Relevance

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The psychological literature

Relevance Theory (Wilson and Sperber 2004) is a cognitive psychological theory.

The notion **context** for psychologists: Recent stimuli
Priming effects (Reder 1983)

(1) a. What kind of pitcher can a catcher fill?
b. The astronomer married a star.
c. The dentist, who filled cavities, marched in the drill.
d. The rabbi, who spoke to the congregation, was hit on the temple.

Criticisms of the Gricean program

- It's actually all pretty complicated, when you try to spell out pragmatic derivations logically, Perrault and Allen (1980), Appelt and Konolige (1988).
- So how psychologically realistic is any of this as a theory of meaning calculation?
- There are plenty of nonlogical factors at work in disambiguating sentences, compelling us to talk about things like saliency and priming.
- Couldn't some of the cognitive mechanisms in evidence in these effects also participate in pragmatic phenomena like implicature?

Mind-reading

A special case of inferring intention from action (Grice 1975)

He said that P; he could not have done this unless he thought that Q; he knows (and knows that I know that he knows) that I will realise that it is necessary to suppose that Q; he has done nothing to stop me thinking that Q; so he intends me to think, or is at least willing for me to think, that Q.

Basically, W&S say inferring intentions from actions is a lot easier than inferring meanings from utterances.

A **relevance module** is needed. Fast and frugal heuristics for computing speaker meaning. Kids have it. It's innate.

Principles (Wilson and Sperber 2004)

Communicative Principle of Relevance

Every ostensive stimulus conveys a presumption of its own optimal relevance. [nonverbal actions, absence of verbal action, included.]

Presumption of Optimal Relevance for ostensive stimulus (OS)

Worthiness	OS is relevant enough to be worth the audience's processing effort.
Compatibility	OS is the most relevant one compatible with communicator's abilities and preferences.

The Interpretive Stance w/o Propositions

Relevance optimizes two criteria

Positive Cognitive Effect (CE): *A positive cognitive effect is a worthwhile difference to the individual's representation of the world: a true conclusion, for example.*

Relevance-theoretic comprehension procedure

Least effort	Follow a path of least effort in computing CEs: Test interpretive hypotheses (disambiguations, reference resolutions, implicatures, etc.) in order of accessibility.
Greediness	Stop when your expectations of relevance are satisfied (or abandoned).

Aspects of the Comprehension procedure

It appears that *expectations of relevance* includes the possibility of multiple CEs, so that in the right context, both of the following may happen.

Greediness	A more worthwhile CE may exist, but may not be found because it is not found first.
Weak implicature	Many more or less equally more worthwhile CEs may exist.

Explicature

(11)a. Peter: Did John pay back the money he owed you?
b. Mary: No. He forgot to go to the bank.

Explicature: Explicit Content is inferential too

The identification of explicit content is equally inferential, and equally guided by the Communicative Principle of Relevance, as the recovery of implicatures. (decoding, disambiguation, reference resolution, other *pragmatic enrichment* processes).

> *"The hearer treats the linguistically encoded concept (e.g. BANK1 in (11b)) as no more than a clue to the speaker's meaning." [p. 618]*

Q: What if the status of literal meaning in RT?

(12)

(a) Mary has said to Peter, "He_x forgot to go to the $BANK_1/BANK_2$." [He_x = uninterpreted pronoun] [$BANK_1$ = financial institution] [$BANK_2$ = river bank]	*Embedding of the decoded (incomplete) logical form of Mary's utterance into a description of Mary's ostensive behavior.*
(b) Mary's utterance will be optimally relevant to Peter.	*Expectation raised by recognition of Mary's ostensive behavior and acceptance of the presumption of relevance it conveys.*
(c) Mary's utterance will achieve relevance by explaining why John has not repaid the money he owed her.	*Expectation raised by (b), together with the fact that such an explanation would be most relevant to Peter at this point.*
(d) Forgetting to go to the $BANK_1$ may make one unable to repay the money one owes.	*First assumption to occur to Peter which, together with other appropriate premises, might satisfy expectation (c). Accepted as an implicit premise of Mary's utterance.*
(e) John forgot to go to the $BANK_1$.	*First enrichment of the logical form of Mary's utterance to occur to Peter which might combine with (d) to lead to the satisfaction of (c). Accepted as an explicature of Mary's utterance.*
(f) John was unable to repay Mary the money he owes because he forgot to go to the $BANK_1$.	*Inferred from (d) and (e), satisfying (c) and accepted as an implicit conclusion of Mary's utterance.*
(g) John may repay Mary the money he owes when he next goes to the $BANK_1$.	*From (f) plus background knowledge. One of several possible weak implicatures of Mary's utterance which, together with (f), satisfy expectation (b).*

This schematic outline of the comprehension process is considerably over-simplified.[15] In particular, it omits a range of lexical-pragmatic processes involved in the construction of explicatures. Consider the word *bank* in (11b). Peter would probably take this to denote not just a banking institution but a specific type of banking institution: one that deals with private individuals, and in particular, with John. Unless it is narrowed in this way, the explicit content of Mary's utterance will not warrant the conclusion in (12f), which is needed to satisfy Peter's expectation of relevance. (It is hard to see how the fact that John had forgotten to go to the World Bank, say, might explain his failure to repay the money he owed.) Similarly, he would take the phrase *go to the bank* to mean not merely visiting the bank, but visiting it in order to get money, and to get money in the regular way (legally, rather than, say, by robbing the bank). Unless the explicit content is narrowed in this way, it will not warrant the conclusion in (12f), which is needed to satisfy Peter's expectation of relevance.

Metaphor

Experimental evidence suggests the literal interpretation of a metaphor is often never even considered.

Peter and Mary

Peter	What do you think of Martin's latest novel?
Mary	It puts me to sleep.

Relevance theory allows a non literal interpretation to be more accessible in context (an evaluation of the book is relevant)

Explicature: Example II

Carston 2004

X How is Mary feeling after her first year at university?

Y She didn't get enough units and can't continue.

a. MARY$_x$ DID NOT PASS ENOUGH UNIVERSITY COURSE UNITS TO QUALIFY FOR ADMISSION TO SECOND YEAR STUDY AND, AS A RESULT, MARY$_x$ CANNOT CONTINUE WITH UNIVERSITY STUDY.

b. MARY$_x$ IS NOT FEELING VERY HAPPY.

What gets explicated

She didn't get enough units and can't continue.

WHAT didn't she get enough units for?
WHAT can't she continue?
WHAT NP "she" co-refer with?
WHICH "Mary"?
WHAT discourse connection does "and" encode?
WHAT kind of "units"?
WHAT kind of "get"-ing?

MARY$_x$ DID NOT PASS ENOUGH UNIVERSITYLL COURSE UNITS TO QUALIFY FORL ADMISSION TO SECOND YEAR STUDY AND, AS A RESULT, MARY$_x$ CANNOT CONTINUE WITH UNIVERSITY STUDY.

Semantics/Pragmatics Boundary Redrawn

Carston 2004

Semantics

"...semantics is a mapping between elements of linguistics form and certain kinds of cognitive information rather than between linguistic expressions and truth-conditions or real-world referents." [Semantic "representations" are indispensable, contra the classic view of formal semanticists.]

Semantic Rep		Utterance Meaning
The meaning encoded in a linguistic expression	Explication $\Longrightarrow$	Content explicated in context Pragmatic process

Pragmatics

"...explicature is an amalgam of decoded linguistic meaning and pragmatically inferred meaning"

Example Explicature

The UNITS concept must apply to something relevant to how MARY_x is doing at university.

"...the the conceptual content of an implicature is supplied wholly by pragmatic inference"

Example Implicature

MARY_x IS NOT FEELING VERY HAPPY.

Explicated Content vs. What is Said

Carston 2004 p. 636

The idea that linguistically encoded meaning is standardly highly underdetermining of the proposition explicitly expressed by an utterance distinguishes this view from Gricean conceptions of "what is said" by an utterance. In fact, neither [the meaning encoded in a linguistic expression nor the content of explicatures] meshes with the traditional saying/implicating distinction: on the one hand, the meaning encoded in linguistic expression types falls short of "what is said" and, on the other hand, the content of explicatures goes well beyond "what is said", requiring for its recovery the exercise of pragmatic principles, just as much as implicatures do. "What is said", then, falls somewhere between the two.

Contrasts with Grice/Neo-Griceans

1. Explicature and implicature construction are constructed **in parallel** (not ordered in the way they are for Grice: first literal, then **figurative** meaning) [p. 616, Wilson & Sperber]
2. Context rules. For example, quantity implicature: *Some* implies *not all* only if the context warrants it. [Experimentally testable prediction.]
3. An expectation of "truthfulness" is a side of effect of relevance (special case of worthiness)
4. Implicatures may be generated without obeying the maxim of cooperation (refusal to answer)
5. Semantic representation is not propositional (true or false); Explicated content is.
6. Observation: Semantic content must be explicatable (into a proposition).

Saturation (Explicature)

a.	Paracetamol is better.	[than what?]
b.	It's the same.	[as what?]
c.	He is too young.	[for what?]
d.	It's hot enough.	[for what?]
e.	I like Sally's shoes.	[shoes in what relation to Sally?]

Gricean/Classical view of saturation cases?

Carston p. 637

"For instance, Segal (1994: 112) and Larson & Segal (1995: chapter 1) assume there is a specific performance system for identifying the referents of indexicals and assigning them to the relevant position in logical form. This system is located between the parser (which delivers structured linguistic meaning) and what they call "a pragmatics system", which, as in Grice's conception, assesses the conversational appropriateness of "what is said" and derives implicatures. . . .

"The assumption seems to be that there is some sort of rule or procedure for matching the linguistic element with a contextual parameter and that the speaker's communicative intention need not be considered (hence that pragmatic maxims or principles are not involved in the process)."

Explicature is a hybrid process

Reder 1983

(2) a. What kind of pitcher can a catcher fill?
b. The astronomer married a star.

Gricean principles + psychology + grammatical constraints

1. Priming
2. Discourse salience
3. Explanatory parsimony (river banks sometimes have money but . . .) [Gricean]
4. Discourse salience + explanatory parsimony (*The jeep got rear-ended. The fender was bashed in.*)

Free enrichment $\neq$ saturation = slot-filling

Carston, p. 639 Recovering conceptual material without a linguistic mandate

a.	She has a brain.	[A HIGH-FU BRAIN]
b.	It's going to take time for these wounds to heal.	[CONSIDERABLE
c.	I've had a shower.	[TODAY]
d.	It's snowing.	[IN LOCATION X
e.	Mary gave John a pen and he wrote down her address.	[AND THEN] [WITH MARY's F
f.	Sam left Jane and she became very depressed. Michael's dad	[AND AS A RESU Uttered while ind who has just ente

Given disambiguation and saturation, each of these would express a proposition w/o the bracketed concepts. (Could add lexical/concept specialization here.

Pragmatic widening/narrowing

(3) a. He was upset but he wasn't upset.

b. X WAS UPSET* BUT X WASN'T UPSET**

c. I'm happy. (low grade contentment/delirious joy/ my negotiating demands have been met)

d. There is a rectangle of lawn at the back.

e. The steak is raw.

Examples requiring implicatures in embedded sentence

a. It's always the same at parties: either I get drunk and no-one will talk to me or no-one will talk to me and I get drunk.

a'. It's always the same at parties: either I get drunk and, AS A RESULT, no-one will talk to me or no-one will talk to me and, AS A RESULT, I get drunk.

b. If someone leaves a manhole uncovered and you break your leg, you can sue.

b'. If someone leaves a manhole uncovered and, AS A RESULT, you break your leg, you can sue.

c. If each side in the soccer game got three goals, then the game was a draw.

c'. If each side in the soccer game got *at least three* goals, then the game was a draw.

c''. If each side in the soccer game got *at least three goals*, AN NOT MORE THAN THREE then the game was a draw.

Examples for discussion

Examples from Clark and Clark (1979). Some are what they call **contextual expressions**.

(4)
a. Ruling in death of **Ferrari woman** (headline: the woman's will stipulated that she be buried in her Ferrari)
b. Never invite two **China trips** to the same dinner party.
c. He **enfant terrible**'d gracefully (said of a workshop participant)
d. Ruth Buzzi **houseguested** with Bill Dodge. (newspaper gossip column)
e. He **wristed** the ball over the net. (sportscaster)
f. Will you **cigarette** me? (Mae West)
g. They **timbered off** the hills in the 1880s. (Conservation article)

Neo-Griceans (ctd.)

Question: Maxim of Truthfulness: S&W claim "loose language" is a problem for Grice (squares are not square, spheres not spherical, etc.), whereas "explicature" calculation makes sense of these easily. Agree? [p. 619]

Question: How are pragmatic "narrowing" interpetations handled differently in Relevance Theory (Stereotypes, Horn Prin R)

R-based inferences

1. p and q ⇒ p preceded q (p caused q)
2. It rained and I got wet.
3. a and b VPed ⇒ a and b VPed together
4. Jerry and Susanne went to the movies → Jerry and Susanne went to the movies together
5. The boulder smashed the jeep. The door was dented.→ The door was part of the jeep (not the boulder, please!) **Bridging**

Relevance and Q (Carston 1998)

What kinds of implicatures are the following two implicatures for Neo-Griceans?

- John was reading a book ⇒ John was not reading a dictionary
- Some like eating raw liver ⇒ Not everyone likes eating raw liver

Carston argues both can be analyzed as Q and both as R

Taxonomic scalar implicature (⟨ rose, flower ⟩)

A: What did you buy your mother?
B: I bought her flowers.

Carston: No implicature, because B's utterance is already optimally relevant. Hirschberg (1985) argues there is an implicature only if A asks *Did you buy roses for your mother*?

Cancellation analyis

(5) a. Do all, or at least some, of your neighbors have pets?
b. If you or some of your neighbors have pets, you shouldn't use pesticide in your garden.

	GCI	RT
No QI	default QI + cancellation slower	no enrichment faster
QI	default QI faster	context-driven enrichment slower

Noveck and Sperber (2007) set up this experimental paradigm; Bott and Noveck (2004) report some results suggesting the default QI takes longer processing time (good for RT)

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