

Experiment 1: “sense” data analysis

Truth Clauses and False Connections

Karolina Krzyżanowska, Peter Collins, and Ulrike Hahn

Supplementary Materials

Figure 1 shows the descriptive data for the sense question: “In this context, would it make sense for [the teacher] to say...” The figure shows a similar pattern to the assertability data (reported in the paper). Once again, conjunctions are more assertable than conditionals in the top row, but not in the bottom row. Once again, 6 out of 8 conditions receive high ratings and the exceptions are conditionals without an inferential

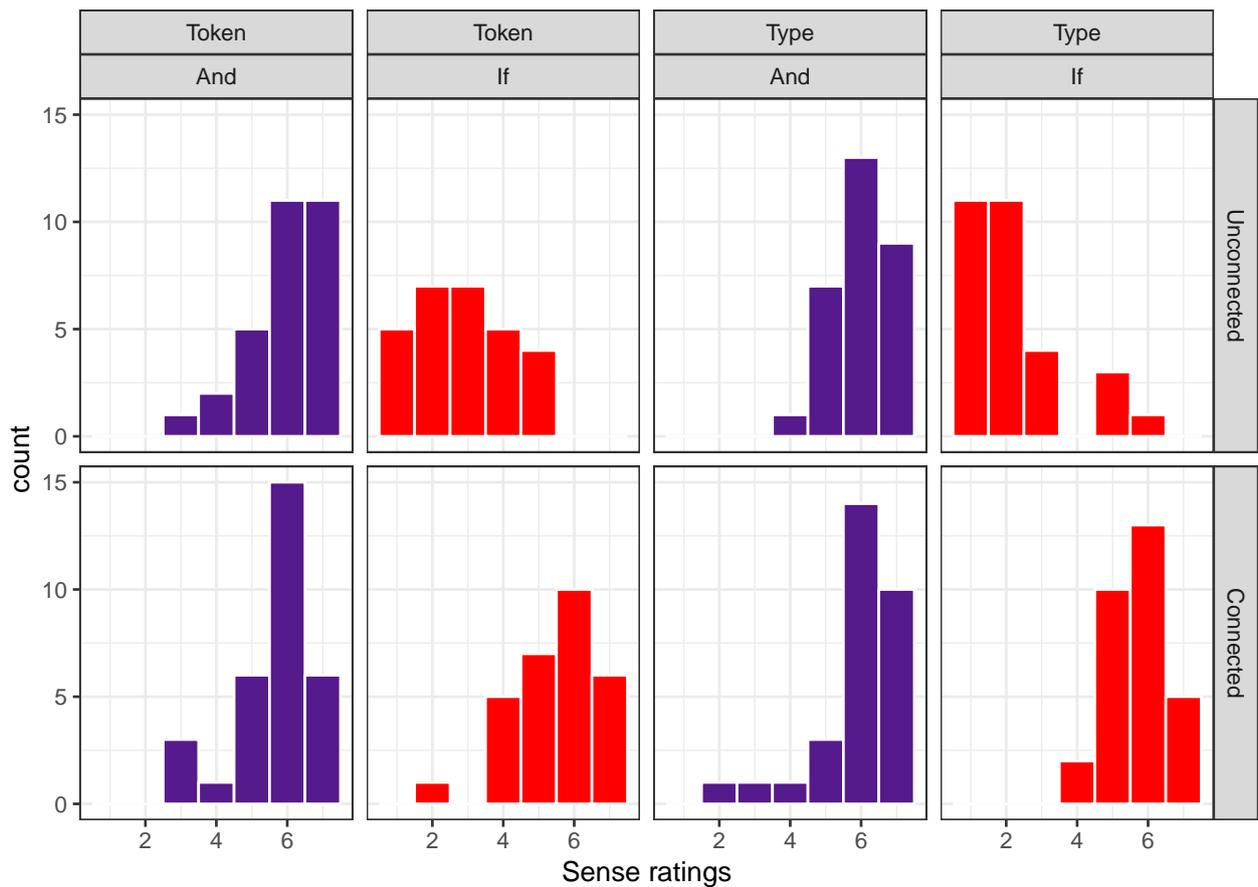


Figure 1: Distribution of the responses to the “sense” question in the Experiment 1.

connection. The figure suggests an interaction between Connection and Sentence, but a similar pattern in Types and Tokens. Table 1 reports the descriptive statistics.

		Token		Type	
		Unconnected	Connected	Unconnected	Connected
And	mean	6.00	5.70	6.13	6.02
	sd	1.28	1.52	1.15	1.39
If	mean	2.96	5.51	2.30	5.81
	sd	1.84	1.63	1.60	1.31

Table 1: Descriptive statistics for “sense” data from Experiment 1.

The analysis comprised a between-participants ANOVA on mean ratings (averaged across items) for each participant: Clause Content (Type/Token) \times Connection (Connected/Unconnected) \times Sentence (And/If). Table 2 reports the results of the ANOVA. Note that, as above, a Holm-Bonferroni adjustment was applied to the ANOVA.

For completeness, we note that sentences were rated as making significantly more sense with an inferential connection ($M = 5.76$, 95% CI [5.56, 5.96]) than without ($M = 4.35$, 95% CI [4.15, 4.55]). We turn to the predictions relevant for our research questions. For *Research Question 1* we see that “And” sentences ($M = 5.96$, 95% CI [5.76, 6.16]) were rated as making significantly more sense than “If” sentences ($M = 4.15$, 95% CI [3.94, 4.35]). Again, this effect was moderated by an interaction with Connection. Figure 2 plots the estimated marginal means, and shows the interaction of Connection and Sentence.

We followed up the interaction of Connection and Sentence with comparisons on the estimated marginal means. These comparisons were treated as a family of 4 tests, and the significance level was set at $p = .013$. These analyses demonstrated that, when there was no connection, “and” sentences were rated as making significantly more sense than “if” sentences ($M_{Difference} = 3.43$, $SE = .20$, $t(230) = 16.78$, $p < .001$). As above, this difference amounted to almost half of the response scale. When there was a connection, “and” sentences were rated as making only slightly, and non-significantly, more sense than “if” sentences ($M_{Difference} = .20$, $SE = .20$, $t(231) = .99$, $p = .32$). The parameter estimate for the difference and its standard error indicate that the data are compatible with small positive and negative differences between sentence types. As with the assertability data, these findings conflict with Grice. And as with the assertability data, “if” sentences with an inferential connection received sense ratings comfortably above the midpoint of the scale, as shown by the estimated marginal mean

Effect	df	MSE	F	η^2	p
Content	1, 230	1.23	0.02	< .001	.88
Connection	1, 230	1.23	95.63	.29	< .001
Sentence	1, 230	1.23	159.04	.41	< .001
Content*Connection	1, 230	1.23	3.95	.02	.19
Content*Sentence	1, 230	1.23	1.99	.009	.48
Connection*Sentence	1, 230	1.23	125.86	.35	< .001
Content*Connection*Sentence	1, 230	1.23	1.84	.008	.48

Table 2: Results of the ANOVA, with Holm-Bonferroni adjustment, for the “sense” data from the Experiment 1, with Holm-Bonferroni adjustment.

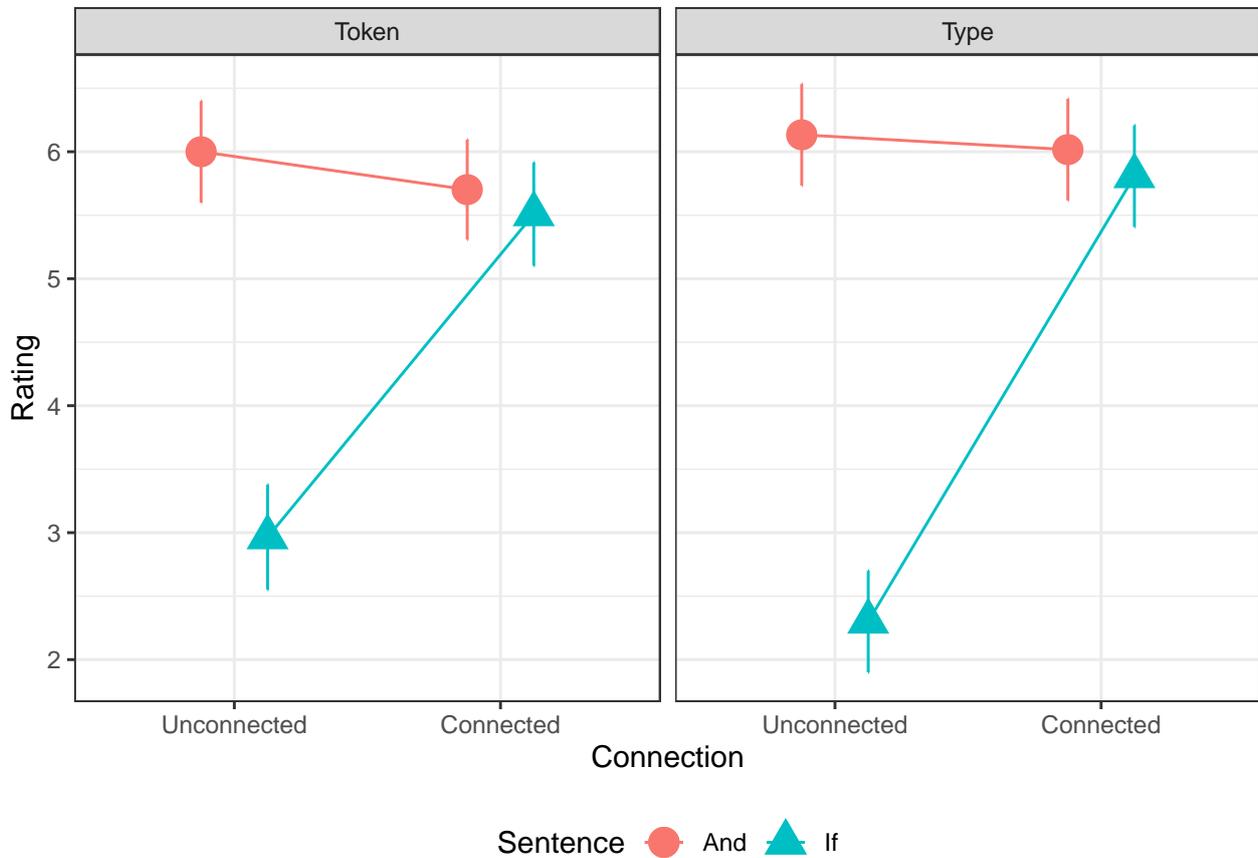


Figure 2: Estimated marginal means for the “sense” data from the Experiment 1. The figure shows the interaction of Connection and Sentence.

($M = 5.66$, 95% CI [5.37, 5.94]).

For *Research Question 3* we see that an inferential connection did not benefit sentences equally. “And” sentences were rated as making slightly and non-significantly less sense with a connection than without ($M_{Difference} = .21$, $SE = .20$, $t(230) = 1.03$, $p = .31$). “If” sentences were rated as making substantially and significantly more sense with a connection ($M_{Difference} = 3.03$, $SE = .21$, $t(230) = 14.72$, $p < .001$), a difference of some 43.29% of the response scale.

For *Research Question 4*, the data showed no clear effect of Clause Content. As the estimated marginal means show, Type sentences were rated as making very slightly and non-significantly more sense ($M = 5.06$, 95% CI [4.86, 5.26]) than Token sentences ($M = 5.04$, 95% CI [4.84, 5.25]). The confidence intervals show almost complete overlap. The Clause Content variable did not enter into significant interactions.