1. RELEVANCE THEORY, COMMUNICATION AND COGNITION
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Deirdre Wilson
deirdre.wilson@ucl.ac.uk

1. Introduction

Broad definition of pragmatics: The study of **language use** (as opposed to language structure).

Narrower delimitation of the domain of pragmatics
The study of how linguistic properties and contextual factors interact in utterance interpretation, enabling hearers to bridge the gap between **sentence meaning** and **speaker's meaning.**

"What a speaker intends to communicate is characteristically far richer than what she directly expresses; linguistic meaning radically underdetermines the message conveyed and understood. Speaker S tacitly exploits pragmatic principles to bridge this gap and counts on hearer H to invoke the same principles for the purposes of utterance interpretation." (Horn 2004: 4)

Illustrations
Speaker's explicit meaning
1a. Sue wrote *a letter*. (*disambiguation*)
1b. *The plane* is cancelled. (*reference resolution*)
1c. *No-one* came to the party. (*domain of quantifiers*)
1d. That book is *difficult*. (*interpretation of vague/incomplete expressions*)
1e. I'll bring a *bottle* to the party. (*lexical narrowing*)

Speaker's implicit meaning
2a. Jane is a *saint*. (*metaphor, irony*)
2b. *Some* philosophers are easy to read. ('not all': *scalar implicatures*)
2c. I entered the room. *Both windows* were open. ('The room had 2 windows': *bridging inference*)
2d. *Peter:* Do you want some coffee?
Mary: Coffee would keep me awake. ('Mary doesn't want coffee: *indirect answers*)'

Hearer's goal: Not just to pick some arbitrary meaning, but to identify the **speaker's meaning**.

Basic issues:
3a. What is a sentence meaning? What is a speaker's meaning?
3b. How wide is the gap between sentence meaning and speaker's meaning?
3c. What type(s) of process do hearers use to bridge the gap?
3d. What formal or cognitive models of other domains might shed light on pragmatic processes?

Four approaches:
4a. Pragmatics is an extension of **grammar**, or **semantics** (formal/code-like approaches)
4b. Pragmatics is an exercise in **general-purpose common-sense reasoning** (Fodor's approach)
4c. Pragmatics is an exercise in **'mindreading'** (attribution of beliefs/desires/intentions.) (Grice)
4d. Pragmatics involves a **dedicated inferential comprehension mechanism** (relevance theory)

Today's aim: To outline the basic principles of relevance theory and consider what answers they suggest to the questions in (3a-d).

2. Coding and inference in communication

Grice's major achievement was to propose an **inferential model** of communication**:** the first serious alternative to the classical **code model.**

Code: a set of rules or principles pairing (observable) **signals** with (unobservable) **messages** (e.g. phonetic representations of sentences with semantic representations of sentences).

Coded communication: An individual with a **message** to convey produces the associated **signal**, which is received and **decoded** by another individual with an identical copy of the code.

Examples of coded communication in animals: the bee dance; vervet monkey signals.

Central question for pragmatics: To what extent is human communication coded?

Example: Mary is angry with Peter and doesn't want to talk to him. When he speaks, she might:
5a. stare ostentatiously at the ceiling.
5b. open a newspaper and start reading it.
5c. look angrily at Peter and clamp her mouth shut.
5d. look angrily at Peter, put a finger to her lips and whisper 'Shh'.
5e. say 'I am deaf and dumb'.
5f. say 'I won't talk to you'.

Implications of these examples
6a. Some human communication can be achieved without **any** code (e.g. (5a-b).
6b. Language **is** a code which vastly increases the possibilities of human communication.
6c. What is conveyed by an utterance goes well beyond what is linguistically encoded.
6d. Utterances are only **clues** to the speaker's intended meaning, which hearers must **infer.**

Assumptions about linguistic semantics:
7a. Sentence meaning = translation of a natural-language sentence into a conceptual representation system (or 'language of thought').
7b. Sentence meanings ('logical forms') are typically fragmentary, or incomplete, with gaps or place-holders where e.g. referents of referential expressions may be inferentially supplied.
7c. Concepts (constituents of conceptual representations) are Fodorian 'atomic concepts'.
7d. Conceptual representations are the primary bearers of truth-conditional content.
7e. The borderline between **semantics and pragmatics** coincides with the borderline between **decoding and inference** (Ariel 2010).

Inference: starts from a set of **premises (e.g.** *Mary is looking ostentatiously at the ceiling; Maryhas uttered S*) and yields a set of **conclusions** that follow logically from (or are at least **warranted** by) the premises (e.g. *Mary means that P*).

Grice's proposal: utterances are actions, and we infer the intentions behind them
"one of my avowed aims is to see talking as a special case or variety of purposive, indeed rational, behaviour" (Grice 1989: 28).

Inferring the intention behind an ordinary, non-communicative action:
8a. You see me take out a key as I walk towards my front door.
8b. You infer that I intend to use the key to open the door and go into the house.

Mindreading: The interpretation of actions as governed by **mental states** (e.g. beliefs, desires, intentions)**,** using a form of **inference to the best explanation.**

Question: Is utterance interpretation analysable as a straightforward case of mindreading?

Answer: It **is** a case of mindreading, but communicative acts have special features that distinguish them from ordinary non-communicative acts.

Speaker's meaning: An **overtly expressed** intention, i.e. one that is **intended** to be recognised.

Central feature of inferential accounts of communication:
The **overt expression** and **inferential recognition** of intentions

Main differences between code and inferential models of communication:
9a. The code model deals with **pre-established/conventional** links between **signal** and **message.**
9b. The inferential model explains how a hearer can **infer** the speaker's meaning by combining linguistic clues with available contextual information.
9c. The code model **guarantees** successful communication as long as a shared code is correctly applied to an undistorted signal
9e. The inferential model doesn't **guarantee** successful comprehension even if shared inferential procedures are correctly applied to an undistorted signal (it merely yields a best bet).

3. <u>Relevance and cognition</u>

Origins of relevance theory
10a. An attempt to build on Grice's insights by developing a theoretical notion of **relevance.**
10b. An attempt to build a **cognitively plausible, empirically testable** theory of communication

Gricean pragmatics:
In inferring the speaker's meaning, the hearer assumes that utterances will meet certain **standards (**defined by the Co-Operative Principle and maxims of truthfulness, informativeness, relevance etc.**),** and rejects any interpretation that doesn't meet those standards. (Grice 1967/1989)

Grice's problems: There was a gap in his theory: he could not say what **relevance** was. Relevance theory started as an attempt to fill that gap. But unlike Grice (and most of his followers), it aims to define relevance not only for **communication** but also for **cognition**.

What sorts of things can be relevant? Any **input** to cognitive processes:
Sights, sounds, utterances, thoughts, memories, conclusions of inferences …

When is an input relevant? Some organisms have a fixed set of questions, and being relevant is a matter of answering a question. But humans don't have a fixed set of questions, and we need a more flexible account.

Relevance theory's claim:
An input is **relevant** in a context of mentally represented assumptions when it **interacts** with that context to make a worthwhile difference (a 'positive cognitive effect'), by justifiably **strengthening** an existing assumption, **revising** an existing assumption, or combining with an existing assumption to yield **true implications**.

Illustration
I'm late for an interview, and plan to take a taxi. At the taxi rank I discover *There are no taxis.* This input is relevant by **implying** that I may be late for the interview, **confirming** my suspicion that I left home too late, and making me **revise** my assumption that today is my lucky day.

Degrees of relevance (of an input to cognitive processes, in a mentally represented context)**:**
11a. Other things being equal, the greater the **positive cognitive effects** achieved by processing an input, the greater its relevance (to the individual who processes it, at that time).
11b. Other things being equal, the smaller the **processing effort** required to achieve these effects, the greater the relevance (to the individual, at the time).

Mental effort (or 'processing effort')
Affected by frequency of use, recency of use, linguistic and logical complexity, size and accessibility of contextual information, etc.

Illustration: Peter goes to the doctor, who could truly tell him any of (12a-c). Which information would be **most relevant** to him?

12a. You are ill.
12b. You have flu.
12c. It's not the case that you don't have flu.

(12b) is more relevant than (12a) because it has **more implications (**more 'cognitive effects'**).**
(12b) is more relevant than (12c) because it yields the **same effects** for **less effort.**

Cognitive principle of relevance
Human cognition (perception, memory, inference) is geared to picking out the most **relevant** inputs (sights, sounds, utterances) and processing them in the most **relevance-enhancing** way.

Common objection to the Cognitive Principle of Relevance? It is too vague to be testable.

What would falsify the Cognitive Principle?
Evidence that attention is **systematically** allocated on some other basis: e.g. to inputs which are informative without being relevant, which yield many associations but few inferential effects, which are cheap to process regardless of any expected effects, etc.

How might the Cognitive Principle of Relevance be tested? (van der Henst & Sperber 2004)

Illustration: seeing what forward inferences people make from different premises

Determinate relational problems	***Indeterminate relational problems***
A is taller than B	A is taller than B
B is taller than C	C is taller than B

When asked "What follows", 8% answered "Nothing follows" for determinate relational problems, and 45% answered "Nothing follows" for indeterminate relational problems.
Among those who did draw conclusions from the indeterminate problems, significantly more drew **single-subject** conclusions (e.g. "B is shorter than A and C") rather than **double-subject** conclusions (e.g. "A and C are taller than B"), even where this cost more effort (as here). **Reason**: single-subject conclusions are in a form more likely to yield further conclusions.

4. Relevance and communication

Consequence of the fact that human cognition is relevance-oriented
It is possible (at least to some extent) to predict and manipulate the mental states of others.

Predicting what someone will attend to, and what conclusions they will draw
13a. We notice when someone yawns, and conclude that they may be tired or bored.
13b. You notice that my glass is empty and conclude that I might like another drink.

Covertly manipulating the thoughts of others
14a. I yawn 'accidentally', intending you to notice and conclude that I am tired or bored.
14b. I 'accidentally' leave my glass near you, intending you to notice and offer me a drink.

This is **covert manipulation**, because I intend you to come to a certain conclusion without recognising that this is just what I intended.

Overtly manipulating the thoughts of others by using an 'ostensive stimulus'
15a. I yawn in an exaggerated way, intending you to realise that I *want* you to think I'm tired.
15b. I touch your arm, hold up my empty glass and say 'My glass is empty'.

Ostensive stimulus: used to attract the audience's attention and indicate a speaker's meaning
Catching someone's eye, touching them, clapping one's hands, speaking to them.

Here, I intend you to recognise that I **intended** you to come to a certain conclusion. We are in the domain of **overt communication**, used to convey a **speaker's meaning.**

Communicative Principle of Relevance:
Every act of overt communication creates a **presumption of optimal relevance**

Presumption of optimal relevance
16a. The utterance will be **at least relevant enough** to be worth the audience's attention
16b. It will be the **most relevant** one compatible with the speaker's **abilities** and **preferences.**

Illustration A: **Reference resolution**
We're waiting to board a plane, and someone says to me:

17. *The plane* is cancelled.

Question: which plane does the speaker mean?
Answer: the first interpretation to come to mind is 'the plane we're waiting for'.

Question: Would (17), on this interpretation, satisfy my presumption of optimal relevance?
Answer: Yes: (17) has lots of immediate implications on this interpretation, which make it more relevant than anything else we could have been attending to at this time. If the speaker had some other plane in mind, she could have saved me some effort by reformulating her utterance.

Case B: Lexical disambiguation:
18. John wrote a letter.

Possible interpretations of (18)
19a. John wrote a letter of the alphabet.
19b. John engaged in correspondence.

Encyclopaedic information
Assumptions stored in memory under headings like WRITE, LETTER_1, LETTER_2 etc., available for use as **contextual assumptions**

Frames, schemas or scripts
Ready-made **chunks** of encyclopaedic information about typical objects or events (e.g. WRITE A LETTER_2.), which are stored as a unit, frequently used, so highly accessible and easy to process.

Interpretation (19b) is (a) the most frequently used sense, and (b) combines with an easily accessible (stereotypical) context to (c) yield manifestly satisfactory effects. A speaker who did not intend this interpretation should have rephrased her utterance to spare the hearer wasted effort.

Relevance theory also sheds light on **why** sense (19b) is the most frequently used, hence the first to be tested. Sense (19a) would generally be irrelevant unless John was a small child or paralysed. So frequency of use in communication has feedback effects on organisation of memory.

Case C: Intended context and cognitive effects:
20a. *Peter*: Do you want some coffee?
20b. *Mary*: Coffee would keep me awake.

Possible contextual assumptions
21a. Mary doesn't want to stay awake.
21b. Mary doesn’t want anything that would keep her awake.

Possible contextual implication of (20b) in context (21):
22. Mary doesn’t want any coffee.

Alternative contextual assumptions
23a. Mary wants to stay awake.
23b. Mary wants something to keep her awake.

Alternative contextual implication of (20b) in context (23):
24. Mary wants some coffee.

If interpretation (21)-(22) is highly accessible and relevant in the expected way, interpretation (23)-(24) is ruled out by the ban on wasted processing effort; and vice versa.

General point:
If a certain hypothesis about the speaker’s meaning is **highly salient**, makes the utterance **relevant in the expected way** and makes sense of all the **linguistic and other evidence** provided (e.g. by facial expressions, body language, tone of voice, knowledge of the communicator and the context, etc.) this is the best a rational hearer can do.

Relevance-guided comprehension heuristic
25a. Follow a path of least effort in looking for cognitive effects: Test interpretive hypotheses (disambiguations, contextual assumptions, implications, etc.) in order of accessibility.
25b. Stop when you have enough cognitive effects to satisfy your expectations of relevance.

Question: Doesn't this predict that hearers will choose the interpretation that makes the utterance most relevant to them, regardless of whether the speaker could have intended it?

Answer: No. The hearer's goal is to infer the speaker's **overtly intended meaning**, and the presumption of relevance explicitly refers to the speaker's **abilities** and **preferences.**

Common objection to the Communicative Principle of Relevance
It is too vague to make testable predictions.

What would falsify the Communicative Principle of Relevance:
Evidence that communicators **systematically** orient to some other property of utterances than optimal relevance: e.g. if speakers systematically aim at **literal truthfulness** rather than optimal relevance, or produce utterances which are **informative** without being relevant, or prefer to save their own **effort** even if the result is not relevant enough to be worth processing.

Case A: Truthfulness and relevance
Grice, Horn and Levinson claim that the maxim of **literal truthfulness** ('Do not say what you believe to be false') is the most important of all the maxims. According to relevance theory, there is no such maxim, and hearers are guided only by expectations of **relevance.**

Testing the Communicative Principle (van der Henst, Carles & Sperber 2002)

Experiment 1: experimenters asked strangers in the street "Do you have the time, please?" Grice predicts that speakers should tell the exact time; relevance theory predicts that speakers should give rounded answers (which are easier to process) if nothing relevant follows from exact answer

Result: 97% of those with analogue watches and 57% with digital watches gave rounded answers.

Experiment 2: experimenters asked "Do you have the time, please? My watch has stopped." Here, some crucial implications follow from the exact answer.

Result: only 49% gave rounded answers when a precise answer would be more relevant.

Experiment 3: experimenters asked "Do you have the time, please. I have an appointment at 12.00", at different intervals in the half hour leading up to the imaginary appointment.

Result: People tended to give more strictly accurate answers as the time of the imaginary appointment approached (when some crucial implications might be lost by rounding).

Case B: Co-operation and relevance
Grice (and most neo-Griceans) treat communication as essentially **co-operative:** speakers are expected to give the 'required information' if they have it. According to relevance theory, speakers are not expected to give information they are **unwilling or unable** to give.

26a. *Student to teacher:* What questions are we having in the exam?
26b. *Teacher:* Something on the topics we've covered this term.

Gricean interpretation: The speaker is **unable** to be more precise.
Relevance theory: The speaker is **unable or unwilling** to be more precise.

5. <u>Some comparisons with Grice</u>

(a) The source of pragmatic principles
The Communicative Principle of Relevance is not a Gricean maxim. It can't be violated, and doesn't have to be learned: it follows from basic assumptions about human cognition. Speakers can't help creating expectations of relevance. (Of course, the expectations may be disappointed.)

(b) Vagueness of theoretical terms
Grice didn't define relevance. Relevance theory does. It also clarifies what Grice might have meant by 'brevity', 'perspicuity' etc., and provides a relevance-guided comprehension heuristic.

(c) Is co-operation (in Grice's sense) necessary for communication?
Grice claims that comprehension (at least of implicatures) depends on a conversation having 'an accepted purpose or direction' which goes beyond simply understanding and being understood. Relevance theory denies this (although hearers have to co-operate by paying attention, etc.).

(d) Are speakers really expected to 'be as informative as is required'?
Grice suggests that speakers should be 'as informative as is required', even if they don't have the information to give, or if it would go against their interests to give it. Relevance theory claims that speakers are not expected to give required information if they are **unable** or **unwilling** to do so.

(e) Is the appeal to deliberate, blatant maxim violation really necessary?
No. It's main role for Grice was in analysing figurative utterances. I'll suggest alternative accounts in Lecture 4..

(f) What is the scope of the Communicative Principle of Relevance?
Grice tried to distinguish **meaning** from **showing.** Relevance theory denies that such a distinction is possible, and treats the Communicative Principle as applying to both meaning and showing.

(g) What happened to the maxims of Quantity, Quality and Manner? What is worth saving of them follows from the notion of optimal relevance. (We'll discuss Quality in Lecture 3)

6. <u>Bach's objections</u> (Bach 2010)

The relevance-guided comprehension heuristic is no more than common sense:
"Calling this a 'procedure' is, I think, a bit of an exaggeration. What it amounts to, really, is to consider hypotheses about what the speaker means in the order in which they occur to you – how else? – and to stop as soon as a sufficiently plausible one comes to mind." (Bach 2010: 130)

Bach's objections in 'Postscript on relevance theory' (Bach 2010: 135-6)
"I have tried to compare and contrast impliciture and explicature without getting caught up in a debate on the merits of relevance theory. However, it may be of interest to mention what I regard as its most serious difficulties, most of which are fairly well known. Never mind relevance theorists' highly idiosyncratic and misleading use of term "relevance." As they use it, they don't mean relevance in the ordinary sense of the

term but, rather, the ratio of quantity of cognitive effects to degree of processing effort. Here are the more serious problems.

1. The most obvious problem is that of how to quantify and to measure degrees of cognitive effects and degrees of processing effort. The formulations I've seen of relevance-theoretic concepts and principles are too vague to be of much help in this regard.

2. Then there is the uniqueness problem: since relevance is a function of two variables (however they are measured), in particular a ratio, there is no unique way to maximize relevance or, indeed, to achieve any specific degree of it. Any increase or decrease in processing effort can be offset by a corresponding increase or decrease in cognitive effects, and vice versa. So there is no unique answer to the question of what is the most relevant interpretation of a given utterance.

3. Accordingly, it's not clear what predictive or explanatory value can be attributed to the Cognitive and Communicative Principles of Relevance and to the Principle of Optimal Relevance. Moreover, it would seem that these principles falsely predict that trivial, stupid, boring, or repetitious utterances are much harder to understand than they really are.

4. Then there is the problem of individual differences. Since a given utterance is likely to have different cognitive effects on and require different degrees of cognitive effort by different people, it is not clear that relevance theory can explain how a speaker can successfully communicate with different people at the same time."

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