The Basic Notions

The term ‘implicature’ goes back to the philosopher Paul Grice, as laid down in his seminal article ‘Logic and Conversation’ (Grice, 1989), which is the published version of a part of his William James lectures held in 1967 at Harvard University (see Grice, Herbert Paul). In Grice's approach, both 'what is implicated' and 'what is said' are part of speaker meaning. 'What is said' is that part of meaning that is determined by truth-conditional semantics, while 'what is implicated' is that part of meaning that cannot be captured by truth conditions and therefore belongs to pragmatics. Several types of implicature are distinguished. Figure 1 shows the Gricean typology of speaker meaning (cf. Levinson, 1983: 131).

The most widely accepted type of implicature is the conversational implicature. According to Grice, it comes in two ways, generalized conversational implicature (GCI) and particularized conversational implicature (PCI). The following example from Levinson (2000: 16–17) illustrates this distinction:

**Example:**

**Context, 1** Speaker A: What time is it?
Speaker B: Some of the guests are already leaving.

PCI: 'It must be late.'
GCI: 'Not all of the guests are already leaving.'

**Context, 2** Speaker A: Where's John?
Speaker B: Some of the guests are already leaving.

PCI: 'Perhaps John has already left.'
GCI: 'Not all of the guests are already leaving.'

Because the implicature (‘... not all ...’) triggered by *some* arises in both contexts, it is relatively context-independent. Relative context-independence is the most prominent property of GCIs. In addition, GCIs are normally, or even consistently, associated with certain linguistic forms. For example, if someone utters *Peter is meeting a woman this evening* it is, because of the indefinite article, standardly implicated that the woman is not his wife, close relative, etc. (cf. Grice, 1989: 37; Hawkins, 1991). In contrast to GCIs, PCIs are highly context-dependent, and they are not consistently associated with any linguistic form.

The distinction between conversational implicatures and conventional implicatures draws on the observation that in coordinations like *Anna is rich but she is happy*, the truth conditions are just the truth conditions of the coordination *Anna is rich and she is happy*, with the exception of the contrastive meaning of *but*. This meaning is not truth-functional, and it is not context-dependent either; hence, there is some motivation for assuming the category of conventional implicature.

Note that there may be further types of implicature, e.g., implicatures of politeness or style that are neither conventional nor conversational (cf. Leech, 1983; B:own and Levinson, 1987).

Conversational implicatures come about by the exploitation (apparent flouting) or observation of the cooperative principle (CP) and a set of maxims (Grice, 1989) (see Cooperative Principle; Maxims and Flouting):

**Cooperative Principle**
Make your conversational contribution such as is required, at the stage at which it occurs, by the accepted purpose or direction of the talk exchange in which you are engaged.

**Maxim of Quantity**
1. Make your contribution as informative as is required (for the current purposes of exchange).
2. Do not make your contribution more informative than is required.

**Maxim of Quality**
Try to make your contribution one that is true.
1. Do not say what you believe to be false.
2. Do not say that for which you lack adequate evience.

**Maxim of Relevance**
Be relevant.

**Maxim of Manner**
Be perspicuous.
1. Avoid obscurity of expression.
2. Avoid ambiguity.
3. Be brief (avoid unnecessary prolixity).
4. Be orderly.

These maxims and submaxims are conceived as rules of rational behavior, not as ethical norms. They figure prominently in the derivation of an implicature.
The basic idea of such a derivation is best illustrated with a simple dialogue. Imagine that I ask my colleague *Is Markus there?* and she answers *There is a pink Porsche behind the library building.* Understood literally, such an answer does not make any sense. However, as I assume that my colleague is cooperative, and remembering that Markus drives a pink Porsche, I can figure out that Markus is in the library. In working out this information, I have made use of the assumption that my colleague’s answer has been relevant with regard to my question. Thus, conversational implicatures display the property of calculability. A general scheme for the working out of a conversational implicature is given by Grice (1989: 30–31):

A man who, by (in, when) saying (or making as if to say) that *p* has implicated that *q*, may be said to have conversationally implicated that *q*, provided that (1) he is to be presumed to be observing the conversational maxims, or at least the Cooperative Principle; (2) the supposition that he is aware that, or thinks that, *q* is required in order to make his saying or making as if to say *p* (or doing so in those terms) consistent with this presumption; and (3) the speaker thinks (and would expect the hearer to think that the speaker thinks) that it is within the competence of the hearer to work out, or grasp intuitively, that the supposition in (2) is required.

Table 1 lists some of the most typical cases covered by the CP and the maxims. Examples for each case are given below the table. For further classical examples, see Grice (1989) and Levinson (1983). In what follows, ‘*+*’ stands for ‘implicates conversationally’:

(1) War is war. *+* ‘There is nothing one can do about it.’

(2) Some men were drunk. *+* ‘Not all of them were drunk.’

(3a) He is a fine friend. *+* ‘He is not a fine friend.’

(3b) You are the cream in my coffee. *+* ‘You are my best friend.’

(4) There is life on Mars. *+* ‘Speaker believes that there is life on Mars.’

For further illustration of the exploitation/observation dichotomy, look at (1) and (8). As to (1), tautological utterances are always true, which amounts to their being fundamentally uninformative. There is no situation where a speaker wants to tell someone that something is identical with itself. Thus, it seems that the utterer of (1) has violated the first maxim of Quantity Gricean reasoning then leads the hearer to the insight that this violation was only apparent (cf. Autenrieth, 1997). In (8), we have a simple conjunction of two sentences. If the meaning of *and* were to be the same as the meaning of the logical operator, it could not be explained that there is an additional meaning ‘and then.’ Grice’s view is that we may identify the semantic meaning of *and* with the pure connecting operation known from logic as long as we are able to derive the additional meaning from the maxims. The observation of the fourth maxim of Manner, “Be orderly!”, will do this job (cf. Posner, 1980). Both observation and exploitation are in line with the general pattern for working out an implicature.

Besides the property of calculability, conversational implicatures display the properties of variability and cancellability. Variability means that there are contexts where the speaker utters the same utterance, but the respective implicature does not arise. Thus, the implicature is dependent on the specific context in which it arises. (This does not exclude the notion of relative context-independency in the case of GCI.) Cancellability (or defeasibility) means that it is possible to withdraw an implicature within the situation of utterance without any contradiction. For example, it is possible to utter *Some men were drunk, indeed all.* Reversely, conversational implicatures should be reinforceable, as Sadow (1978) proposed. Thus, it is possible to conjoint the content of an implicature with the utterance that triggers that implicature, as in *Some of the girls were reading books but not all.*

Conventional implicatures are neither calculable, nor variable, nor cancellable. However, they are said to be detachable, i.e., if the elements that trigger them are replaced, the respective implicature does not arise.

<table>
<thead>
<tr>
<th>Table 1</th>
<th>Typical cases of implicature</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Maxims</strong></td>
<td><strong>Explication</strong></td>
</tr>
<tr>
<td>Quantity</td>
<td>Tautology (1)</td>
</tr>
<tr>
<td>Quality</td>
<td>Irony, metaphor, sarcasm (3)</td>
</tr>
<tr>
<td>Relevance</td>
<td>Implicatures due to thematic switch (5)</td>
</tr>
<tr>
<td>Manner</td>
<td>Implicatures due to obscurity, etc. (7)</td>
</tr>
</tbody>
</table>
By contrast, conversational implicatures are non-detachable, i.e., if there is an expression X’ that shares meaning with expression X that triggers the implicature, the same implicature should arise. For example, if *She is very beautiful* gives rise to an ironical implicature, then *She is a real beauty* should have the same effect (Sadock, 1978: 287). (An obvious exception to this are Manner implicatures.)

For further illustration, consider focus particles like *even*. An utterance such as *Even JOHN drives a Porsche* has the same truth conditions as the corresponding utterance without the focus particle, i.e., *John drives a Porsche*. The additional meaning of the type 'John is the least likely to drive a Porsche,' being related to a contextually given set of other individuals (e.g., Gustav, Bettina, Markus...), may be considered as a conventional implicature (cf. König, 1991), because this meaning appears to be neither truth-conditional nor context-dependent. Moreover, if *even* is replaced by another focus particle, the respective implicature is not triggered. However, if the conventional implicature is bound to the specific lexical item *even*, and for this reason is detachable, then the implicature seems to be part of the literal meaning of this lexical item. Therefore, it is difficult to distinguish between conventional implicatures on the one hand and entailments (belonging to the ‘what is said’) on the other hand. For this and other reasons, some researchers do not accept that there is a category of conventional implicature (cf. Bach, 1999; for a logical approach, see Potts, 2003).

**Beyond Grice**

The reception of the Gricean framework has been largely dominated by the wish to develop a more systematic architecture of maxims. Moreover, the Cooperative Principle has been on trial, as other aspects (e.g., logical, anthropological, cognitive, etc.) became more attractive. The prevailing tendency has been to reduce the set of maxims proposed by Grice. Three major reductive approaches have been developed: (a) the tri-heuristic approach by Levinson (2000), (b) the dual principle approach by Horn (1984), and (c) the monoprinicled approach by Sperber and Wilson (1995) and Carston (2002). These approaches are outlined in the following sections. It should be mentioned, however, that there are other important approaches that elaborate on the Gricean framework, e.g., Gazdar (1979) or Atlas (2005), as well as radical criticisms such as Davis (1998). For useful surveys, see Levinson (1983: Ch. 3) and Rolf (1994).

**Presumptive Meanings: Levinson’s Theory of Generalized Conversational Implicature**

Levinson develops his revision of Grice’s maxims from three heuristics that follow from the anthropological need to overcome the “fundamental bottleneck in the efficiency of human communication, occasioned no doubt by absolute physiological constraints on the articulators” (Levinson, 2000: 28). Accordingly, Grice’s rationalistic CP plays no role. The heuristics are (Levinson, 2000: 31–33):

**Levinson’s Heuristics**

Heuristic 1: What isn’t said, isn’t.

Heuristic 2: What is simply described, is stereotypically exemplified.

Heuristic 3: What’s said in an abnormal way, isn’t normal; or Marked message indicates marked situation.

Heuristics 1 corresponds to Levinson’s Q-principle (see maxim of Quantity 1 in Grice’s framework), Heuristics 2 to Levinson’s I-principle (Grice’s maxim of Quantity 2), and Heuristics 3 to Levinson’s M-principle (Grice’s maxim of Manner 1 and 3). These three principles are said to derive GCIs. For the correspondences to Grice, and a typical example, see Table 2.

Where inconsistent implicatures arise, they are systematically resolved by an ordered set of priorities” (Levinson, 2000: 39), among them Q > M > I, where ‘>’ is understood as ‘defeats inconsistency.’ Levinson (2000: 153–164) gives some examples for Q > I, Q > M, and M > I. An example for Q > M is

---

**Table 2**  Corresondence between Levinson’s Heuristics and Principles, and Grice’s Maxims

<table>
<thead>
<tr>
<th>Heuristics</th>
<th>Principles</th>
<th>Grice’s Maxims</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heuristic 1</td>
<td>Q-Principle</td>
<td>Quantity, 1</td>
<td>Q-implicature: (a) Some colleagues were drunk. + &gt; ‘Not all of them were drunk.’ (scalar implicature) (b) The doctor believes that the patient will not recover. + &gt; ‘The doctor may or may not know that the patient will not recover.’ (clausal implicature)</td>
</tr>
<tr>
<td>Heuristic 2</td>
<td>I-Principle</td>
<td>Quantity, 2</td>
<td>I-implicature: Anna turned the switch and the motor started. + &gt; ‘Anna turned the switch and then therefore the motor started.’ (conjunction buttressing)</td>
</tr>
<tr>
<td>Heuristic 3</td>
<td>M-Principle</td>
<td>Manner, 1 and 3</td>
<td>M-implicature: Bill caused the car to stop. (vs. Bill stopped the car.) + &gt; ‘He did this indirectly, not in the normal way, e.g., by use of the emergency brake.’ (periphrasis)</td>
</tr>
</tbody>
</table>
It's not unlikely that Giant Stride will win the Derby, and indeed I think it is likely. Here, as Levinson (2000: 160) points out, the first conjunct gives rise to the M-based implicature 'less than fully likely,' because of the double negative not unlikely, while the second conjunct triggers the Q-based implicature 'it is possible it is likely,' because of the use of think, which does not entail the complement clause. In this case, the Q-implicature of the second conjunct defeats the M-implicature of the first. (However, as Traugott, 2004: 11 observes, indeed may serve as a M-implicature cancelling device.)

The Q-principle is defined as follows (Levinson, 2000: 76):

**Q-principle**

**Speaker's maxim:** Do not provide a statement that is informationally weaker than your knowledge of the world allows, unless providing an informationally stronger statement would contravene the I-principle. Specifically, select the informationally strongest paradigmatic alternate that is consistent with the facts.

**Recipient's corollary:** Take it that the speaker made the strongest statement consistent with what he knows, and therefore that:

a. if the speaker asserts $A(W)$, where $A$ is a sentence frame and $W$ an informationally weaker expression than $S$, and the contrastive expressions `<$S$, $W$>' form a Horn scale (in the prototype case such that $A(S)$ entails $A(W)$), then one can infer that the speaker knows that the stronger statement $A(S)$ (with $S$ substituted for $W$) would be false [...] 

b. if the speaker asserted $A(W)$ and $A(W)$ fails to entail an embedded sentence $Q$, which a stronger statement $A(S)$ would entail, and <$S$, $W$> form a contrast set, then one can infer that the speaker does not know whether $Q$ obtains or not (i.e., $[P(Q), P \sim (Q)]$) read as 'it is epistemically possible that $Q$ and epistemically possible that not-$Q$'

The I-Principle mentioned in the Speaker's maxim requires that a speaker should not be more informative than necessary (see below). Wherever it is possible, the speaker should build on stereotypical assumptions. In the Recipient's corollary, two cases are distinguished, namely scalar implicature, involving Horn scales (named after Laurence Horn, see the next section) and clausal implicature, involving contrast sets.

In the case of scalar implicatures, we need a Horn scale: given a scale <$q$, $p$> with $p$ as an informationally weak and $q$ as an informationally strong element, the assertion of $p$ implicates the negation of $q$. In such cases, the speaker is supposed to be as informative as possible, thus observing the Q-principle (or the maxim of Quantity). Therefore, the speaker could not say more than he actually did, and this means that the stronger statement does not hold. A classical example is the utterance $p =$ Some colleagues were drunk implicating $q =$ Not all of them were drunk.

In the case of clausal implicatures, we need contrast sets. Let [know, believe] be a contrast set. Then $p =$ The doctor believes that the patient will not recover implicates $q_1 =$ The doctor may or may not know that the patient will not recover' (Levinson 2000: 110). The crucial point is that clausal implicatures indicate epistemic uncertainty about the truth of the embedded sentence. Note that, because <know, believe> also form a Horn scale, there is a scalar implicature as well: in this case $p$ implies $q_2 =$ 'The doctor does not know that the patient will not recover.'

Well-known Horn scales include the quantifiers, connectives <and, or>, modals <necessarily, possibly>, <must, should, may>, adverbs <always, often, sometimes>, degree adjectives <hot, warm>, and verbs <know, believe>, <love, like>. Contrast sets include verbal doubles like [know, believe], [realize, think], [reveal, claim], [predict, foresee], and others (cf. Levinson, 2000: 111).

Now consider the I-principle (Levinson, 2000: 114–115):

**I-Principle**

**Speaker's maxim:** the maxim of Minimization. 'Say as little as necessary'; that is, produce the minimal linguistic information sufficient to achieve your communicational ends (bearing $Q$ in mind).

**Recipient's corollary:** the Enrichment Rule. Amplify the informational content of the speaker's utterance by finding the most specific interpretation, up to what you judge to be the speaker's m-intended [= meaning-intended] point, unless the speaker has broken the maxim of Minimization by using a marked or prolix expression.

Specifically:

a. Assume the richest temporal, causal and referential connections between described situations or events, consistent with what is taken for granted.

b. Assume that stereotypical relations obtain between referents or events, unless this is inconsistent with (a).

c. Avoid interpretations that multiply entities referred to (assume referential parsimony); specifically, prefer coreferential readings of reduced NPs (pronouns and zeros).

d. Assume the existence or actuality of what a sentence is about (if that is consistent with what is taken for granted).

This principle is said to cover a whole range of implicatures: conditional perfection (9), conjunction buttressing (10), bridging (11), inference to stereotype (12), negative strengthening (13), NEG-raising (14), preferred local coreference (15), the mirror
maxim (16), specialization of spatial terms (17), and possessive interpretations (18) (cf. Levinson, 2000: 117–118).

(9) If you mow the lawn, I'll give you five dollars. + > 'If you don't mow the lawn, I will not give you five dollars.'

(10) Bettina wrote an encyclopedia and sold the rights to Elsevier. + > 'Bettina wrote an encyclopedia and then sold the rights to Elsevier.'

(11) Gustav unpacked the picnic. The beer was warm. + > 'The beer was part of the picnic.'

(12) Markus said 'Hello' to the secretary and then he smiled. + > 'Markus said “Hello” to the female secretary and then Markus smiled.'

(13) I don't like Alice. + > 'I positively dislike Alice.'

(14) I don't think he is reliable. + > 'I think he is not reliable.'

(15) John came in and he sat down. + > 'John, came in and he sat down.'

(16) Harry and Sue bought a piano. + > 'They bought it together, not one each.'

(17) The nail is in the wood. + > 'The nail is buried in the wood.'

(18) Wendy's children + > 'those to whom she is parent'; Wendy's house + > 'the one she lives in'; Wendy's responsibility + > 'the one falling on her, Wendy's theory + > 'the one she originated'

The M-principle is defined as follows (Levinson, 2000: 136–137):

**M-principle**

**Speaker's maxim:** Indicate an abnormal, nonstereotypical situation by using marked expressions that contrast with those you would use to describe the corresponding normal, stereotypical situation.

**Recipient's corollary:** What is said in an abnormal way indicates an abnormal situation, or marked messages indicate marked situations, specifically:

- Where S has said p, containing a marked expression M, and there is an unmarked alternate expression U, with the same denotation D, which the speaker might have employed in the same sentence-frame instead, then where U would have I-implicated the stereotypical or more specific subset of D, the marked expression M will implicate the complement of the denotation d, namely d of D.

The M-principle is supposed to cover a range of cases, among them lexical doublets (19) and rival word formations (20), nominal compounds (21), litotes (22), certain genitive (23) and zero morph constructions (24), periphrasis (25), and repetition (26) (cf. Levinson, 2000: 138–153).

(19) She was reading a tome [vs. book]. + > 'She was reading some massive, weighty volume.'

(20) Ich nehme den Flieger [vs. das Flugzeug].

(= I take the plane [vs. the airplane]) + > 'Fliegen ist nichts Besonderes für mich.'

(= 'Flying is quite normal for me.')

(21) This is a box for matches [vs. matchbox]. + > 'This is a (nonprototypical) box specially made for containing matches.'

(22) I: took a not inconsiderable effort. + > 'It took a close-to-considerable effort.'

(23) the picture of the child (vs. the child's picture)

+ > 'the picture depicts the child'

(24) She went to the school/the church/the university (vs. to school, to church, to university, etc.)

+ > 'She went to the place but not necessarily to do the associated stereotypical activity.'

(25) Bill caused the car to stop. [vs. Bill stopped the car.] + > 'He did this indirectly, not in the normal way (e.g., by using the emergency brake.).'

(26) He went to bed and slept and slept. + > 'He slept longer than usual.'

Note that only the first ('Avoid obscurity of expression') and the third ('Be brief (avoid unnecessary prolixity)!') submaxims of the Gricean maxims of Manner survive in Levinson's M-principle. Levinson views the second submaxim ('Avoid ambiguity') in connection with 'generality narrowing', which is subsumed under the Q-principle (Levinson, 2000: 135). The fourth submaxim ('Be orderly') is not needed any more, because the notorious cases of 'conjunction buttressing' fall under the I-principle in Levinson's framework. Moreover, Levinson (2000: 135) notes the general cognitive status of this general semiotic principle of linearization, and he questions its status as a maxim.

It seems that many of the cases in (19)–(26) may be explained in terms of the Q- or I-principle; in other cases, it is not at all clear that we have the same denotation, as required in the Recipient's corollary of the M-principle, thus throwing into doubt whether a separate M-principle is really needed. By comparison, Horn's (1984) approach (sketched in the next section) has no separate maxim/principle of Manner. For further discussion, see Meibauer (1997) and Traugott (2004).

Obviously, the maxim of Quality and the maxim of Relevance are not maxims that figure in the derivation of GCIs. The only comment on the
maxim of Quality Levinson gives is that this maxim “plays only a background role” in the derivation of GCIs; maybe he has the sincerity conditions for assertive acts in mind (Levinson, 2000: 74). Note that Grice (1989: 34) needed the maxim of Quality to derive the implicatures in the cases of irony, metaphor, and sarcasm (see Irony). In contrast, Levinson argues that irony and sarcasm are cases of PCIs (Levinson, 2000: 386, Fn. 2), a claim that seems somewhat premature at least when considering cases of conventional irony and sarcasm. The maxim of Relevance is a maxim that, according to Levinson (2000: 74), derives only PCIs. However, this maxim seems to play a role when it comes to disambiguation and ‘ellipsis unpacking’ (Levinson, 2000: 174, 183) (see Relevance Theory).

In addition to the revision of the Gricean maxims just outlined, Levinson sketches a radical revision of the widely accepted Gricean view of the interaction of grammar and pragmatics according to which in language production, conversational implicatures are supposed to operate on, and follow the semantic representation of, the said (Levinson, 2000: 173). Levinson finds this view basically wrong:

Grice’s account makes implicature dependent on a prior determination of ‘the said.’ The said in turn depends on disambiguation, indexical resolution, reference fixing, not to mention ellipsis unpacking and generality narrowing. But each of these processes, which are prerequisites to determining the proposition expressed, may themselves depend crucially on processes that look undistinguishable from implicatures. Thus, what is said seems both to determine and to be determined by implicature. Let us call this Grice’s circle. (Levinson, 2000: 186)

According to Levinson, there are at least five phenomena that show the influence of GCIs on sentence meaning (Levinson, 2000: 172-187). First, GCIs (of the scalar type) are involved in the disambiguation of ambiguous constructions like some cats and dogs, for only the bracketing [(some cats) and dogs], with the appropriate implicature ‘some but not all cats, and dogs in general,’ is appropriate in the sentence He’s an indiscriminate dog-lover; he likes some cats and dogs. Second, the resolution of indexicals is dependent on the calculation of GCIs, e.g., The meeting is on Thursday. +> ‘not tomorrow’ (when tomorrow is Thursday). Third, reference identification often requires GCIs, e.g., John came in and the man sat down. +> ‘The man was not identical to John.’ Fourth, in ellipsis unpacking, as in simple dialogues like Who came? – John <came>, the missing information is constructed on the basis of Relevance and I-Implicature. Finally, there is the case of generality narrowing, e.g., if someone utters I’ve eaten breakfast +> ‘I’ve eaten breakfast [this morning]’ where the Q-principle is activated.

In order to resolve the dilemma of Grice’s circle, i.e., to account for ‘pragmatic intrusion,’ Levinson proposes an alternative model (Levinson, 2000: 188). This model contains three pragmatic components, namely Indexical Pragmatics, Gricean Pragmatics 1, and Gricean Pragmatics 2, and two semantic components, namely Compositional Semantics and Semantic Interpretation (model-theoretic interpretation). The output of Compositional Semantics and Indexical Pragmatics is input for Gricean Pragmatics 1. The output of Gricean Pragmatics 1 is input for Semantic Interpretation, and its output (‘sentence meaning, proposition expressed’) is input for Gricean Pragmatics 2, whose output is ‘speaker meaning, proposition meant by the speaker.’

Whereas Indexical Pragmatics and Gricean Pragmatics 1 are presemantic pragmatic components, Gricean Pragmatics 2 is a postsemantic pragmatic component. It seems that Gricean Pragmatics 2 deals with GCIs (‘indirection, irony and tropes, etc.’) whereas Gricean Pragmatics 1 deals with GCIs (‘disambiguation, fixing reference, generality-narrowing, etc.’). At the heart of Levinson’s approach is his analysis of GCIs, precisely because it is here that arguments for this new model of the semantics-pragmatics interaction may be found.

Division of Pragmatic Labor: Horn’s Q- and R-Principles

Central to Horn’s approach to implicature is the insight that implicatures have to do with “regulating the economy of linguistic information” (Horn, 2004: 13). In contrast to Levinson, Horn (1984) assumes only two principles, the Q-principle and the R-principle:

Q-principle
Make your contribution sufficient: Say as much as you can (given R).
(Lower-bounding principle, inducing upper-bounding implicatures)

R-principle
Make your contribution necessary: Say no more than you must (given Q).
(Upper-bounding principle, inducing lower-bounding implicatures)

The Q-principle collects the Gricean maxims of Quantity 1 as well as Manner 1 and 2, while the R-Principle collects Quantity 2, Relation, and Manner 3 and 4. The maxim of Quality is considered as unreducible, as truthfulness is a precondition for satisfying the other maxims (Horn, 2004: 7).

The Q-principle aims at the maximization of content. It is a guarantee for the hearer that the content is
sufficient. The hearer infers from the speaker's failure to use a more informative or briefer form that the speaker was not in a position to do so. Scalar implicatures are a case in point. The R-principle aims at the minimization of expression, and consequently, the minimization of the speaker's effort. According to Horn, this principle holds for all indirect speech acts.

The following table, which is adapted from Horn (2004: 10), shows how the Q-principle works in the case of scalar implicatures (Table 3). The two-sided reading is the default case.

According to Horn, the conflict between the Q-principle and the R-principle may be resolved, as expressed by the following principle (Horn, 1984: 22):

The Division of Pragmatic Labor
The use of a marked (relatively complex and/or prolix) expression when a corresponding unmarked (simpler, less 'effortful') alternative expression is available tends to be interpreted as conveying a marked message (one which the unmarked alternative would not or could not have conveyed).

Levinson (1987: 73) argues that Horn mixes up two things here that properly should be distinguished, namely minimization of content on the one hand, and minimization of expression on the other. According to Levinson, splitting up the maxims of Manner in the way Horn does is mistaken, because the Manner maxims are fundamentally dependent on form, and thus related to minimization of expression.

Following Horn's original work, much research has been done on Horn scales, e.g., by Hirschberg (1991), Fretheim (1992), Matsumoto (1995), Sauerland (2004), van Rooy (2004). In this connection, three further areas of research deserve to be singled out.

First, as shown in Horn (1989: Ch. 4), there is the phenomenon of metalinguistic negation. For example, when uttering It's not warm, it's hot! the first part of the utterance gives rise to the scalar implicature 'It is not hot,' but this implicature is obviously denied in the second part of the utterance. Typically, utterances of this type have a humorous, ironical, or sarcastic flair (cf. Chapman, 1996 for an overview and Carston, 1996 and IWata, 1998 for an echo-theoretic interpretation).

Second, there is some discussion about the exact status of the Horn scales in the lexicon, e.g., how are elements selected for scales, how is the ordering of the elements achieved, etc. An influential approach is the one by Hirschberg (1991), who argues that there exist, in addition to lexical scales, scales that are induced pragmatically or on the basis of real-world knowledge. For example, when speaker A asks Did you get Paul Newman's autograph? and speaker B answers I got Joanne Woodward's, implicating 'not Paul Newman's,' we are dealing with a salient scale of autograph prestige <Newman, Woodward>. Consequently, Hirschberg (1991: 42) denies that there is any principled distinction between GCIs and PCIs.

Third, the economical aspect of Horn's reduction of the Gricean apparatus has recently become very attractive within Bidirectional Optimality Theory (cf. Blutner, 2004). This theory assumes that sentences are semantically underspecified, and therefore are in need of enrichment. A function Gen is assumed that determines for each common ground the set of possible enrichments. Bidirectional (i.e., taking the perspective of speaker and hearer) Optimality Theory then stipulates that a form-meaning pair is optimal if and only if it is taken from the set defined by Gen, and that there is no other pair that better fulfills the requirements of the Q- and I-principle. For an application and further discussion, see Krifka (2002) (see Pragmatics: Optimality Theory).

Relevance Theory: Carston's Underdeterminacy Thesis
Relevance theory is a cognitive theory of meaning whose major claims are that semantic meaning is the result of linguistic decoding processes, whereas pragmatic meaning is the result of inferential processes constrained by one single principle, the Principle of Relevance, originally proposed in Sperber and Wilson (1995) (see Relevance Theory). However, the connection to the Gricean maxim of Relevance is rather weak, as can be seen from the following definitions

<table>
<thead>
<tr>
<th>Statements</th>
<th>Lower bound, one-sided (what is said)</th>
<th>Upper bound, two-sided (what is implicated qua Q)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Pat has three children</td>
<td>'... at least three...'</td>
<td>'... exactly three...'</td>
</tr>
<tr>
<td>b. You ate some of the cake</td>
<td>'... some if not all...'</td>
<td>'... some but not all...'</td>
</tr>
<tr>
<td>c. It's possible she'll win</td>
<td>'... at least possible ...'</td>
<td>'... possible but not certain ...'</td>
</tr>
<tr>
<td>d. He's a knave or a fool</td>
<td>'... and perhaps both ...'</td>
<td>'... but not both'</td>
</tr>
<tr>
<td>e. It's warm</td>
<td>'... at least warm ...'</td>
<td>'... but not hot'</td>
</tr>
</tbody>
</table>
(Carston, 2002; for other versions, see Wilson and Sperber, 2004):

**First (Cognitive) Principle of Relevance**

Human cognition is geared towards the maximization of relevance (that is, to the achievement of as many contextual (cognitive) effects as possible for as little processing effort as possible).

**Second (Communicative) Principle of Relevance**

Every act of ostensive communication (e.g., an utterance) communicates a presumption of its own optimal relevance.

Carston (2002) questions the standard division of labor between semantics and pragmatics and argues that pragmatics contributes much more to the construction of explicit meaning (‘what is said’) than generally assumed. Her overall aim is to establish relevance theory as a theory of cognitive pragmatics. The relevance theoretic approach is, according to Carston, “to be characterized as a sub-personal-level explanatory account of a specific performance mechanism conducted at the level of representations-and-procedures” (Carston, 2002: 11).

Carston’s underdeterminacy thesis says that linguistic meaning generally underdetermines what is said. Pragmatic inferences are not only necessary to determine implicatures, but also to fix the proposition directly expressed by an utterance. This discrepancy between the meaning encoded in linguistic expressions and the proposition expressed by the utterance of these expressions (‘what is said’) is illustrated by various cases (over and above the well-known cases of ambiguities and indexical resolution): missing constituents (27), unspecified scope of elements (28), underspecificity or weakness of encoded conceptual content (29), overspecificity or narrowness of encoded conceptual content (30):

(27a) [Where is the book?] On the top shelf.
(= ‘The book is on the top shelf.’)
(27b) Paracetamol is better, [than what?]
(27c) This fruit is green, [which part of the fruit?]
(28a) She didn’t butter the toast in the bathroom with a knife, [different stress changes the information structure]
(28b) There’s nothing on TV tonight, [nothing that is interesting for you]
(29) I’m tired, [predicate is too weak]
(30) Her face is oblong, [predicate is too narrow]

In all these cases, additional inferential steps are necessary to understand what the speaker intends to say.

Since linguistically encoded meanings are necessarily incomplete, pragmatics makes an essential contribution not only to the construction of implicit meaning but also to the construction of explicit meaning. In the spirit of Relevance Theory, Carston proposes a three-level model of semantic and pragmatic interpretation of linguistic expressions.

The first step involves semantic decoding of linguistic expressions. The output of the semantic decoding is an impoverished, nonpropositional semantic representation, which Carston calls logical form. It can be described as a “structured string of concepts with certain logical and causal properties” (Carston, 2002: 57) containing slots indicating where certain contextual values must be supplied. Hence, the output of the semantic decoding device is an incomplete template or scheme, open to a range of compatible propositions.

In the second step of interpretation, the hearer reconstructs the proposition intended by the speaker through pragmatic inference. Thus, pragmatic inference bridges the gap between what is linguistically expressed (incomplete conceptual schemata/logical form) and what is said (full propositional representations). For example, when a speaker utters the subsentential expression on the top shelf in a given context of utterance, the hearer is supposed to reconstruct the missing constituents to yield the intended proposition ‘The marmalade is on the top shelf’. The pragmatic interpretation device is constrained by the First (Cognitive) Principle of Relevance, as proposed by Sperber and Wilson (1995).

Finally, there has to be a third step of interpretation, in which the hearer determines implicatures, i.e., ‘what is meant.’ Thus, Carston assumes that pragmatic inference is necessary for the second and third step of interpretation. In this cognitive approach, the bulk of utterance interpretation has to be done by pragmatic inference.

The pragmatic device of interpretation relies not only on linguistic information but also on additional information gained from context, perception, and world knowledge. Here, Carston essentially refers to Searle’s theory of mind, especially his notion of Background (cf. Searle, 1980). Utterances are interpreted against a set of more or less manifest background assumptions and practices. Consider, for instance, the following five sentences: (a) Jane opened the window, (b) Jane opened her book on page 56, (c) Jane opened the wall, (d) Jane opened her mouth, (e) The doctor opened her mouth. Carston assumes that the encoded meaning of the English verb open does not vary in all five examples, although open receives quite different interpretations, depending on a set of background assumptions about different practices of opening. The Background is construed as a set of weakly manifest assumptions and practices in an
individual’s cognitive environment. Since the background always supplies additional meaning to the interpretation of an utterance, the proposition expressed by an utterance cannot be fully determined by the meaning of its parts and the mode of their combination. Consequently, the principle of semantic compositionality (see Frege, Friedrich Ludwig Gottlob) does not hold for the proposition expressed, but only for the underdetermined logical form (i.e., the first step of interpretation).

As does Levinson (2000), Carston, too, argues that Grice does not account for the fact that ‘what is said’ is not independent from pragmatic input. However, Carston and Levinson differ in their approaches to the question of how the pragmatic intrusion problem needs to be dealt with. As shown above, Levinson develops a pragmatic subtheory of GCIs, dealing only with the pragmatic processes involved in the elaboration of ‘what is said’. By contrast, Carston favors a unitary account of all pragmatic processes, irrespective of whether they contribute to the ‘what is said’ or to different implicated assumptions (corresponding to Levinson’s PCIs).

Carston’s (2002: 377) use of the terms explication and implicature, essentially based on Sperber and Wilson’s (1995: 182) distinction between explicit and implicit assumptions/propositions, is spelled out in the following way (cf. Carston, 1988):

Explication
An ostensively communicated assumption that is inferentially developed from one of the incomplete conceptual representations (logical forms) encoded by the utterance.

Implicature
An ostensively communicated assumption that is not an explication; that is, a communicated assumption which is derived solely via processes of pragmatic inference.

The difference between explicatures and implicatures lies essentially in the way they are supplied: explicatures are developments of the logical form that they contain as a proper subpart, whereas implicatures are derived purely inferentially. In regard to these two kinds of pragmatic enrichment, the cognitive approach Carston promotes motivates the distinction between ‘communicated assumptions’ and the ‘inferential steps’ leading to them. Carston argues that explicatures are construed by means of interpretative hypotheses rather than by (generalized) implicatures.

Consider the example: John came in and he sat down. The preferred interpretation for the personal pronoun he in the second sentence is the coreferential one. Following Levinson, this interpretation results from an I-implicature. Carston argues that this implicature must be a proposition like ‘He refers to whomever John refers to’, “a propositional form representing a hypothesis about reference assignment” (Carston, 2002: 131). She rejects the idea of reference assignment being an implicature and rather identifies it as an interpretative hypothesis like ‘John came in and he, John, sat down’, which is derived online and only confirmed if it meets the expectation of relevance. Carston claims that this strategy is able to resolve the dilemma of Grice’s circle, for the simple reason that interpretation processes can be effected simultaneously.

Finally, the cognitive approach leads Carston to reject conventional implicatures; these are subsumed under the procedural elements. Relevance Theory distinguishes between concepts as constituents of mental representations, and procedures that constrain pragmatic inferences. Conventional implicatures conveyed by expressions such as moreover and therefore do not contribute to the conceptual part of the utterance, but point the hearer to the kind of pragmatic processes she is supposed to perform (cf. Blakemore, 2002).

Bach (1994), who tries to defend the Gricean notion of ‘what is said’, criticizes the notion of explication and proposes instead the term implicature (cf. also Bach, 2001). Implicatures are either expansions of ‘what is said,’ as in You are not going to die [from this little wound] or completions, as in Steel isn’t strong enough [for what?]. In these cases, “the resulting proposition is not identical to the proposition expressed explicitly, since part of it does not correspond to any elements of the uttered sentence”; hence Bach considers it “inaccurate to call the resulting proposition the explicit content of an utterance or an explication” (Bach, 1994: 273).

Carston views Relevance Theory as a cognitive theory of utterance understanding that aims at the subpersonal level, where processes are fast and automatic. Thus, it should be clear that this theoretical goal differs from that pursued by Grice (cf. Saul, 2002). It must be noted, however, that arguments from psycholinguistic research are called for in order to constrain the theory.

First, it may be asked how children acquire implicatures and what roles maxims, principles, and the like play in this process. There are studies on the acquisition of irony and metaphor by Winner (1988) as well as studies on the role of Gricean principles in lexical acquisition (cf. Clark E V, 1993, 2004). More recently, studies have been done on the acquisition of scalar implicatures, in particular dealing with the hypothesis that small children are “more logical” than older children and adults, in that they more readily accept the “some, perhaps all” – reading of the quantifier some (cf. Noveck, 2001; Papafragou and Musolino, 2003).
Second, there is some evidence that hearers do not first compute the literal meaning, then the nonliteral or indirect meaning, but that they arrive at the nonliteral/indirect meaning earlier or in a parallel fashion (cf. Shapiro and Murphy, 1993; Récanati, 1995; Gibbs, 2002; Giora, 2003). It is obvious that experimental research is very important for implicature and explication theory (cf. Wilson and Sperber, 2004: 623–628).

Quality Reconsidered

In the development of neo-Gricean approaches to implicature such as Horn’s and Levinson’s, the Gricean maxim of Quality has been neglected (see Neo-Gricean Pragmatics). Thus, genuine pragmatic matters such as metaphor, irony, sarcasm, lying, etc. have become largely unattractive for some implicature theorists, although metaphor had been featured as a cardinal case of maxim exploitation already early on (cf. Levinson, 1983: 147–162). Relevance Theory, on the other hand, which takes a stand on Grice as well as on neo-Gricean approaches, has developed an independent theory of irony; moreover, Carston (2002: Ch. 5), analyzes metaphors as instances of ad hoc-concept construction. In neither of these approaches, however, does the maxim of Quality play any role (see Metaphor: Psychological Aspects).

First, consider irony. If a speaker A utters X is a fine friend, referring to a person who has betrayed a secret of A’s to a business rival, then the first maxim of Quality is flouted (Grice, 1989: 34). Because it is obvious that A does not believe what he says, the hearer reconstructs a related proposition, i.e., the opposite of p. The ironical implicature qualifies for the status of an implicature, because it is calculable, context-dependent, and cancellable. Note that this substitutional analysis is in contrast to the additive nature of other types of implicature. However, this approach has been criticized for several reasons: (i) The analysis cannot account for ironical questions, requests and understatements, (ii) it cannot explain the distinction between irony and metaphor, because the latter is also explained with regard to the first maxim of Quality, and (iii), it is not fine-grained enough, because it does not follow from ‘He is not a fine friend’ that he is not a friend at all.

The Gricean approach to irony has been most prominently attacked by relevance theorists (Sperber and Wilson, 1981; Wilson and Sperber, 1992; Sperber and Wilson, 1998). Following Sperber and Wilson, ironical utterances have four main properties: (i) They are mentioned, not used, (ii) they are echoic in nature, (iii) the ironical interpretation is an implicature that is derived through recognition of the echoic character of the utterance (Sperber and Wilson, 1981: 309), (iv) the ironical speaker displays a dissociative attitude towards the proposition uttered. Take the utterance What lovely weather! as an example. When uttered during a downpour, the speaker cannot mean the opposite, because this would be uninformative. Instead, he wants to convey that it was absurd to assume that the weather would be nice. Thus, the ironical utterance is a case of echoic mention of a previously entertained proposition. Types of echo include sarcastic repetition (31), attributed thoughts (32), norms (33) and standard expectations (34) (cf. Sperber and Wilson, 1998):

\[(31) A: I’ll be ready at five at the latest.\]
\[B: Sure, you’ll be ready at five.\]

\[(32) A: I’ll be ready at five at the latest.\]
\[B: You mean at five tomorrow?\]

\[(33) A: I’ll be ready at five at the latest.\]
\[B: You are so punctual.\]

\[(34) A: I’ll be ready at five at the latest.\]
\[B: It’s a great virtue to be on time!\]

Thus, the echo theory of irony does not imply that there is always an original utterance that is exactly reproduced. The echo theory is constrained in that most utterances cannot be interpreted as echoes, and echoic interpretations must contribute to the relevance of an utterance.

Several objections to this theory may be made (cf. Sperber and Wilson, 1998): (i) The notion of an echo is far too vague; it does not make sense to look for an echo in cases of conventional irony, e.g., when somebody utters Boy, is it hot! when it is icy cold. (ii) Because not every ironic mention is ironical, echoic mention is not sufficient to explain ironical interpretation. (iii) It is not clear why the substitution of the opposite should not be a starting point in the search for the dissociative attitude of the speaker towards the proposition. (iv) Relevance Theory cannot explain why hearers often fail to grasp the relevance of an ironical utterance.

Second, consider metaphor. For Carston (2002), metaphors are cases of ad hoc concept construction. Ad hoc concepts are those concepts “that are constructed pragmatically by a hearer in the process of utterance comprehension” (Carston, 2002: 322). Typical instances of ad hoc concepts come about via narrowing or broadening. Narrowing may be illustrated by utterances like Ann is happy, where the concept associated with happy in a particular context is much narrower than the encoded concept. The case of broadening is exemplified by utterances like There is a rectangle of lawn at the back, where it
is very unlikely that the encoded concept of rectangle is communicated. Both processes are cases of constructing an ad hoc concept that contributes to the explicature.

If metaphors are ad hoc concepts, then they are part of the explicature as well. Thus, in Mary is a bulldozer, the logical form of bulldozer is associated with an ad hoc concept BULLDOZER* differing from the concept BULLDOZER usually encoded by this word. In this approach, metaphor isn’t an implicature any more, as Grice (1989) and Levinson (1983) would have it, but an explicature.

Recall that for Horn (1984), the maxim of Quality was unreducible. Since then, its domain of application has considerably shrunk. However, it still seems to play a role when it comes to the analysis of lying, deception, insincerity, and – maybe – irony (cf. Wilson and Sperber, 2002; Meibauer, 2003). In Levinson’s (2000) approach, matters of irony, etc., are dealt with in the component called Gricean Pragmatics 2. Maybe it is there that the maxim of Quality will have a comeback. It is clear that some version of the maxim plays also a role in the definition of success conditions for assertive illocutions (see Irony).

**Implicature and the Grammar/Pragmatics Interface**

As has become clear from the sketch presented here of Levinson’s and Carston’s frameworks, pragmatic inferencing is powerful enough to influence semantic representations (see Semantics-Pragmatics Boundary). However, when it comes to pinpoint the exact relations of implicatures to illocutions on the one hand, and sentence types on the other, there still are many open questions.

First, consider implicatures vis-à-vis illocutions. Even if both are associated with an individual speech act, these notions refer to different entities: an additional proposition, in the case of implicature, vs. a type of act such as a promise, assertion, request etc., in the case of illocution.

An important connection between illocutions and implicatures is usually seen as obtaining in the case of indirect speech acts (see Speech Acts; Pragmatic Acts). According to Searle (1975), a reconstructive process that leads the hearer from the secondary illocutionary point (the ‘literal’ illocution) to the primary illocutionary point (the intended illocution) is similar to the scheme of reasoning that Grice proposed for conversational implicatures; step 2 of his sample derivation even includes principles of conversational cooperation (compare also the speech act schema proposed by Bach and Harnish, 1979). Accordingly, indirect speech acts have sometimes been analyzed as implicatures, for example the question Can you close the window?, meant as a request to close the window, a case that is related to the R-Principle as proposed by Horn (1989, 2004).

A case in point is the rhetorical question. Whereas Meibauer (1986) analyzes them as indirect speech acts, i.e., interrogative sentences types associated with assertive force and polar propositional content, Romero and Han (2004) analyze negative yes/no questions like Doesn’t John drink? as connected with a positive epistemic implicature such as ‘The speaker believes or at least expects that John drinks.’ It is not clear at first sight whether such analyses are compatible; in any case, as Dascal (1994) has shown, the notions of implicature and speech act are independently motivated, and should not be confused. Thus, the question of their interrelation requires further research.

Second, consider implicatures vis-à-vis sentence types. It is widely accepted that there is a systematic connect:ion between sentence types such as declarative, interrogative, and imperative, etc., and illocutions such as assertion, question, and request, etc.; moreover, in some approaches the existence of an intermediate category ‘sentence mood’ is assumed (cf. Sadock and Zwicky, 1983; Harnish, 1994; Reis, 1999; Sadock, 2004; Zanuttini and Portner, 2003). However, while it is conceivable that sentence types determine a certain illocutionary potential, the analogical notion of an ‘implicature potential’ has never been proposed, probably because of the authors’ concentration on lexical elements that give rise to GCIs.

However, there are several observations showing that such a concept is not totally mistaken. Consider the following examples:

(35) Who is the professor of linguistics at Tübingen? +> Someone is the professor of linguistics at Tübingen.

(36) [I gave the encyclopedia to Bettina.] You gave the encyclopedia to WHOM?

(37) Visit Markus and you’ll get new ideas! +> If you visit Markus then you’ll get new ideas.

(38a) This is good. +> This is not excellent.

(38b) Is this good? *+> Is this not excellent?

In (35), we have the case of an existential implicature that is typically bound to wh-interrogatives, but shows the properties of variability and cancellability. (Its classification as an existential presupposition, cf. Levinson, 1983: 184, has been abandoned, because it does not survive the negation test.) Example (36) illustrates the echo-wh-question. As Reis (1991) has persuasively argued on the basis of German data, these sentence types are neither ‘echo-wh-interrogatives’ nor wh-interrogatives. Instead, these utterances
are regular instances of any sentence type, and their interrogative force is explained as a conversational implicature triggered by the wh-element (see also Reis, 1999). Another example showing that implicatures are sensitive to sentence types is the conditional imperative in (37) (cf. Davies, 1986; Clark, 1993). Finally, if elements that trigger scalar implicatures are in the scope of a question operator, the respective implicature may be blocked, as shown in (38) (the asterisk * denotes a blocked or unallowed implicature). In summary, then, there is evidence of a systematic interaction between implicatures and sentence types. The question is, then, how and where to account for this interaction.

A detailed analysis of the sentence type-implicature relation is developed in Portner and Zanuttini (2000). They concentrate on negated wh-questions and exclamatives in Paduan, a northern Italian dialect spoken in the city of Padua:

(39a) Parcossa no ve-to anca ti? (wh-interactive)
    ‘Why NEG go-s.cl also you
    ‘Why aren’t you going as well?’

(39b) Cossa no ghe dise-lof (wh-exclamative)
    what NEG him say-s.cl
    ‘What things he’s telling him!’

The point is that the NEG-element has no negative force. In principle, there are two strategies for analyzing examples like (39): First, as a special type of negation, nonpropositional, expletive, or modal in character. The second strategy, as proposed in Meibauer (1990) on the basis of German data, is to assume regular negation, and to derive the modal effect from pragmatic principles. Portner and Zanuttini (2000), drawing on the latter approach, assume that exclamatives are factive. The negation particle no triggers a conventional implicature, which says that the lowest element from a set of alternative elements (that are possible in a contextually given scale) is true. In cases like (39a), there is an expectedness scale [less expected < more expected], in cases like (39b), there is an unexpectedness scale [more expected < less expected]. The scales are dependent on the respective sentence type. While it is not clear (i) whether exclamatives constitute a separate sentence type at all (cf. d’Avis, 2001), (ii) why the implicatures are of the conventional type, and (iii) how the relevant scales are obtained from the context, it should be clear that such an approach paves the way for a more empirical research on the interplay of sentences types and implicatures.

Conclusions

On the basis of the foregoing sketch of three major approaches to implicature theory, we may state some of the prevailing tendencies. To begin with, there is a striving to understand implicatures in terms of economy. This is true for Levinson’s insight that implicatures help to overcome “the slowness of articulation,” as becomes clear from his slogan “inference is cheap, articulation expensive” (Levinson, 2000: 29), as well as for Horn’s appeal to the principle of least effort and Sperber and Wilson’s view on optimal relevance. Lately, recent developments in Optimality Theory have shown attempts to integrate the interplay of maxims into their frameworks.

Second, there is a tendency to reject the classic dual distinction between ‘what is said’ on the one hand, and ‘what is implicated’ on the other. Instead, a three-level approach to meaning is favored, cf. the distinction in Levinson (2000: 21–27) between sentence meaning, utterance type meaning, and speaker meaning, or Carston’s three-level model of utterance interpretation. However, there is considerable terminological confusion here, as the diagram in Levinson (2000: 195) impressively shows; confusion that has to do with the still unsolved problem of finding demarcation lines or fixing the interfaces between ‘what is said’ and ‘what is meant.’ Further discussion of the question of level architecture can be found in Récanati (2004).

Obviously, the second tendency is connected with the widely accepted view that some sort of underdeterminacy thesis is correct, and that there are presemantic pragmatic processes that are input for model-theoretic interpretation (cf. Levinson, 2000: 188), or are necessary to fix full propositional representations (cf. Carston, 2002).

As has become clear, there are still many problems to solve: the status of the maxims of Relevance and Manner, the distinction between GCI and PCI, the status of conventional implicatures, the interaction of implicatures with illocutions and sentence types, to name only a few. Besides, the role that implicatures play in many areas, such as those of language acquisition and language change, awaits much further research.

See also: Cooperative Principle; Grice, Herbert Paul; Irony; Maxims and Flouting; Neo-Gricean Pragmatics; Pragmatic Acts; Pragmatics: Optimality Theory; Relevance Theory; Semantics-Pragmatics Boundary; Speech Acts.

Bibliography


Indexicality: Theory

A Ponzo, University of Bari, Bari, Italy
© 2006 Elsevier Ltd. All rights reserved.

Indexicality in Peirce’s Categories and Sign Typology

‘Indexicality’ is a feature of the ‘index,’ one of three types of signs identified by Charles S. Peirce, the other two being the ‘icon’ and ‘symbol.’

According to Peirce, a sign is something that stands for something else, in some respect. It creates in the mind of the interpreter an equivalent sign, or perhaps a more developed sign, that is, an interpretant (2.228 – As is common in Peircean scholarship, quotes and citations will be identified by volume and paragraph number from Peirce [1931–1958]).

That the sign stands for something in some respect means that it does not refer to the object in its entirety (dynamic object), but only to a part of it (immediate object). Furthermore, a sign subsists for Peirce according to the category of ‘thirdness,’ that is, it presupposes a triadic relation between itself, the object, and the interpretant thought, which is itself a sign. And given that it mediates between the interpretant sign and the object, the sign always plays the role of third party.

The icon is characterized by a relation of similarity between the sign and its object.

The symbol is a sign “in consequence of a habit (which term I use as including a natural disposition)” (4.531). The symbol is never pure but contains varying degrees of indexicality and iconicity; similarly,