Believing what you are told: Politeness and scalar inferences

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Recent studies in experimental pragmatics have investigated the effect of politeness on the derivation of scalar inferences. Most notably, Bonnefon and colleagues (2009, 2011) claim that when the scalar utterance is face-threatening ('Some people hated your speech') the scalar inference is blocked. Furthermore, contrary to evidence showing that scalar inferences come with extra cost (since Bott & Noveck, 2004), they suggest that, in face-threatening contexts, the *semantic* interpretation - *at least some people hated your speech* - is arrived at slowly and effortfully (as compared to face-boosting contexts). Their claims rest on tasks such as Table 1's, where participants are presented with a scenario that ends with a scalar utterance, which is either face-threatening (*Some people hated your speech*) or face-boosting (*Some people loved your speech*). At that point, participants are asked to evaluate the utterance through what we label as the *semantic compatibility question*. Bonnefon and colleagues report a significantly higher percentage of 'Yes' answers to the semantic compatibility question in the face-threat condition than in the face-boost one. Furthermore, 'Yes' answers take significantly longer, but only in the face-threat condition.

We argue that, while intriguing, their analysis conflates the interpretation of *some* with a different mechanism, one in which a participant decides whether or not to *accept* a speaker's intended meaning. To be clearer, we distinguish between the *derivation* of the scalar inference, which can arise as part of the comprehension process, and its *epistemic assessment*, which can result in the possibility that the addressee will subsequently reject such pragmatically generated output. The gap between comprehension and acceptance is typically bridged by *epistemic trust* (Sperber et al., 2010). Crucially, in face-threatening contexts, the addressee may have reasons to doubt the truth of the pragmatically refined meaning (what the speaker communicates) because he thinks that the speaker is trying to be kind and polite (rather than strictly honest). We tested our hypothesis through a series of MTurk studies inspired by Bonnefon et al.'s task (see Table 1). Our main experimental innovation is that we separated the presentation of the scalar utterance from participants' evaluation of it. In this way, reaction times to each part could be measured separately. These will be referred to as $RT_{UTTERANCE}$, and $RT_{QUESTION}$; their combination will be referred to as RT_{TOTAL}.

Data preparation: In order to retain the cleanest data possible, we removed from our analysis participants who (i) clicked on the relevant screen more than necessary; (ii) exceeded the following reaction times: $RT_{UTTERANCE} > 20s$, $RT_{QUESTION} > 30s$; and, (iii) were identified as outliers (SD's exceeding ± 2.5).

Study 1 (N = 292): The behavioural results of Study 1 replicate Bonnefon et al.'s finding showing that participants are more likely to answer 'Yes' to the semantic compatibility question in the face-threat condition (45%) than in the face-boost one (32%) (Fisher exact test, $p = .02$). With regard to RTs, Study 1 does not replicate Bonnefon et al. (2011). Overall RTs (RT_{TOTAL}) show that participants *tend* to be slower to answer 'Yes' when asked the semantic compatibility question in the face-threat condition ($F(1,288) = 2.75$, p = .10). However, as anticipated, by separating the scalar utterance from the listener's response to the question, it appears that slowdowns occur at the epistemic assessment stage ($RT_{QUESTION}$), with a main effect of condition ($F(1,288) = 4.21$, p = .04) and a tendency towards an interaction ($F(1,288) = 3.51$, p = .06). Similar analyses for the scalar utterance ($RT_{UTTERANCE}$) do not yield significant effects, all p's > .29.

Study 2 (N=294): Study 2 encourages participants to derive the scalar inference by (i) increasing its relevance and by (ii) characterizing the speaker as epistemically more knowledgeable with regard to the question at issue (see Table 1). As predicted, the face-threat/face-boost distinction is much clearer here ('Yes' answers: 45% vs. 12.5%) than in Study 1 (Fisher exact test, $p < .001$). Again, there are no new effects to report with respect to RT_{TOTAL} (p's $> .10$) and $RT_{UTTERANCE}$ (p's $> .28$). However, it is noteworthy that those who ultimately respond 'Yes' to the semantic compatibility question tend to read the scalar utterance faster than those who ultimately respond 'No', which goes counter to Bonnefon et al's main claim. As far as the $RT_{QUESTION}$ is concerned, we observed a significant effect of condition ($F(1,290) = 4.91$, p = .03), response type ($F(1,290) = 5.06$, p = .03), as well as an interaction that tends towards significance ($F(1,290) = 3.18$, p =.08). This trend indicates that those who respond 'Yes' in the Face-threat condition take an exceptionally long time to answer the semantic compatibility question.

Overall, we find no evidence that the scalar utterance is interpreted at different speeds across the two (face-threat vs. face-boost) conditions. Our data suggest, instead, that the process of epistemic evaluation, which operates when answering the semantic compatibility question, is the source of the reaction time differences. This undermines any claim that suggests that participants slow down while *drawing* a semantic reading of the utterance on line. These data open up an interesting direction of research within the field of experimental pragmatics as they highlight the importance of taking into consideration the cognitive distinction between comprehension and acceptance, which has been neglected in this literature so far.

References [1]Bonnefon, J-F., Feeney, A., & Villejoubert, G. (2009). When some is actually all: Scalar inferences in face-threatening contexts. *Cognition, 112*, 249-258. [2] Bonnefon, J-F., De Neyes, W., & Feeney, A. (2011). Processing scalar inferences in face-threatening contexts. In *Proceedings of the 33rd Annual Conference of the Cognitive Science Society*. Austin, TX. [3] Bott, L., & Noveck, I.A. (2004). Some utterances are underinformative: The onset and time course of scalar inferences. *Cognition*, *51*, 437–457. [4] Sperber, D., Clément, F., Heintz, C., Mascaro, O., Mercier, H., Origgi, G., & Wilson, D. (2010). Epistemic vigilance. *Mind & Language, 24*(4), 359-393.

Table 1. The table below displays the Speech story in the original version from Bonnefon et al. (2011) (translated from Dutch), as well as in the modified versions of Study 1 and Study 2. Relevant changes to the original story are in bold.

Bonnefon et. al. (2011)	Study 1	Study 2
Imagine you gave a speech at a small political rally. You are discussing your speech with Denise, who was in the audience. There were 6 other people in the audience. You are considering whether to give this same speech to another audience.	Imagine you gave a speech at a small political meeting. You are discussing your speech with Denise, who was also there. There were 6 other people in the audience that day. You tell Denise that you are thinking about giving the same speech to another group.	Imagine you gave a speech at a small political meeting. You are discussing your speech with Denise, who was also there. There were 6 other people in the audience that day and **you know that Denise spoke with all of them about it later**. **You tell Denise that you would like to know the audience's reaction.**
Hearing this, Denise tells you that 'Some people loved/hated your speech.' Given what Denise told you, do you think that it is possible that everybody loved/hated your speech?	Hearing this, Denise tells you that 'Some people loved/hated your speech.' Given what Denise told you, do you think that it is possible that everybody loved/hated your speech?	Hearing this, Denise tells you that 'Some people loved/hated your speech.' Given what Denise told you, do you think that it is possible that everybody loved/hated your speech?