
Over-specifications efficiently manage referential entropy in situated communication

Donnerstag
09.03.2017
11:45 – 12:15
B3 2, 0.03

Elli N. Tourtouri
Universität des
Saarlandes

Francesca Delogu
Universität des
Saarlandes

Matthew W. Crocker
Universität des
Saarlandes

elli@coli.uni-saarland.de

delogu@coli.uni-saarland.de

crocker@coli.uni-saarland.de

When referring to objects in their visual environment, speakers often use more information than required for referent identification, thereby violating Grice's Quantity maxim [1]. Previous research provided contradicting evidence suggesting either that such over-specifications (OS) hinder referential processing [2, 3], or that their processing does not differ from that of minimal specifications (MS) [4]. We provide evidence that OS in fact aids listeners in their effort to identify the visual target, especially when the number of referential candidates is increased.

In an eye-tracking experiment, participants were presented with arrays of objects and heard OS or MS descriptions of a target, reducing referential entropy more or less gradually. We hypothesised that OS would result in faster and easier target identification than MS, especially when referential candidates are eliminated more gradually. We find that, when referential entropy is reduced less gradually, OS results in equally fast and easy target identification as MS, while OS facilitates reference resolution when more visual search is required.

From these results we conclude, firstly, that situated comprehension is sensitive to the distributional properties of the visual environment, as well as the encoding of the referring expression. Secondly, we argue that the prime determinant of processing effort in situated communication is the efficient modulation of visual search complexity through the gradual reduction of referential entropy across the utterance, even when this results in violations of the gricean maxim.

References: • [1] Grice (1975). In Cole & Morgan (Eds.), 41–58. • [2] Engelhardt et al. (2011). *Brain Cogn*, 77, 304–331. • [3] Davies & Katsos (2013). *J pragmat*, 49, 78–106. • [4] Arts et al. (2011). *J pragmat*, 43, 361–374.

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