Reduced sensitivity to underinformativeness?
Using a ternary judgment task to assess scalar implicature generation in L2 and L1

Natural language utterances can often receive more than one interpretation. For instance, the literal meaning of (1) corresponds to (2). However, (1) can also be interpreted as in (3):

(1) Some of my friends studied linguistics
(2) Literal interpretation: At least one of my friends studied linguistics
(3) Pragmatic interpretation/Scalar Implicature: Not all of my friends studied linguistics

According to the Standard Pragmatic Model (Grice, 1975 and subsequent work), the interpretation in (3) is pragmatically derived via an inferential process (Scalar Implicature/SI generation) whereby comprehenders take the usage of the weaker term to imply the negation of the stronger alternative on the same scale (*some ~> some but not all*)

Despite the fact that both (2) and (3) are easily accessible to typical adult language users, children strongly prefer literal interpretations and do not generate SIs at adult-like rates until relatively late in language development (e.g., Noveck, 2001). Interestingly, a similar pattern is found in (adult) L2 speakers: in the classic binary choice tasks, L2 speakers tend to accept underinformative sentences like “Some elephants are mammals” more frequently than L1 speakers, and the SI rate appears modulated by L2 proficiency (Khorsheed et al., 2022).

Do children and L2 speakers perform similarly for similar reasons? According to the Pragmatic Tolerance Account (Katsos & Bishop, 2011), children generate fewer SIs than adult (L1) speakers not because they lack the necessary pragmatic competence, but rather because - unlike adults - they are generally tolerant towards pragmatic violations. Indeed, in Ternary Judgment Tasks (TernJT), a task in which instead of binary response options (“False”, “True”), participants are given a ternary scale with an intermediate option (“A bit true”), children and adults perform alike: they judge underinformative *some*-sentences choosing the intermediate option. According to Katsos and Bishop (2011), this finding suggests that children, albeit more tolerant towards violations, are as sensitive as adults to underinformativeness and, when given the chance, can demonstrate an adult-like pragmatic competence.

With this study, we aimed to investigate whether pragmatic tolerance plays a role also in L2 pragmatic processing. Specifically, we hypothesize that the processing difficulties connected to comprehending a foreign language might make L2 speakers pragmatically more tolerant than adult L1 speakers: if this is the case, pragmatic tolerance, not a difficulty with SI generation, may be responsible for the reduced rate of SIs attested in L2.

Method

Ninety-one participants (43 L1 Dutch speakers and 48 Dutch L2 speakers of English) took part in our experiment. L2 proficiency was assessed by means of the LexTALE task (Lemhöfer & Broersma, 2012) and used to divide (by median split) the L2 participants in two groups (Low vs. High Proficiency). Following Bott and Noveck (2002), the experiment included *some*-Underinformative sentences (“Some pets are dogs”) and 5 types of control sentences with the quantifiers *all* and *some* (*some*-True, *some*-False, *all*-True, *all*-False, *all*-FalseAbsurd). Participants performed a TernJT: they were asked to judge the sentences by choosing between “False”, “A bit true”, or “True”.

Results

Performance on control conditions was as expected in L1 and L2 groups: false sentences were overwhelmingly rejected and true sentences accepted; the middle option was hardly ever selected. Participants’ responses in the critical condition *some*-Underinformative are shown in Figure 1. Regression analysis confirmed that the intermediate option was less likely to be selected compared to the other responses ($\beta = -3.7$, $p < .001$) and the L1 and L2 groups did not

differ in their tendency to choose the intermediate option as opposed to the other choices.

Furthermore, to assess participants' tendency to accept the underinformative sentences, we created a factorial outcome variable with two levels: "acceptance" ("True") vs. "other response" ("False" and "A bit true") and found that the L2_Low Proficiency group was more likely (β = 1.24, $p < .05$) than the other two groups (L1 and L2_High Proficiency) to fully accept *some*-Underinformative ("True").

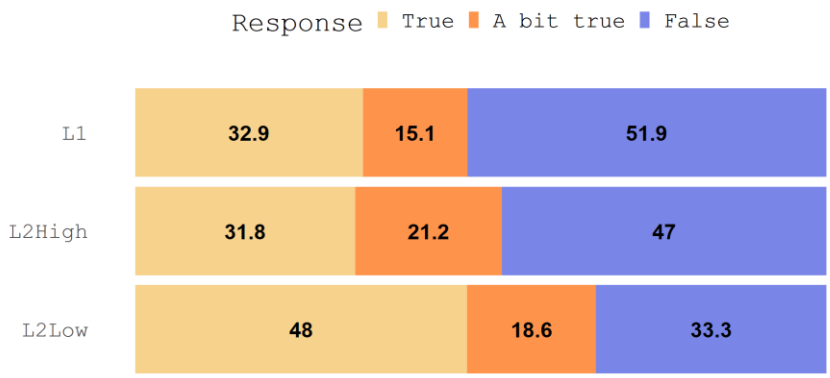

Figure 1: Percentage of responses of the L1 and L2 (High Proficiency vs Low Proficiency) groups on the Ternary Judgment Task

Discussion and Conclusions

In line with previous literature, our study brings additional support to the observation that L2 proficiency modulates the rate of acceptance of underinformative sentences: our L2_Low Proficiency group accepted *some*-Underinformative utterances 48% of the time (vs. 32% in L2_High Proficiency). At the same time, our study does not suggest that L2 speakers differ from L1 speakers in terms of pragmatic tolerance: despite the availability of an intermediate option, L2 speakers (irrespective of proficiency) were not likely to judge *some*-Underinformative sentences more often as "A bit true". Taken together, these findings suggest that, despite the use of a TernJT, L2 speakers show a reduced sensitivity to underinformativeness (modulated by proficiency) that is not attributable to a tolerant attitude towards pragmatic violations.

Finally, our study suggests that the reliability of TernJTs for gauging inferential skills should not be taken for granted. In fact, neither our L2 groups nor, importantly, our L1 group, behaved as expected in the TernJT: even these latter participants failed to preferentially select the intermediate response. An unexpected behavior in the control group has emerged before in previous studies with TernJTs (e.g., Wampers et al., 2018); this high variability in the performance of the control group casts doubt on the idea that the TernJT can be used as a fine-grained, more sensitive measure to assess and uncover differences in the pragmatic skills of different populations.

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