# New data on the nature of competition between indefinites and definites

**Introduction** We report experimental data on the status of 'anti-presuppositions', which are generally seen as inferences resulting from reasoning over presuppositional alternatives, focusing on the anti-uniqueness inferences based on the competition between definites and indefinites, c. (1).

(1) # {A/The} sun is shining.

We see that, across 3 tasks, anti-uniqueness inferences for indefinites pattern differently from both implicatures and presuppositions. The results raise important methodological issues, and also pose challenges for recent theoretical proposals that these inferences, just like quantity-based implicatures under a grammatical approach (Fox 2007, Chierchia et al. 2012), are derived via a mechanism of exhaustification (Magri 2009, Marty 2017, Elliott & Sauerland 2018).

**Experiments** 3 task variations involving pictures and sentences tested for the relation between sentences with definite and indefinite descriptions and pictures with one or multiple referents. Experiment 1 used a forced choice picture selection task, experiment 2 was an acceptability rating study and experiment 3 employed the covered box (CB) paradigm. The materials utilized dialogues as in (2).

(2) a. What's wrong?      b. Look! {A/The} shirt in my closet has a stain on it.

In the definite version, the sentence presupposes that there is only one shirt in the child's closet (uniqueness), whereas the indefinite is usually taken to convey an anti-presupposition of anti-uniqueness (that there is more than one shirt), and an implicature that only one of the shirts in the closet has a stain on it (exactly-one implicature). Dialogues were presented as a comic strip showing a parent and child having a conversation, with the latter starting with *Look!* to highlight speaker and hearer's shared situational knowledge; see fig. 1.

The tasks used different judgments about the relation of the child's answer to various closet picture representations. Pic. (a) (see fig. 2) satisfies anti-uniqueness and the exactly-one implicature. Pic. (b), (see fig. 3) satisfies uniqueness, as well as the exactly-one implicature. Pic. (c) (see fig. 4) neither satisfies uniqueness, nor the exactly-one inference, but does satisfy anti-uniqueness. Given theoretical assumptions, picture (a) is thus considered the relevant target for the indefinite, whereas picture (b) is the relevant target for the definite. Picture (c) is not a (fully) appropriate match for either determiner.



Fig. 1. Context used in experiments 1/2
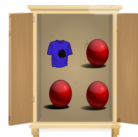


Fig. 2. (a)SINGLESTAIN



Fig. 3. (b)SINGLESHIRT



Fig. 4. (c)MULTIPLESHIRTS

Experiment 1 used a forced-choice picture selection task, with Picture (b) pitted against the others for both determiners, yielding 4 conditions. An analysis using generalized linear mixed effects models and the glmer function in R revealed a significant interaction between DETERMINER and PICTURE ($p<.001$): whereas for the definite SINGLESHIRT choices were at ceiling for both competitors, the indefinite showed a strong preference for SINGLESTAIN over SINGLESHIRT, while still preferring SINGLESTAIN over MULTIPLESHIRTS (see fig. 5).

The acceptability rating study presented the 3 pictures in the comic strip context individually and asked participants to rate the appropriateness of the child's answer in light of the depicted situation. Acceptability data were analyzed using linear mixed effect models and the lmer function in R. While both determiner versions were judged to be less good in the MULTIPLESHIRTS context, there were no significant differences between determiners for all conditions (see figs. 6 and 7).

As a third methodological angle, we used a covered box task (Huang et al. 2013) to present the SINGLESHIRT picture along with a CB picture, where the items in the closet were hidden. We also included a variation of the context, where the adult asked 'Why are you not ready?' to further highlight the relevance of uniqueness (not depicted). An analysis using generalized linear mixed effects models and the glmer function in R revealed no difference between conditions, overt picture choices were at ceiling for both determiners, see fig. 8.
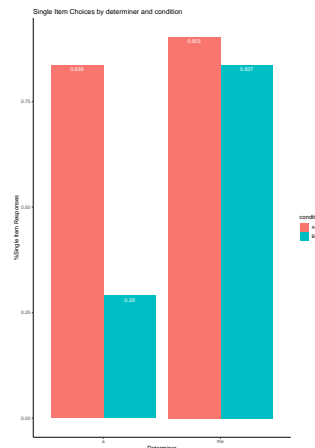


Fig. 5. Percentage of choices for SINGLESHIRT in both conditions. Condition A= competitor MULTIPLESHIRTS, condition B= competitor SINGLESTAIN.
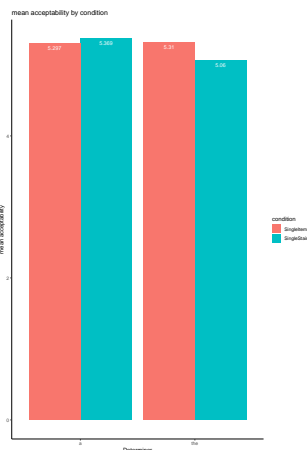


Fig. 6. Acceptability of sentences with definite and indefinite in the SINGLESHIRT and SINGLESTAIN condition.
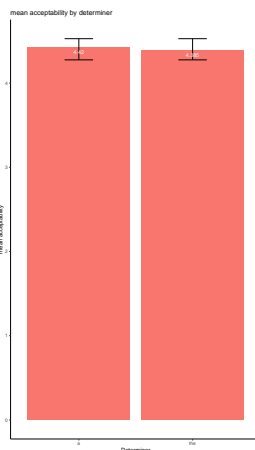


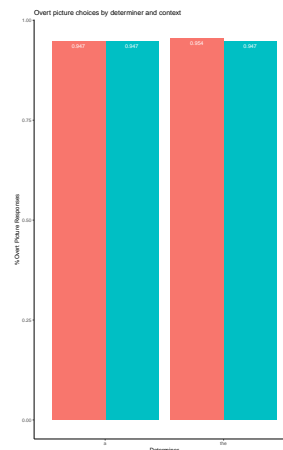Fig. 7. Acceptability of both determiners in the MULTIPLESHIRTS condition.



Fig. 8. Overt picture choices (competitor covered box) by context and determiner.

**Discussion** While we have found clearer evidence for the anti-uniqueness inference of indefinites than previous experimental work (Clifton 2013, authors 2019a) in the forced choice task, it did not leave any mark whatsoever in the acceptability or CB versions, in contrast to the uniqueness presupposition of definites and the implicature associated with indefinites. This further strengthens previous experimental results (authors 2019a,b, Schneider et al. 2019) showing that the anti-uniqueness inference has a weaker epistemic status. Our results suggest that reasoning over presuppositional alternatives is driven by different factors than reasoning involved in deriving implicatures. Theories that postulate the same underlying mechanism for both inferences must be considered too strong in view of our data, unless they work with a theory of alternatives that predicts restricted availability of presuppositional alternatives to exhaustification.