We Are What We Say: Pragmatic Violations Have Social Costs

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Abstract

In two studies we show that a speaker's choice to obey or violate the pragmatic maxims of Relevance and Informativeness – as well as the reasons behind these choices (Inability vs. Unwillingness) – affect how the speaker is socially perceived, revealing a connection between pragmatic reasoning and social evaluation. Our findings further suggest that core dimensions of social evaluation (Competence vs. Warmth) are differentially informed by different aspects of a speaker's conversational behavior. We conclude that, even after a brief exposure to someone's conversational behavior, people draw social inferences about the speaker by reasoning along the same principles that inform pragmatic inferences. Our results highlight how pragmatic reasoning, social evaluation and person perception jointly underlie the meaning conveyed by linguistic utterances in communication, bringing together different areas of research in a novel way.

Keywords: social evaluation; linguistic inferences; pragmatic reasoning; maxims; conversation

Introduction

Research across linguistics and psychology has shown that listeners systematically compute the message that they extract from an utterance by drawing inferences of two different kinds. *Pragmatic inferences* allow listeners to fine tune the message of an utterance by enriching its literal meaning via reasoning about the interlocutor's communicative intentions and the discourse context. For example, if Kim asks "Is Gail dating anyone?" and John responds "She's been going to Cleveland every weekend", Kim can infer that Gail is (likely) dating someone in Cleveland (adapted from Grice 1975). While these inferences have been modeled in different ways (Grice 1975; Horn 1984; Levinson 2000; Goodman & Frank 2016 i.a.), these accounts by-and-large share the assumption that communication is *intentional* – for these inferences to be drawn, Kim must assume that John wants to communicate that particular message – and *cooperative* – John and Kim must be working jointly to achieve the purpose of attaining an effective exchange of information by following a set of communicative Maxims (e.g., Quantity, Quality, Manner & Relevance: Grice 1975; see Horn 1984; Sperber & Wilson 1986; Levinson 2000 for alternative proposals).

Social inferences, by contrast, allow listeners to evaluate and form impressions about the speaker's social and personal qualities based on how they speak. For example, if John pronounces the final consonant in *going* as *goin'*, Kim might infer (among other things) that John is – or would like to come

across as – from the Southern US, easy-going and unpretentious, in a relaxed mood, and better disposed towards rural than urban areas (Campbell-Kibler 2007). These inferences have been traditionally investigated by the discipline of sociolinguistics, with most of the work focusing on how these inferences arise in connection to particular sounds (Labov 1963; Eckert 2008, Campbell-Kibler 2007; Levon 2014 i.a.) and, less frequently, morpho-syntactic constructions (Bender 2000; Hilton 2018). Social inferences are not limited to language; work in social psychology has shown that, more broadly, any domain of human behavior can serve as a cue for people to form an impression of someone's personality and identity – and thus provide a window onto the processes whereby we judge and evaluate others on a variety of levels based on what they do (Fiske, Cuddy, Glick $ Xu 2002; Fiske 2018; Stolier, Hehman & Freeman 2020 i.a.).

Social inferences are crucially different from pragmatic ones. First, they target the social identity and personality of the speaker, as opposed to the message; second, they do not necessarily assume intentionality or cooperativeness. As a result, they have been traditionally investigated independently of pragmatic ones. This divide has been recently questioned by work showing that, besides sounds, social inferences can be systematically generated also in connection to the choice of using linguistic forms that come with non trivial semantic content, and whose deployment is therefore (at least in part) intentional. These include intensifiers (e.g., *totally*: Beltrama & Staum Casasanto 2017), demonstratives and determiners (e.g. *this/that/the*: Acton & Potts 2014; Acton 2019), discourse markers (e.g., *like*: Dinkin & Maddeaux 2017); or numerals (Beltrama 2018). In a parallel fashion, recent neo-Gricean proposals have modeled pragmatic and social inferences as jointly emerging from pragmatic reasoning – modeling these inferences with a probabilistic approach (Goodman and Frank 2016; Burnett 2019; Yoon et al. 2020). Combined together, the findings from these endeavors highlight the value of exploring the link between social and pragmatic inferences, pointing to a connection between these domains. At the same time, these studies also feature an important limitation, in that they all focus on the use of language in communicative situations in which cooperativeness can be assumed on the part of all interlocutors – even when it comes to cases in which the conversational choices of a speaker seemingly appear to deviate from one or more maxims. In particular,

previous work has focused on cases in which such violations are *flouted* to help the listener further their goals in the conversation – for instance by indirectly signaling relevant propositional information (Grice 1975); by emphasizing particular social effects (Acton & Potts 2014); or by serving a face-saving function (e.g., Mazzarella et al. 2018; Bonnefon, Feeney & Villejoubert 2009).

Yet, the move of assuming cooperativeness falls short of covering the whole range of communicative situations in which listeners draw inferences from linguistic utterances. In particular, we routinely witness conversations in which some speaker effectively violates one or more pragmatic maxims – and does so with no particular reason: for example, speakers might over-describe or under-describe things with no benefit to the interlocutor; mislead the interlocutor; or fail to address the interlocutor's questions or concerns. Although pragmatic theory typically sees these instances as conversational breakdowns (but see Sperber & Wilson 1995), these cases appear to be a productive site for listeners to form an impression of the speaker – often in negative terms (Bradford, Bitterly & Schweitzer 2020; Gaspar, Methasani, & Schweitzer 2019 i.a). Furthermore, Fairchild and Papafragou (2018) and Fairchild, Mathis and Papafragou (2020) show that the social evaluation of uncooperative behavior is crucially modulated by the perceived reason behind a violation: in particular, under-informative speakers are perceived as less helpful and trustworthy than adequately informative ones, but only in situations in which their violation can be ascribed to *unwillingness* to cooperate (i.e., when they are native speakers of a language), as opposed to *inability* to do so (e.g., when they are non-native speakers). This finding resonates with the observation that, even outside the domain of linguistic communication, unwillingness to be cooperative has a higher social cost than inability to do so, as shown by studies on both infants and primates (Behne et al 2005; Canteloupe & Meunier, 2017 i.a.). Taken together, these considerations suggest that, in order to attain a comprehensive picture of conversational behavior and pragmatic reasoning one should systematically consider cases in which cooperativeness cannot be assumed, and violations cannot be reconciled with a benevolent intention on the part of the speaker.

Current study

The present study undertakes this endeavor by asking: does maxim violation carry social costs in terms of social evaluation? And how are these costs modulated by the specific type of violation, as well as the reason behind it – and in particular, by whether violations can be attributed to *unwillingness* vs. *inability* to cooperate? On the pragmatic side, we focus on two maxims: Relevance – i.e., how related the speaker's utterances are to the conversation topic (or the Question Under Discussion; see Roberts 2012) – and Informativeness – i.e., how much information the speaker conveys in the context. On the social perception side, we assess participants' evaluations along the two core dimensions that have been claimed to underlie social traits ascription: the evaluation of someone's intentions and disposition towards others, most commonly known as *Warmth* – e.g., sociability, likability, friendliness; and the evaluation of someone's individual skills and ability to achieve goals, commonly known as *Competence* – e.g., knowledgeability, capability, assertiveness (Fiske 2018, Stolier, Hehman & Freeman 2020 i.a.). We predict that, by virtue of undermining the interlocutor's quest for information in the conversation a speaker failing to observe either Relevance or Informativeness should be socially penalized along both Competence and Warmth. Furthermore, we expect that the social penalty for pragmatic violations should be mitigated in situations in which such violations are due to the speaker's inability, as opposed to unwillingness to cooperate.

Experiment 1

Methods

Participants   Four hundred adult native speakers of English were recruited on Amazon MTurk (100 per condition) and compensated $0.30.

Materials and Procedure   The experiment was designed with PC Ibex (Zehr & Schwarz 2018) and administered online. It consisted of a single trial, which included three different parts. First, participants were shown the following text on the screen: "In this study, you will see a conversation between two co-workers, named John and Kim. After the conversation, you will be asked several questions". Second, Kim and John appeared on the screen as two black silhouettes and began a conversation, with each utterance represented as written text within a speech bubble. The conversation implemented a 2x2 between-subjects design, resulting from crossing two factors: Relevance and Informativeness. Kim started the dialogue by expressing the desire to go on either a skiing vacation or on a tropical vacation, and mentioning possible destinations. John always responded by telling Kim that he had been to all these places. John's final utterance always consisted of him telling Kim his experience vacationing in Zermatt, Switzerland, regardless of whether Kim had wanted a skiing vacation (+ Relevance) or a tropical vacation (– Relevance). John's answer was either a detailed description of the location where he had gone skiing (High Informativeness), or a short utterance in which he simply disclosed the name of that location (Low Informativeness). The fact that John's final utterance was always prefaced by "I've been to all these places" made it clear that John was epistemically able to address Kim's comment, and that any pragmatic violation in his final response could be therefore ascribed to *unwillingness* to cooperate. All dialogue combinations are reported in Table 1.

Table 1: Full dialogue & conditions for Experiment 1

Kim	I'd like to go on a skiing vacation but I don't know where to go.	Sets up + Relevance
Kim	I'm thinking Austria, Switzerland or Italy	
Kim	I'd like to go on a Caribbean vacation but I don't know where to go.	Sets up – Relevance
Kim	I'm thinking Antigua, Barbados or Bahamas. &	
John	I've been to all these places. Let's see....	—-
John	I recently went to Zermatt, Switzerland. It has the best slopes and views of all skiing places I've been to	High Informativeness
John	I recently went to Zermatt, Switzerland.	Low Informativeness

The conversation was presented incrementally: each utterance was shown for 7 seconds and then replaced by the subsequent utterance. After the conversation ended, the silhouettes of John and Kim were removed from the screen and participants were presented with four questions, reported in Figure 1 below. Responses consisted of a rating between 1 (lowest value) and 7 (highest value).

Competence:
How knowledgeable do you think John is in the conversation?
How competent do you think John is as a person?
Warmth:
How considerate towards Kim do you think John is in this conversation?
How likable do you think John is as a person?

Figure 1: Evaluation questions

Results

The average ratings for the speaker's Competence ($\alpha = 0.86$) and Warmth ($\alpha = 0.86$) in Experiment 1 are shown in Fig. 2.

A 2 (Relevance: + Relevance, – Relevance) by 2 (Informativeness: High Informativeness, Low Informativeness) factorial ANOVA was performed on participants' evaluations of Competence. There was a main effect of Relevance ($F(1, 341) = 151.31$, $p < .001$, $\eta_p^2 = 0.30$), such that + Relevance responses led to higher Competence ratings than — Relevance ones (M = 5.78, SD = 0.99 vs. M = 3.94, SD = 1.74). There was also a main effect of Informativeness ($F(1, 341) = 8.02$, $p < 0.01$, $\eta_p^2 = 0.02$), such that more informative utterances led to attributions of higher competence than less informative ones (M = 5.12, SD = 1.60 vs. M = 4.70, SD = 1.71). No interaction between Relevance and Informativeness was found
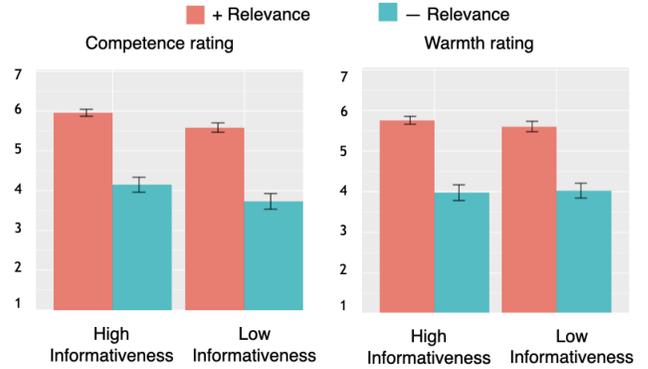

Figure 2: Average Competence and Warmth ratings for Exp1

($F(1, 341) = 0.024$, $p = 0.87$, $\eta_p^2 < 0.01$). A similar ANOVA for Warmth showed a main effect of Relevance ($F(1, 341) = 124.68$, $p < .001$, $\eta_p^2 = 0.26$), such that relevant responses led to higher Warmth ratings compared to irrelevant ones. There was no main effect of Informativeness ($F(1, 341) = 0.34$, $p = 0.55$, $\eta_p^2 < 0.01$), and no interaction between Relevance and Informativeness ($F(1, 341) = 0.45$, $p = 0.49$, $\eta_p^2 < 0.01$).

Discussion

Failure to observe Relevance brought about a hefty social penalty across both Warmth and Competence traits: a speaker uttering irrelevant statements – statements that failed to address the question under discussion introduced by the interlocutor – was rated considerably lower along the social attributes tested in the experiment. Second, the level of Informativeness of an utterance only had a limited impact: it only affected Competence, and only to a moderate extent; no effect of Informativeness was found for Warmth. Taken together, these results suggest that the choice of obeying or violating basic conversational principles carries important social consequences for the evaluation of the speaker. The question remains open, however, as to how social perceptions are affected by the *reason* behind a certain violation: since all violations in Experiment 1 were driven by the speaker's unwillingness to be cooperative, it is not possible to tease out whether, or to what extent, the observed social penalty for lack of Relevance was due to the fact that the speaker disregarded the listener's concern in its own right, or to the fact that the speaker was in the position of being more cooperative, and deliberately chose not to be so. Experiment 2 explored this issue by testing the social perception of Relevance violations in a situation in which the speaker was *unable* – as opposed to *unwilling* – to be more cooperative.

Experiment 2

Methods

Participants Two hundred participants were recruited on Amazon MTurk (100 per condition). Participants were compensated $0.30.

Materials and procedure The procedure and the materials from Experiment 1, together with the Informativeness manipulation, were retained. However, only –Relevance utterances were included. Contrary to Experiment 1, the –Relevance utterances were introduced by the phrase "I've never been to these places", indicating that the maxim violation was due to inability, and not unwillingness.

Results

Figure 3 plots the average ratings from Competence (α = 0.76) and Warmth (α = 0.82) in Experiment 2 alongside the ratings from Experiment 1 (– Relevance only).
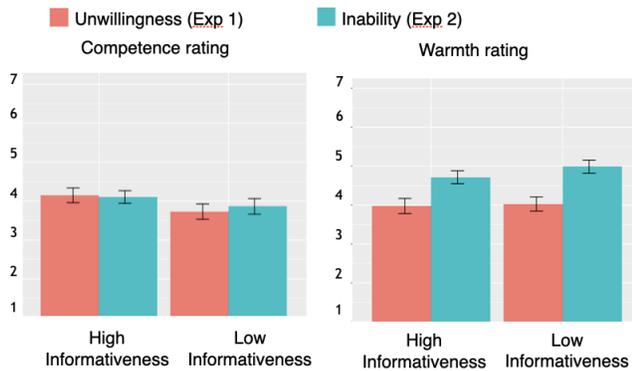

Figure 3: Average Competence and Warmth ratings for Exp1 (–Relevance only) vs. Exp2

A 2 (Experiment: 1: Unwillingness vs. 2: Inability) by 2 (Informativeness: High vs. Low) factorial ANOVA was conducted on the Competence ratings for —Relevance cases. No main effect of Experiment (F(1, 295) = 0.04, p = 0.82, η_p^2 < 0.01) or Informativeness (F(1, 295) = 3.21, p = 0.07, η_p^2 < 0.01) was found. There was also no interaction between Experiment and Informativeness (F(1, 295) = 0.22, p = 0.63, η_p^2 < 0.01).

The same analysis using the Warmth ratings for -Relevance cases as the dependent variable revealed a main effect of Experiment (F(1, 295) = 21.73, p < 0.01, η_p^2 = 0.07), with responses in Experiments 2 (i.e., those driven by inability) rated more highly than responses in Experiment 1 (i.e., those driven by unwillingness) (M = 4.84, SD = 1.38 vs. M = 4.00, SD = 1.68). No main effect of Informativeness (F(1, 295) = 0.56, p = 0.45, η_p^2 < 0.01) and no interaction between Experiment and Informativeness (F(1, 295) = 0.37, p = 0.53, η_p^2 < 0.01) was found.

Discussion

As predicted, the Warmth penalty for irrelevant utterances was mitigated when the violation was due to inability (Exp 2), as opposed to unwillingness (Exp 1) (see also Fairchild et al. 2020; Fairchild & Papafragou 2018). No effect of inability vs. unwillingness was found on Competence. This suggests that the social evaluation of a speaker is not merely informed by whether they choose to obey or violate pragmatic maxims, but also by the reasons that could have driven these choices in the first place – even though such reasons are not equally consequential for the Warmth and the Competence dimension.

General Discussion

Taken together, our results suggest that, even after a brief exposure to someone's conversational behavior, people draw social inferences about the speaker – and do so by relying on very similar cues to those that typically inform pragmatic inferences in the Gricean framework. Specifically, a speaker's conversational choices with respect to Relevance always turn out to affect how they are socially perceived; and choices with respect to Informativeness also have an impact on social evaluation, though in a less consistent fashion. Moreover, the evaluation of speaker's decision to violate these principles is further modulated by the reason behind it, and in particular by whether this choice was due to unwillingness vs. inability on the part of the speaker. It is also important to note that social evaluation is not affected in the same way, and to the same extent, by our dependent variables. Two asymmetries, in particular, emerge from our results: first, Relevance appears to have a stronger effect on social perception than Informativeness; second, the contrast between inability vs. unwillingness does not uniformly impact evaluation along the two core dimensions of Warmth and Competence.

We suggest that both asymmetries could reflect a general difference between Warmth and Competence as a relational vs. individual-oriented dimension – that is, between judgments that directly track someone's intentions towards others vs. someone's independent intellectual skills (Fiske 2018). On this view, the privileged relationship between Informativeness and Competence on the one hand and Relevance and Warmth on the other could reflect the fact that different principles of pragmatic behavior – and the violations thereof – do not carry equal weight when it comes to the interests of the interlocutor: while a speaker's choice to provide more or less relevant information has a direct impact on the interlocutor's goals and needs in the conversation – hence affecting Warmth – the choice to disclose more or less information can be interpreted as revealing someone's abilities and knowledge, independent of their dispositions towards others – hence primarily affecting Competence.

A similar explanation can also shed light on the fact that inability-driven violations are associated with a mitigated social penalty along Warmth, but not Competence. On this view, inability-driven violations, contrary to unwillingness-driven ones, can be construed as alternatives to saying nothing – that is, as an attempt on the part of the speaker to still provide some valuable information in a situation in which their epistemic state does not allow them to provide a more valuable contribution. Because Warmth is the social dimension that directly bears on the goodness of someone's intentions towards others, it is thus possible to explain why the ratings pertaining to this domain of evaluation are higher in the pres-

ence of inability-driven violations, which are compatible with the speaker being well-intentioned towards the listener. Conversely, we suggest that the lack of the same mitigation effect along the Competence ratings can be explained by the more individual-oriented, less relational nature of this particular dimension, which makes it less likely to be sensitive to the contrast between whether the speaker is unwilling vs. unable to cooperate. In addition, it is important to consider the possibility that in the unwillingness case the Competence ratings might have been affected by the fact that the speaker was effectively acquainted with the relevant facts, despite opting not to talk about them; this, in turn, could have contributing to improving the evaluation along Competence, which puts a premium on being knowledgeable about a relevant body of facts, with respect to the inability context, in which the speaker is instead openly uninformed about them, eventually offsetting whatever mitigation effect inability could have had on Competence. The emerging picture is one in which different dimensions of social evaluation are not affected uniformly, and to the same degree, by pragmatic violations – a contrast that provides broader insights on how the dynamics of the conversation are linked to social evaluation above and beyond the contexts tested in the experiment.

Looking at the broader picture, the social inferences observed in our studies afford a novel window onto how interlocutors extract information from an utterance that goes above and beyond the literal content of what is said – one that allows us to tie together pragmatic and sociolinguistic approaches to the study of communication. The first important implication of our results, an especially relevant one to pragmatic approaches to communication, is that a speaker's conversational behavior can productively and systematically invite inferences even in situations in which cooperativeness cannot be assumed – that is, when the speaker makes choices that appear sub-optimal from the perspective of communicative efficiency, and such choices are not motivated by any reason other than the speaker's own self-interest. While such cases have typically escaped the purview of pragmatic research, our results show that suspending cooperativeness does not lead to a suspension of pragmatic reasoning tout court: even when they cannot rely on the assumption that the speaker's conversational moves are motivated by the goal of attaining a mutually beneficial exchange of information, listeners continue to rely on their knowledge of pragmatic principles to assign social meaning to an utterance – and do so by following very similar considerations to those that have been theorized to underlie pragmatic inferences. It follows that a full understanding of how listeners draw inferences from linguistic behavior requires broadening pragmatic approaches to communication from conceptually and methodologically.

On a theoretical level, the systematicity with which social inferences arise in connection to uncooperative conversational choices highlights the importance of enriching Gricean and neo-Gricean pragmatic theories with models of conversation in which cooperativeness is not posited as the sole underlying principle of conversation. Especially relevant to this endeavor are approaches to dialogue and communication that are not (exclusively) built around this assumption, and are therefore more equipped to capture the interactional consequences of breaches of conversational maxims. One prominent example is Lee, Newark and Pinker's (2008) theory of indirect speech, according to which a speaker's conversational choices are the outcome of a cost-benefit analysis with respect to two functions of language – conveying information, and negotiating the type of relationship holding between speaker and hearer – ultimately aimed at allowing the speaker to maximize their own self-interest in the conversation. Applied to our case study, the choice of providing an irrelevant response can be construed as reflecting a speaker's individual preference to assign an especially high value to certain aspects of the relational dimension of language – e.g., exerting power and dominance on the listener, showing confidence – to the exclusion of others– coming across as likable and helpful; facilitating a successful exchange of information. Accordingly, the social evaluation of this choice can be likewise construed as reflecting how the listener sees it in light of their own particular interests (see Breitholtz 2020 for an alternative approach to modeling communication that does not posit the Gricean maxims and the Cooperative principle as the only organizing principle of interaction).

The idea that both others-serving and self-serving interests inform a speaker's behavior in conversation also has important implications for recent neo-Gricean endeavors aimed at modeling pragmatic and social inferences as jointly emerging from pragmatic reasoning – and in particular, game-theoretic approaches that incorporate social and propositional information alike as contributing to the informativeness of a message, and hence the utility of the message to the interlocutors (Goodman & Frank 2016; Yoon et al. 2016; Burnett 2019). While our results provide empirical evidence supporting the effort of pursuing a more unified account of different linguistic inferences, they also highlight the need to expand the scope of these models. The inferences modeled in these frameworks bear on the assumption that conversation is a cooperative game in which interlocutors are utility-maximizing agents and payoffs are calculated based on coordination; our findings, however, show that listeners can productively reason about a speaker's conversational choices, and compute social inferences, also in the absence of a joint effort to arrive at a maximally efficient exchange of information. The upshot is that endeavors to develop a unified framework to model pragmatic and social inferences should similarly be enriched to reflect the fact that social inferences can be drawn even in situations in which inferences presupposing cooperativeness are not possible.

From a methodological perspective, our findings further highlight the importance of developing a richer, more naturalistic experimental approach to the study of communication – one that situates interaction in contexts in which conversational agents are using language to simultaneously pursue

the goal of exchanging propositional information and managing the presentation of their self (see Fusaroli & Tylen 2015, Healey et al 2018 for recent examples). Pursuing this goal requires broadening the approach that characterizes most previous studies of inferences in experimental pragmatics, which tended to focus on isolated utterances, and emphasized the referential/propositional component of language use to the exclusion of its social one (Degen & Tanenhaus 2015; Huang & Snedecker 2018; Grodner et al. 2010 i.a.). By virtue of being a well-tested strategy for tapping into how interlocutors extract social information from speech (Campbell-Kibler 2007; Levon 2014), sociolinguistic perception tasks emerge as particularly promising to improve our understanding of impression formation and social perception in human behavior, affording the possibility of investigating the link between language and social evaluation above and beyond sounds and syntactic constructions.

Conclusion

The present work brings together three important areas of research: work in pragmatics exploring how utterances are interpreted; work in sociolinguistics investigating how different linguistic cues can reflect the social identity of speakers; and work in social psychology investigating how humans are judged and perceived on the basis of their behavior. Future work can examine pragmatic reasoning and social evaluation in richer contexts than the one investigated here, so as to explore how the link between these two domains is modulated by other social information about the interlocutors (e.g., age, social class) typically available in interaction.

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