alluding to the fact that research into experimental pragmatics necessarily is involved in reflecting semantics, too. As a quick glance into the seminal collection edited by Noveck & Sperber (2004) and the more recent volume edited by Sauerland & Yatsushiro (2009) shows, experiments have been run with regard to pragmatic phenomena as diverse as reference, felicity conditions, scalar implicatures, presuppositions, negation, irony and metaphor. But another view into the *Handbook of Pragmatics* (Horn & Ward 2004) and the handbook on semantics (von Heusinger et al., to appear) shows that there is still much experimental ground to cover.

It is not by mere chance that experimental pragmatics profits from experimental **psycholinguistics**, especially with regard to **language acquisition**.

Research into language acquisition has a strong focus on elicitation studies, and it is in the study of research into pragmatic development (and impairment) where the two strands of research, experimental pragmatics and research into pragmatic development, meet. Indeed, it appears as if the appeal of the new research paradigm benefits from this particular constellation, as the numerous studies on the acquisition of scalar implicatures impressively show. Many of the experimental designs used in experimental pragmatics already have a history. For example, the experimental design in today's research into scalar implicatures goes back to Smith (1980). It goes without saying that there is reinterpretation and replication of classical psycholinguistic experiments, too. Still rare are production tasks, and the very promising neurolinguistic research into pragmatics is still in its beginnings (Paradis 1998 a,b; Stemmer & Schönle 2000).

The next section is concerned with one of the most important debates in theoretical and experimental pragmatics, i.e. the analysis of conversational implicatures. The discussion focuses on scalar implicatures and the distinction between generalized and particularized conversational implicatures. Section 3 briefly addresses some varieties of pragmatic enrichment. The acquisition of pragmatics, semantics and the interaction of these two linguistic modules are discussed in Section 4. Here, the discussion focuses again on scalar implicatures. Section 5 deals with the deficits of pragmatic impaired children. Sections 6 and 7 finally briefly touch aspects of pragmatic processing and some methodological issues. The last section gives a brief summary of the contributions to this volume, which deal with various theoretical and experimental aspects of the interface between pragmatics and semantics addressed in this introduction.

2. Testing for scalar implicatures

Scalar implicatures are conversational implicatures due to the observation of the maxims of Quantity. For instance, in a scale ⟨all, some⟩, *some* is an informationally weaker term than *all*. From the assertion of the weaker term the negation of the stronger may be inferred. Thus, if (1a) is asserted, (1b) may be inferred. If the speaker had known for sure that all of the guests were drunk, he should have – observing the maxims of Quantity – said so. Since he didn't, the hearer is licensed to conclude that the speaker intended to convey that not all of the guests were drunk. That we have to do with a type of conversational implicature here, is usually shown with a hint towards cancellability as is illustrated in (1c).

- (1) a. Some of the guests were drunk.
- b. Not all of the guests were drunk.
- c. Some of the guests were drunk, indeed all of them.

For Levinson (2000), scalar implicatures are **generalized conversational implicatures** (GCIs). GCIs arise due to pragmatic principles like the Q-principle, the I-principle, and the M-principle and are distinguished from **particularized conversational implicatures** (PCIs). GCIs are close to the grammar, they are implicatures that may directly influence the truth conditions of a sentence. This phenomenon of ‘pragmatic intrusion’ leads to the idea of a pre-semantic pragmatics. Similar ideas are pursued by a number of scholars, most notably by Relevance theorists and François Recanati (‘truth conditional pragmatics’).

There are, however, many differences with regard to terminology, as well as with regard to the broader conception of the semantics/pragmatics divide, and the distinction between ‘what is said’ and ‘what is implicated’ (cf. Gibbs 1999, 2002; Nicolle & Clark 1999; Liedtke, this volume). Relevance theorists like Carston (2002) create a separate pragmatic category, called ‘explicature’, which is portrayed as a development of a logical form. The usefulness or empirical adequacy of the PCI/GCI-distinction is denied by them, as is the distinction between sorts of pragmatic principles like the Q-principle, the I-principle and the M-principle. Instead, Relevance theorists postulate the operation of general cognitive principles like the Cognitive Principle of Relevance, the Communicative Principle of Relevance, and the Presumption of Optimal Relevance, all of which play some role in guiding pragmatic inferencing.

As far as scalar implicatures are concerned, recent research in experimental pragmatics is dedicated to the question whether there is evidence for GCI-theory versus Relevance Theory. The alternatives are nicely sketched by Noveck & Sperber (2007: 196) with regard to the computational factor ‘speed of interpretation.’ If a scalar term is interpreted literally (e.g. ‘some, maybe all’), so they demonstrate, the GCI theory would nevertheless predict local default enrichment, because of the generalized and relatively context-independent nature of GCIs. If a context is taken into account that is not compatible with default enrichment, the implicature has to be cancelled in order to arrive at the literal interpretation, a process that obviously is costly measured in time. Relevance theory, in contrast, doesn’t assume enrichment in the first place (Relevance principles being operating “fast and automatic”), and therefore predicts fast arrival at the correct interpretation.

Conversely, if a scalar term needs enrichment (e.g. ‘some, but not all’), GCI theory predicts default enrichment, whereas Relevance theory demands calculation of the context (background knowledge has to be considered), so GCI theory should predict fast derivation, while Relevance theory goes together with slow derivation. Note that the respective experiments aim at measuring processing speed. Many studies have the result that deriving implicatures is costly, this being usually regarded as argument against a default view as proposed by Levinson (2000) and Chierchia (2004). However, the GCI/PCI-distinction may stay important for conceptual

reasons, and the strict opposition between the default view and context-driven approaches may turn out as problematical, because alternative views (e.g. **Interactionism**, see Breheny et al. 2006) lend themselves for testing, too (cf. also Katsos 2007, 2009; Zondervan, this volume).

3. Varieties of pragmatic enrichment

The scope of phenomena that fall under the heading of ‘enrichment’ is quite large, and, as far as we know, most phenomena have not been studied comprehensively. A general theory of enrichment is still to be developed. Levinson (2000: 170ff.) discusses disambiguation, interpretation of indexical and general expressions, ellipsis resolution and narrowing as cases of ‘pragmatic intrusion into what is said’. Carston (2002: 21ff.), in her overview on underdeterminacy phenomena, also mentions ambiguities and indexicals, and furthermore adds missing constituents, unspecified scope, as well as under- and overdeterminacy of word meanings. Note that there is a strand of research that, under the heading of enriched composition, complement coercion, and cocomposition, also deals with phenomena like the ones discussed by Carston (cf. Pustejovsky 1995; Jackendoff 1997; Bezuidenhout 2009). However, this line of research refrains from any commitments to a pragmatic module and largely focuses on the syntax-semantics interface. For a comprehensive overview on psycholinguistic and neurolinguistic research dealing with enriched composition phenomena see Pylkkänen and McElree (2006).

A classical case of enrichment is of course ‘conjunction buttressing’ or **asymmetric coordination**. In cases like (2a) versus (2b) the impression of a temporal sequence (and, furthermore, a causal relation) may be either construed as an implicature (on the basis of the maxim of Modality), or traced back to a hidden constituent specifying time (Blakemore & Carston 2005; Hertwig, Benz & Krauss 2008).

- (2) a. Ann married and got pregnant.
- b. Ann got pregnant and married.

Another much-disputed case of a seemingly missing constituent where temporal enrichment plays a role is the utterance (3a), where one might argue for a hidden temporal constituent, or, alternatively, derive this element as an ‘explicature’ or an implicature, as contexts like (3b) suggest.

- (3) a. I didn’t have breakfast.
- b. I didn’t have sex.

Further cases where enrichment appears to take place are bridging and reference transfer. **Bridging** takes place in contexts like (4a), where the beer is to be understood

as part of the picnic. Several experimental studies have been carried out, among them Clark & Haviland (1977), Matsui (2000), and Burkhardt (2006), the latter taking P600 effects as evidence for enriched composition (cf. also Bornkessel-Schlesewsky & Schlewsky (2008) and Drury & Steinhauer (2009) for linguistic interpretations of P600 effects).

- (4) a. Bob unpacked the picnic. The beer was warm.
- b. The omelette left without paying.

Reference transfer concerns utterances like (4b), where *omelette* does not refer to the meal, but to the customer who ordered the meal (see Jackendoff 1977; Nunberg 2004; Schumacher, this volume).

In a broader perspective, **metaphor** and **irony** may also be viewed as enrichment phenomena. While the Gricean approach to these phenomena, despite being quite elementary, often serves as a starting point for experimental research, there are numerous studies intended to test details as well as general approaches (e.g. pretense versus echo theory of irony, cf. the collections by Gibbs & Colston 2007 and Gibbs 2008).

Pragmatic enrichment phenomena are certainly crucial for any attempt at exploring the semantics/pragmatics distinction. However, there are many more pragmatic phenomena that lend themselves to exploration, e.g. research on indirect speech acts (cf. Clark 1979; Shapiro & Murphy 1993) and the operation of maxims (cf. Engelhardt, Bailey & Ferreira 2006), research on presuppositions (cf. Sauerland 2009), anaphora resolution (cf. Holler & Irmen 2007), diverse aspects of information structure (cf. Burkhardt 2006, 2007; Zondervan, this volume), politeness phenomena, and, most importantly, the role of contextual knowledge in utterance interpretation (cf. Altmann & Steedman 1988; Sedivy et al. 1999; Meibauer & Schumacher 2010; Schmitz, this volume; Panizza & Chierchia, this volume). This is, however, only a sketch of crucial phenomena, and it goes without saying that there are many more. Hopefully, experimental research will provide many more data that could eventually lead to an empirically validated theory of pragmatic enrichment.

4. Developmental pragmatics

Children do not only acquire grammatical competence, but also pragmatic competence. At the age of 2, a child does not understand irony or metaphor (cf. Winner 1988; Creusere 2000), and she doesn't know much about speech acts like insulting or reproaching. Since the seminal work of Bates (1976), numerous studies on the acquisition of pragmatics have been carried out (cf. Hickmann 2000; Pan & Snow 1999). It is not by mere chance that experimental pragmatics gains much from

experimental expertise in language acquisition research, since there is a long-standing tradition in psycholinguistic methods and standards of testing (see also Moscati, this volume; Müller et al., this volume; Paltiel-Gedalyovich, this volume; Rohlfing, this volume).

One recurrent finding is that children are more ‘logical’ than adults. Adults are more ‘pragmatic’, in that they observe wider aspects of the context and encyclopaedic knowledge. We will shortly consider the cases of asymmetric coordination and scalar implicature.

Noveck (2004:310) reports on a study dealing with the question whether children are capable to observe the maxim of Orderliness, prescribing that in an **asymmetric coordination** p and q, p and q should be ordered according to the natural order of the narrated events. Noveck found that children were surprisingly tolerant against infringements of this principle. This could be interpreted as evidence for the fact that, for younger children, the facts described are more important than their particular relatedness, so that connective meaning is for them most important. For Noveck (2004:310f.), such results hint to the superiority of Relevance theory, because it is enrichment of an underdetermined proposition that matters here, not a generalised conversational implicature, as Levinson (2000) would have it.

Scalar implicatures are another domain where children seem to act more logical than adults (and older children more adult-like than younger children). In one experiment dealing with scalar implicatures triggered by the French quantifier *certains* (scale: ⟨tous, certains⟩), children and adult controls were asked whether they agreed with the (French translation of the) utterance *Some giraffes have long necks* (cf. Noveck 2001, Experiment III). ‘Logical’ children reacted with ‘yes’. Possibly, they reasoned that even if all giraffes had long necks, it is at least true that some have long necks. Thus, 89 % out of 31 children aged 7–8, and 85% out of 30 children aged 10–11 agreed. In contrast, ‘pragmatic’ adults answered ‘no’. For them, it would be underinformative to answer yes, because, as far as they know, all giraffes have long necks. From 15 adults, 41 % agreed.

In subsequent studies, contexts were more or less enriched in order to control for contextual knowledge. In Papafragou & Musolino (2003), where the Greek quantifier *meriki* (scale: ⟨oli, meriki⟩) was tested, the focus was on felicity instead of truth. In their acting out-Experiment 1 using Truth Value Judgment Test Methodology, children were shown three toy horses which were about to jump over a toy fence. When all horses had jumped over the fence, a puppet commented on that event with, e.g. *Some horses jumped over the fence*, and children were asked whether the puppet ‘answered well’ (focusing on felicity). Adults rejected the puppet’s statement in 92.5 % of the time, whereas 5-year-olds rejected the puppet’s statement only in 12.5 % of the time. A narrative element, mimicking a

certain aspect of a discourse situation, was also introduced into the methodology used by Bott & Noveck (2004) who otherwise used the material from Noveck (2001). In their Experiment II, basically a Truth Value Judgement Test, where sentences were presented on a screen, the stimuli were preceded by a declaration like “Mary says the following sentence is true/false”. This declaration was intended to make a comparison between a ‘logical’ and a ‘pragmatic’ group of participants possible. Note, however, that in this case, a speech report becomes part of the context.

While the general impression from Noveck (2001) and Papafragou and Musolino (2003) was that children are more logical than adults indeed, Guasti et al. (2005:672) stress that children as young as seven years of age are able to derive (adult-like) implicatures “when the contexts meet all the cognitive and linguistic requirements for doing so”. In their Experiment I, the authors replicated Noveck (2001) and found that children accepted “statements like *Some giraffes have long necks* much more often than adults do: 87% compared with 50%”. (Again, it might be asked why so many adults were ‘logical’.) The authors ventured that these results may not have to do with a simple lack in children to derive implicatures (**Pragmatic Delay hypothesis**), but with (unnatural) features of the experimental design (**Pragmatic Limitation hypothesis**). In further experiments the authors used stories presented in videos culminating in sentences like *Some soldiers decide to ride a horse*, and a puppet character commenting on them. Here, the rejection rate was 75% for the group of the seven-year-old children and, quite astonishingly, 83% for the adults. Thus, it is demonstrated that adults decide between agreement and disagreement similar to the children, and that there is a tension between opting for ‘standard conversational norms’ versus adhering to strict truth (cf. also Katsos 2009; Hendriks et al. 2009).

In sum, then, experimental designs cannot do without representing rich contexts, because participants usually react to such rich contexts and are at a loss when forced to act without them. If ‘neutral’ contexts are demanded, participants try to create contexts on their own (Guasti et al. 2005:684–85). And even if it is assumed that participants are able to construe a ‘neutral’ context, the use of certain language materials “can create their own context through a variety of presupposition triggers and information-structure triggers”, as Breheny et al. (2006:445) stress.

Implicatures are a classical pragmatic research topic, speech acts are another. Several studies focus on **felicity conditions** for promises. Experiments by Astington (1988) showed that many children between 5 and 9 years of age assume that promises are true statements related to past or future states. What is relevant from the adult’s perspective (and the sincerity condition), namely that the future act must not only be (accidentally) realised, but (intentionally) caused by the speaker, is not very important for children in this age. In other words, the early concept of a