

In a manner of speaking: an empirical investigation of Manner Implicatures *

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1 Introduction

Grice proposed that not only the content of what is said but also the *form* can give rise to implicatures (Grice 1975): Manner inferences derive from observing or violating the maxim ‘be perspicuous’. In this study we address the questions: (i) do Manner implicatures pattern like Quantity inferences – are they similarly robust and commonly derived by hearers? and (ii) do Manner implicatures, like Quantity, exhibit varying degrees of conventionalization? In addition, we evaluate the kind of experimental paradigms that are suitable for investigating manner implicatures.

2 Context

Although the submaxims of Manner (‘avoid obscurity of expression’, ‘avoid ambiguity’, ‘be brief’, and ‘be orderly’) are diverse, for Grice the defining feature is the relation “not to what is said but, rather, to *how* what is said is to be said” (Grice 1975: 46). Some post-Gricean theorists have subsumed Manner under other principles (Horn 1984), while others have maintained it, albeit in modified form (Levinson 2000, Franke 2009). This latter approach seems justified on theoretical grounds at least, because Manner implicatures can be distinguished from Quantity and Relevance precisely because it is the linguistic form, not the content, which triggers an inference.

Levinson (2000) argues that marked forms are used by speakers as a ‘shortcut’ to a marked meaning (M-forms give rise to M-implicatures), whereas the unmarked I-form produces a stereotypical interpretation (I-implicature). We adopt Levinson’s terminology here, because it allows us to draw a potentially useful distinction between the two forms and corresponding implicatures, while acknowledging that

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I-implicatures are not included as prototypical implicatures in many typologies. Besides Levinson’s Generalised Conversational Implicatures, there are of course Particularised Conversational Manner Implicatures, which are not tied to systematic alternations between forms expressing similar meanings, although the distinction is subject to much debate (e.g., Degen 2015) – see Table 1 for examples.

Theoretically, there are interesting parallels with Quantity: both M- and Quantity implicatures involve reasoning with reference to an alternative that was not said – either an alternative that is ‘stronger’ in meaning, or more lengthy. Both also include more or less conventionalised instances (traditionally, GCIs and PCIs). To date, however, there has been almost no empirical research on Manner.

	Context	M-ending	I-ending	M-implicature	I-implicature
GCI	Nick and Dan were watching a history programme, but Nick fell asleep. Afterwards he asked, "What happened at the end?" Dan replied,	"The invaders caused the villagers to die."	"The invaders killed the villagers."	The invaders killed the villagers but indirectly, by introducing disease.	The invaders killed the villagers directly.
PCI	Jamie got home from his grandmother’s. His mum asked, "Did she give you a drink?" He answered,	"She put a teabag into a cup and poured over boiling water."	"She gave me a cup of tea."	She gave me a cup of tea, only it didn’t taste like tea.	She gave me a normal cup of tea.

Table 1 Example of experimental items

3 Experiments

Experiments were conducted via Prolific Academic, a UK-based crowd-sourcing platform for research. Participants were British English speakers born in UK, which was important as linguistic form is sensitive to variety, possibly even at the dialectal level. Pretests established scenarios consisting of short dialogues, which were rated as equally natural with both a ‘marked’ ending (the M-implicated meaning) and an ‘unmarked’ ending (the I-implicated meaning). There were 8 items with marked forms with lengthy paraphrases (PCIs), and 8 GCIs with lexical alternatives (modals, causatives, negation of contradictories).¹

3.1 Experiment 1

3.1.1 Procedure

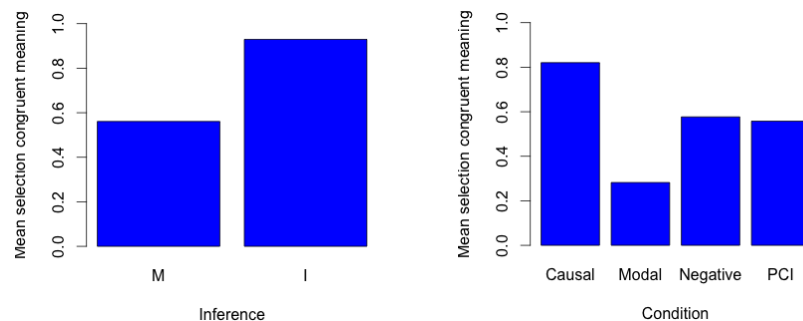
Participants ($N = 39$) in two groups were shown a series of scenarios, each of which ended with an utterance with an M-form or I-form, with its text in red. Below,

¹ For the full stimuli set, see elspethwilson.uk/research/resources/

they read the M-implicated and I-implicated meanings, and were asked to select the sentence that was most similar in meaning to the part of the scenario in red. Scenarios were presented in randomised order, and each participant saw each item in only one condition. If participants are sensitive to M-implicatures, we predicted higher selection rate of M- rather than I-implicated meanings for M-forms, and vice versa.

3.1.2 Results

The results (Fig. 1) show a significantly higher rate of selection of I-implicated meanings for I-forms (92%) than M-implicated meanings for M-forms (56%), Wilcoxon signed-rank by-item: $W = 2$, $p < 0.01$, $r = -0.98$. There is no difference between GCI and PCI items for either M- or I-forms (M GCI 56%, M PCI 56%, I GCI 94%, I PCI 91%), Wilcoxon signed rank: $W = 11$, $p = 0.92$, $r = -.04$; $W = 17.5$, $p = 0.55$, $r = -.21$. Numerically, the results for different types of M-form suggest different strengths of cues across subtypes (Fig. 1b), with causatives seemingly the strongest cue to a marked meaning (82%) and modals the weakest (28%). Binary choice tasks can, however, mask subtle differences in participants' responses to the stimuli; Experiment 2 uses a rating scale, which might show more sensitivity to pragmatic interpretations.



(a) Experiment 1: Mean selection of I-implicated meaning for I-form, and M-implicated meaning for M-form

(b) Experiment 1: Mean selection of M-implicated meaning for M subtypes

Figure 1 Experiment 1 results

3.2 Experiment 2

3.2.1 Procedure

In a 2×2 (form \times meaning) design, participants ($N = 80$) were asked to rate on a scale of 1 to 7 how similar a sentence with an I- or M- implicated meaning was to the part of the scenario in red (I- or M-form), based on Degen's (2015) paradigm for Scalar Implicatures. Four groups of participants saw each item in one condition. We predicted that ratings would be ordered: unmarked form/unmarked meaning $>$ marked form/marked meaning $>$ marked form/unmarked meaning $>$ unmarked form/marked meaning. The inference to the stereotypical from the I-form is arguably closest in form and meaning to the literal meaning of the utterance, and so rated highest; the marked form introduces information not implicated by an unmarked form, so is rated the lowest.

3.2.2 Results

The results (Fig. 2a) show a significant effect of condition (by-item analysis, Friedman test $\chi^2(3) = 33.8, p < 0.01$). Planned pairwise comparisons show that the congruent and incongruent conditions (MM and MI) are not significantly different (Wilcoxon signed-rank by-item: $W = 45, p = .25, r = -0.29$), while II and IM are (Wilcoxon signed-rank by-item: $W = 136, p < .01, r = -1.04$). Planned pairwise comparison of GCI and PCI subtypes for each condition again found no significant differences (Wilcoxon signed-rank – MM: $W = 26, p = 0.26$; MI: $W = 24, p = 0.46$; II: $W = 32, p = 0.055$; IM: $W = 18.5, p = 0.94$).

3.2.3 Discussion

Experiments 1 and 2 show that M-implicatures do not seem to be as robust as, for example, the most robust Scalar Implicatures, in either a binary choice or rating paradigm: in Experiment 1, the M-implicated meaning is selected for the M-form only around half the time, and in Experiment 2, there is no significant difference between the ratings for M congruent and incongruent conditions (seeing the M form and M-implicated meaning or I-implicated meaning). In contrast, in picture-selection tasks, adults tend to be at ceiling for 'pragmatic' interpretation of SIs with 'some' and ad hoc Quantity implicatures (Katsos & Bishop 2011, Stiller et al. 2015), while in a rating task, Degen (2015) finds some utterances with 'some' whose implicated meaning 'some but not all' is consistently given a high rating towards ceiling on a 1-to-7 Likert scale.

Two mitigating explanations are conceivable: firstly, in Experiment 2, the presence of II and IM items rated at the top and bottom of the scale could leave partici-

participants with less space in the middle of the scale to distinguish MM and MI conditions. Experiment 3 was run to address this concern. Secondly, M-Implicatures could differ from, say, Scalar Implicatures in that the implicated meaning does not have such a direct relation in form or meaning to what is said (e.g., ‘some’ > some but not all). This could mean that participants did infer an M-implicature, but that the explicitly stated M-implicated meaning in the tasks did not match their inferences. Furthermore, the I-implicated meaning is included in the M-implicated meaning, which may mean it is chosen more often or rated more highly than the M-implicated meaning. Experiment 4 was carried out to ascertain the variety in participants’ inferred meanings.

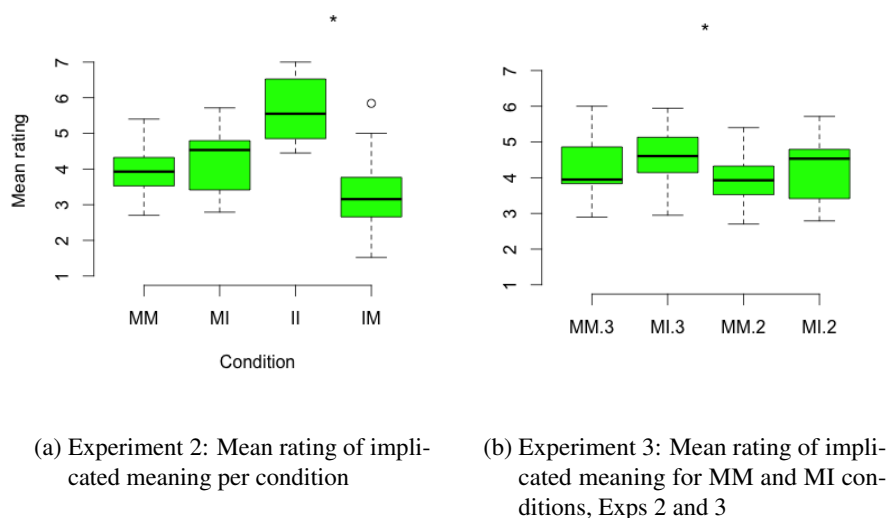


Figure 2 Experiment 2 and 3 results

3.3 Experiment 3

This was the same as Experiment 2, but with only MM and MI conditions ($N = 38$). A by-item analysis of the results (Fig. 2b) using Friedman’s ANOVA and planned pairwise comparisons indicates that the only significant difference between MM and MI conditions in Experiments 2 and 3 was between Experiment 2 MI and Experiment 3 MM (Wilcoxon signed-rank, $W = 112$, $p = 0.02$, $r = -0.58$). This suggests the 2×2 design of Experiment 2 did not affect the distribution of participants’ ratings.

3.4 Experiment 4

Participants (N = 41) were asked to write what they thought the speaker of the utterance in red meant. Participants saw both M- and I-forms (but only one condition per item), and, in the instructions, were given two example interpretations, one for an I-form and one for an M-form.

Results were coded as ‘M-implicature’ or ‘no M-implicature’, with 39% M-implicature responses for M-forms, and no difference between GCI and PCI types (40% and 38% respectively). Qualitatively, a wide variation in interpretations of M-forms was observed, even given the context of the short dialogues. Sometimes interpretations were even in opposite directions – see Table 2 for examples.

This suggests that one factor leading to low rates of M-implicatures in binary choice and ratings tasks, compared to I-implicatures, is that, given minimal background context in the experiment, participants arrive at varying M-implicated interpretations, which do not necessarily match the one explicitly stated. However, even with free response, M-implicated meanings constituted fewer than half of all responses to M-forms, suggesting that, at least in written mode, M-implicatures are not as robust as other inferences, such as the most robust examples of Scalar Implicature (cf. Van Tiel et al. 2014).

Item (critical utterance)	M inference	No M inference
“I’m not unpleased by what you’ve done.”	That the feature he has written is satisfactory, but that it is not amazing. I am quite please by what you have done. His boss is not overly impressed but thinks his work is acceptable.	I’m pleased. I’m pleased with your work. Mick’s boss was happy with his feature.
“She put a teabag into a cup and poured over boiling water.”	Jamie’s grandmother makes tea so badly it is just boiling water over a teabag. Jamie might like his tea with milk and sugar, neither of which his grandma has. She made little effort. She couldn’t be bothered.	Jamie explained how his grandmother made a cup of tea. Jamie’s Grandmother made a cup of tea for Jamie. She made me tea.
“The invaders caused the villagers to die.”	At the end of the history programme some villagers died as a result of the actions of some invaders. The invaders killed the villagers indirectly. They all died in the end.	The invaders killed the villagers. They killed them.

Table 2 Examples of responses in Experiment 4

4 Conclusion

Speakers may not be as sensitive to Manner triggers as theories such as Levinson (2000) would suggest, although there is evidence that speakers sometimes derive inferences suggested in the literature. Some of these findings may be particularly due to the way binary choice and ratings contexts interact with Manner. Further research could investigate whether, for example, prosodic cues in speech affect the reliability of manner inferences, and whether other experimental paradigms, such as those measuring sensitivity to maxim violation, might reveal a difference between proposed GCI and PCI implicatures. Finally, as the results of Experiment 1 suggested that different lexical triggers within the GCI category may be more or less reliable cues, future research could also investigate these subtypes with a sample size and design suitable for statistical analysis, to assess whether M-implicatures constitute a homogenous class.

References

- Degen, Judith. 2015. Investigating the distribution of some (but not all) implicatures using corpora and web-based methods. *Semantics and Pragmatics* 8(11). 1–55.
- Franke, Michael. 2009. *Signal to act: Game theory in pragmatics*: University of Amsterdam PhD Thesis.
- Grice, H. Paul. 1975. Logic and conversation. In Robert Stainton (ed.), *Perspectives in the philosophy of language*, 41–58. Broadview Press.
- Horn, Laurence. 1984. Toward a new taxonomy for pragmatic inference: Q-based and R-based implicature. In D. Schriften (ed.), *Meaning, form, and use in context: Linguistic applications*, 11–42. Georgetown University Press.
- Katsos, N. & D.V.M. Bishop. 2011. Pragmatic tolerance: Implications for the acquisition of informativeness and implicature. *Cognition* 120(1). 67–81.
- Levinson, Stephen C. 2000. *Presumptive meanings: The theory of generalized conversational implicature*. MIT Press.
- Stiller, Alex J., Noah D. Goodman & Michael C. Frank. 2015. Ad-hoc implicatures in preschool children. *Language, Learning & Development* 176–190.
- Van Tiel, Bob, Emiel Van Miltenburg, Natalia Zevakhina & Bart Geurts. 2014. Scalar diversity. *Journal of Semantics* 1–39.

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