Pragmatic strengthening

Prerna Nadathur, Ling130b, Spring 2015

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1 Quantifier relationships

We've seen the role that quantifiers (or other function words) can play in determining the inferential relationships between sentences containing content words that are hypernyms or hyponyms of each other.

(1) a. buy *a* car $\sqsubseteq$ buy *a* vehicle
     b. buy *no* car $\sqsupseteq$ buy *no* vehicle

Although it doesn't make sense to talk about quantifiers being hypernyms or hyponyms of each other, there are inferential relationships that hold between various function words.

What relationships hold between the following pairs of sentences?

(2) a. John bought every car.
     b. John bought a car.
     c. *Relationship:*
(3) a. John bought some car.
     b. John bought a car.
     c. *Relationship:*
(4) a. John bought every car.
     b. John bought many cars.
     c. *Relationship:*
(5) a. John bought no car.
     b. John bought few cars.
     c. *Relationship:*

Question: What makes these relationships hold? How would you characterize these inferential patterns?

Consider the following short dialogues:

(6)   a. A: How did the students do on the exam?
          B: Some of them passed.
      b. *Inference(s):*

(7)   a. A: Who ate the cookies?
          B: I ate some of them.
      b. *Inference(s):*

(8)   a. A: How did the race end?
          B: Few people finished.
      b. *Inference(s):*

(9)   a. A: We should make the driving test harder next time.
          B: Why?
          A: Many people said it was too easy.
      b. *Inference(s):*

What do you notice about the inferences you are led to from these dialogues as compared to the relationships between quantifiers that we discovered in (2)-(5)?

What's going on here?
We're using information about the meanings of these words *relative to one another* to infer something from the choice of one over the other.

The logic goes something like this:

(10)   a. A: How did the students do on the exam?
           B: Some of them passed.
       b. *Some* in this case is compatible with two different scenarios: one in which all of the students passed, and one in which some but not all of the students passed.
       c. How can we resolve which one of the two it is?
       d. If all of the students had passed, there would be no reason for B to say *some*: *all* only gives us one possible scenario, removing ambiguity – so it would be a stronger, more informative thing to say (assuming we like to be informative)
       e. Since B didn't say *all*, we can rule out the scenario in which *all* holds
       f. Thus, we go from B's use of *some* to the (pragmatically) strengthened meaning "Some but not all of the students passed."

2

What's different about these kinds of inferences and the ones in (2)-(5)? (*Hint:* Suppose B hasn't finished marking the exams yet)

The entailment relationships we noted between the quantifiers in (2)-(5) put them into ordered relationships based on strength or informativity. These orderings, based on the lexical content of the words in question, allow us to make robust inferences in certain contexts.

2   Scalar implicature

Inferences of the type we drew in (6)-(10) are known as **scalar implicature**. The strength-based ordering we have between words like *all* and *some* allow us to infer from the use of the weaker item (*some*) that the speaker intends the negation of the stronger item (*all*) – thus, e.g. allowing us to strengthen the meaning of *some* to *some but not all*. There are two important aspects to a scalar inference:

a. The reasoning outlined in (10) goes ahead on the assumption that the speaker wants to be maximally informative/unambiguous

b. A strict strength-based ordering between two alternative lexical choices allows us to **strengthen** the use of the weaker one to exclude the meaning of the stronger one.

Crucially, as we noted above, these aren't entailments – they're sensible inferences in some contexts, but additional information can cause us not to draw them. Scalar implicatures instead belong to the arena of *pragmatic inferences*.

More broadly, scalar inferences belong to the class of **Gricean implicatures** (which some of you may be familiar with). *Implicatures* are a class of inference that are drawn on the basis of (a) lexical content, (b) shared context between interlocutors and (c) a set of assumptions about *cooperative behavior* in communication.

(11)   **The cooperative principle (Grice 1975):**
       Make your contribution as is required, when it is required, by the conversation in which you are engaged.

By itself, this isn't too helpful, but the idea is that we make our conversational contributions in such a way as to drive forward the interaction in which we are engaged, in accordance with our understanding of shared goals. So, in an exchange like the one in (10), since A has asked B for information about how the students did on the exam, it makes sense to assume that B isn't needlessly being ambiguous – rather, he is cooperating with the conversational goal by offering as much information as he can.

Grice breaks down the cooperative principle into a number of sub-maxims, all of which generate interesting inferential consequences. These aren't conversational rules in the sense of being "inviolable" – rather, apparent violations of cooperative behavior can supplement strictly-encoded meaning:

(12) **Gricean maxims:**

    a. **Quality:** Contribute only what you know to be true. Do not say false things, or things for which you lack evidence.

    b. **Quantity:** Make your contribution as informative as is required. Do not say more than is required.

    c. **Relevance:** Make your contribution relevant

    d. **Manner:** Avoid obscurity and ambiguity; be brief and orderly.

A quick example, using **Relevance:**

(13)   a. A: Do you want to go out for lunch today?
               B: I have a dentist's appointment.

    b. At face value, B's response doesn't have anything to do with having lunch. But if we assume B is attempting to be relevant, we can draw the conclusion that the dentist appointment may somehow interfere with having lunch (maybe B isn't supposed to eat for a couple of hours before the appointment, or maybe the appointment is at lunchtime). From this, we can draw the conclusion that B is saying no to the question of lunch, because of this other commitment.

The maxim that generates scalar implicatures is **Quantity**, although other facets of cooperative behavior are also invoked. Let's see how it applies to a case like (10):

(14)   a. A: How did the students do on the exam?
               B: Some of them passed.

    b. B has said "Some of the students passed."

    c. B could have said "All of the students passed," which would be strictly stronger than his actual utterance, in that it informs us directly about the status of every student, and thus might be a sensible contribution (since A asked about the students in general)

    d. "Some of the students passed" and "All of the students passed" are basically equal in length/complexity, so it couldn't have been a desire for brevity that favoured "some"

    e. If B had said "Some of the students passed" while knowing that all of them did, he would be violating the Quantity maxim – he wouldn't have made his contribution as informative as is required.

    f. Therefore, it is likely that B intends A to infer that B knows that not all of the students passed (or, at least does not have sufficient information to claim that all of the students passed).

Question: Are maxims other than Quantity playing a role here? Where, and how?

The reasoning in (14) is essentially the same as in (10), but it allows us to provide a more general framework for what a **scalar implicature** is. One, it involves (at least)

two alternative utterances, which are ordered in a strength relationship (in this case via entailment) – and two, it involves reasoning from the use of the weaker alternative to the negation of the stronger. Levinson (1983) provides the following framework:

(15)   a. S has said p

        b. There is an available expression q, which is more informative than p, which might be desirable as a contribution to the current purposes of the exchange. (Relevance)

        c. q is of roughly equal brevity to p, so S did not say p rather than q simply to be brief. (Manner)

        d. Since if S knew that q holds but still uttered p he would be in breach of the injunction to make his contribution as informative as is required, S must mean the addressee to infer that S knows that q is not the case (or at least that he does not know that q is the case).

3   Scalar implicatures with content words

One easy way for lexical items to be ordered by strength is via entailment. Orderings like the ones below are commonly referred to as **Horn scales** (first defined in Horn 1972). The item on the right in each pair is stronger than the one on the left – in particular, the right elements entail the left ones. This allows us to reason from the use of the left elements to the speaker's intended negation of the right element.

(16)   Some Horn scales:

        a. ⟨ some, all ⟩
           some ⤳ not all

        b. ⟨ few, none ⟩
           few ⤳ not none

        c. ⟨ many, all ⟩
           many ⤳ not all

We also have entailment relationships (via hypernymy and hyponymy) for content words. How might these figure into generating scalar implicatures?

(17)   A: Did Sally finally manage to buy a car?
        B: Well, she bought a vehicle.

How would you describe the inference generated here along the lines of (14)?

In addition to nouns, we can get these kind of relationships – and therefore scalar inferences – with verbs and adjectives as well:

(18) A: John was worried he was going to bomb the exam.
     B: Well, he failed.

(19) A: How did you like Jessica's experimental muffins?
     B: They were alright.

(20) A: Do you think Bond will be able to complete the mission?
     B: It's going to be very difficult.

What items are being contrasted here? Can you think of scenarios in which you wouldn't necessarily generate the scalar inference? Why?

Here's a table of a few different scales (see also van Tiel et al 2014). What others can you think of?

Category	Examples	
Adjectives	⟨ intelligent, brilliant ⟩	⟨ difficult, impossible ⟩
Adverbs	⟨ sometimes, always ⟩	⟨ possibly, necessarily ⟩
Determiners	⟨ some, all ⟩	⟨ few, none ⟩
Nouns	⟨ mammal, dog ⟩	⟨ vehicle, car ⟩
Verbs	⟨ might, must ⟩	⟨ pass, ace ⟩

4   Informativity orderings

Entailment is one way we can measure strength via informativity, but it's not the only way. What scalar relationships are invoked in the following exchanges?

(21) a. A: Who was the blonde I saw you at the movies with last week?
         B: Oh, her? She's just a friend.
      b. *Inference:*
      c. *Scale:*

(22) a. [from *10 Things I Hate About You*]
          Bianca: There's a difference between like and love. Because, I like my Sketchers, but I love my Prada backpack.
          Chastity: But I love my Sketchers.
          Bianca: That's because you don't have a Prada backpack.
      b. *Inference:*
      c. *Scale:*

(23) a. A: [at a fancy meal] For the main course, you may have fish or meat.
      b. *Inference:*
      c. *Scale:*

Orderings that give rise to scalar implicatures can be highly context-sensitive:

(24) Suppose movie tickets cost $10, and A and B are standing outside the movie theater:
      A: Can you buy your own ticket?
      B: I have 8 dollars.

(25) Suppose instead tickets cost $8:
      A: Can you buy your own ticket?
      B: I have 8 dollars.

(26) Tickets still cost $8, but the machine only takes exact change:
      A: Can you buy your own ticket?
      B: I have a ten.

   For the following examples, try to identify the scale that is being set up. What other lexical items might be involved in this scale? What contexts might block the scalar implicature?

(27) A: Are Chris and Frances married?
      B: They're engaged./They're living together.

(28) A: When you lived in California, did you belong to a wine club?
      B: My sister did.

(29) A: Are you on vacation?
     B: I was.

A big part of the reasoning involved with scales has to do with what might be a sensible or relevant alternative utterance, given the goals of the conversation. One way in which scales can be context-dependent is by invoking different kinds of alternatives. For example, *wicked* might be a weaker alternative to *evil* if we're talking about morality, but if you're from Maine, it might be a weaker alternative to *unbelievable* (in a good sense).

Similarly, *seeing other people* might normally be a way of breaking things off with someone gently, but here it suggests something different:

(30) A: I saw David out with a woman last night, are he and his wife separated?
     B: They're seeing other people.

Can you come up with some other examples that vary in context?

References

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