(In-)definites, (anti-)uniqueness, and uniqueness expectations

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Summary Using *A* in noun phrases such as *A father of the victim* is odd, which is commonly explained by the principle *Maximize Presupposition*, requiring speakers to use the alternative with the strongest presupposition (here *the*, given its uniqueness presupposition). This results in an anti-uniqueness inference for *A* (clashing with stereotypical expectations in the example at hand), sometimes labelled as an 'anti-presupposition' (Percus 2006), as it derives from reasoning over the presuppositions of alternative forms. We compare these inferences to the uniqueness inferences associated with definites, while manipulating uniqueness expectations in a picture manipulation task using visual world eye-tracking. This offers a minimal comparison of uniqueness-based inferences that are lexically encoded vs. pragmatically inferred, and furthermore tests the prediction that the accommodatability of its presupposition (Rouillard & Schwarz, 2018), plays a role in the derivation of anti-uniqueness inferences.

Experiment Participants (n=75) played a simple game where they were provided with descriptions (containing indefinite or definite articles) of spills that happened in different rooms, and then had to try to best match the description by dragging a splash representing a spilled beverage to one of two room settings, which differed in whether they contained one or two relevant objects.

(1)   Peter spilled wine on {a/ the} {TV/ pillow} in the living room.

Moreover, the referenced objects were varied with regards to whether they would be typically unique (e.g., TV) or not (e.g., pillow) in the given setting (e.g. living room; see Fig. 1/2, as established by a norming study (asking 50 native speakers of English "How typical is it that there is exactly one TV in a standard living room?"). Picture choices, response times and eye-movements were tracked during the task.

(a) Pic1   **(b)** Pic2

(a) Pic1   **(b)** Pic2

Figure 1: -typically unique: {*The / A*} *pillow*, Unique Def. (Pic1) and Non-unique Indef. (Pic2) Targets.

Figure 2: +typically unique: {*The / A*} *TV*, Unique Def. (Pic1) and Non-unique Indef. (Pic2) Targets.

Participants also went through a brief constrained production phase, where they had to drag words to form a sentence of the form above to describe a provided picture. This was intended to engage them with the task more by seeing both sides of the game, and to highlight the alternative choices between determiners in relation to the number of relevant objects in the picture. Production and comprehension block order was counterbalanced across participants.

Results In line with previous results and its assumed pragmatic status, the anti-uniqueness inference of indefinites is less readily available, and less robust than the uniqueness inference of definites. This is witnessed by (i) low production 'accuracy' in the initial production block (Fig. 3), lower overall comprehension accuracy, and bigger susceptibility to plausibility effects biasing against multiple instances of stereo-typically unique objects, especially in the initial comprehension block, see Fig. 4 (statistics in the captions were done using linear mixed effect models in R, with item, condition and subjects as random slopes).
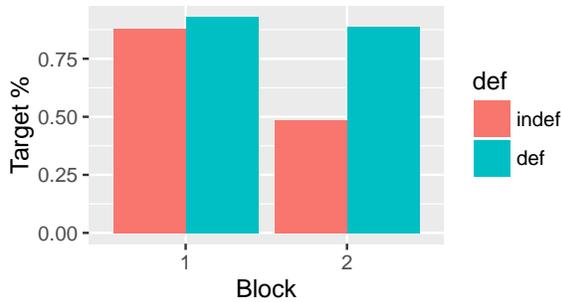
Figure 3: Target determiner choices for production task by block order; 1= production first, 2= comprehension first. Significant interaction between definiteness and order (*p*<.05).
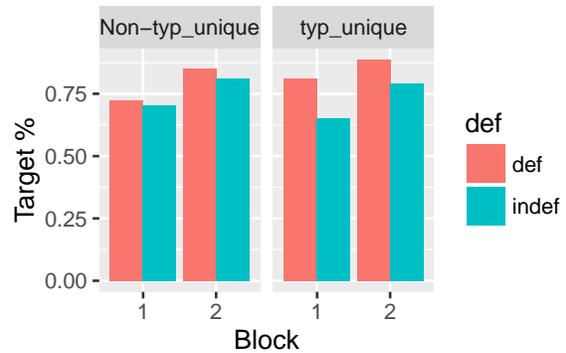

Figure 4: Target selections for comprehension task by block order and stereo-typical uniqueness; 1= comprehension first, 2 = production first. (i) Significant main effect of block order (*p*<.001), present at all levels, with more target choices for comprehension second. (ii) Interaction between typical uniqueness and determiner in Block 1 (p< .01), driven by more frequent target choices for Def in +typically unique (parallel simple effect present for Block 2).

In line with the differences in accuracy, eye movement patterns are more mixed for indefinites when looking at all trials (graph not shown); however, homing in at target choice trials, there is no difference between determiners in overall time-course for fixation shifts to the respective targets (Fig. 5) (this also holds for RTs). The only effect of stereo-typical uniqueness is a general bias towards the more unusual picture (e.g., with 2 TVs), present for both determiners. For the non-stereo-typically unique items, definite and indefinite pattern the same in the overall time-course.
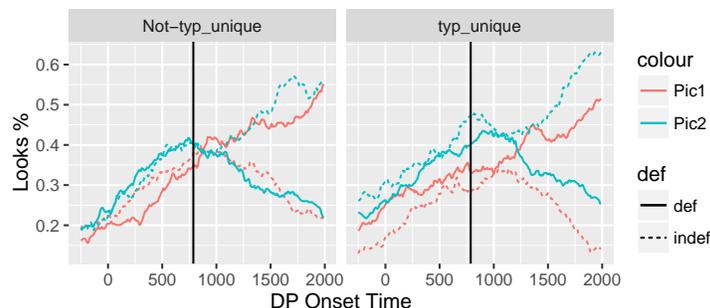

Figure 5: Proportions of fixations on each picture, relative to DP Onset. (Black line indicates mean DP-offset/PP-onset.)

Conclusion In combination, these results support the idea that the anti-uniqueness inference for indefinites is pragmatically derived from reasoning over the alternative expression and its presupposition,in that the inference is not robustly present from the start but is boosted by exposure to the alternatives and how they could matter (reflected in increased accuracy in 2nd blocks for both production and comprehension). At the same time, when the anti-uniqueness inference IS accessed, resulting in target choices, then there is no difference in time course between determiners, at least in the present task (note that the relative lateness of the effect likely is at least partly due to the nature of the task requiring clicking and dragging splash-pictures around). This suggests that the additional reasoning involved in deriving the inference by reasoning over the lexical presupposition of the alternative does not (necessarily) require extra processing time if the conditions for this contextual reasoning over alternatives are met. **Selected References** • Heim 1991. Artikel und Definitheit. In *Handbook of Semantics*. • Percus 2006. Antipresuppositions. In *Theoretical and Empirical Studies of Reference and Anaphora* • Sauerland 2008. Implicated presuppositions. In *Sentence and Context*, DeGruyter.