Manner implicatures and how to spot them

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Abstract

The goal of this paper is to help develop a general picture of conversational implicature (Grice, 1975) by looking beyond scalar implicature to see how the phenomenon behaves in a general sense. I focus on non-scalar Quantity implicatures and Manner implicatures. I review canonical examples of Manner implicature, as well as a more recent, productive one involving gradable adjective antonym pairs (Rett, 2015). Based on these data, I argue that Manner implicatures—and conversational implicatures generally—are distinguishable primarily by their calculability; their reinforceability; their discourse sensitivity (to the Question Under Discussion; Roberts, 1990; van Kuppevelt, 1995; Simons et al., 2011); and their embeddability (under negation, propositional attitude verbs, quantifiers, etc.). I use these data to draw conclusions about the usefulness of implicature-specific operators and about ways to compositionally represent conversational implicatures.

Keywords

1 Introduction

Grice (1975) introduced conversational implicature to argue that some aspects of meaning—despite not being explicitly, compositionally encoded—can nevertheless be systematized and explained. His implicatures arise as a product of the literal content of the utterance ("what is said") and the context in which it is used, based on the hearer's assumptions about the speaker's conversational goals (and the speaker's manipulation of those assumptions). In particular, Grice argued, in any typical conversation, the hearer assumes the Cooperative Principle (1):

(1)   **The Cooperative Principle**   (Grice, 1975)
      Make your contribution such as it is required, at the stage at which it occurs, by the accepted purpose or direction of the talk exchange in which you are engaged.

Grice delineated four subspecies of conversational implicature by dividing the Cooperative Principle into distinct submaxims (2):

(2)   **Grice's submaxims**
      1. **Quantity:** Make your contribution as informative as required, but not more;
      2. **Quality:** Do not say false things or things for which you don't have adequate evidence;
      3. **Relation:** Be relevant;
      4. **Manner:** Avoid obscurity; avoid ambiguity; be brief; be orderly

He exemplified each, and explained how these conversational implicatures can and do arise in predictable ways in particular contexts.

Of these four types of conversational implicatures, Quantity implicature—in particular scalar implicatures, a subtype—have been given an overwhelmingly disproportionate amount of attention in the formal semantics community (see Geurts, 2011, and references therein). (Another type, Relevance implicature, has had its own heyday in Relevance Theory; Sperber and Wilson, 1995.)

While scalar implicature is a transparently interesting phenomenon, its overrepresentation in the literature gives the impression that it is canonical (or even that there is a canonical type of conversational implicature). The goal of this paper is to push back against that impression by examining in modest depth another type of implicature, Manner. I argue that Manner implicature has a great deal in common with scalar implicature (and non-scalar Quantity implicature), but the subtle differences are instructive in a number of important ways: they help provide a picture of the diagnostics of conversational implicature broadly speaking (see also Hirschberg, 1991). This in turn helps inform the debate about the nature of conversational implicature (e.g. Lepore and Stone, 2013) and the debate about how to compositionally account for their embeddability (e.g. Chierchia, Fox, and Spector, 2009).

There are several diagnostics that all conversational implicatures have in common: they are calculable; reinforceable; discourse-sensitive; and embeddable. This last property raises a clear challenge to accounts that rely on a null exhaustivity operator—synonymous with *only*—to account for embedded scalar implicature (see also Potts et al., 2015). The phenomenon is in fact more

general, and extending these accounts would require null operators for each submaxim, not all of which (e.g. Manner) has a clear synonymous counterpart in overt natural language.

The paper will also demonstrate how the robust linguistic concept of markedness can offer substantial insight into the phenomenon of Manner implicature (see also McCawley, 1978; Horn, 1991), and provide more substantial, compelling exemplars of the phenomenon than Grice had originally offered. It is my hope that these tools will enable others in the field to extend the reach of Manner implicature in a principled way to other apparent semantic effects of markedness. Beyond helping to explain those particular phenomena, we can learn a great deal more about the behavior of conversational implicature, and about the semantics/pragmatics interface in general.

2   Grice's diagnostics

Grice's original presentation of conversational implicature offered several diagnostics for them, although he specified that some of them do not extend to Manner implicature. See Blome-Tillmann (2013) for a more comprehensive overview.

2.1   *Calculability*
Foremost, conversational implicature—especially in contrast to conventional implicature (Potts, 2005)—is **calculable**: it arises in context as the result of the speaker's reasoning about the utterance and the context of utterance. An example is in (3).

(3)   A: What did you think of the presentation?
       B: The handout was well-formatted.
          B's implicature: I did not like the presentation.

B's response to A's question is thought to carry a conversational implicature. While its literal content is consistent with the speaker (B) liking the presentation, the hearer (A) calculates the implicature that B did not like the presentation. A reasons that B is following the conversational maxims (and that B is assuming that A is assuming that she is following them). A observes that B is flouting the Maxim of Quantity: her answer isn't as informative as it could be, because one's enjoyment of a presentation typically depends on significantly more than handout formatting. This comment must thus be the most informative one B could make; A concludes, as a result, that B must not like

the presentation (but can't say so for reasons of politeness, which seems to be another plausible type of maxim; Lakoff, 1973; Brown and Levinson, 1978).[1]

The claim that conversational implicatures are calculable in this way sets them apart from conventional implicature. (A canonical example of conventional implicature is the oppositional meaning of *but* that distinguishes it from the truth-conditionally equivalent *and*; Potts, 2005.) Conventional and conversational implicature differ fundamentally in that the former is lexicalized (or grammaticized) and the latter is not. This corresponds to the observation that conventional implicatures are detachable (see §2.3), while conversational implicatures are not. The claim that conversational implicatures are calculable also characterizes them as arising from general cognitive principles, as opposed to convention. This predicts that the former will be to a large extent universal, while conventional implicature will not be (see Lepore and Stone, 2013, for extensive discussion).

Finally, this property entails that we can type conversational implicature (into Quantity, Manner, etc.) based on the form, content, and context of utterance. The oppositional difference between *but* and *and* may or may not be lexically encoded in other languages; it could very well have been that *and* (but not *but*) carries the oppositional meaning; and it could very well have been that *but* contrasts with *and* in some other way.

2.2   *Cancellability*

An implicature of a word or phrase is cancellable iff it can arise from an utterance in a particular context, but it need not. Grice's formulation of the property of cancellability is as follows (1975:44): "[A] putative conversational implicature that *p* is explicitly cancellable if, to the form of words the utterance of which putatively implicates that *p*, it is admissible to add *but not p*, or *I do not mean to imply that p*, and it is contextually cancellable if one can find situations in which the utterance of the form of words would simply not carry the implicature."

A standard diagnostic of cancellability is the *in fact* continuation in (4).

(4)   Ann ate some of the pizza ... in fact, she ate all of it.

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1   This perspective on natural language meaning crucially relies on our ability to model interlocutors' reasoning about each other's epistemic states and cooperativity. The puzzle of how to include such reasoning has its foundations in the mutual knowledge paradox (Clark and Marshall, 1981) and has been recently formalized in game-theoretic pragmatic approaches like Rational Speech Act theory (Frank and Goodman, 2012).

In (4), the potential implicature is a scalar implicature, associated with the use of the scalar term *some*, which is semantically weak or less informative (in upward-entailing contexts like this one) relative to its counterpart *all*. The assumption is that its use—in comparison to that of *all*—can trigger a Quantity implicature. The hearer's reasoning would proceed as follows: I assume the speaker is providing the strongest information she can; she didn't use the stronger *all* so I can assume she doesn't think the corresponding statement *Ann ate all of the pizza* is true; I assume the speaker is an authority on the topic; I therefore infer that the stronger statement *Ann ate all of the pizza* is false. The felicity of the *in fact* continuation in (4)—at least in this out-of-the-blue context—indicates that the scalar implicature (that Ann didn't eat all of the pizza) is cancellable.

Importantly, cancellability doesn't even hold of all Quantity implicatures. I will use the terms 'scalar' and 'non-scalar' to differentiate between subtypes of Quantity implicatures. Both types have in common that they involve two terms with asymmetric entailment patters, but they differ in that the former are associated with a linearly ordered scale—even *ad hoc* ones, like that associated with the phrase *assistant professor* (Hirschberg, 1991)—while the latter are not.[2]

Grice (1975) provided two examples of non-scalar Quantity implicatures (see also Geurts, 2011): those involving indefinites like *a woman* (5); and those involving tautologies, like (6).

(5)   John met a woman at the bar last night.
      implicates John did not meet his mother/wife/girlfriend at the bar last night.

(6)   War is war.
      implicates The canonical properties of war are unavoidable.

Both of the utterances carry a Quantity implicature. In (5) the implicature is triggered by the use of the indefinite *a woman*. As Grice's story goes, the hearer

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2   A diagnostic for the difference involves the acceptability and interpretation of an overt *only* before the putatively scalar item, in concordance with treatments of scalar implicature that involve a covert *only*. It's acceptable to say *Jane ate only four cookies* or *Jane is only an assistant professor*, and doing so makes explicit the scalar implicature associated with these uses. But—foreshadowing the discussion of (5) and (6)—the use of *only* in *John met only a woman at the bar last night* doesn't target the informativity difference associated with the non-scalar Quantity implicature 'John didn't meet his mother/wife/girlfriend at the bar last night,' and tautologies like (6) are unacceptable with *only,* cf. the scalar-implicature treatment of tautologies in Ward and Hirschberg (1991).

reasons that this DP is less informative than it could be (in comparison to e.g. *his wife*); she also reasons that the speaker is an authority on the topic (Russell, 2006), and is attempting to be as cooperative as possible. The hearer can therefore reasonably infer that John did not meet his e.g. wife last night at the bar; this is a Quantity implicature because it arises as the result of the speaker's utterance being relatively uninformative.

The utterance in (6) is uninformative in every context: it is tautological. Grice argued that tautologies, as a consequence, all carry Quantity implicatures (and, further, that these Quantity implicatures is the only content they are associated with). Importantly, because they are conversational implicatures, the implicatures associated with tautologies are calculable from what the speaker has said. This allows the hearer to reason about the speaker's intended meaning from her choice of words, resulting in the correct prediction that the tautology *War is war* carries a calculably distinct implicature from the tautology *Boys will be boys*.[3]

Importantly, these non-scalar Quantity implicatures do not seem to be cancellable, in the standard sense; this is illustrated by (7) (see also Hirschberg, 1991).

(7)   a. John met a woman at the bar last night.... #in fact, he met his wife.
      b. War is war ... #in fact, there is nothing unusual or stereotypical about war.

So while scalar implicatures are canonically and strongly associated with the property of cancellability, the universality of this property is unclear. I will revisit the issue of cancellability in §3.2, where we will see that all conversational implicature is cancellable, depending on the relationship between the implicature and the Question Under Discussion.

2.3   *Non-detachability*

Non-detachability is another of Grice's characteristics of conversational implicature, and another way of contrasting them with conventional implicature. Assuming again that *and* and *but* are truth-conditionally equivalent—that they are associated with the same truth table or Boolean function—then conven-

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3   A reviewer worries that the sentence *Boys will be boys* is not a tautology, because it is not necessarily true in light of its future modality. It's true that a sentence like *Jane will behave like Jane tonight* is not necessarily true, but the use of bare plurals in the sentence *Boys will be boys* strongly suggests a generic interpretation—of the subject and the predicate—and the sentence is a tautology under this generic or definitional reading.

tional implicatures are detachable. The oppositional implicature associated with *but* in the sentence *Jane is smart but funny* isn't present in the truth-conditionally equivalent sentence *Jane is smart and funny*. The implicature associated with *but* is therefore detachable from its truth-conditional content.

Grice claimed that this is in contrast with conversational implicature: "[I]nsofar as the manner of expression plays no role in the calculation, it will not be possible to find another way of saying the same thing, which simply lacks the implicature in question" (p:58). First, this means that the property of non-detachability, in Grice's original estimation, doesn't extend to Manner implicatures. This exception is explicitly made in the quote above: *insofar as the manner of expression plays no role in the calculation*. Manner implicatures are, by definition, implicatures whose manner of expression plays a role in the calculation of the implicature. I'll discuss this more in §4; for now, it is sufficient to point out that non-detachability is not a necessary or sufficient condition for conversational implicature.

Second, it means that Grice expects conversational implicature, in a general sense, to arise from an utterance with a particular meaning in a particular context, regardless of the precise choice of wording. One example is in (8) (from Blome-Tillmann, 2013).

(8) A: Are you going to the party tonight?
     B: I don't like parties.   *implicates* B won't go to the party
     B′:   I'm not into parties.   *implicates* B won't go to the party

But the property of non-detachability is complicated in light of the observation that scalar implicatures do not arise in downward-entailing contexts (Ladusaw, 1979). A downward-entailing context is one that supports inferences from sets to subsets. A matrix sentence without any sentential operator or quantifier, like (9), is (generally) an upward-entailing environment; it is an environment that supports inference from sets (here, the extension of *pepperoni pizza*) to super-sets (here, the extension of *pizza*).

(9)   The students ate pepperoni pizza. → The students ate pizza.

A downward-entailing context, exemplified in (10), does the opposite.

(10) The students didn't eat pizza. → The students didn't eat pepperoni pizza.

In (10), the downward-entailing operator that conditions this change is negation; other downward-entailing operators include quantifiers and adverbs.

These are contexts in which scalar implicatures are reliably absent, because they are contexts in which the weak scalar element (in (4), *some*) is no longer entailed by the strong scalar element (*all*). As a result, the negated sentence in (11) doesn't carry a scalar implicature; it doesn't implicate that Ann didn't eat not all of the pizza, i.e. that she ate all of the pizza.

(11) Ann didn't eat some of the pizza.

There is a sense, therefore, in which scalar implicatures **are** detachable: they come and go, depending on the context of utterance. And it's not clear the extent to which non-detachability extends to other, non-scalar Quantity implicatures. We assume that tautologies, for instance, are all synonymous: they all denote the set of all possible worlds, or some theoretical equivalent. But the conversational implicatures associated with each of the tautologies in (12) are quite different:

(12) a. War is war.
     b. Five bucks is five bucks.

The tautology in (12a) is a commentary on the inevitable costs and tragedies of war; (12b) most naturally amounts to a claim that five dollars isn't a substantial cost to pay. So while each of these tautologies carries a conversational implicature—as Grice predicts—the implicature is so different from one example to the next that it's hard to think of them as the same implicature. Does this mean non-scalar Quantity implicature is not non-detachable? Do tautologies count as an instance in which the manner of expression plays no role in the calculation of implicature? Because of these confounds, I will avoid non-detachability as a property of conversational implicature.

Thus, even staying within the confines of Quantity implicature, we seem to be able to find only one necessary property of conversational implicature: calculability. The big question remains: if these are the known diagnostics for scalar implicature, but we know that two (i.e. detachability and cancellability) don't extend to other implicatures, what are the diagnostics for Manner implicature? Or, what are the diagnostics for conversational implicature more generally? There has been relatively little work done on these questions, especially concerning Manner implicature. I will argue in §4 that this is due in part to the fact that canonical exemplars of non-scalar types of implicature—especially Manner implicature—have been less than ideal. But first, in §3, I review some additional diagnostics for conversational implicature, and conclude with a list of fairly broadly applicable ones.

3   Some additional diagnostics

In addition to being calculable, all conversational implicatures are reinforce-able (in contrast to presuppositions); discourse-sensitive; and embeddable.

3.1   *Reinforceability*

Soon after Grice's work, two nearly identical tests were proposed to differenti-ate conversational implicature from presupposition. The overarching general-ization is that reiterating the content of a presupposition is redundant—and therefore leads to infelicity—while reiterating the content of a conversational implicature is not and does not. Horn (1972) referred to his test as "Redundancy of Conjunction"; Sadock (1978) referred to his as "Reinforceability".

(13)   **Redundancy of Conjunction** (Horn, 1972):
        If p implicates q, 'p & q' is felicitous. But if p presupposes q, 'p & q' is infe-licitous.

(14)   a.   #John is a bachelor and/but he is a man.
        b.   Some people left early ?and/but not everyone did.

Sadock's version of the test (**Reinforceability**) incorporates disjunction; the disjoining of a property with a property it presupposes is known as Hurford's Constraint (15a); conversational implicatures seem immune to this restriction (15b) (although see Meyer, 2014, for a treatment of Hurtford's Constraint using conversational implicature).

(15)   a.   #Jane is a woman or she is a queen.
        b.   Jane bought A or B or both.

We now have two necessary properties for conversational implicature; together they differentiate them from conventional implicature and presupposition (see also Potts, 2012). A typology is illustrated in Figure 1.

3.2   *Variation with discourse status*

At-issue content is content that addresses the Question Under Discussion (QUD, Roberts, 1990) and doesn't project, i.e. is preserved under negation or other truth-conditional operators (Simons et al., 2011). In contrast, not-at-issue content does not address the QUD, and does project. An important observa-tion about conversational implicature—dating back to van Kuppevelt (1995, 1996)—is that, if an implicature (even a scalar one) is at issue, it isn't can-

NON-ASSERTORIC CONTENT

PRESUPPOSITIONS   IMPLICATURES
non-reinforceable

CONVENTIONAL   CONVERSATIONAL
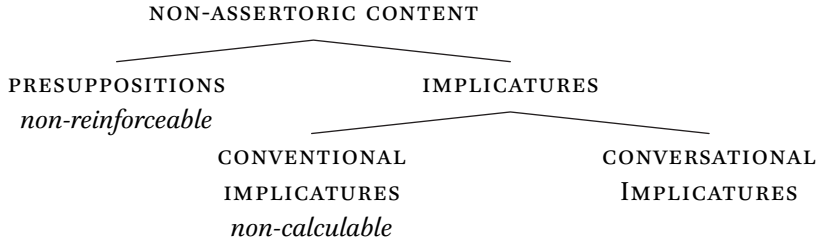IMPLICATURES   IMPLICATURES
non-calculable

FIGURE 1   A typology of non-assertoric content

cellable. In other words, the at-issue status of conversational implicatures varies with their discourse status.

This contrast is illustrated in (16)–(17) for the scalar implicature from *some* to 'not all'. In (16), the QUD (A's question) is about exam-takers, rendering the implicature (about the amount of exams) not-at-issue and thereby cancellable.

(16) A: Who passed some exams?
       B: John (passed some exams). In fact, he passed all of them.

In contrast, the QUD in (17) is about the amount of exams, to which the scalar implicature is directly relevant (or 'at issue'). Consequently, it is not cancellable, but is rather part of the asserted, at-issue content.

(17) A: How many exams did John pass?
       B: (John passed) Some. #In fact, he passed all of them.

The inability of conversational implicatures to be cancelled when they address the QUD is in line with what we know about at-issue content; it cannot be directly denied (i.e. targeted by negation in discourse), and it can be used informatively (i.e. to narrow the Common Ground).

This diagnostic illustrates two things: first, as we saw in §2.2, not all conversational implicatures are cancellable. But, more importantly, we can predict when a conversational implicature is cancellable: when it is not at issue.

There is an arguably related context that ensures a scalar implicature is cancellable: one in which the word or phrase triggering the implicature has an 'anaphoric link' (van der Sandt, 1992); in other words, if the phrase was introduced into the conversation before the speaker of the relevant utterance used it. This is illustrated in (19) for the indefinite *a woman* (from (5)).

(18) A: Who did John meet at the bar last night?
       B: He met a woman (at the bar), #in fact, he met his wife.

(19) A: Did John meet a woman at the bar last night?
      B: Yes (he met a woman), in fact he met his wife.

The narrow generalization that describes the contrast between (18) and (19) is
that non-scalar Quantity implicatures can be cancelled if the phrase they are
associated with has an anaphoric link, or if they directly answer the Question
Under Discussion. It also shows that they can be detached in such a condition.
Interestingly, this doesn't apply to all non-scalar Quantity implicatures; those
associated with tautologies like *War is war* cannot be cancelled.

(20) A: But war is war, don't you think?
      B: Yes (war is war), #in fact, there is nothing unusual or stereotypical
         about war.

But the broader generalization to be drawn from these data is that phrases
that are typically associated with conversational implicatures—scalar items,
under-informative descriptions, and, as we'll see in the next section, marked
phrases—do not carry these implicatures when the speaker has a conversa-
tional excuse for choosing them. The conversational implicatures these phrases
typically carry critically depend on the speaker's choice to use them. In con-
versations in which this choice is made for the speaker, the implicatures are
cancellable.

 I will present one final property of conversational implicatures before turn-
ing to discuss Manner implicatures more broadly. Like the property of vari-
ability with discourse status, it isn't a sufficient condition for conversational
implicatures, but it appears to be a necessary one.

3.3   *Embeddability*
Infamously, scalar implicatures can be interpreted locally (Chierchia, 2004;
Russell, 2006; Potts et al., 2015). This is illustrated in (21), for the scalar implica-
ture that *some* implies 'not all' and the embedding verb *believe*.

(21) Jane believes [CP that some students are waiting for her.]
      implicates Jane believes that not every student is waiting for her.

The standard generalization is that, in this context, the scalar implicature can
(and must) be interpreted locally; i.e. in the embedded proposition, as part
of the object of Jane's beliefs. This provides a prima-facie problem for the
standard, out-of-the-box Gricean perspective on conversational implicature as
something that is calculated at the level of the utterance (though see Russell,
2006; Simons, 2010, 2017, for some neo-Gricean rebuttals).

Attitude reports aren't the only context in which conversational implicatures need to be incorporated into the sub-utterance truth conditions: implicatures seem to embed in the antecedents of conditionals (rather than project, as presuppositions do); and seem to feed into the arguments of quantifiers, as exemplified in (22) and (23) for the scalar implicature 'and not both,' commonly associated with the use of the disjunction *or* (in contrast to the conjunction *and*).

(22) If you are registered for Phonology or Semantics, get in Line A. (If you are registered for both, get in Line B.)

(23) Exactly three students registered for Phonology or Semantics. (The others took both.)

In (22), the antecedent of the conditional intuitively describes (or, can describe) a situation in which the hearer is registered for either Phonology or Semantics, but not both. In (23), the quantifier is most naturally interpreted as counting the students who are registered for either Phonology or Semantics (but not both) as numbering three. These intuitions suggest that the *truth conditions* of these utterances encode these putative implicatures, albeit in an at-issue, non-cancellable way. We accordingly need a semantic theory that can account for and predict their ability to be calculated locally, in embedded contexts.

As I will discuss in §4, Manner implicatures are also embeddable; although the different semantic relationship between scalar alternatives and Manner alternatives means that the latter are less restricted in monotonic contexts than scalar implicatures are. But we can also note, at this point, that non-scalar Quantity implicatures are also embeddable.

(24) a. Jane believes that a man ate the pizza.
b. Jane believes that war is war.

The sentences in (24) show this for attitude reports: intuitively, (24a) reports that Jane's belief is that a man who is not her father, partner, etc. ate the pizza, although this implicature may not arise in cases of anaphoric links. And (24b) reports not that Jane believes a tautology, but she holds the view that stereotypical properties of war are inevitable attributes.

The examples below illustrate that non-scalar Quantity implicatures, too, can be interpreted in the antecedents of conditionals (25) and in the arguments of non-monotonic quantifiers (26).

TABLE 1   Properties of Quantity implicature

IMPLICATURE TYPE	calculable	cancellable (QUD-sensitive)	reinforceable	embeddable
scalar Quantity	✓	✓	✓	✓
non-scalar Quantity	✓	✓	✓	✓

(25) a. If Jane met a man at the bar last night, her partner will be upset.
      b. If (it's true that) war is war, then there's no sense committing to the
         Universal Declaration of Human Rights.

(26) a. Exactly three students met a man at the bar last night.
      b. Exactly three situations in which war is war are situations in which
         human lives could have been saved.

In sum, embeddability appears to be a necessary property of conversational implicature, as it appears to be a property that all conversational implicatures exhibit (in contrast to presuppositions); it is not, of course, a sufficient property, because other types of content (e.g. asserted content, conventional implicature) is embeddable as well.

3.4   *Summary: properties of conversational implicature*
Conversational implicatures are by definition calculable. This distinguishes them from conventional implicatures, which are lexically or grammatically encoded in potentially arbitrary ways from the phrases associated with them. And there are other necessary properties of conversational implicature. They seem to be universally reinforceable and embeddable (in contrast to presuppositions). And, like other types of content (see Simons et al., 2011), conversational implicatures are discourse-sensitive: their content can be at-issue or not-at-issue (i.e. cancellable or non-cancellable), depending on whether it addresses the Question Under Discussion. These properties of conversational implicature are listed in Table 1.

In the next section, I apply these criteria to Manner implicature, by examining first canonical examples of Manner implicatures in Grice and the early literature, and then turning to the phenomenon of evaluativity, which I believe to be a much more productive and robust instantiation of Manner implicatures than previous examples.

4   Manner implicatures: an introduction

4.1   *What is a Manner implicature?*
Grice's Maxim of Manner has four sub-clauses:

(27) Maxim of Manner
   1. Avoid ambiguity.
   2. Avoid obscurity.
   3. Be brief or succinct.
   4. Be orderly.

The flouting of these subclauses results in four distinct varieties of implicature. I'll present Grice's examples of each clause in turn; §4.2 and the bulk of the paper will deal with the third variety of implicature.

Grice's original example of the first clause of the Maxim of Manner involves the description of a British General, having just conquered the city of Sind, sending back the message *I have Sind*. In addition to being unambiguous in writing (c.f. [aɪ hæv sɪnd]), the utterance doesn't carry an implicature in the context of utterance. Grice's example is of a violation of the first clause of the Maxim of Manner, but not an example of its being flouted.

More useful is an example of a speaker flouting the first clause, and creating an implicature as a result.

(28) A: Did Jane give Sue the check?
      B: Sue received the check yesterday.

In (28), B's response is more ambiguous (or more underspecified) than the Question Under Discussion (namely, whether Jane gave Sue the check) calls for. B's response, consequently, asserts that Sue received the check yesterday, and implicates that B doesn't want to commit to the claim that Jane gave it to her (i.e. that B wants to be non-committal). I'll refer to this as a '**non-committal**' implicature; it typically indicates a speaker's desire for plausible deniability.

Grice's example of the second clause, against obscurity, is spelling or using big words in front of children (for instance, a situation in which a parent spells I-C-E C-R-E-A-M, or speaks in a different language, in talking to another parent in front of their children). This sort of example is clearly a violation of the Maxim of Manner, and it seems to convey to the other parent that the speaker doesn't want the children to hear the phrase *ice cream*. I'll refer to this as a '**masking**' implicature; it typically indicates that the speaker wants to mask her message from one or more hearers.

Note that masking implicatures can, in certain cases, be conventional; we can imagine an agreed-upon code that is used only when the speaker wants to mask her message to a particular hearer (or at least intends to convey as much), and we can imagine such a code or language game varying arbitrarily with respect to whether it's more or less complicated than its origin language (or equally complicated: imagine a code or language game in which English words are pronounced backwards). That masking implicatures can arise conventionally, in coded language games, doesn't negate the hypothesis that masking implicatures can arise conversationally whenever the speaker chooses to be obscure in a non-conventionalized manner, although it does indicate a close diachronic relationship between conversational and conventional implicature (Levinson, 2000).

Grice's example of the third subclause, 'Be brief or succinct,' is in (29).

(29) a. Miss X sang "Home Sweet Home".
      b. Miss X produced a series of sounds that corresponded closely with the score of "Home Sweet Home".

The implicature is calculated as follows. As before, the speaker is assumed to be an epistemic authority on the topic, and cooperative; the utterance in (29b) is obscure and lengthy relative to (29a), which is truth-conditionally equivalent; therefore the event must not be a clear, canonical instance of "Home Sweet Home"-singing. I'll refer to this as an **'atypical'** implicature, and I will focus more on these sorts of implicatures in the next section.

Grice's fourth subclause is 'Be orderly'. It is commonly associated with the implicature that two events described in one order also took place in that order, as in (30) (Carston, 2002).

(30) a. Jane brushed her teeth. She got into bed.
      b. Jane brushed her teeth and got into bed.

In particular, it's been claimed that Be Orderly is responsible for the oddness of the sentences in (31).

(31) a. #Jane got into bed. She brushed her teeth.
      b. #Jane got into bed and brushed her teeth.

I won't discuss 'Be orderly' implicatures further, as they overlap with other, similarly general theories of discourse coherence (Kehler, 2004), and conjunction (Txurruka, 2003). But they are an interesting consideration in the overall picture of Manner implicature.

In sum: if a speaker opts to be conspicuously ambiguous (or underspecified), she flouts the first clause of the Maxim of Manner, and the result is a non-committal implicature: an implicature that the speaker is unwilling to commit to one disambiguation/specification or another. If a speaker opts to be conspicuously obscure, she flouts the second clause of the Maxim of Manner, and the result is a masking implicature, that the speaker wants to mask her message from at least one hearer.

Flouting of the third clause, 'Be brief or succinct,' results in a distinct implicature: that the speaker views the situation she is describing as atypical. This is the canonical Manner implicature, and has a quite natural relationship to the traditional linguistic concept of markedness. In the next section, I discuss relatively recent extensions of the Maxim of Manner to markedness.

4.2   *Markedness*

In linguistics, the notion of markedness is robust and spans a wide variety of phenomena (see for instance Bybee, 2011). Across languages and linguistic categories, natural language seems to organize members of pairs or *n*-tuples of linguistic elements in terms of primacy. The paradigm is strongest in phonology, where, for instance, voiceless segments (e.g. [s], [t], [f], [k]) are unmarked relative to their voiced counterparts ([z], [d], [v], [g], respectively). But it extends to morphology, syntax, and semantics, as well. Generally speaking, a linguistic element *x* is unmarked relative to its counterpart *y* iff *x* has a broader cross-linguistic distribution than *y*; has a broader language-internal distribution than *y*; is acquired before *y*; is processed more quickly than *y*; outlasts *y* diachronically, etc.

Markedness is relevant to the Maxim of Manner because, in a context in which two forms or signals are semantically equivalent, markedness is a clear, linguistically robust measure of what constitutes relative brevity, succinctness, or cost. In the following cases, the markedness relevant for the calculation of Manner implicatures will be almost entirely morphological. One form is more morphologically marked than another iff it has more morphemes, as in the difference between *pink* and *pale red*, as discussed in §4.2.1, or the difference between positive and negative antonyms *possible* and *impossible* (Horn, 1991; Levinson, 2000). But, as discussed in §4.2.3, there is strong cross-linguistic evidence that the difference in markedness between positive and negative antonyms extends to all antonymic pairs, like *tall* and *short*, regardless of whether they wear the difference on their morphological sleeve (Lehrer, 1985).

4.2.1   Periphrasis

Katz (1972) and McCawley (1978) introduced markedness into the Manner discussion, comparing phrases to their periphrastic but synonymous counterparts.

Katz (1972) focused on cases like (32):

(32) a. He killed the sheriff.
       b. He caused the sheriff to die.

McCawley (1978) discussed cases of lexical blocking, as in (33).

(33) a.   pale green
       b. ?pale red (cf. *pink*)
       c. ?pale black (cf. *grey*)

The explanation for both is the same: *kill* and *cause to die* or *pink* and *pale red* are synonymous at the level of compositional semantics, but the latter is more marked than the former. As a result, after the calculation of a Manner implicature, their denotation is carved up in such a way that the central, canonical part of the denoted property comes to be associated with the unmarked phrase, while the sidelined, atypical part of the property comes to be associated with the marked phrase. Thus, Katz reports that (32a) is appropriate in cases of murder, while (32b) is appropriate only to describe cases of indirect or accidental death. McCawley summarizes (p:246), regarding (33a), "Thus, an analysis in terms of conversational implicature allows one to define *pink* as 'pale red,' show *pink* and *pale red* are not interchargeable, and show why *pale red* refers to shades of red that are nowhere near as pale as the shades of green, blue, and yellow that one refers to as *pale green*, *pale blue*, and *pale yellow*."

The assumption that these pairs of words are semantically synonymous is dubious because there is no context in which they are in fact synonymous. Which is to say, *kill* seems to mean 'directly murder' in every context of utterance, and *cause to die* seems to mean 'indirectly murder' in every context of utterance. We thus do not have independent evidence of one of the foundational assumptions of a Manner implicature account of periphrasis: that the two phrases differ morphologically—in terms of markedness—but not semantically. This adds an element of unfalsifiability to the Manner implicature story as it's applied to periphrastic phenomena. However, not all Manner implicature phenomena are subject to this worry: the litotes in §4.2.2 are transparently, logically synonymous, for example. And the evaluativity phenomena discussed in

§4.2.3 are particularly interesting because the two phrases are not synonymous in every context, and the Manner implicature only arises when they are.

4.2.2 Litotes

In similar work, Horn (1991) introduced litotes as a plausible candidate for markedness-based Manner implicature. Litotes are the negation of a negative antonym. Under the assumption that two negations cancel one another out in the compositional semantics, litotes are transparently synonymous with their positive-antonym counterparts.

Horn's interest in litotes stems from Jespersen's early discussion of them, which foreshadows Gricean Manner implicature:

> [T]wo negatives, however, do not exactly cancel one another out so that the result is identical to the simple ... the longer expression is always weaker: "this is not unknown to me" or "I am not ignorant of this" means "I am to some extent aware of it," etc. The psychological reason for this is that the *détour* through the two mutually destructive negatives weakens the mental energy of the listener and implies ... a hesitation which is absent from the blunt, outspoken *common* or *known*.
>
> JESPERSEN, 1965: 332

Crucially, both Jespersen and Horn analyze litotes as ambiguous: a sentence like (34) can either mean (34a)—an intensified reading—or (34b), a diminished reading.[4]

(34) I was not unaware of the problem.   (Horn, 1991: 90)
     a. I was damn well aware of it.
     b. I had a very slight awareness of the problem.

The explanation for why the implicature arises in a given context is the same as before: the phrases *aware* and *not unaware* are synonymous; the latter is more marked than the former; therefore an utterance containing the latter comes to carry a Manner implicature, that the individual modified by the litotes atypically instantiates the predicate. It is hard, however, to find an explanation for why the Manner implicature can take the form of either (34a) or (34b). This is especially puzzling when it's contrasted with the periphrasis data from McCaw-

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4 This work on litotes has recently inspired some Manner-based cognitive modeling; see Tessler and Franke (2019).

ley, in which *pale red* is reported to become associated with the darker end of the relevant color spectrum (in particular, that it's not ambiguous between the darker or the lighter end of the spectrum).

4.2.3 Evaluativity

In Rett (2015), I argue that the phenomenon of Manner implicatures quite naturally extends to an explanation of the distribution of evaluativity in marked adjectival constructions (as well as many other related degree constructions). A sentence is evaluative iff it requires that a degree exceed a contextual standard. Evaluativity is typically illustrated by contrasting the following two constructions (Cresswell, 1976; Klein, 1980, 1982; von Stechow, 1984):

(35) a. Jane is tall. *positive construction*
      b. Jane is taller than Bill. *comparative*

The sentence in (35a) is a positive construction, meaning it contains an unmodified (by e.g. *6ft, very*) or unbound (by e.g. *more*) adjective. It is evaluative, as are all positive constructions: it entails that Jane's height exceeds some contextual standard. A quick diagnostic for evaluativity is that an evaluative sentence entails the negation of its antonymic counterpart. We can thus confirm that (35a) is evaluative because it entails the sentence *Jane is not short*.

   The sentence in (35b) is a comparative; it, in contrast, is not evaluative. It doesn't entail that either Jane nor Bill's height exceed a contextual standard. It entails neither of the sentences *Jane is not short* nor *Bill is not short*; the sentence in (35b) can be true in a context in which Jane and Bill are both short (as long as Bill is the shorter of the two).

   In the early stages of the semantic analysis of these constructions—called 'degree semantics' because semanticists generally model the meaning of gradable adjectives using degrees—the contrast between the sentences in (35) was considered significant. Specifically, much was made about the apparent fact that evaluativity is in complementary distribution with any overt morphemes that modify or bind the adjective's degree argument. This apparent complementary distribution between evaluativity and the overt modification or binding of adjectives led many (beginning with Cresswell, 1976) to postulate that evaluativity is introduced semantically, via a covert operator *pos*, which is in complementary distribution with overt morphemes like measure phrases or the comparative (see also Kennedy, 1999).

   But the minimal pair in (35) gives a mistaken impression of the distribution of evaluativity. It is not in fact in complementary distribution with the overt modification or binding of adjectives. Positive constructions like (35a) are

always evaluative, and comparatives (with relative adjectives like *tall* or *short*) are never evaluative. But evaluativity is a property of some other constructions in which the adjective's degree argument is bound or valued.

(36) **non-evaluative constructions**
    a. Jane is 4 ft tall.   *measure phrase (MP) construction*
    b. Jane is taller than Bill.   *positive-antonym comparative*
    c. Jane is shorter than Bill.   *negative-antonym comparative*

(37) **antonym-variably evaluative constructions**
    a. Jane is that tall/short.   *degree demonstrative*
    b. How tall/short is Jane?   *degree question*
    c. Jane is as tall/short as Bill.   *equative*

None of the constructions in (36) are evaluative; the first two do not entail that Jane is not short; (36c) does not entail that Jane is not tall.

The positive-antonym constructions in (37) (i.e. the ones with *tall*) are not evaluative either; *Jane is that tall* does not entail that Jane is not short, and in fact can be uttered in a context in which it's clear that Jane is considered short. (Something like, "Huh, I didn't know that Jane is short." "Yeah, she's (only) that tall.") But the negative-antonym constructions in (37) are, in contrast, evaluative. *Jane is that short* does entail that Jane is not tall; in contrast to its positive-antonym counterpart, it cannot be uttered in a context in which it's already been established that Jane is tall. The same goes for the degree questions in (37a) and equatives in (37c); the positive-antonym versions do not presuppose that Jane is tall, but the negative-antonyms do presuppose that she is short, making the constructions evaluative when they are formed with a negative antonym.

Based in part on the strong previous work showing that negative antonyms are marked relative to their positive counterparts (Lehrer, 1985; Heim, 2007), I've argued that evaluativity arises in the constructions in (37) as a Manner implicature (Rett, 2015). It arises in only those constructions formed with negative antonyms because they are relatively marked; it arises in the constructions in (37) because in these constructions (but not those in (36)), both antonyms are acceptable and result in synonymous constructions. In particular, holding fixed the referent of the degree demonstrative, *Jane is that tall* is synonymous with *Jane is that short*. The same generalization extends to the other constructions in (37), assuming an 'exactly' interpretation of the equative.[5]

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5 See Rett (2015a) and Rett (2015b) for an explanation of how this account extends to the 'at least' and 'at most' interpretations of equatives.

In contrast, evaluativity can never arise as a Manner implicature in the constructions in (36). This is true for MP constructions like (36a) because these cannot be formed with negative antonyms in English (*_Jane is 4 ft short_).[6] The two comparatives in (36b) and (36c) are not synonymous; because the comparative encodes a strict linear ordering, the choice of antonym makes an important difference for the meaning of the comparative. So the choice to use the marked antonym over the unmarked one is a matter of meaning, never style or brevity.

As with the other cases of markedness-based Manner implicatures discussed in this section, evaluativity is an instance of an atypicality Manner implicature. The idea is that the use of the marked adjective over the unmarked one—in constructions in which the option is available—signifies that the use of the word is an atypical one. Horn (1989: 22) characterizes this sort of Manner implicature as an instance of a marked form "conveying a marked message". As with periphrasis (but not with litotes), markedness in these adjectival constructions results in a specific Manner implicature: the atypicality is restricted to the high end of the scale, it cannot be associated with the low end, even though either extreme might be considered _a priori_ atypical. I suggest in Rett (2015) that this might be because the high end of the scale is the only one exclusively associated with the adjective used; or it might be the result of a pragmatic compulsion to infer the strongest interpretation.

Importantly, in contrast to the other markedness-based Manner implicature phenomena discussed in this section, the evaluativity associated with negative antonyms isn't absolute, which is to say, it's detachable. It is clearly not a lexical property of negative antonyms like _short_, because it's absent in constructions like (36c). Antonyms like _tall_ and _short_ are typically assumed to denote gradable properties along the same dimension of measurement (in this case, height), but with reverse orderings. Our evidence for these meanings comes from constructions—like the comparative—that don't involve Manner implicatures. And the nature of these meanings entails that there are some adjectival constructions (e.g. the comparative) in which the semantic difference between antonyms is significant, and others (e.g. the equative) that render it insignificant. All of this makes evaluativity an ideal specimen of Manner implicature: the marked antonym is associated with an atypicality implicature, but this implicature comes and goes with the synonymy between antonyms in a con-

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6   Although see Doetjes (2012), which shows that Dutch is a language in which MP constructions with negative antonyms are grammatical; and that these negative-antonym MP constructions are evaluative, as this Manner implicature count predicts.

struction, so we have independent evidence of the meaning of the relevant adjectives, and also of the assumption that negative antonyms don't lexicalize the evaluativity.

Further details about how the Manner implicature account of evaluativity can be extended to other constructions can be found in Rett (2015); in §6 I return to some of the book's content in a suggestion of how to represent Manner implicatures formally. But in the next section, I return to the diagnostics of conversational implicature from §3 and Table 1 to see whether the Manner implicatures discussed in this section pass our tests for conversational implicature.

5 Diagnosing Manner implicatures

Broadly speaking, Manner implicatures pass all the diagnostics for conversational implicature: they are calculable; reinforceable; QUD-sensitive; and embeddable. This puts them on par with non-scalar Quantity implicatures; and suggests the need for an account of conversational implicature that can predict and explain these properties—in particular, embeddability—across the spectrum of conversational implicature.

5.1 *Calculability*

It should be clear by now that Manner implicatures are calculable. The Jespersen quote from §4.2.2 is a good example of the reasoning a hearer might go through when presented with an unnecessarily marked form: "Why would the speaker use this more marked phrase when she could have used an unmarked one to convey the same meaning? She must intend to signify that the situation she's describing isn't a typical instantiation of this description." In this way, Manner implicatures are calculable.

Importantly, the calculation of the Manner implicature is specific to the marked phrase used. So a sentence with a marked adjective carries a Manner implicature regarding the meaning of that adjective: the use of *short* versus *tall* implicates that the individual in question is atypically short, not just atypical full stop. A markedness-based Manner implicature is an implicature not just that the situation described is atypical, but that it's atypical in a way pertinent to the marked phrase. Thus, we would expect a different Manner implicature (e.g. short relative to a contextual standard versus young relative to a contextual standard) for each marked phrase.

5.2   *Reinforceability*

Recall that reinforceability is a test, posited by Horn (1972) and Sadock (1978), to differentiate between types of not-at-issue content. Conversational implicatures can be felicitously reinforced, while presuppositions cannot. And in fact, Manner implicature seems reinforceable, as the examples below (for litotes and periphrasis in (38) and for two evaluative constructions in (39)) demonstrate.

(38) a. I am not ignorant of this … which is to say, I know a little bit about it.
      b. Jane caused the sheriff to die … which is to say, she killed him indirectly.

(39) a. Jane knows how short Bill is, which is to say she knows he's short.
      b. Jane is as short as Bill, which is to say they're both short.

Reinforceability thus seems like another good test for conversational implicature broadly construed.

5.3   *Discourse-sensitivity*

Initial tests seem to suggest that Manner implicatures are not cancellable out of the blue; (40) and (41) represent my best attempts to cancel the markedness-based Manner implicatures discussed in the previous section.[7]

(40) a. I am not unaware of this … #in fact/although I was told about it yesterday.
      b. Jane caused the sheriff to die … #in fact/although she murdered him outright.

(41) a. Jane knows how short Bill is … #in fact/although she knows Bill is tall.
      b. Jane is as short as Bill … #in fact/although they're both tall.

But, as discussed in §3.2, we now know that the cancellability of conversational implicatures varies with discourse status. And this seems to be true of Manner implicatures, as well. In particular, these constructions do not seem to carry their Manner implicatures when they are uttered in a discourse with an

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7   In the cases of litotes and periphrasis, the meaning of the Manner implicature is more obscure than it is for the evaluativity cases. As a result, that meaning is harder to isolate and cancel in a given context. These tests are therefore more compelling for the evaluativity implicatures than they are for the other Manner implicatures.

anaphoric link; i.e. when the conversation gives the speaker an excuse for using the more prolix phrase, as (42) and (43) show, especially in comparison to (40) and (41).

(42) A: Jane says she's not unaware of it. Are you also not unaware of it?
B: Yes (I'm not unaware of it), in fact/although I was told about it yesterday.

(43) A: Jane looks quite shaken. Did she somehow cause the sheriff to die?
B: Yes (Jane caused the sheriff to die), in fact/although she murdered him outright.

(44) A: The soccer players are mostly short, and the coach knows how short they are. She knows how short Anne is, she knows how short Beth is ... does she know how short Chris is?
B: Yes (she does know how short Chris is), in fact/although Chris is one of the players who is tall.

The minimal pair below (from Rett, 2015) demonstrates that, despite being encoded in a conversational implicature, evaluativity can be used to answer the QUD. In these contexts, of course, the evaluativity is an entailment of the sentence, and not cancellable. The evaluativity is associated with B's question ('How short...?') in (45); the positive-antonym degree question ('How tall...?') in (46) reinforces the claim that this evaluativity is a property only of (the relevant) negative-antonym constructions.

(45) A: I'm a little worried about the actress playing me in the movie. Is she tall or short?
B: (*to the casting agent*) How short is Susan again?
A: That's fine, as long as she's short.

(46) A: I'm a little worried about the actress playing me in the movie. Is she tall or short?
B: (*to the casting agent*) How tall is Susan again?
A: #That's fine, as long as she's tall.

Grice also predicted Manner implicatures are detachable, but we have found that conversational implicatures can differ in this respect. For unmarked/ marked pairs whose meanings are synonymous in every context—like *kill* and *cause to die*, or *pink* and *pale red*—we expect the Manner implicature associ-

ated with the marked form to be non-detachable, which is to say, present in every context. But in the case of positive and negative antonyms, there are some contexts (degree demonstratives, degree questions, and equatives) in which the unmarked and marked forms are semantically equivalent, and other contexts (comparatives) in which they are not. Evaluativity arises—associated with the marked, negative antonym—in the former, and fails to arise in the latter. So Manner implicature is detachable, provided the truth-conditional synonymy between the marked and unmarked forms isn't universal.

5.4   *Embeddability*

Finally, embeddability is an extremely well-attended-to property of scalar implicature. I argued in §3.3 that the property also holds of non-scalar Quantity implicature. In this section, I'll argue that it is a property of Manner implicature as well.

Recall that markedness-based floutings of the Maxim of Manner carry atypicality implicatures that are associated (due to calculability) with the use of the marked phrase in particular. It is certainly true that these Manner implicatures can be embedded under e.g. propositional attitude verbs, as (47) shows.

(47) a. The judge believes that Jane caused the sheriff to die.
      b. Sue believes that her employee is not unaware of the harassment allegations.
      c. Jill believes that Jane is as short as Bill.

In particular, the indirectness associated with the periphrases in (47a) can be part of the judge's belief; (47a) is naturally interpreted as meaning that the judge believes Jane's role in the death was indirect. And the intensifying implicature associated with litotes can be part of Sue's belief in (47b); the sentence is true and appropriate in a situation in which Sue's belief is that her employee is well aware of the allegations. Finally, (47c) is true in a situation in which Jill believes Jane and Bill have equal heights, and also that they both count as short (relative to some contextual standard).

Interestingly, these Manner implicatures in all of these sentences do not need to be interpreted locally, with the embedded clause; they can have a global interpretation as well. In these interpretations, the atypicality implicature can be associated with the speaker, rather than the subject of the matrix clause. Specifically, (47a) is consistent with a situation in which the judge mistakenly believes that Jane murdered the sheriff outright, but the speaker knows that the death was accidental. In this reading, the Manner implicature—that the death was indirect—is associated with the speaker, rather than the sub-

ject of the embedded clause. In other words, it can project globally, outside of its local clause. Similarly, (47b) is consistent with a situation in which Sue knows merely that her employee has an appropriate and normal awareness of the allegations, but the speaker has reason to believe the employee knows even more than Sue thinks. And, finally, (47c) is consistent with a situation in which Jill believes merely that Jane and Bill are of equal height, but the speaker additionally believes that they count as short in the context of utterance.

Additional evidence that Manner implicatures can be embedded comes from their behavior in quantificational sentences. This is demonstrated by (48); the negative-antonym equative is unacceptable in this context because, in addition to equating John's height to the height of everyone in the family, which is true, the construction incorrectly requires that everyone in the family count as short.

(48) *context*: Everyone in my family is 5 ft tall. Since we're all different ages, this means that some of us count as short and some of us count as tall. John is 5 ft tall too.
#John is as short as everyone in my family.

Specifically, this sentence can only be felicitously uttered in a situation in which John's height is the same as every family member's height (under the 'exactly' interpretation, see footnote 5) and in which all of the family members count as short in the context of utterance.[8]

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8   The generalization can be extended to downward-monotonic quantifiers, too, although the parallel with scalar implicatures falls apart. Presuppositions project globally outside of downward-monotonic quantifiers, as illustrated in ia, which presupposes that every student has a term paper.
(i) a. No student is proud of her term paper.
   b. No student is proud of her term paper or final presentation.
   c. No student is as short as her professor.
In (ib), the exclusive-*or* scalar implicature associated with *or* (in contrast to the semantically stronger *and*) doesn't project, or isn't interpreted; the sentence doesn't require that no student be proud of exactly one of her paper or presentation, i.e. it doesn't require that every student be proud of neither her presentation or paper or both. But this is arguably because the scope of *no* is downward-entailing, and thus reverses the informativity relationship between *or* and *and*. The evaluative Manner implicature in (ic) does imply that every student's professor is short, which is to say that the evaluativity implicature is interpreted locally. Arguably, the relevant difference between the scalar implicature in (ib) and the Manner implicature in (ic) is not a difference in ability to embed or project, but rather sensitivity to monotonicity.

5.5   *Summary*

Conversational implicatures are by definition calculable; this property certainly holds of Manner implicatures. And I've shown that several other properties seem to universally hold of conversational implicature, too; or at least, that they extend to non-scalar Quantity and Manner implicature, with a few caveats.

The properties of cancellability and discourse-sensitivity pattern together; van Kuppevelt (1995, 1996) showed that conversational implicatures can only be cancelled when their content doesn't address the Question Under Discussion, i.e. when their contribution is not-at-issue. Similarly, van der Sandt (1992) argued that conversational implicatures can be cancelled when their use has an anaphoric link in the conversation. In these respects, non-scalar Quantity implicature and Manner implicature behave just like scalar implicature.

The property of detachability also requires a caveat. Scalar implicatures are monotonicity-sensitive: words like *some* and *or* are only underinformative relative to their counterparts *all* and *and* in upward-monotonic environments. So scalar implicatures are detachable—meaning, we know they're not a lexical property of the word or phrase—by virtue of the fact that they don't arise in downward-monotonic environments. In contrast, tautologies like *War is war* are always underinformative. The implicatures associated with them are thereby never detachable.

The same goes for some marked phrases, in particular litotes and periphrastic constructions: these forms are always marked relative to their unmarked counterparts, and they're also synonymous in every context, so their Manner implicatures are consequently not detachable. The only exception are conversations in which they have an anaphoric link, i.e. in which the speaker has a metalinguistic excuse for choosing the marked phrase over the unmarked one.

In contrast, the evaluativity associated as a Manner implicature with positive and negative antonyms is detachable, because two antonyms are only synonymous in certain contexts (in particular in degree questions, degree demonstratives, and equatives). These are the contexts in which we see a Manner implicature, namely the implicature that the relevant degree exceeds the contextual standard; in other contexts, e.g. comparative constructions, the Manner implicature does not arise.

So, in summary, all conversational implicatures are calculable; they also appear to be universally embeddable, reinforceable, and discourse-sensitive. This latter property means that they can be cancellable and detachable, al-

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TABLE 2   Properties of conversational implicature

IMPLICATURE TYPE	calculable	cancellable (QUD-sensitive)	reinforceable	embeddable
scalar Quantity	✓	✓	✓	✓
non-scalar Quantity	✓	✓	✓	✓
Manner	✓	✓	✓	✓

though their ability to be detachable depends on some additional, construction-specific properties (namely whether the construction is semantically vacuous, or whether the two Manner alternatives differ in meaning in any context).

In the final section, I'll briefly review how Manner implicature has been formally characterized and analyzed.

6   Analyzing Manner implicature

Informally, Quantity implicatures arise when a speaker uses one form when she could have used a more informative (but equally complex) form. Manner implicatures can be seen as duals to these; they arise when a speaker uses one form when she could have used a less complex (but equally informative) form. In this section, I'll briefly review formal implementations of this generalization.

6.1   *Formal characterizations of Manner implicature*
Horn encodes this duality explicitly; in a series of papers (Horn, 1984, 1989, 1991), he reconceptualizes Grice's maxims into two opposing forces, representing a speaker's and hearer's processes of reasoning, respectively. It is generally referred to as "Horn's Division of Pragmatic Labor". Horn's two principles are as follows (from Horn, 1984: 13).

(49) **The Q Principle (Hearer-based)**
      Make your contribution sufficient (cf. Quantity clause 1);
      Say as much as you can (given R)

(50) **The R Principle (Speaker-based)**
      Make your contribution necessary (cf. Relation, Manner, Quantity clause 2);
      Say no more than you must (given Q)

The Q Principle in (49) is a lower-bounding principle, meaning it places restrictions on how uninformative a speaker should be. It consequently produces upper-bounded implicatures (restricting the strength of the utterance). In Horn's theory, the Q Principle is what's responsible for scalar implicatures, e.g. a use of *some* implicating 'not all': it restricts the information on the opposite end of the informativity spectrum (effectively, "the speaker doesn't know more than p").

The R Principle in (50) is an upper-bounding principle, meaning it places restrictions on how informative a speaker should be. And its implicatures are correspondingly lower-bounded (effectively, "the speaker must mean at least p"). An example is the utterance *Can you pass me the salt?* in a context in which it's clear that the hearer is capable of passing the salt. The assumed implicature is that the speaker, in uttering the question, intends to convey that she wants the hearer to pass her the salt.

Formalizing these principles requires an explanation of what sorts of competitors, or alternatives, interlocutors consider for a given linguistic element. The determination of alternatives for both types of implicature requires a precise characterization of complexity and informativity: Quantity implicatures arise when the former is held fixed and the latter varied; Manner implicatures arise when the latter is held fixed and the latter varies.

In Rett (2015b), I extend work on the formalization of Quantity alternatives in Katzir (2007) to Manner implicatures. Katzir defines levels of complexity on parse trees, as in (51).

(51) STRUCTURAL COMPLEXITY:
    Let ϕ, ψ be parse trees. If we can transform ϕ and ψ by a finite series of deletions, contractions, and replacements of constituents in ϕ with constituents of the same category taken from $L(\phi)$, we will write $\psi \lesssim \phi$. If $\psi \lesssim \phi$ and $\phi \lesssim \psi$ we will write $\phi \sim \psi$. If $\psi \lesssim \phi$ but not $\phi \lesssim \psi$ we will write $\psi < \phi$.

Katzir uses the notion of strict subsets of meaning—or generalized entailment—to capture differences in informatively, paired with the notion of 'weak assertability' (p:672): "[a] structure ϕ is said to be weakly assertable by a speaker S if S believes that ϕ is true, relevant, and supported by evidence." Katzir's formalization of Q-alternatives is as follows:[9]

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9   Katzir defines structural alternatives more weakly, as $A_{str}(\phi) := \{\phi' : \phi' :\lesssim \phi\}$. The discussion here does not require this flexibility.

(52) Q ALTERNATIVES

Let ϕ be a parse tree. The set of Q alternatives for ϕ, written $A_{Qstr}(\phi)$, is defined as $A_{Qstr}(\phi) := \{\phi' : \phi' = \phi\}$.

(53) THE Q PRINCIPLE

Do not use ϕ if there is another sentence $\phi' \in A_{Qstr}(\phi)$ such that both:
a. $[\![\phi']\!] \subset [\![\phi]\!]$, and
b. ϕ' is weakly assertable.

Following Horn, R-alternatives and the R Principle are just duals of these, so, for ω ranging over types (Rett, 2015a,b):

(54) R ALTERNATIVES

Let ϕ denote a semantic object of type $\langle \omega, t \rangle$. The set of R alternatives for ϕ is defined as $A_{Mstr}(\phi) := \{\phi' : [\![\phi']\!] \subset /[\![\phi]\!]\}$.

(55) THE R PRINCIPLE

Do not use ϕ if there is another sentence $\phi' \in A_{Mstr}(\phi)$ such that both:
a. $\phi' \lesssim \phi$, and
b. ϕ' is weakly assertable.

Rett (2015b) also reformulates Horn's Principle of Least Effort along these lines; the informal characterization of a Manner implicature is that marked forms are associated with marked meaning. (56) specifies how this might look in a formal semantics.

(56) THE MARKED MEANING PRINCIPLE

For parse trees ϕ, ϕ' such that $\phi' \in A_{Mstr}(\phi)$, ϕ carries the Manner implicature: "& atypical(ϕ)".

What counts as atypical is explicitly anchored to ϕ, but can vary in its particular instantiation across contexts.

6.2   *Compositional accounts of Manner implicature*

The above subsection has characterized markedness-based Manner implicature formally: based in part on work from Horn (1984); Katzir (2007), we can specify when Manner implicatures are expected to arise, and what their semantic contribution looks like when they do arise. Additional discussion associating the above to the specifics of the phenomenon of evaluativity is in Rett (2015).

There have been few attempts to formalize a compositional semantics for Manner implicature; in other words, to explain how it can arise as the result of pragmatic considerations yet still interact with other elements of the semantics. The few attempts I am aware of are based in Game-Theoretic Pragmatics.

The first is in Blutner (2000), who translates the theory in Horn (1984) into a dynamic Optimality-Theoretic (OT) framework. He reinterprets Horn's Q and R Principles into (violable) constraints, and modifies the foundations of OT so that the theory is bidirectional, treating both the speaker's and hearer's perspectives. The model for this bidirectionality is the game-theoretic notion of equilibrium, in which a successful communication is one that satisfies both the speaker's and the hearer's needs and expectations. In a similar vein, Schaden (2009) offers a treatment of the interpretation of present/perfect aspect relative to simple past tense in an OT-based system of markedness competition.

Van Rooij (2004), arguing that the conventions described in Horn (1984) are the result of evolutionary factors, reformulates the Manner implicatures in the more universal framework of game theory, as a signaling game (see also Skyrms, 2010; McCready, 2012). He argues that conventionalized Manner implicatures arise when a speaker and hearer achieve a Nash Equilibrium; in this theory, competition is between form/action pairs associated with the speaker and hearer, respectively. The notion of markedness is recast in terms of utility (p:308): "Let us call a strategy *strictly efficient* if in interaction with itself it has a higher utility than any other strategy β in self-interaction: $U(\alpha, \alpha) > U(\beta, \beta)$".

Recently, the phenomenon of Manner implicature has been taken up in Rational Speech Act (RSA) models of Game-Theoretic Pragmatics; in particular, by Franke and Jäger (2015) and Bergen et al. (2016), whose focus is quite empirically abstract. Tessler and Franke (2019) provides an RSA model for one of the two Manner implicatures associated with litotes.

While these Game-Theoretic accounts of Manner implicature hold great promise for their ability to model markedness as cost (and thereby to predict the distribution of marked meaning), none of them acknowledge or address Manner implicature as an embedded phenomenon. In particular, they treat Manner implicature as Grice did; as an utterance-level calculation about the speaker's goals and assumptions. Recent work (Potts et al., 2015) has tried to advance an RSA-based model of embedded scalar implicature; Bumford and Rett (*in preparation*) tries to extend these principles to embedded Manner implicature as well.

7   **Conclusion**

The goal of this paper has been to shed light on the phenomenon of Manner implicature and, in so doing, to shed a little more light on the phenomenon of conversational implicature generally.

I've focused on a particular subtype of Manner implicature, those arising from the flouting of Grice's third clause, *Be brief or orderly*. I've argued that the flouting of this clause results in atypicality implicatures: the implicature that a marked form is associated with a marked meaning (the "Marked Meaning Principle"). To illustrate this sort of Manner implicature, I've discussed periphrasis; litotes; and evaluativity in adjective constructions.

The Manner implicatures associated with these constructions have more in common with other types of implicature—in particular Quantity implicature—than Grice had originally thought. Specifically, controlling for effects of discourse (van der Sandt, 1992; van Kuppevelt, 1995, 1996), the conversational implicatures reviewed here are almost universally cancellable, and largely detachable. (There are two exceptions: the non-scalar Quantity implicatures associated with tautologies are not cancellable or detachable because the form's semantic denotation is vacuous; and the Manner implicatures associated with litotes and periphrasis are not detachable because the pairs of alternatives are synonyous in every context.) They are also universally embeddable, which provides a new and important desideratum for theories of embedded implicature; ideally, such a theory would be as implicature-general as the phenomenon of embeddability is.

Compositional analyses of Manner implicature tend to be implementations of Horn's (1984) dualistic reconfiguration of Gricean maxims. They tend, as a result, to be Game-Theoretic: to involve a cost/benefit analysis of cost and informativity. While many of these accounts are promising, and formalized in the familiar frameworks of Optimality Theory and Rational Speech Act Theory, none of them currently extend to embedded Manner implicature, and thus arguably need to be supplemented or recast in the backdrop of a new formulation of the semantics/pragmatics interface.

The discussion has also resituated the role of scalar implicature in theories of conversational implicature in general. I've advocated for a compositional theory of Manner implicature, but of course, the ideal is a compositional theory of all types of conversational implicature. We are accustomed to associating compositional semantic treatments of scalar implicature with the syntactic treatment in Chierchia, Fox, and Spector (2009) and related papers. But the success of this exhaustivity-based approach relies on the presupposition that scalar implicatures, and only scalar implicatures, are embeddable. Given that

this is not the case, and given that the embeddability of e.g. Manner implicatures can be treated using a null exhaustivity operator, we must therefore reconceptualize conversational implicature and its ability to embed in a compositional semantics that is more broadly extendable.

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