

The role of focus and alternatives in presuppositional competition

A comparison between German and English

Network meeting definiteness 2022, Humboldt University, Berlin

Nadine Bade (joint work with Florian Schwarz), 29th of June 2022

Presuppositional competition

- Determiners enter competition on the presuppositional level
- What is the role of focus and alternatives when backgrounded meaning is in competition?

Today

- (Re-)examine data on competition between focused and unfocused indefinites versus definite determiners in German and English
- Offer a decompositional analysis of presuppositional determiners allowing them to enter “part-time” competition

Implicated presuppositions

- (1) a. #John looked at a sun during the eclipse.
b. John looked at the sun during the eclipse.
- (2) a. #John broke all of his legs during the skiing trip.
b. John broke both of this legs during the skiing trip.
- (3) C: John came.
a. #Mary came.
b. Mary came, too.

Heim, 1991; Percus, 2006; Sauerland, 2008; Singh, 2009. Bade, 2014; Bade, 2016; Bade, 2017; Bade & Tiemann, 2015; Marti, 2018; Anvari, 2019; Bade & Schwarz, 2019a, b, 2021; Schneider et al. 2019a,b; Bade & Renans, 2021

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Maximize Presupposition! (Heim, 1991)

Presuppose as much as possible!

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- (1) a. #John did **not** look at a sun during the eclipse.
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Meaning of (in)definites

Based on a classic Fregean view on (in)definiteness (Frege, 1892; Strawson, 1950)

- (3) $[[\text{the}]](P)(Q)$ is only defined if there is a unique x s.t. $P(x)$ is true.
If defined, it is true if there is an x s.t. $P(x)$ and $Q(x)$
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The two determiners must be meaning equivalent (on the level of assertion) to predict the described effects

Meaning of (in)definites

- The same mechanism is assumed to be behind derivation of scalar implicatures and implicated presuppositions
- Under some approaches, the two inferences are derived by the same operator which is part of the grammar (Singh, 2008; Magri, 2009; Marty, 2018) —> EXH/O, akin to the meaning of “only”
- However, the alternatives differ in nature

Goals of the talk

Today (in more detail):

- Present evidence that the (lack of) competition is not fully captured by this view
- Suggest a decomposed analysis: $[[\text{the}]] = \text{DEF} + \exists$
- Meaning equivalence of “a”/“the” in certain environments
- Highlight importance of (visual) alternatives in explaining differences

Case study: indefinites/definites

“A/One shirt in Benjamin’s closet is blue.”

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Goal: comparison between processing of **scalar implicatures** and **(implicated) presuppositions**

Experiments

“A/One shirt in Benjamin’s closet is blue.”

“The shirt in Benjamin’s closet is blue.”

- Series of visual world (eye-tracking) studies in German and English
- 2 factors: picture competition x determiner (A/The/One/ONE_F)
- Second factor between subjects (in later iterations within)
- Overt competitor/covered box
- Follow-up studies on “both”/“all” and acceptability rating

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**Variant 1 a: overt target/
competitor (English)**

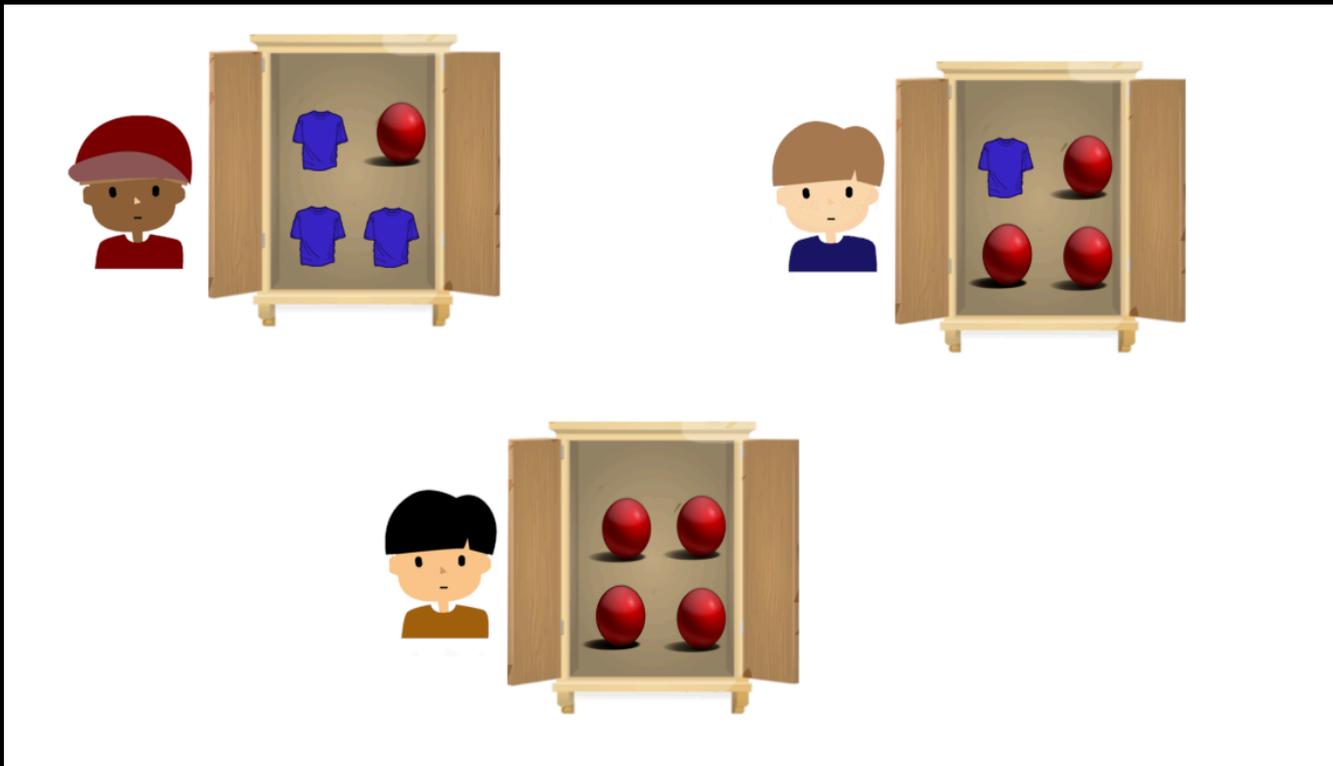
Task and Procedure

“A/One shirt in Benjamin’s closet is blue.”

“The shirt in Benjamin’s closet is blue.”

- Participants heard the sentence above on head phones
- They saw different pictures on screen
- Their task was to choose Benjamin
- While making the choice their eye-movements were recorded
- 120 participants (University of Pennsylvania undergraduates) in the lab

Condition A



“A/One shirt in Benjamin’s closet is blue.”

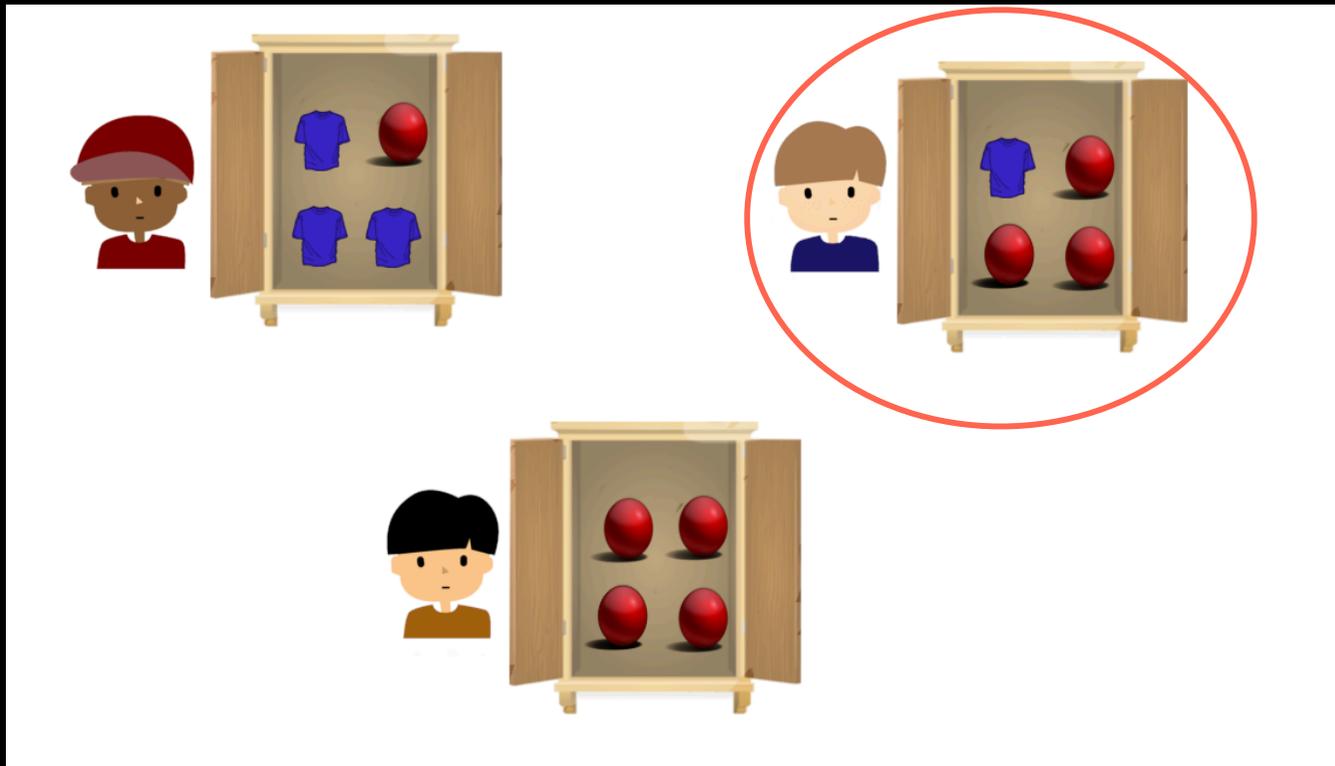
Condition A

Scalar Impl.

TRUE

Impl. Pres.

FALSE



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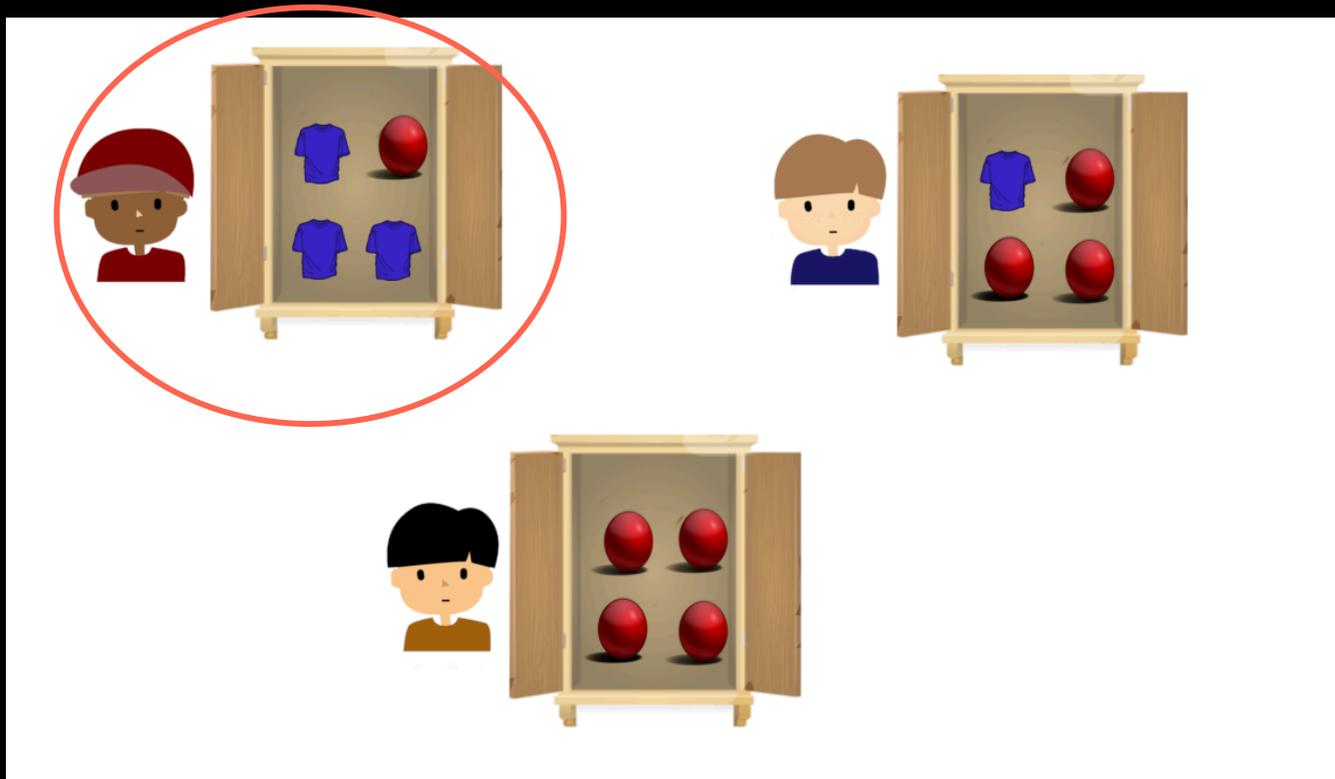
Condition A

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FALSE

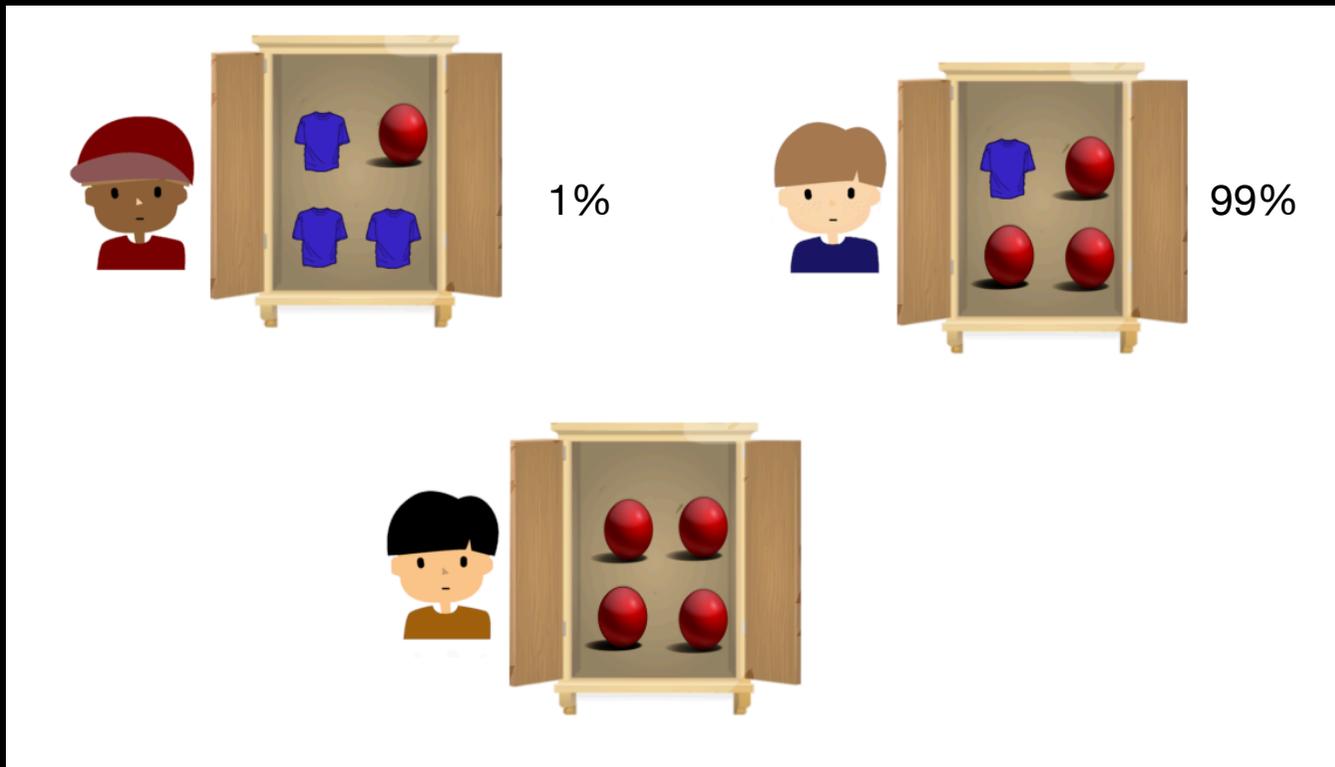
Impl. Pres.

TRUE



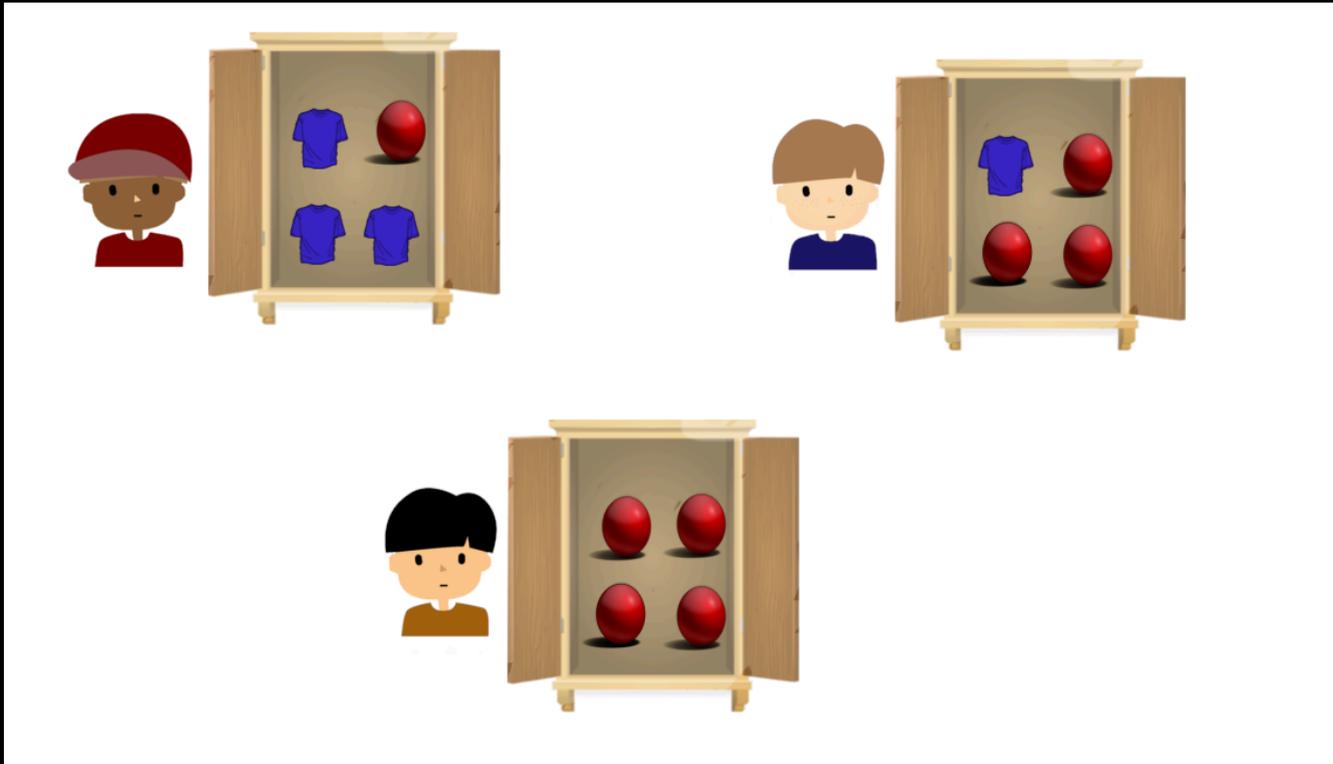
“A/One shirt in Benjamin’s closet is blue.”

Condition A: results



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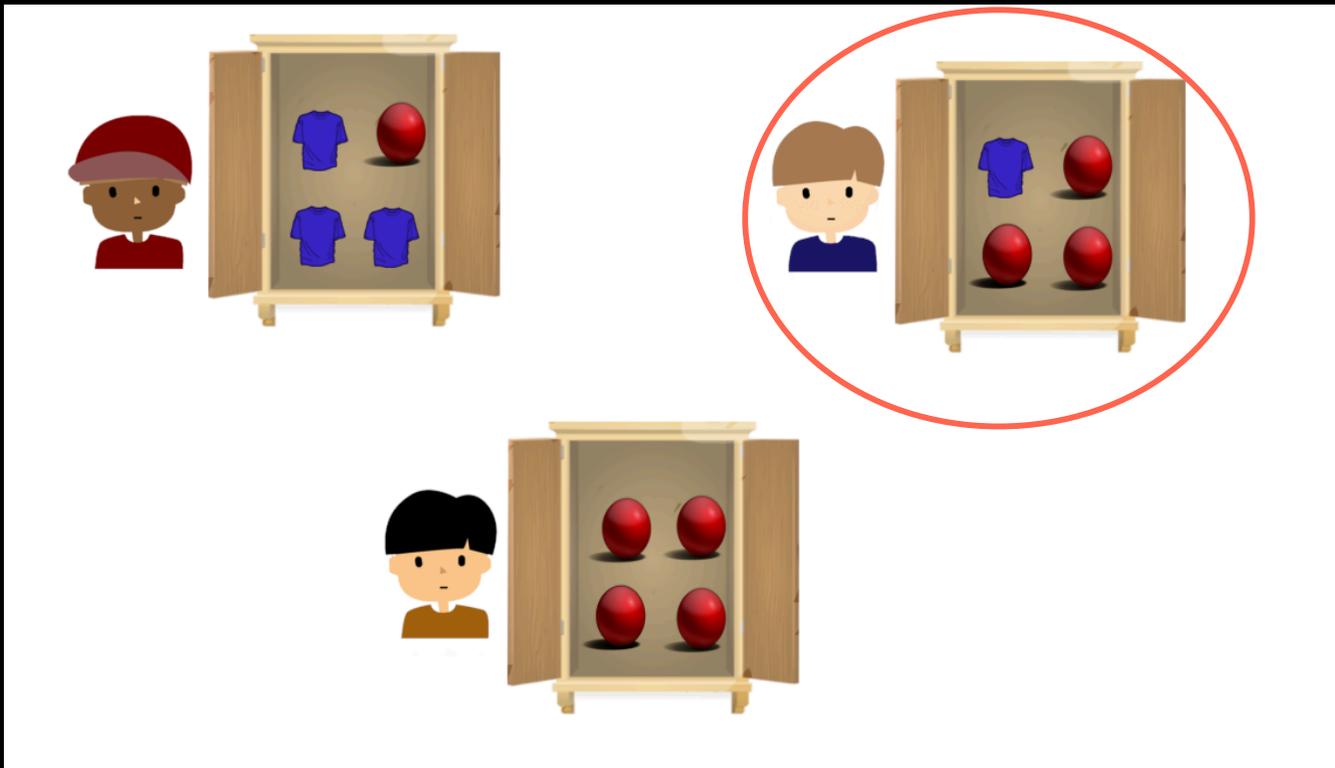


“The shirt in Benjamin’s closet is blue.”

Condition A

Presupposition

TRUE

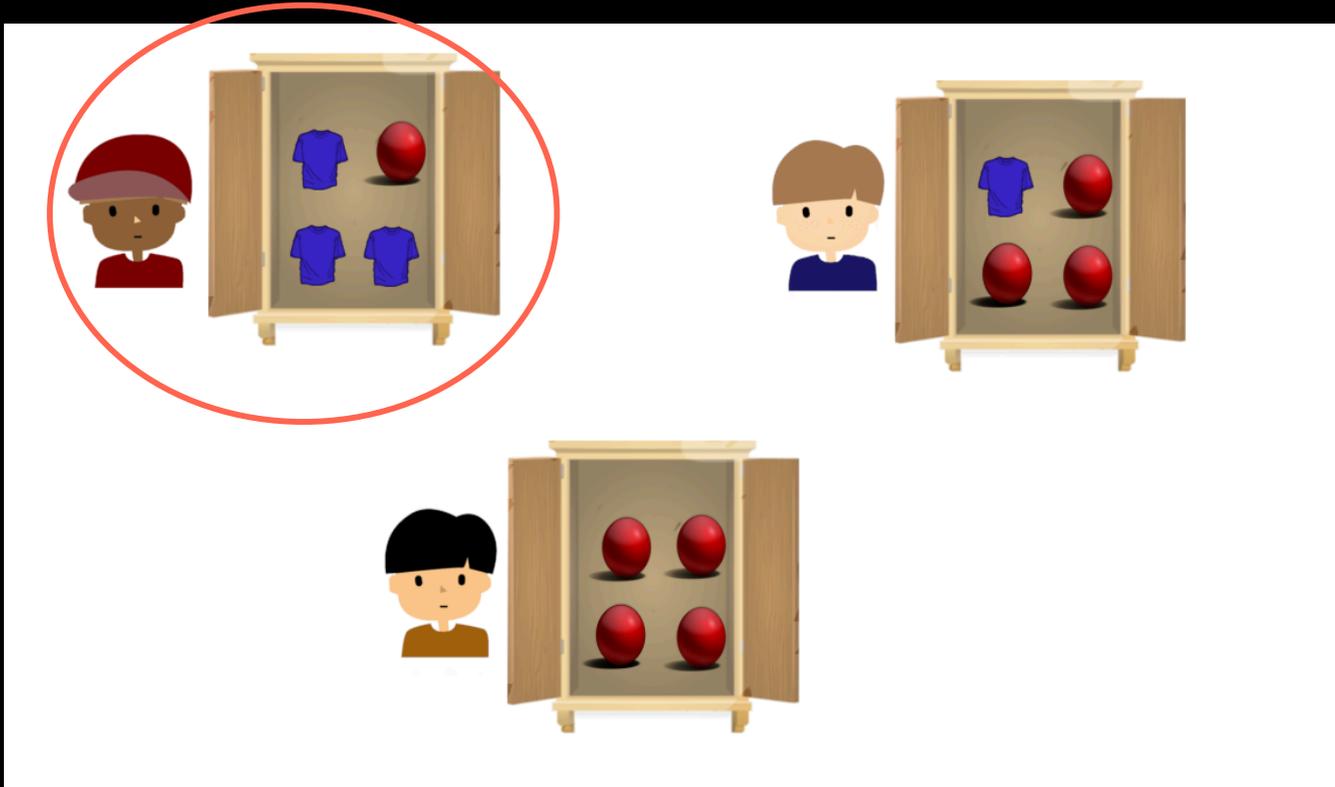


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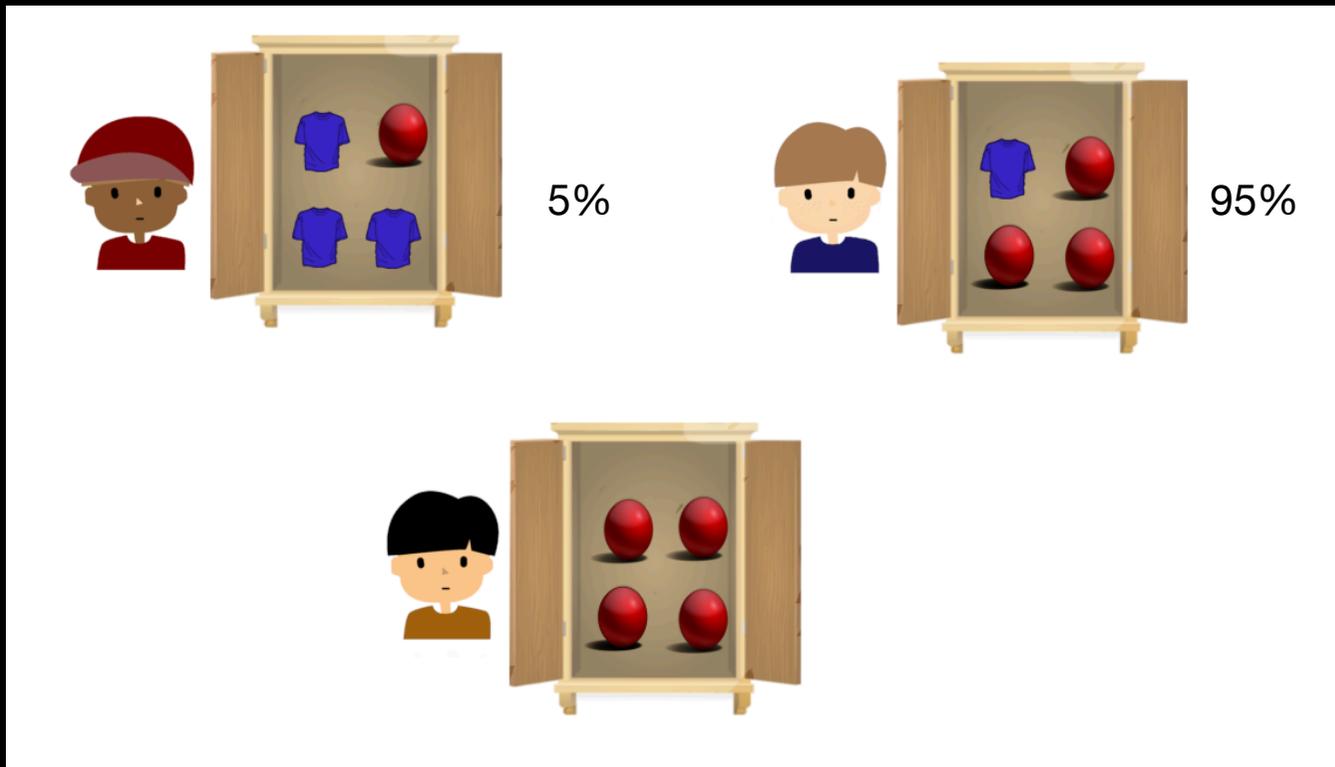
Presupposition

FALSE



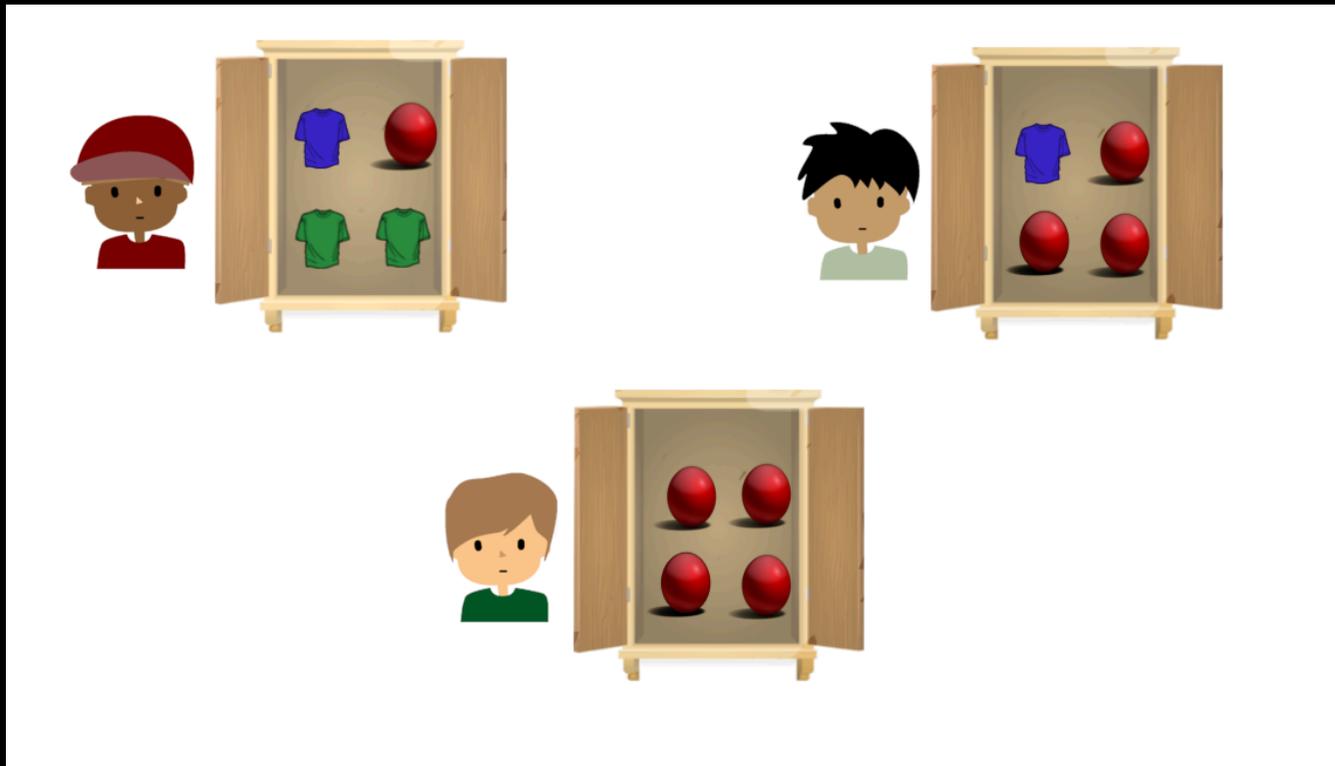
“The shirt in Benjamin’s closet is blue.”

Condition A: results



“The shirt in Benjamin’s closet is blue.”

Condition B



“A shirt in Benjamin’s closet is blue.”

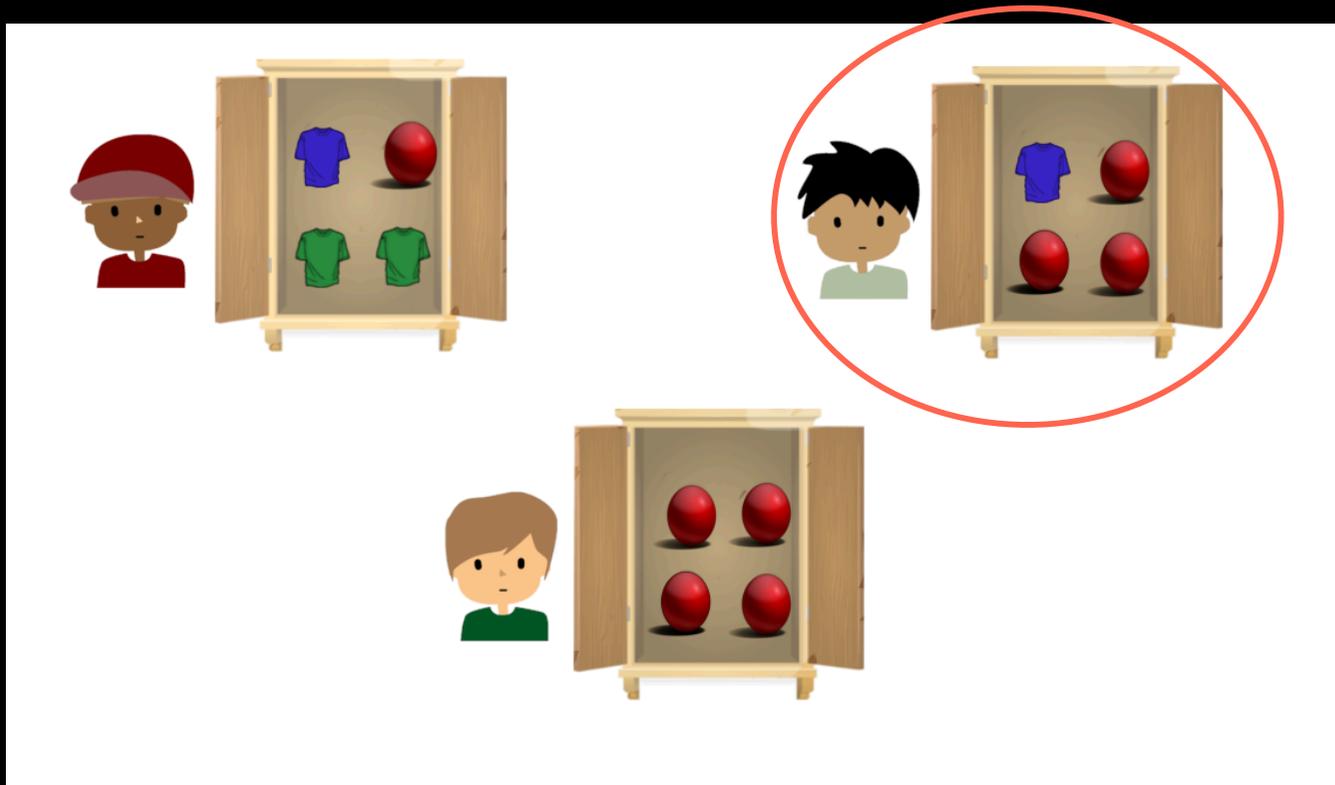
Condition B

Scalar Impl.

TRUE

Impl. Pres.

FALSE



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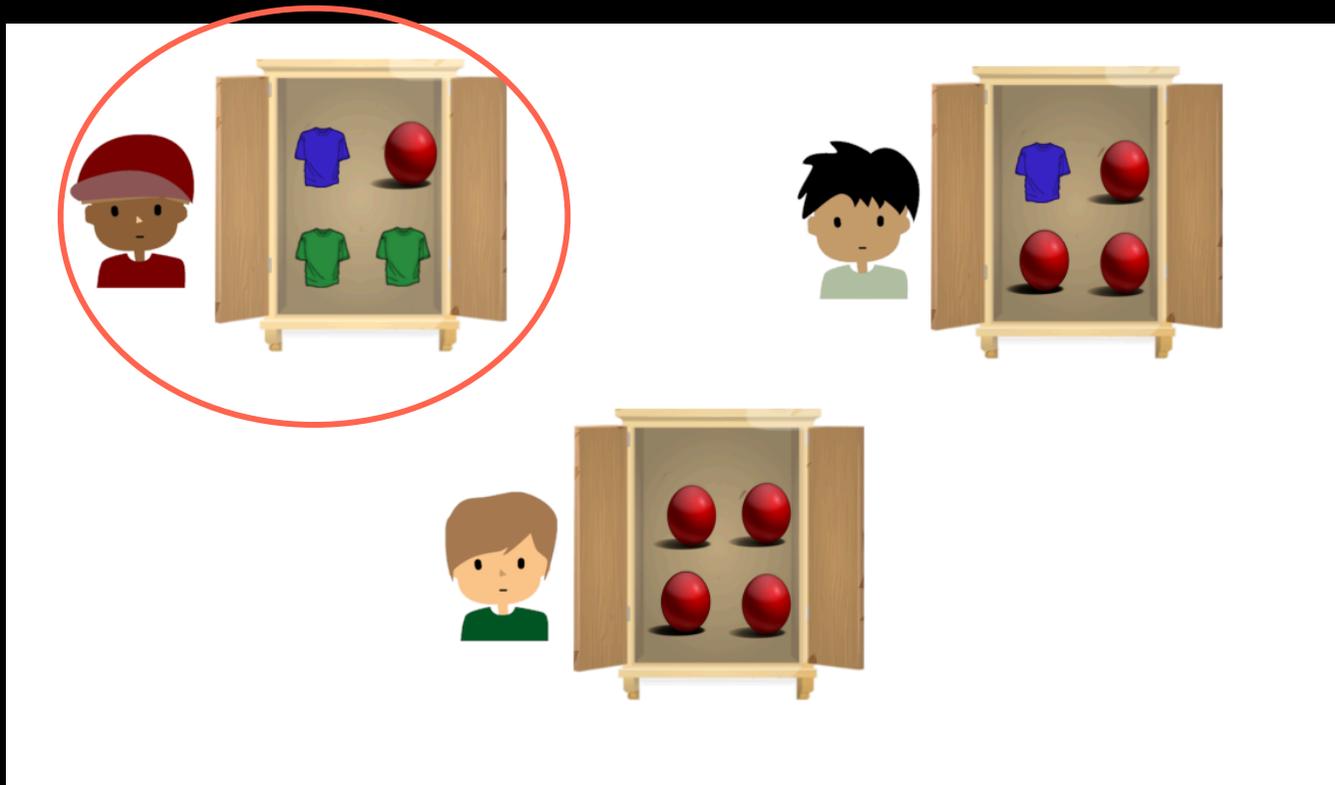
Condition B

Scalar Impl.

TRUE

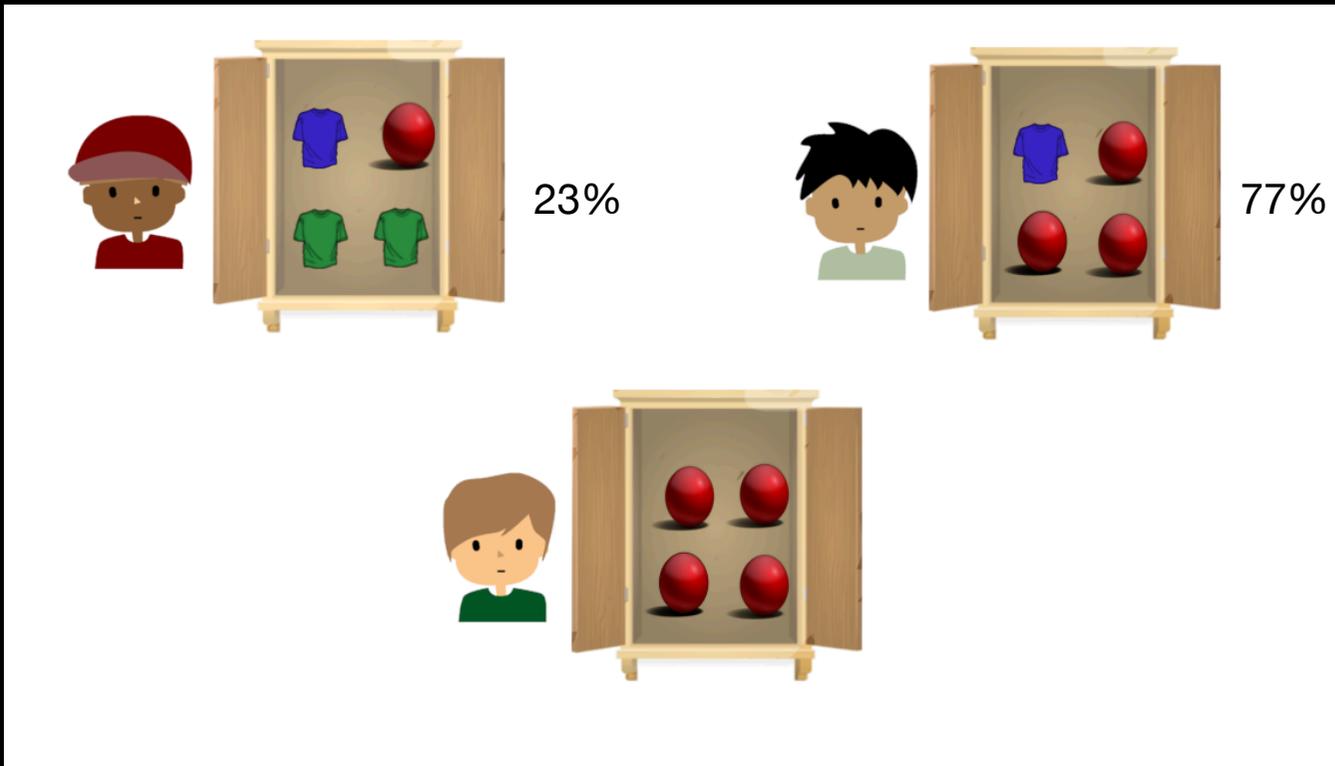
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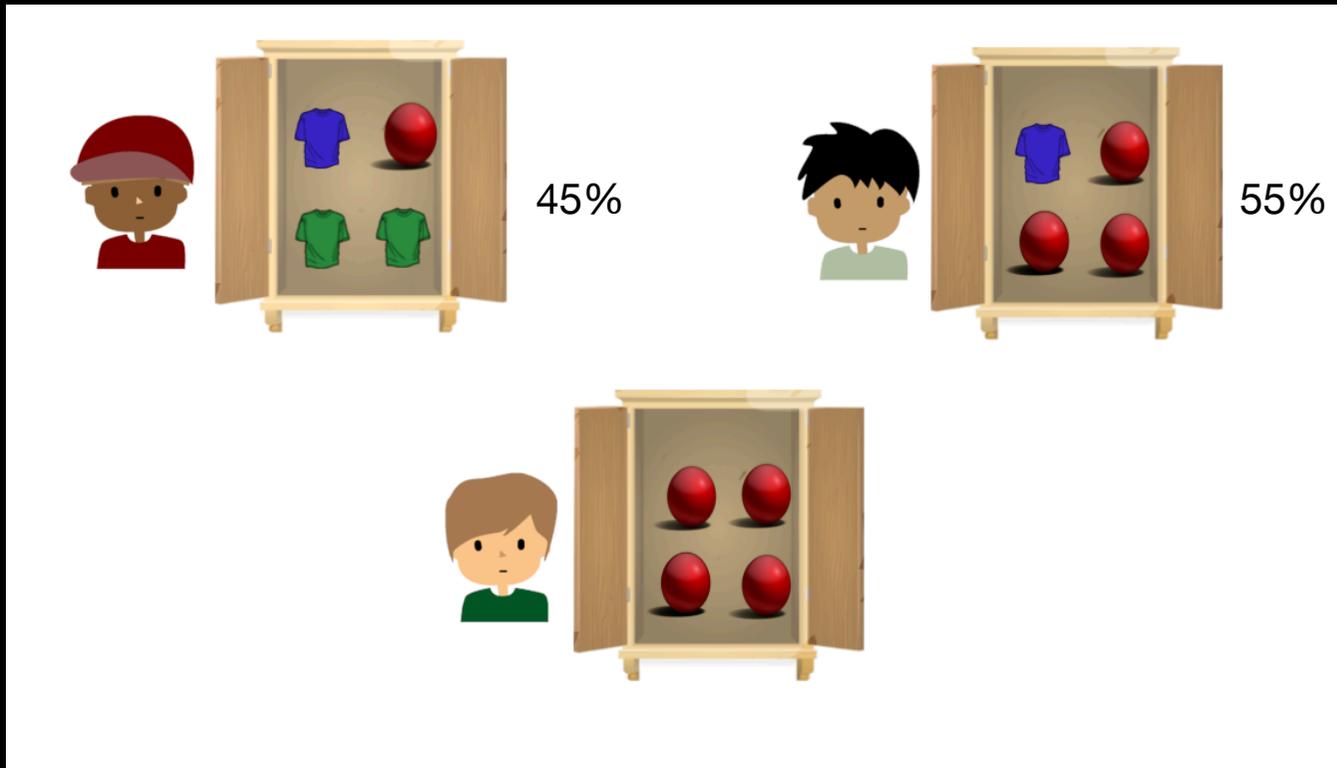
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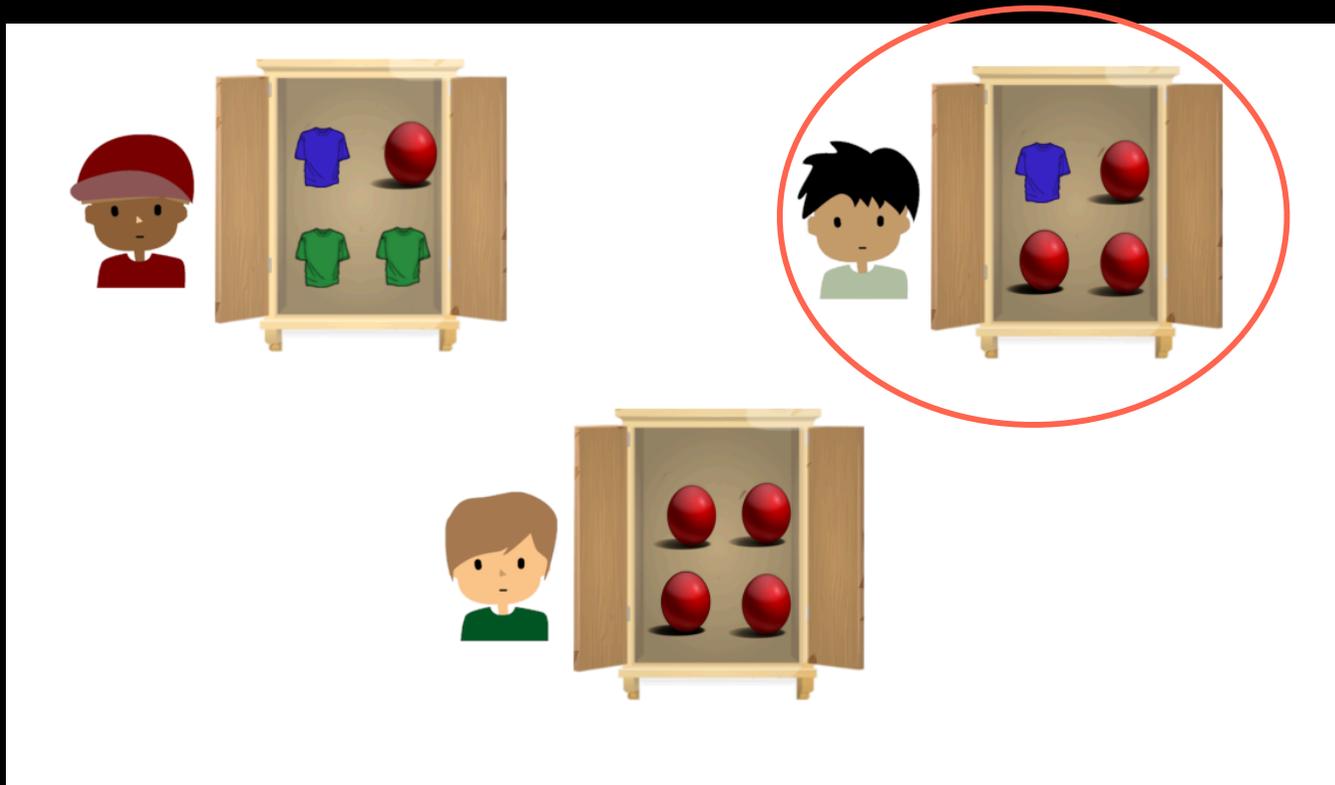


“One shirt in Benjamin’s closet is blue.”

Condition B

Presupposition

TRUE

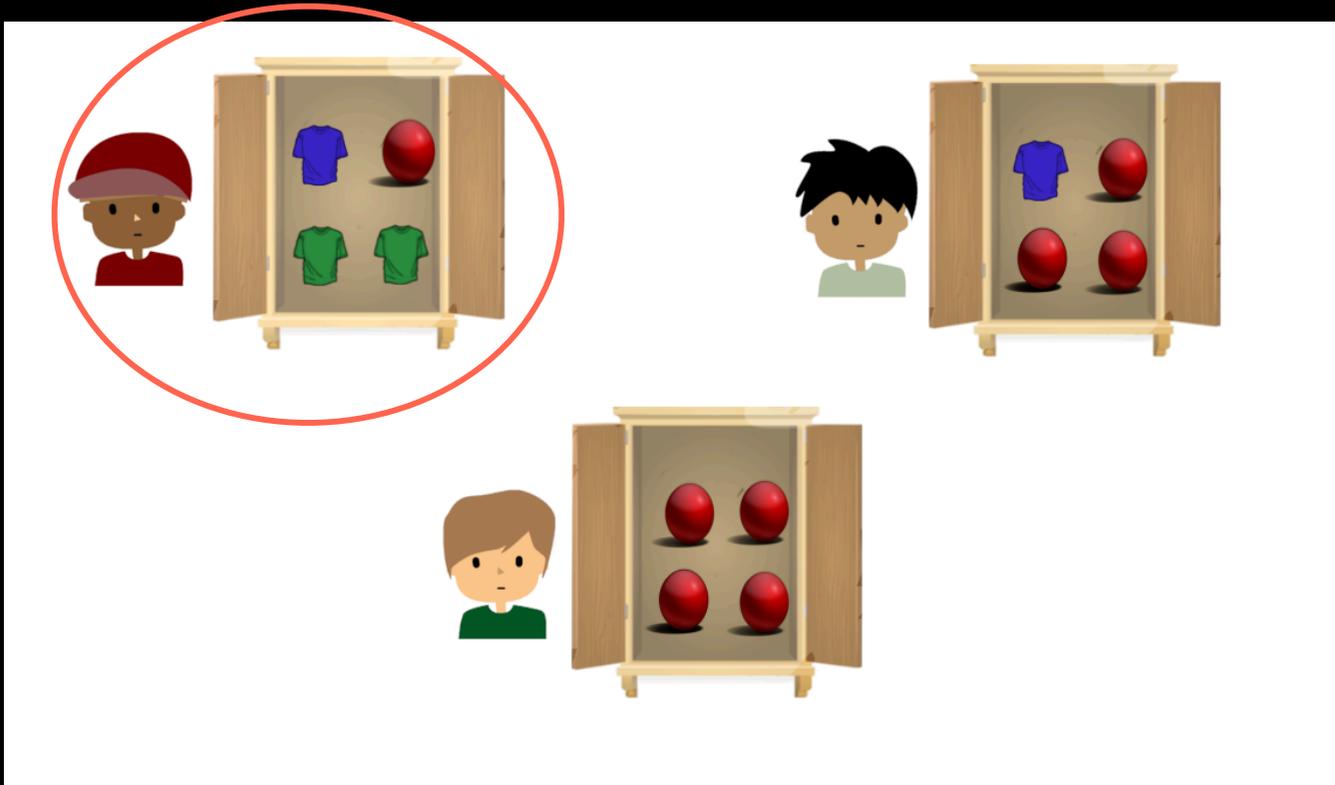


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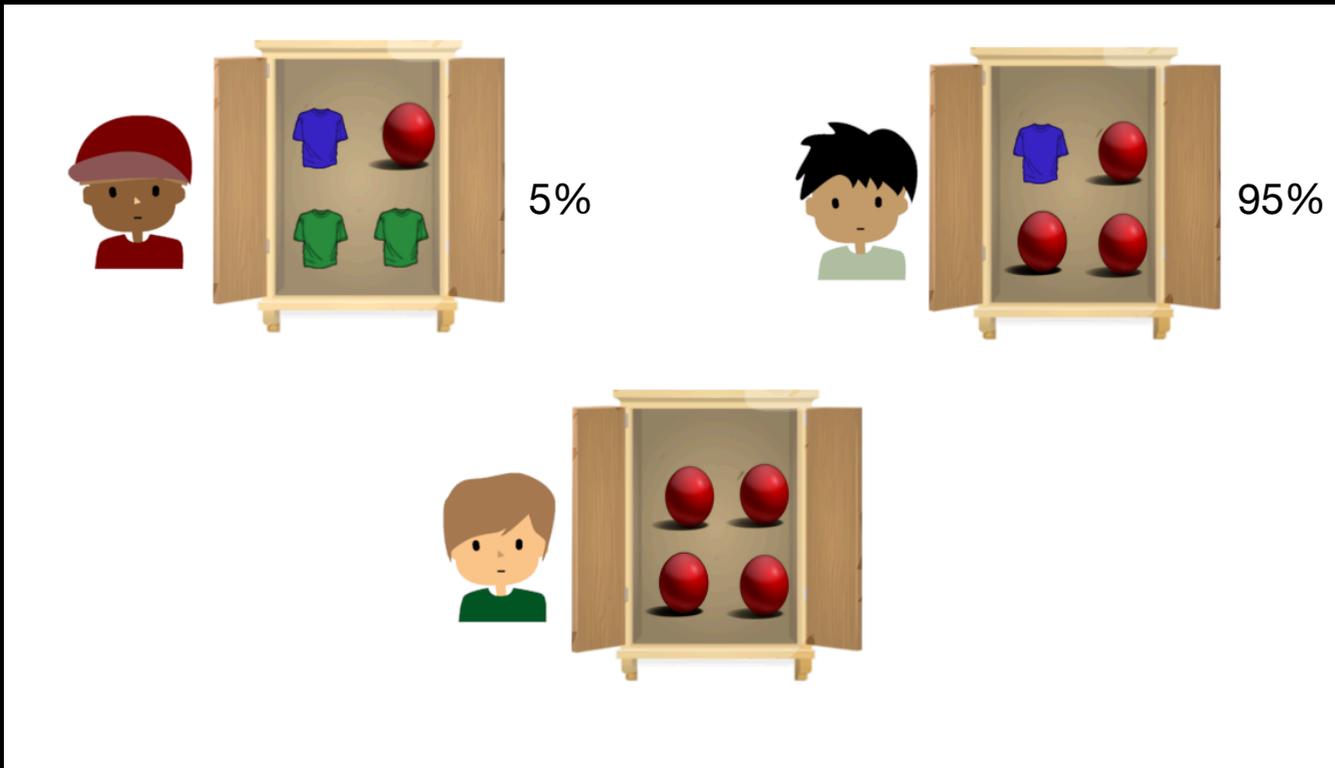
Presupposition

FALSE

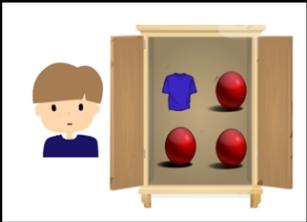
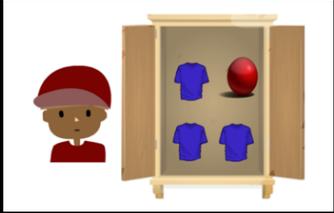
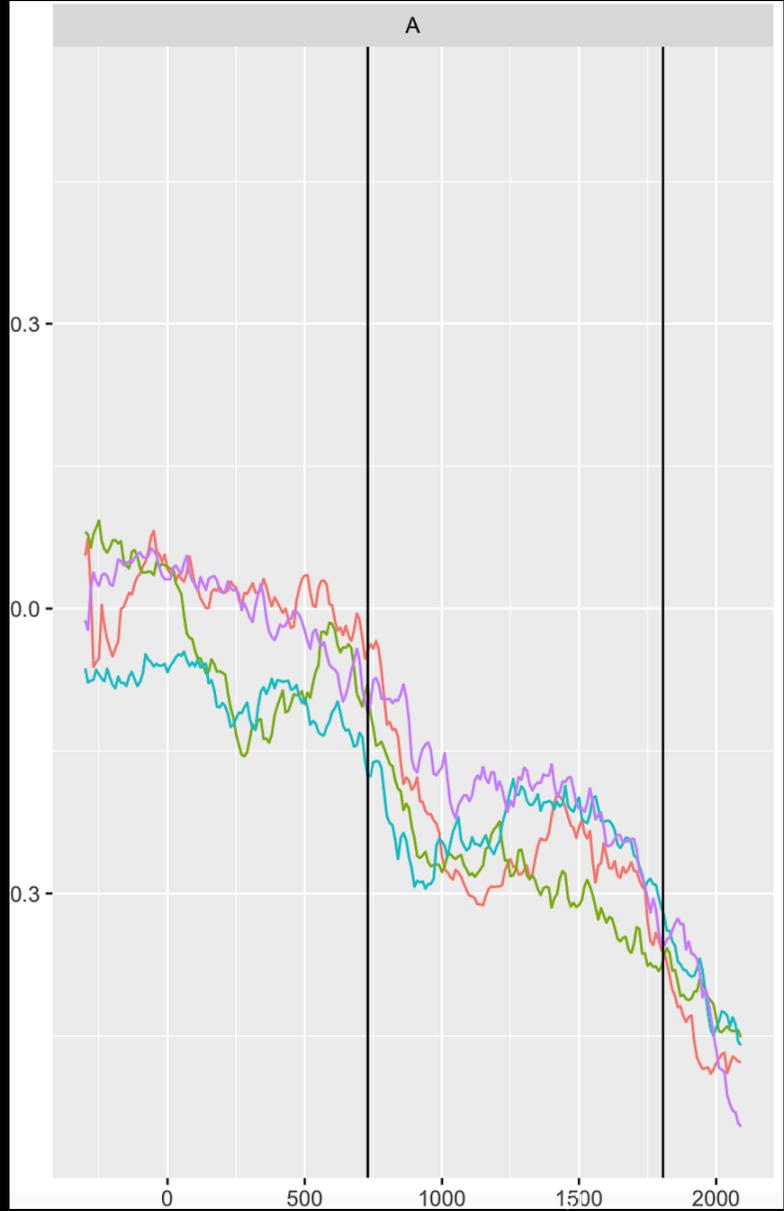
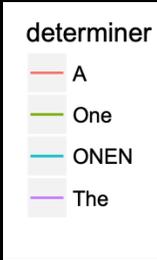


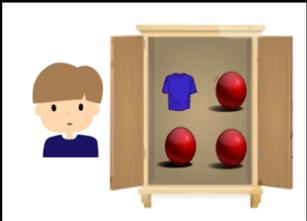
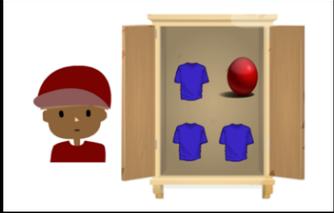
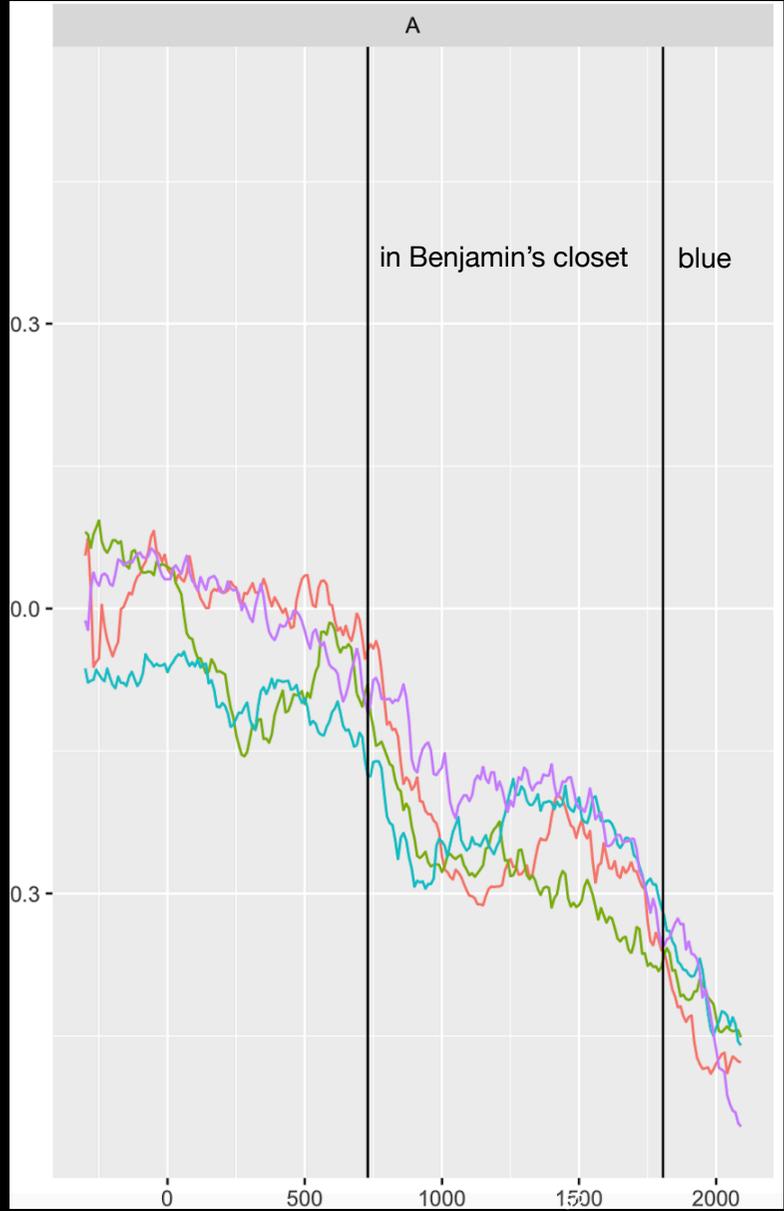
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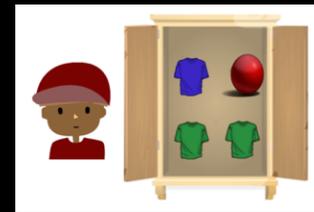
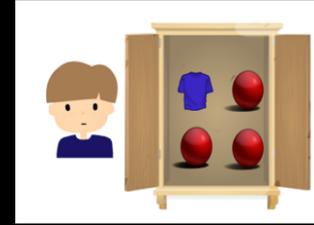
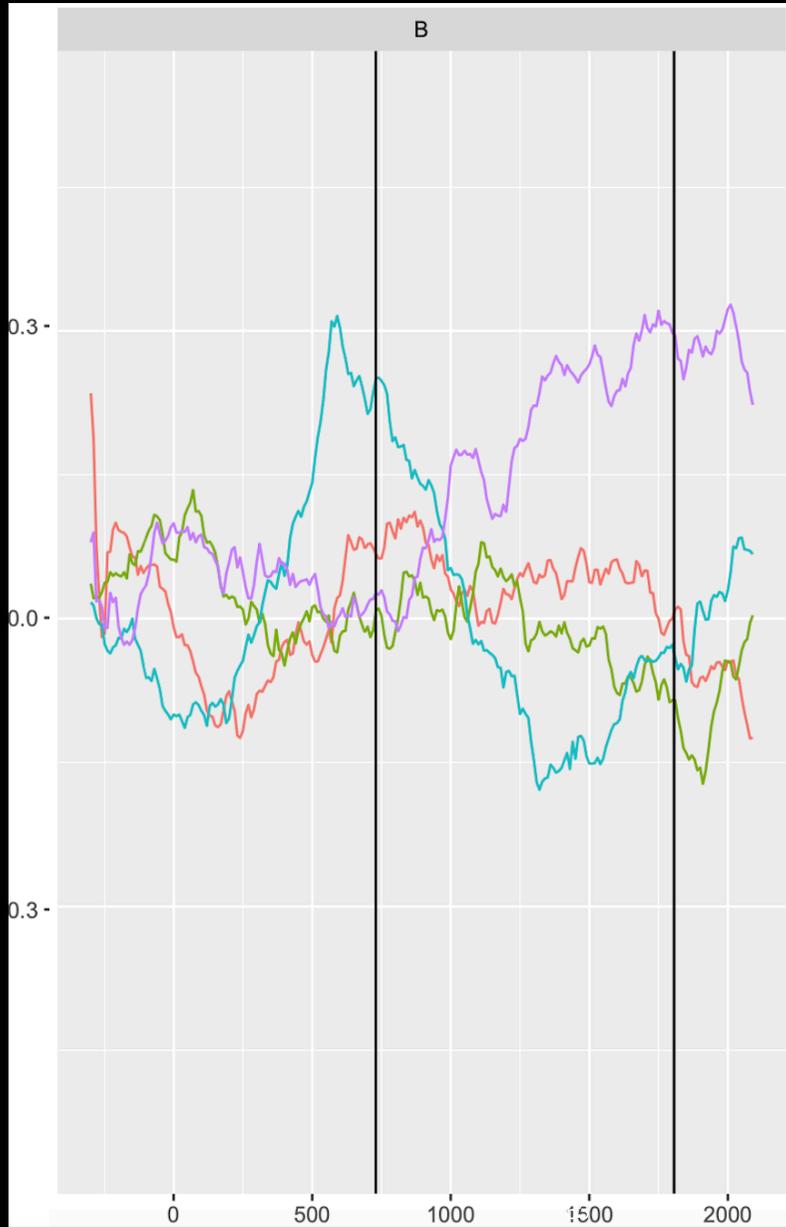
Condition B: results

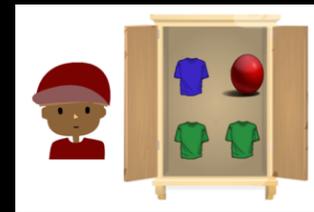
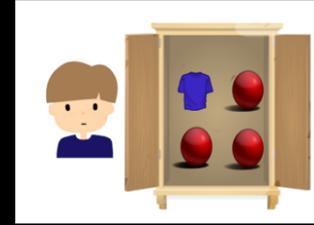
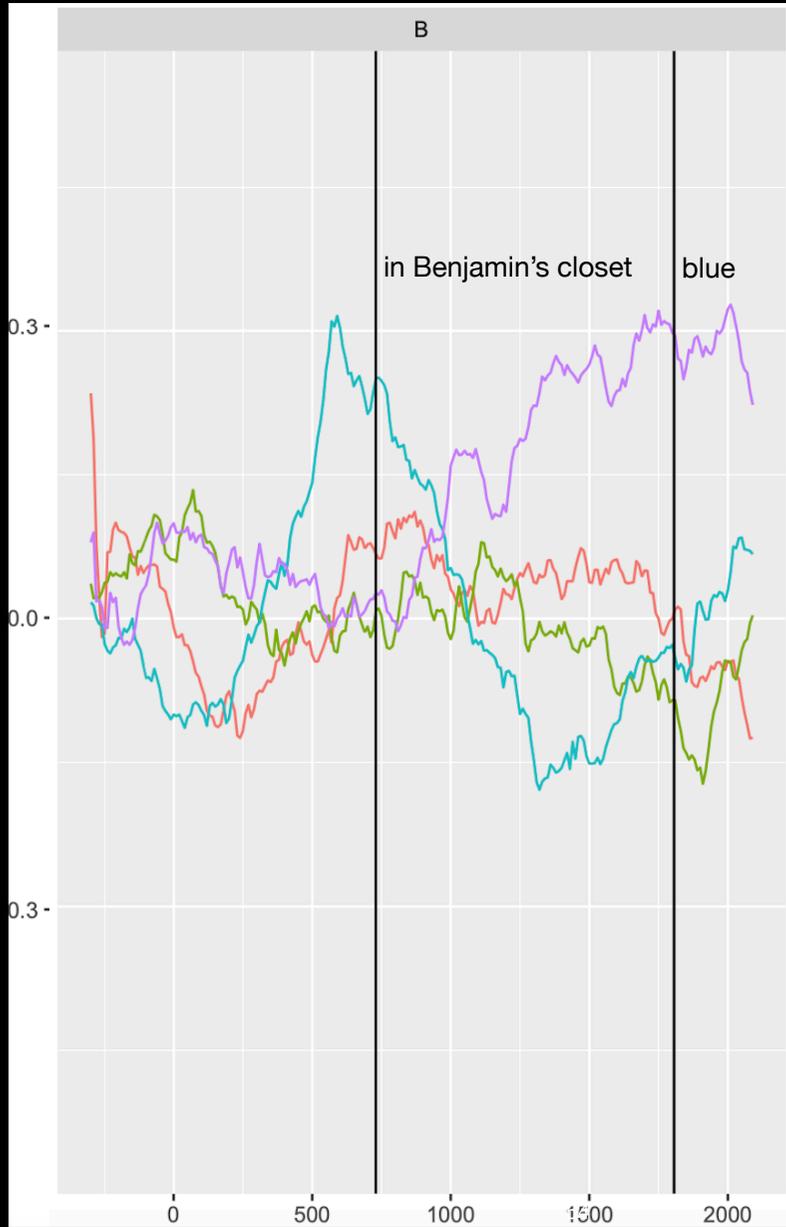


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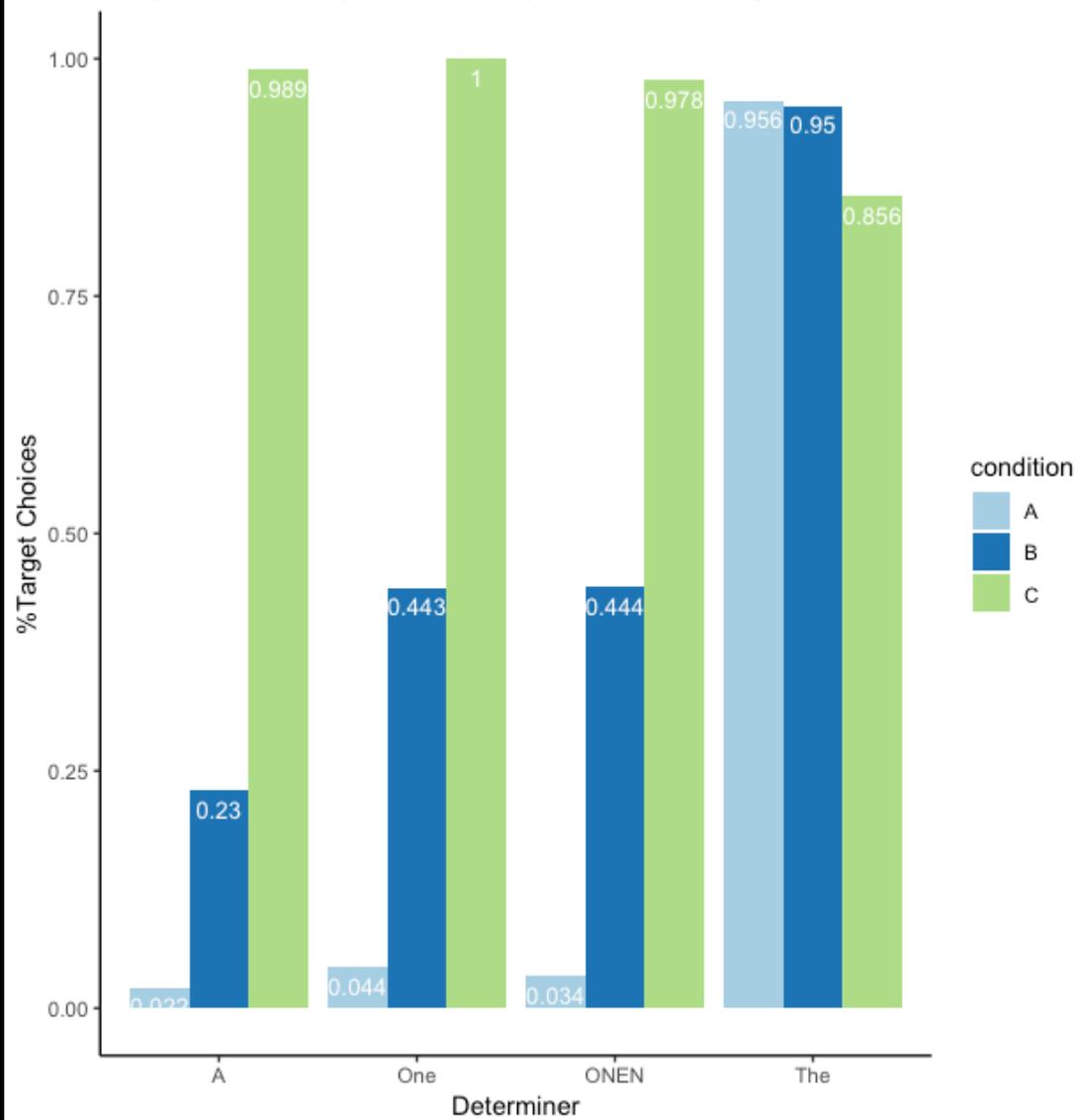




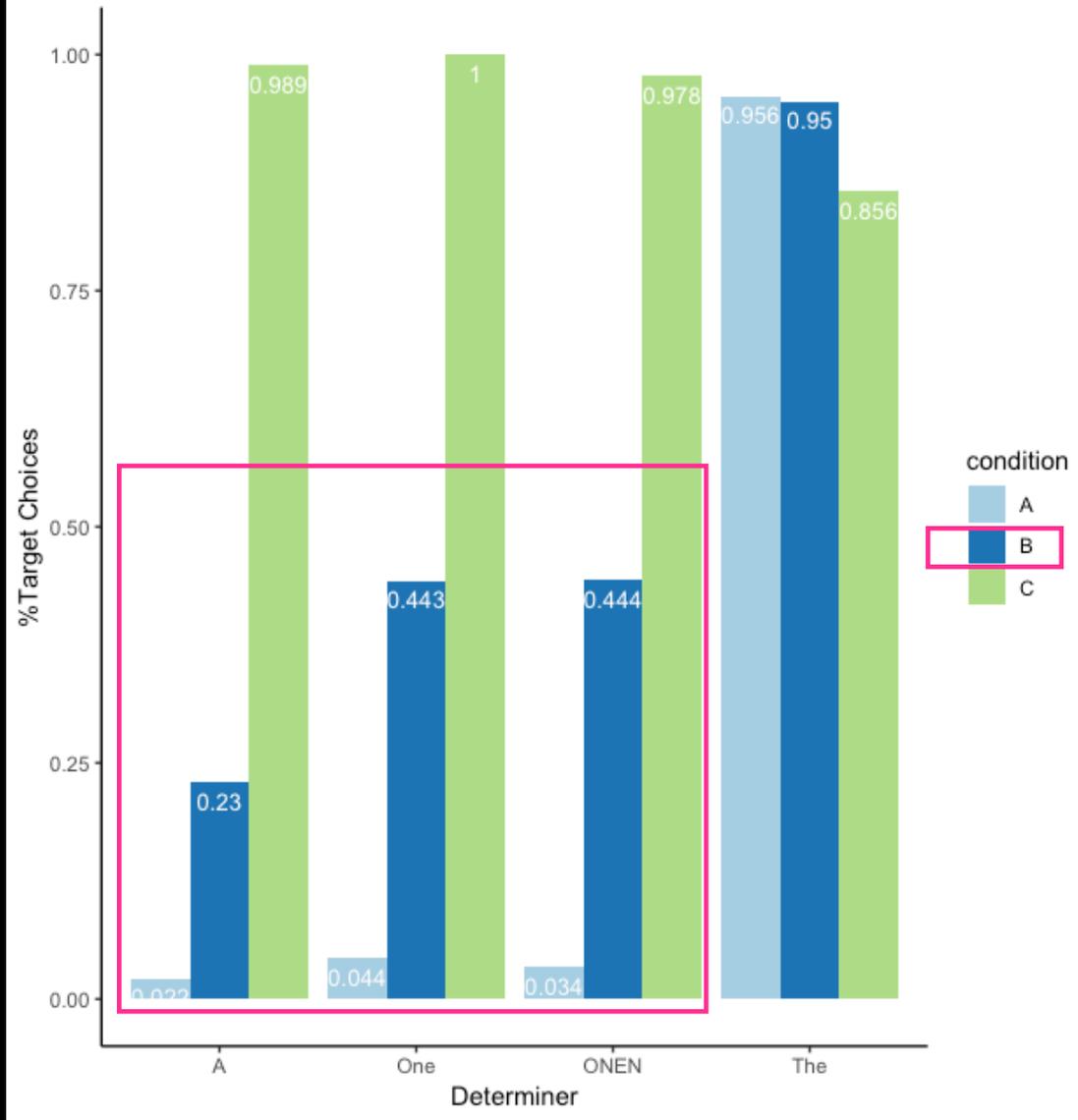


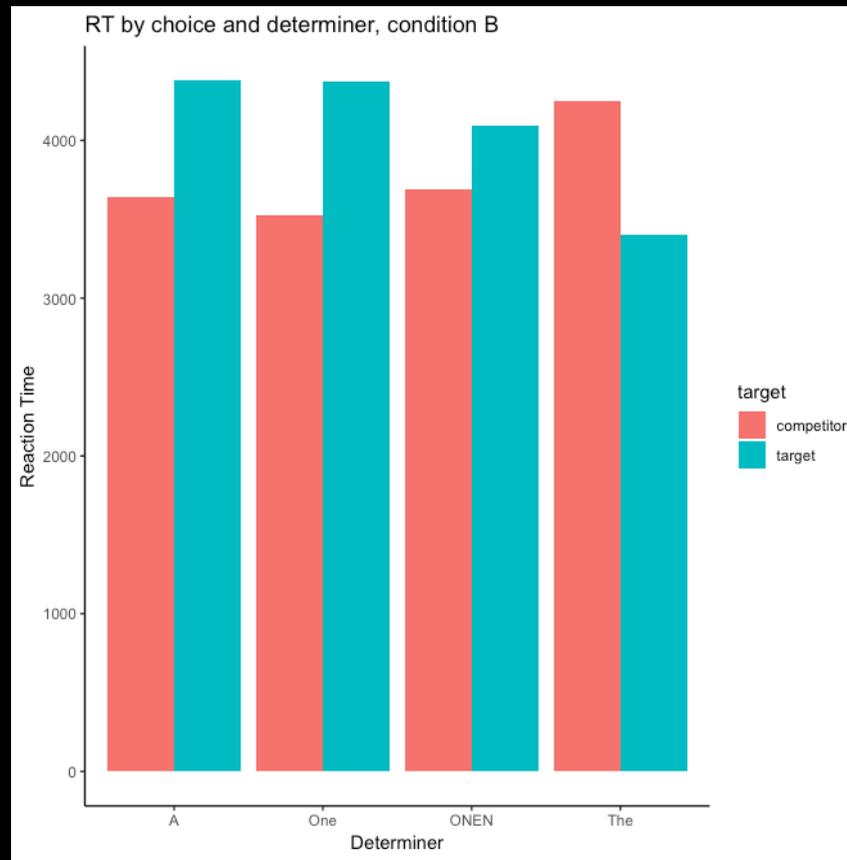
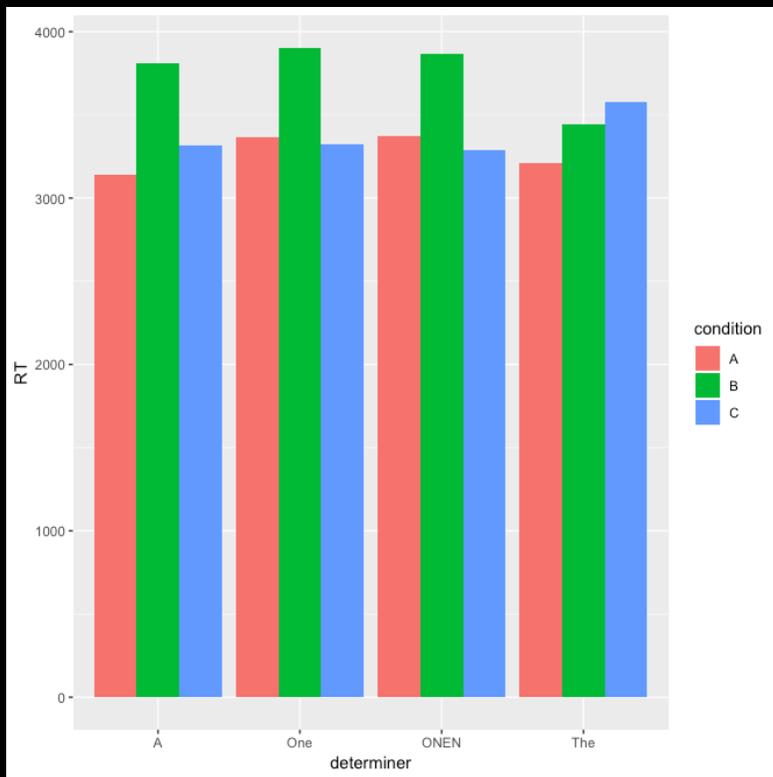


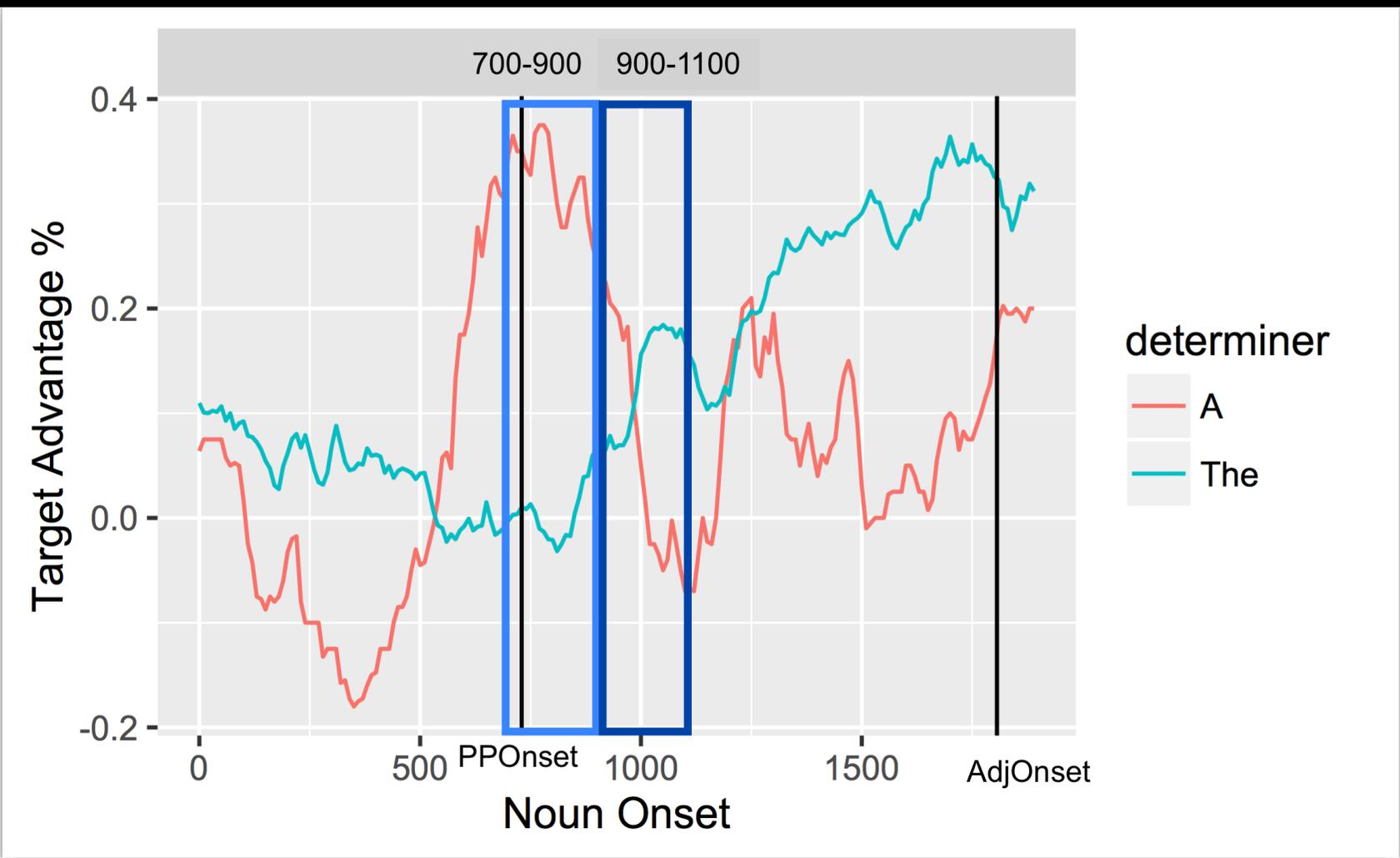
Target Choices By Condition By Determiner English



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Summary of findings

- Implicated presuppositions, presuppositions and scalar implicatures show different processing/choice patterns
- Implicated presupposition derived to much lower rate than scalar implicatures or presuppositions
- “a”/“the” (often) give rise to same picture choices in the given scenario —> “there is a (maximal) blue shirt”

- If target is chosen, „A“ is slower than „The“ (also eye-tracking interaction) —> uncertainty as to whether to draw the inference or not
- For all indefinite except ONE choosing target takes significantly longer than choosing competitor (for definite the opposite)
- That focused ONE stands out also reflected in eye-tracking data: more looks to comp for ONE compared to „a“ when competitor is chosen (SingleItem) in condition B

- Also there is an interaction for Det*Pic for ONE/„A" and picture condition A/B in 500-700ms after DP onset: initially more looks to target for ONE, but then competitor becomes relevant
 - How is the difference between indefinite and numerals explained?
 - What is the role of focus?



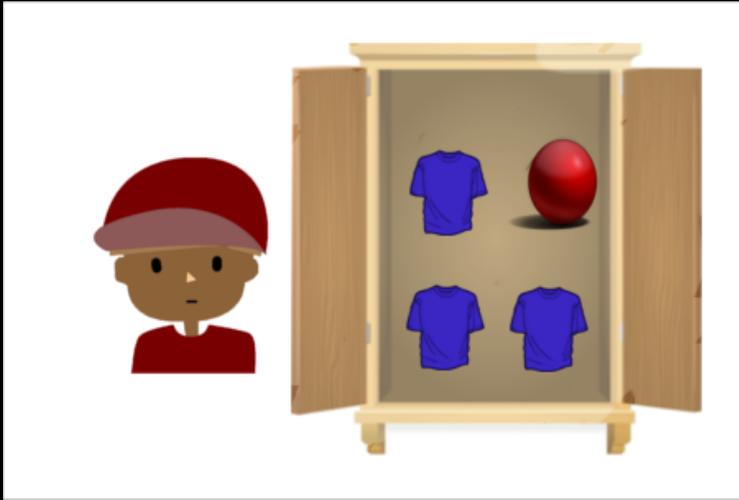
Target advantage by determiner and response (1=competitor, 2= target)



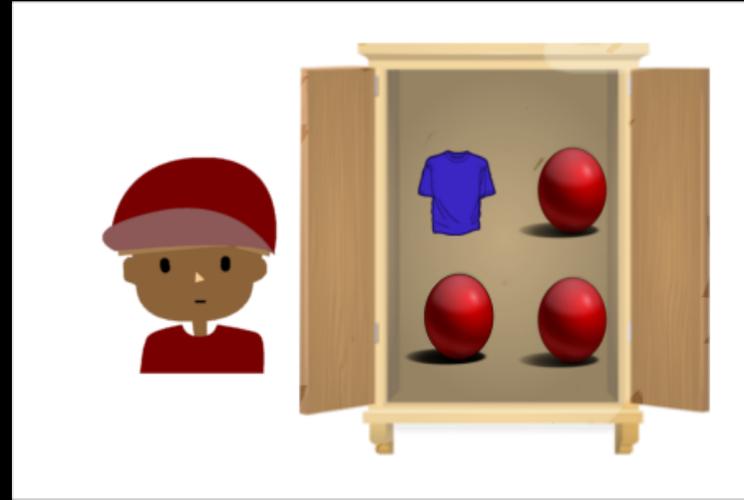
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Variant 2a Covered Box (English)

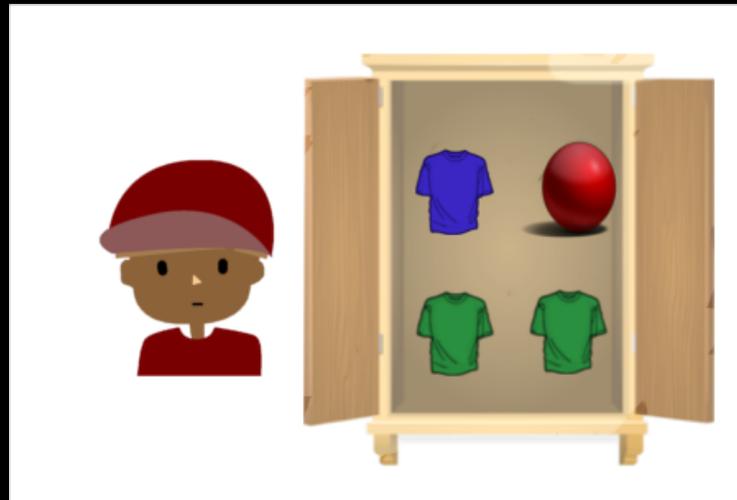
- Picture selection task programmed with Ibex, 166 speakers via Prolific
- Participants chose between SameColor/DiffColor/Single Item and CB, respectively



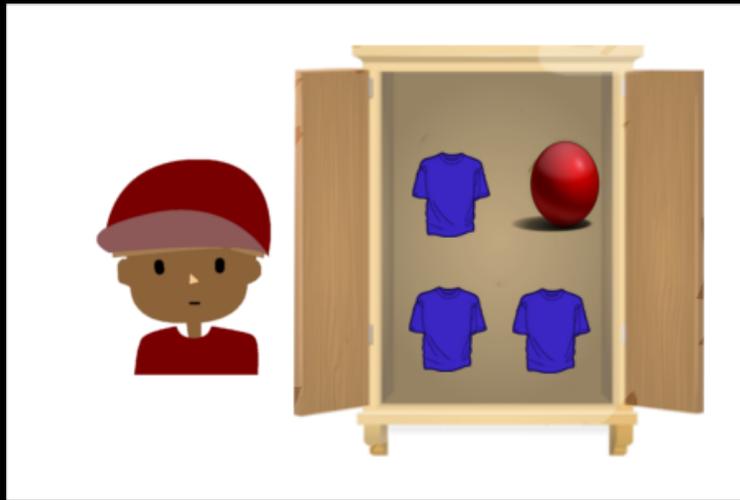
SameColor



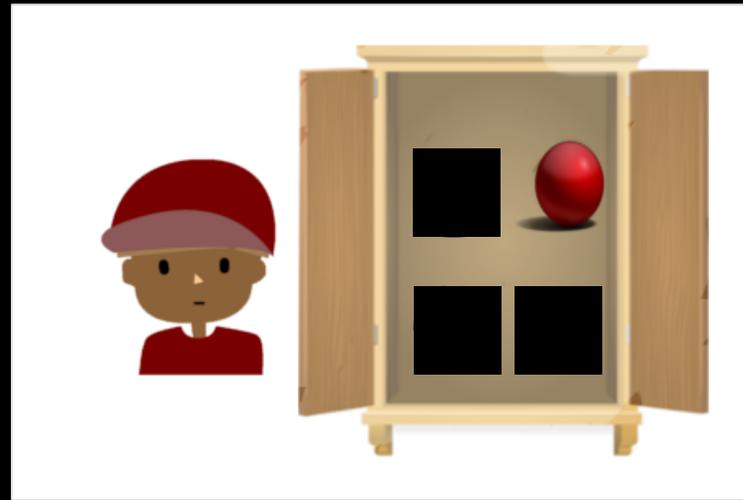
SingleItem



DiffColor



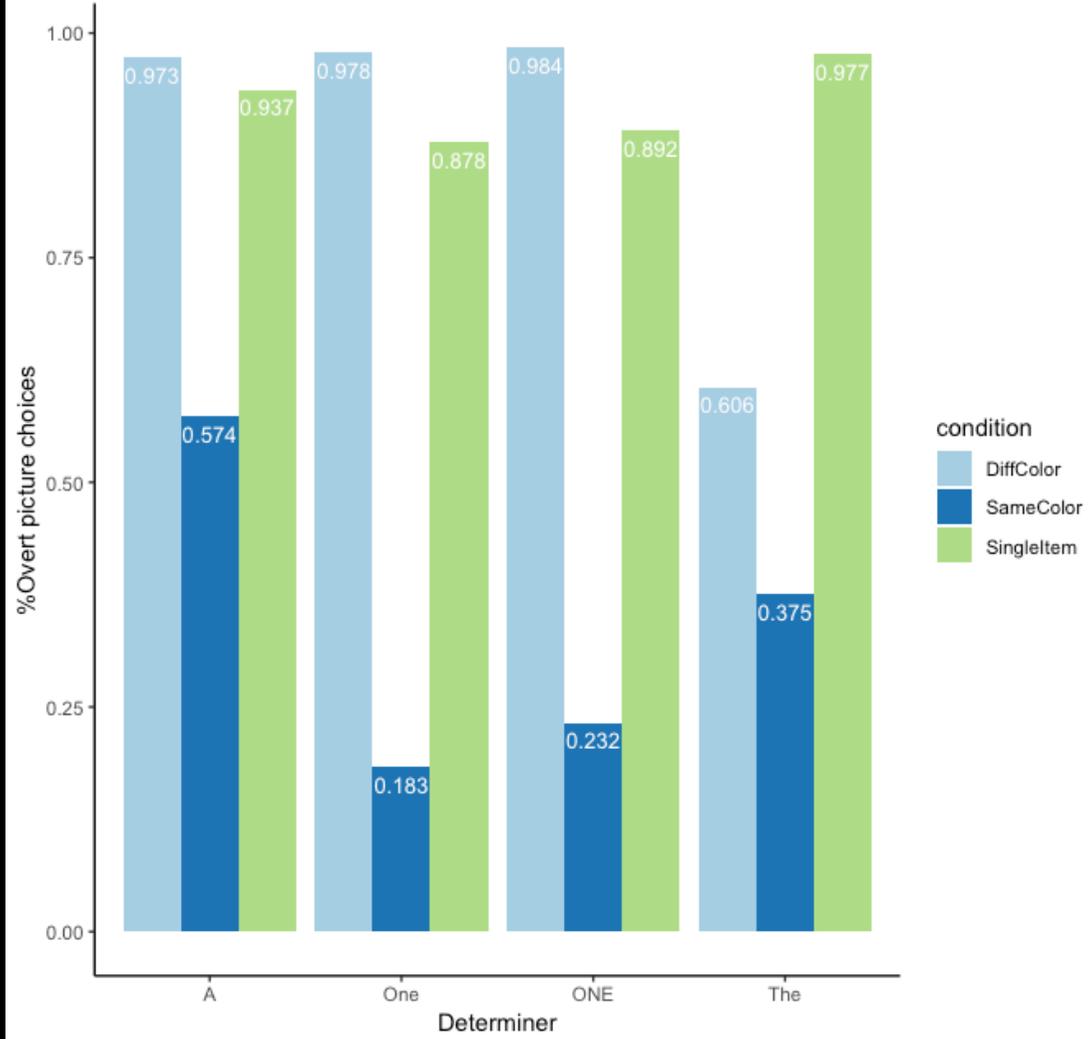
SameColor



Covered Box

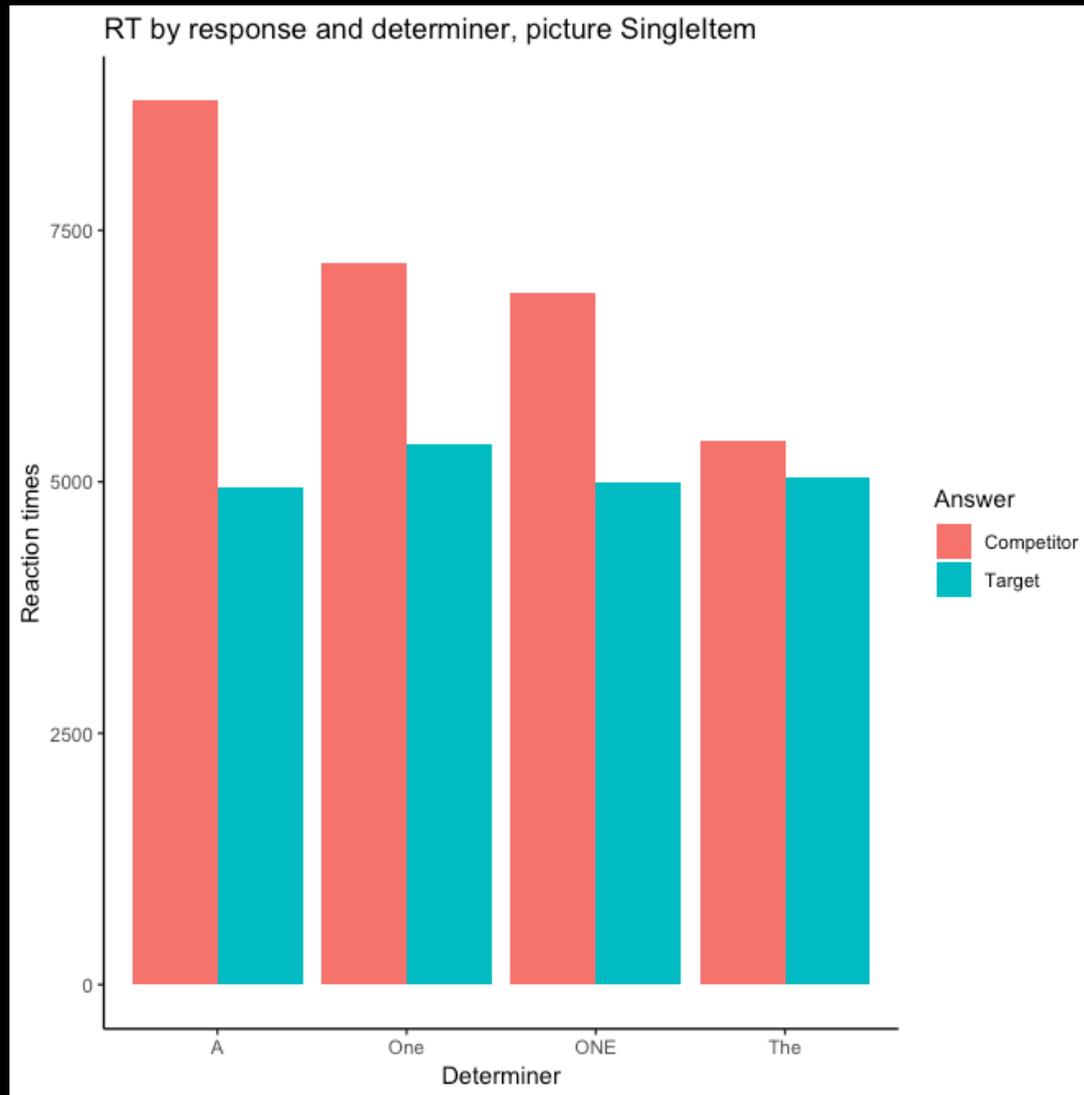
- Overwhelmingly high overt picture choices with SingleItem and DiffColor pictures
- Interesting differences in SameColor conditions: for One/ ONE very high CB choices compared to indefinite —> indefinite seems less „implicature“ sensitive

Overt picture choices By Condition and Determiner - English

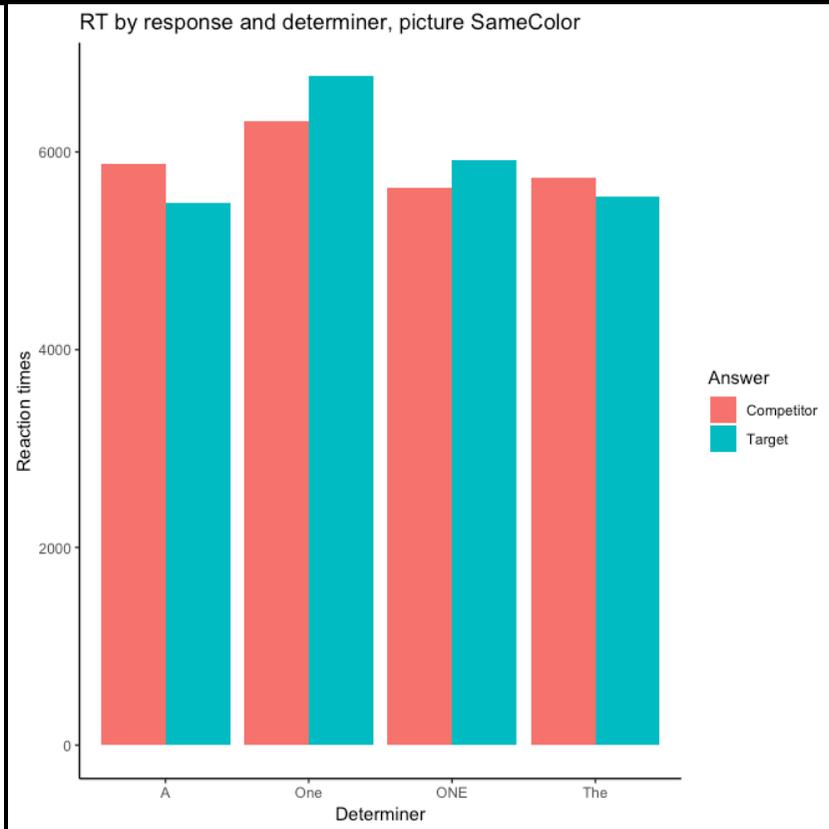
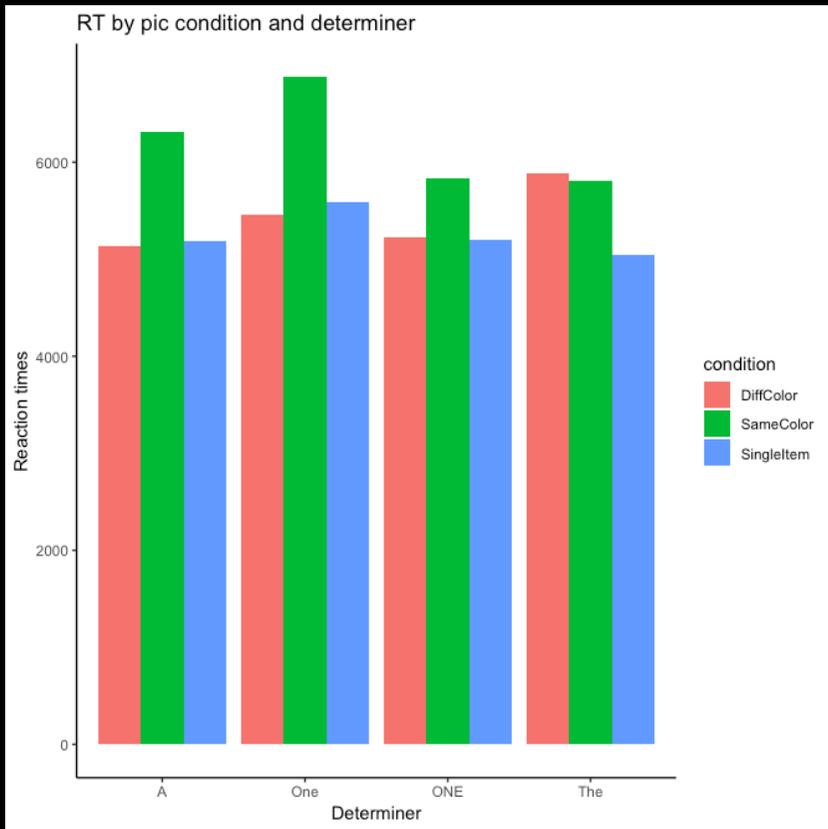


- At least for numerals there are significantly more CB choices for SingleItem (still low 10/12%) than for DiffColor -> hints at anti-uniqueness playing a role
- Again, this is different for indefinite, where this difference is not significant

- For Singeltem if CB is chosen (rarely) then it takes significantly longer (for all indefinites), highest difference for „A“
 - Why is the implicature less relevant for the indefinite with the CB task than with overt competitor? —> access to the visual alternative

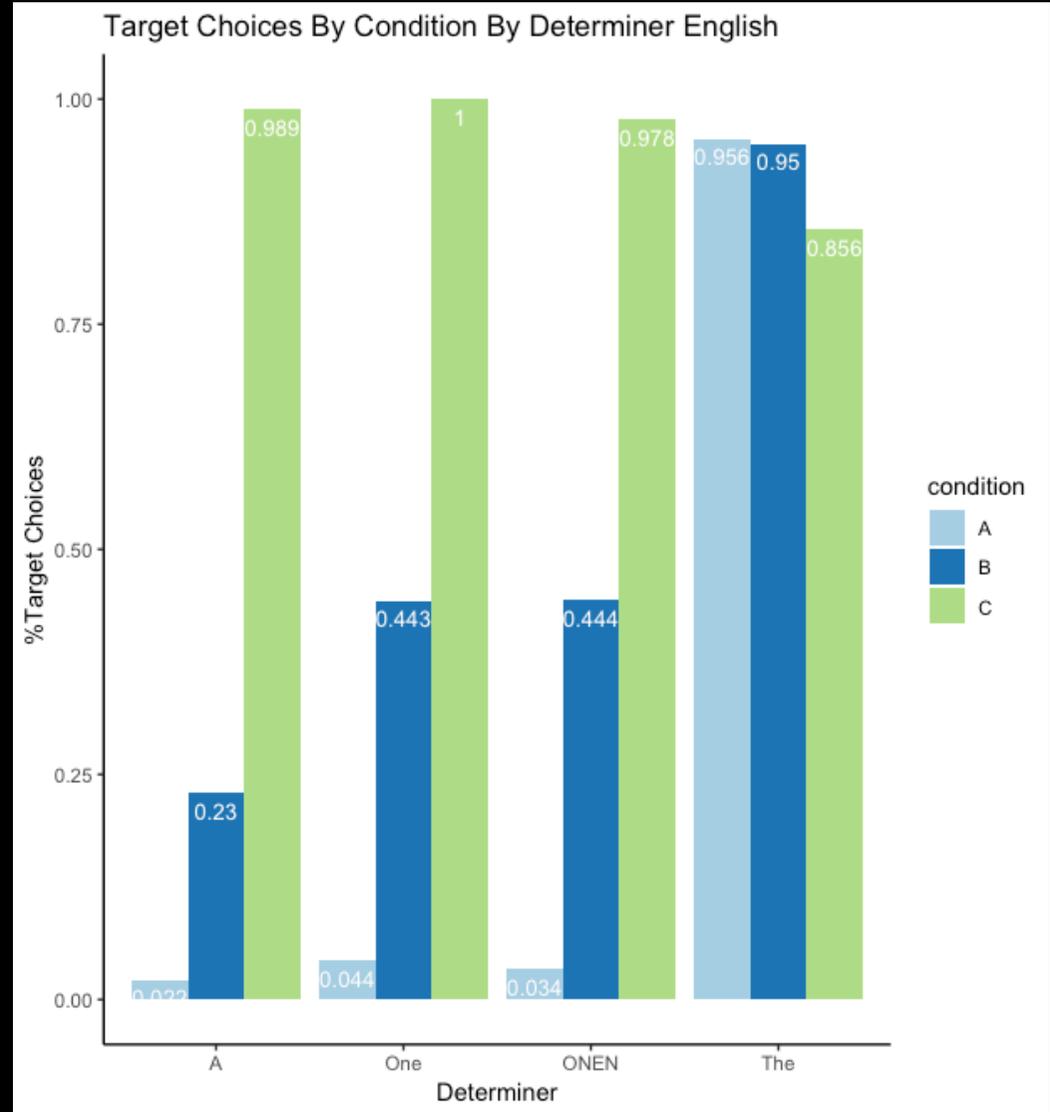
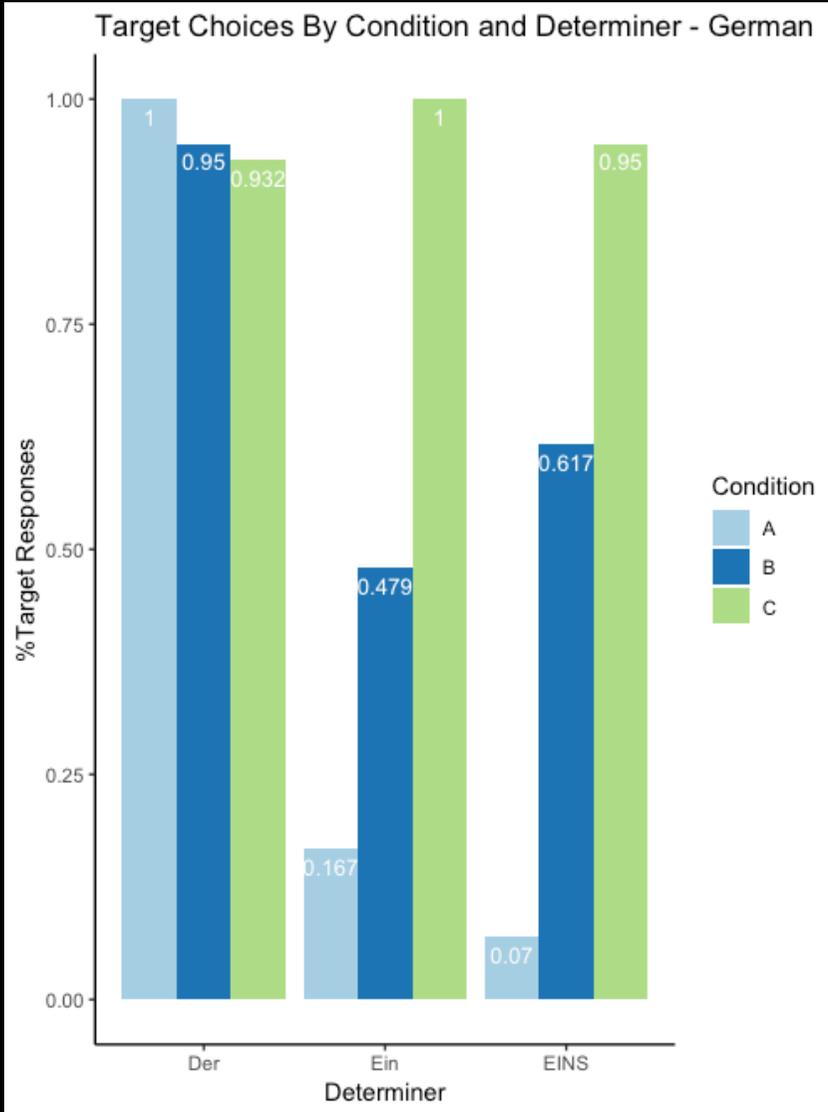


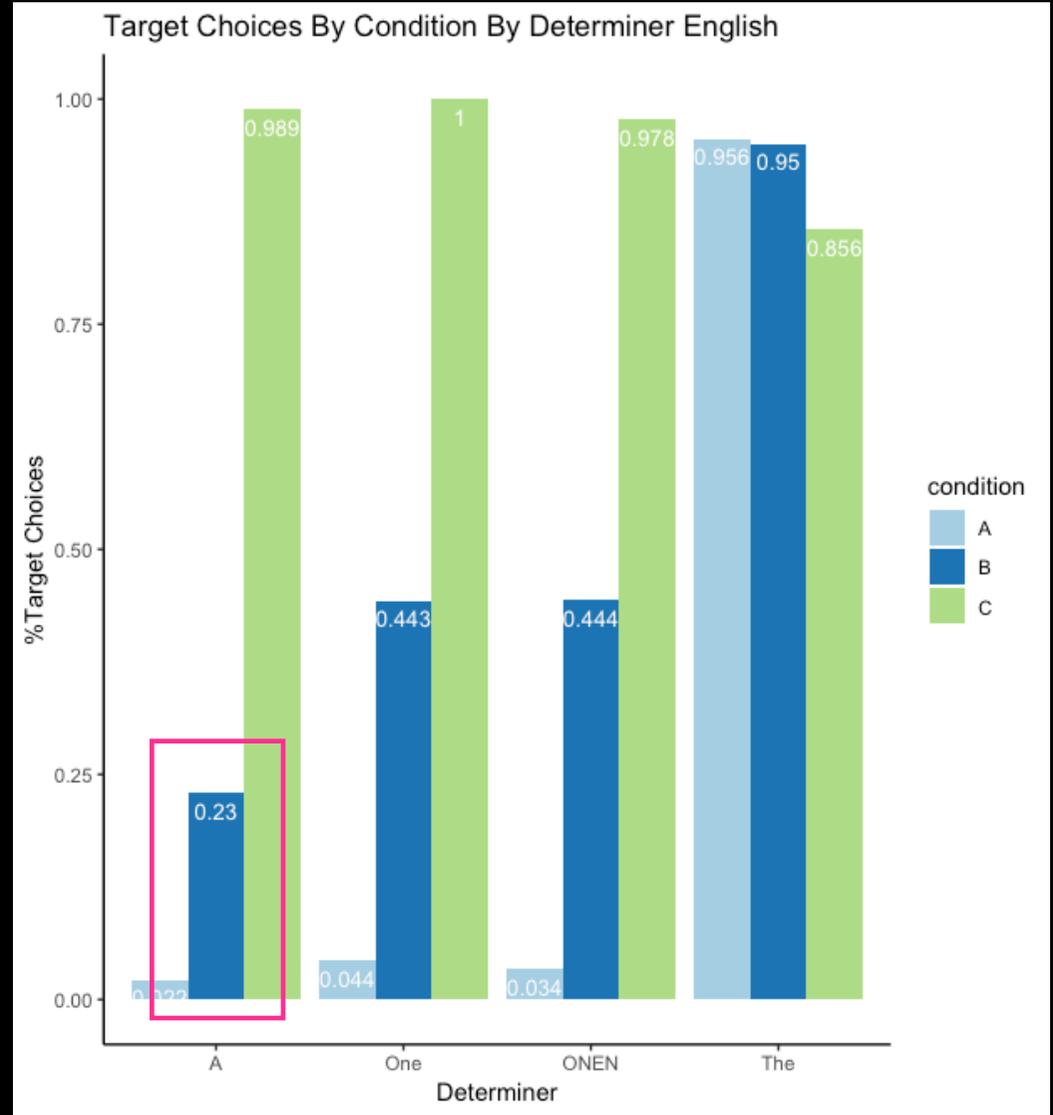
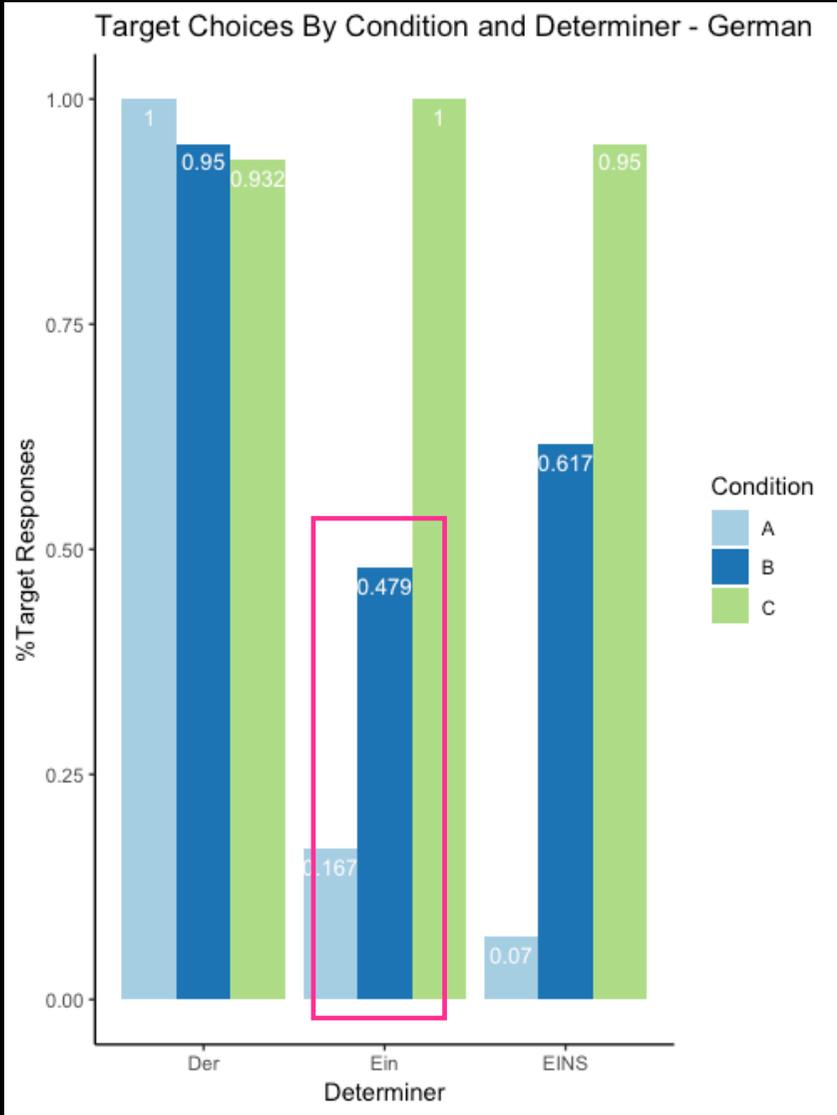
- The highest RTs overall are in the presupposition/ implicature violating SameColor Condition
- In this case, choosing the CB takes longer for all determiners except „A“, suggesting the implicature plays less of a role (however, no significant interaction)



Variant 1b overt target/ competitor (German)

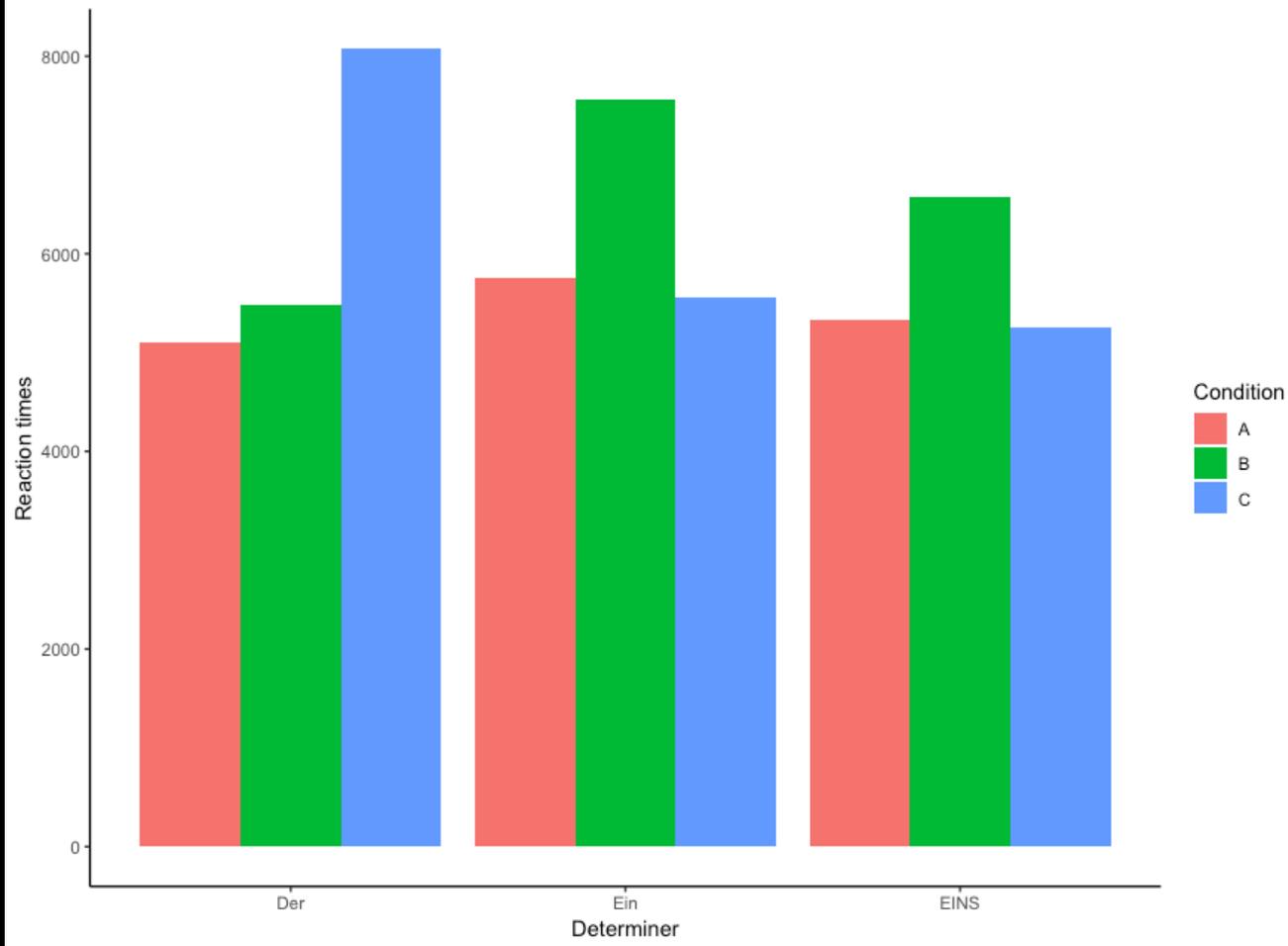
- Low target choices for indefinite in relevant condition B, however more than for English (both for focused and unfocused version) —> probably due to German indefinite being a numeral as well





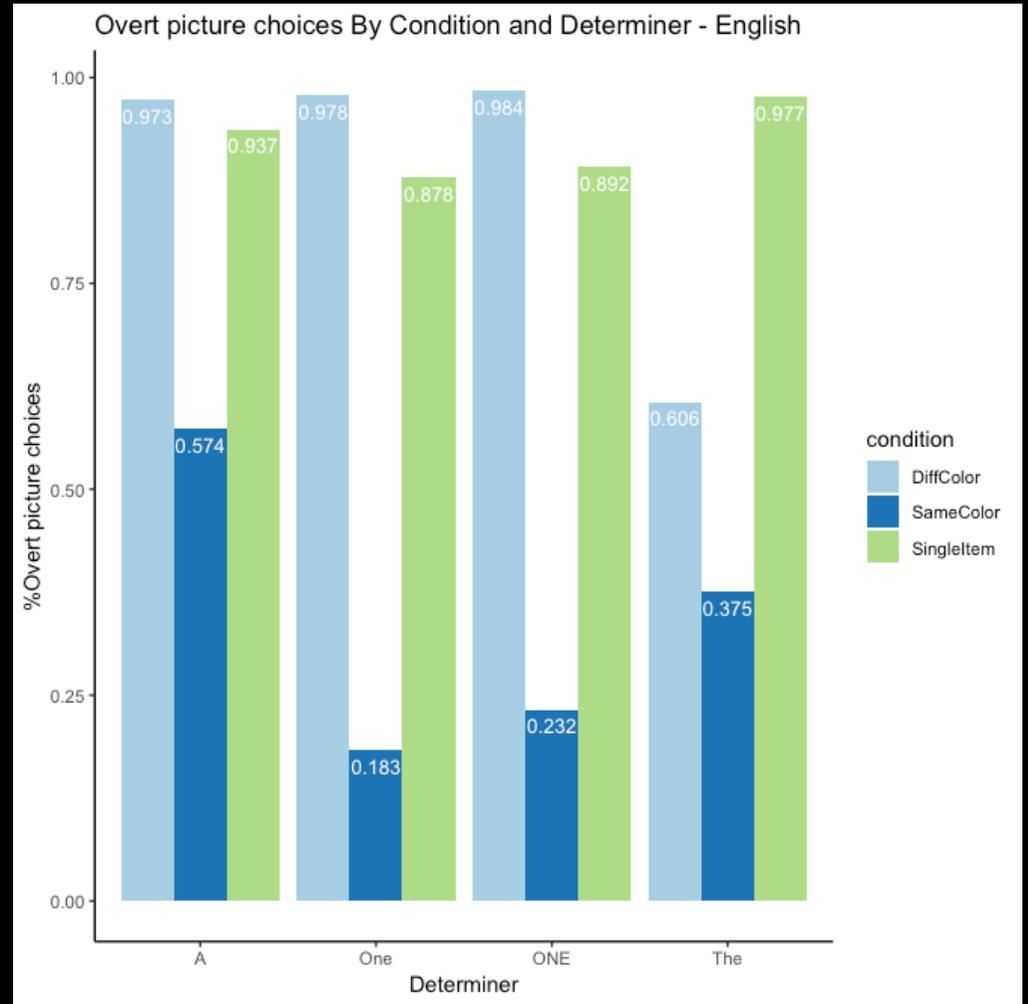
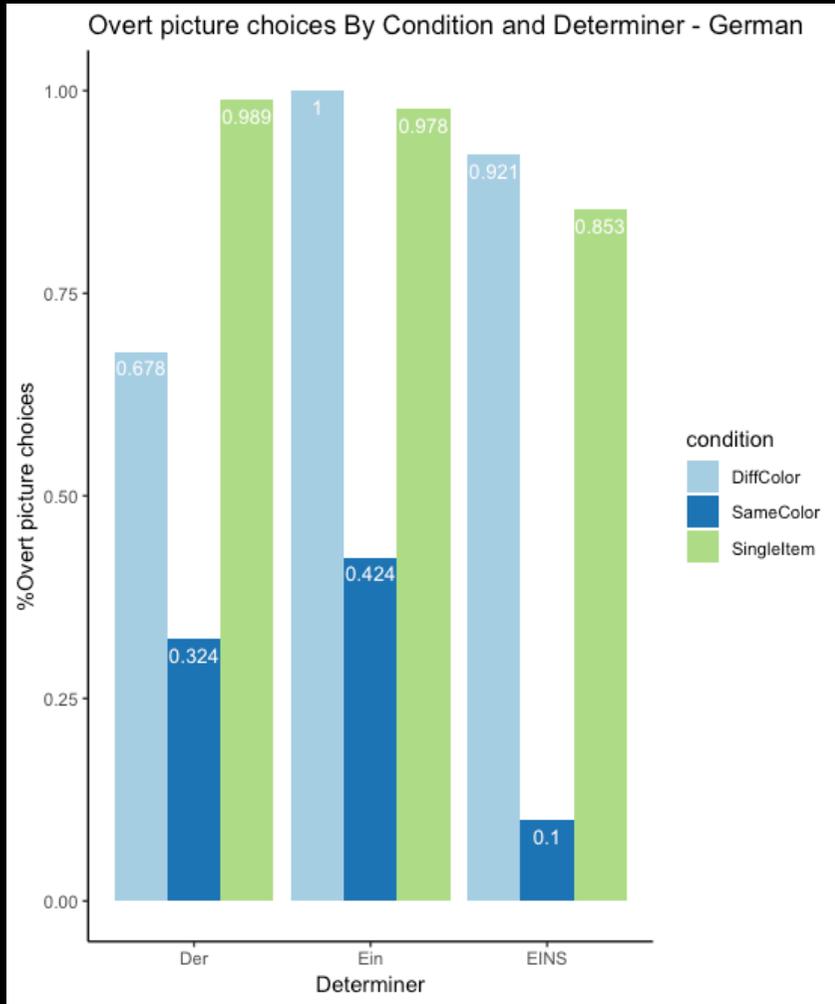
- Also highest RTs in condition B: as for English due to Target Choices taking longer (anti-uniqueness takes time)
- The difference not significant for focused „EIN“ but for „ein“

Reaction Times By Condition and Determiner - German



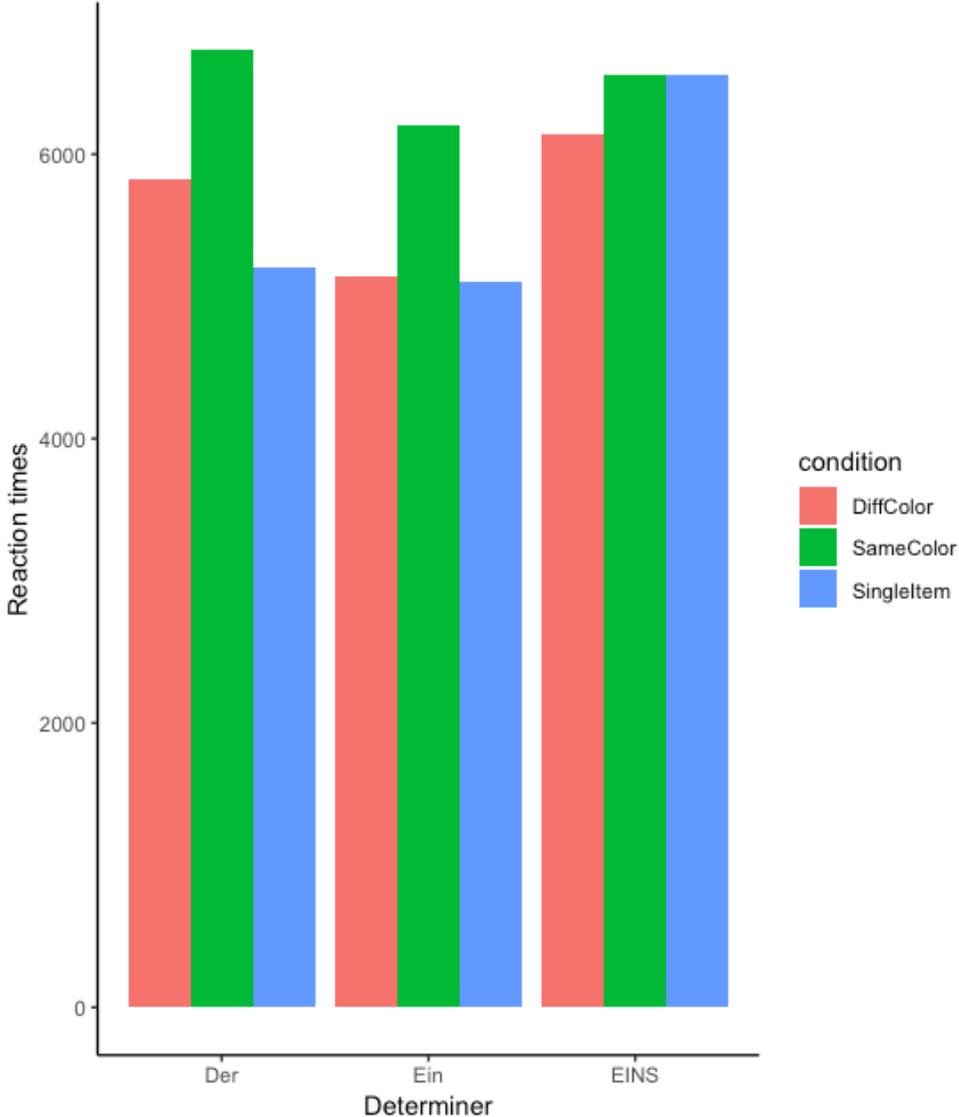
Variant 2b: Covered Box (German)

- For focused „EIN“ there are significantly more CB choices with SingleItem than with DiffColor (effect less „strong“ for unfocused „ein“ but present, as opposed to English)
- Interesting effects regarding implicatures: with SameColor and „EIN“ the overt picture takes longer and is chosen less often, for unfocused „ein“ CB takes longer and is chosen less often



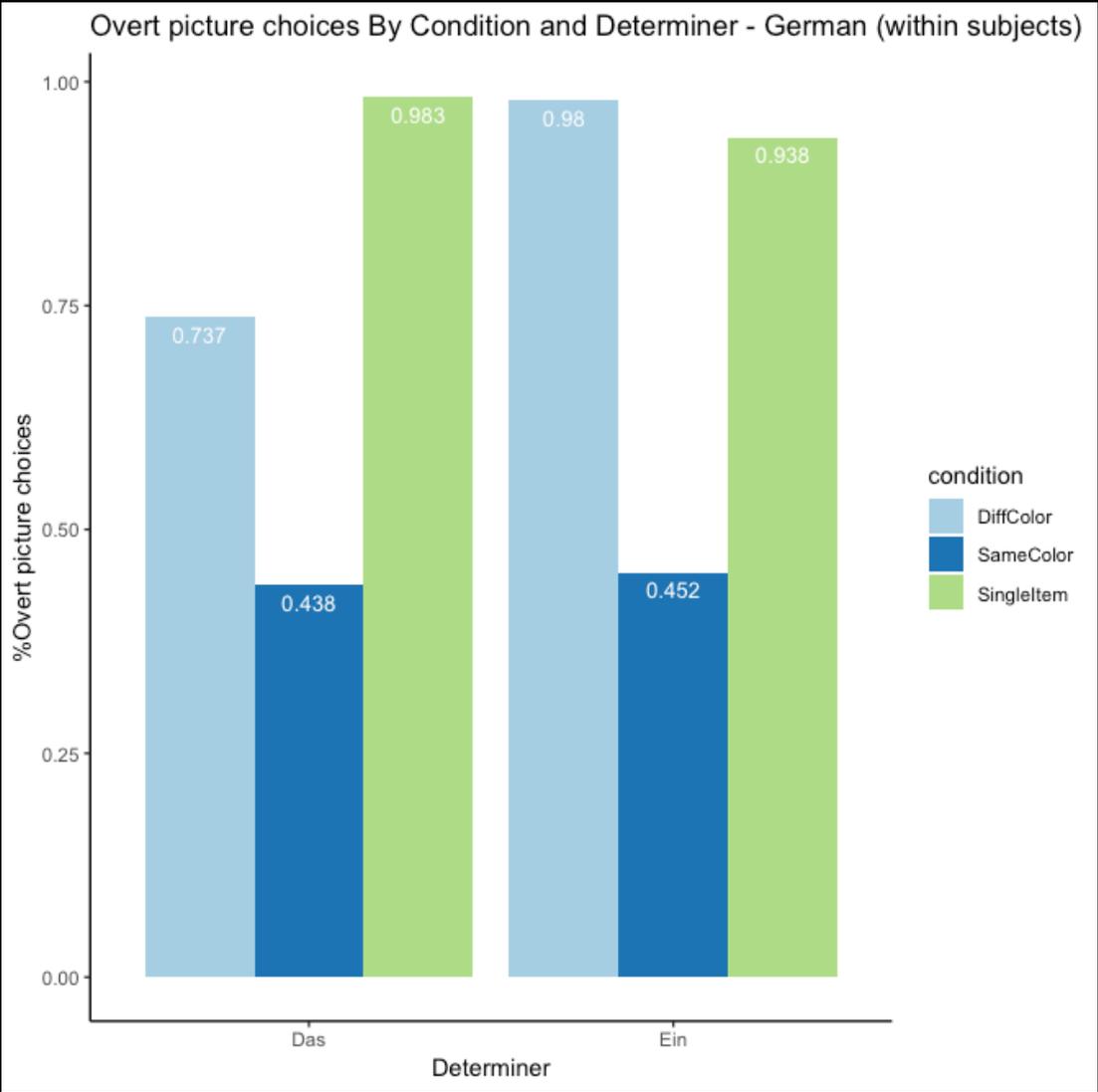
- As for RTs results look similar to English: if in the SingleItem condition the CB is chosen for indefinites it takes much longer

Reaction Times By Condition and Determiner - German

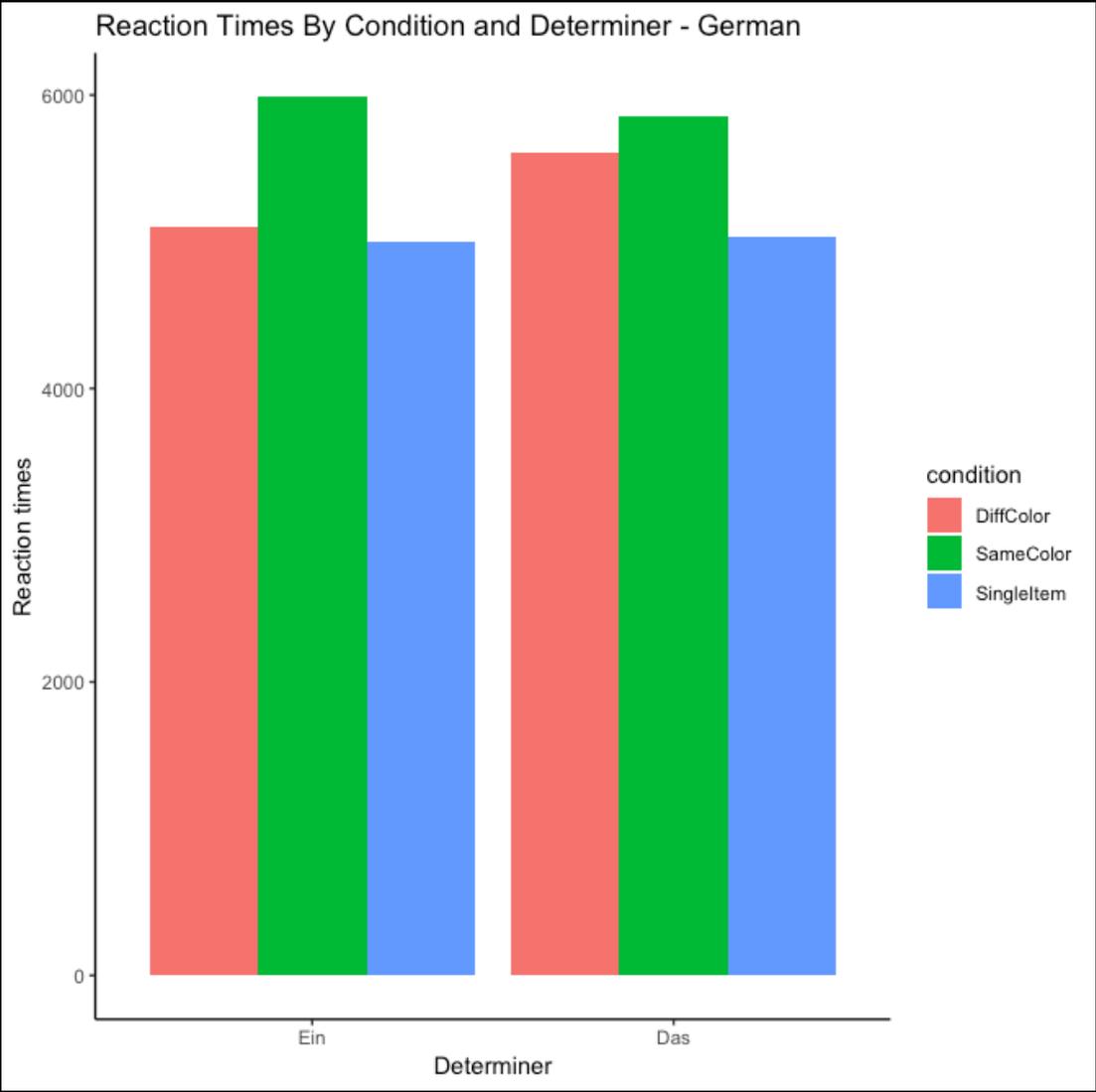


Variant 3: overt target/competitor within subjects (German)

- Results overall look very similar to when participants are only exposed to one of the determiners („A“ or „The“)



- No difference between presupposition violation/implicature violation in SameColor condition (also no difference in reaction times)
- Significantly less SingleItem choices for „Ein“ than „Das“ (however, both at ceiling)



Summary

- Implicated presuppositions derived to a much lesser degree in this simple setting
- Implicated presuppositions less sensitive to focus in German and English
- However, focus did affect the eye-tracking patterns

Implications

- Puzzling given the assumption that the same operator/mechanism derives both inferences
- However, assumption can be upheld if alternatives (for some reason) are not activated or not relevant
- Proposal: for indefinite there is ‘part-time’ competition with the definite
- Assumption: definiteness and existential closure separated (Heim, 2011)

Taken together: implications

- Definiteness (5) is a modifier granting uniqueness that depending on the existential closure operator, presupposing variant in (7) and non-presupposing version in (6), can be part of assertion (see Heim, 2012)

$$(5) \quad \llbracket \text{DEF} \rrbracket = \lambda P . \lambda x . \forall y [P(y) \leftrightarrow x = y]$$

$$(6) \quad \llbracket \exists_{\text{plain}} \rrbracket = \lambda P . \lambda Q . \exists z [P(z) \& Q(z)]$$

$$(7) \quad \llbracket \exists_{\text{pres}} \rrbracket = \lambda P : \exists x [P(x)] . \lambda Q . \exists z [P(z) \& Q(z)]$$

Taken together: implications

(5) $\llbracket \text{DEF} \rrbracket = \lambda P . \lambda x . \forall y [P(y) \leftrightarrow x = y]$

Uniqueness modifier: “shirt” \rightarrow “unique shirt”

(6) $\llbracket \exists_{\text{plain}} \rrbracket = \lambda P . \lambda Q . \exists z [P(z) \ \& \ Q(z)]$

Plain existence: “there is a (unique) shirt and it is blue”

(7) $\llbracket \exists_{\text{pres}} \rrbracket = \lambda P : \exists x [P(x)] . \lambda Q . \exists z [P(z) \ \& \ Q(z)]$

Pres. existence: “there is a (unique) shirt (presupposition) and it is blue”

Taken together: implications

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Pres. existence: “there is a (unique) shirt (presupposition) and it is blue”

Taken together: implications

- On the surface they are meaning equivalent:
DEF + \exists_{plain} can be spelled out as “a”/“the”
—> both can assert “there is a unique relevant shirt and it is blue”
- Other option: There are of unequal complexity and can thus not be alternatives (Fox & Katzir, 2011)

Role of alternatives/QUD

- If existence of a shirt is at-issue (Is there a blue shirt in B's closet?) plain existential is activated and both definite and indefinite are meaning equivalent
- For “How many”-questions numerals are better competitors and definite is infelicitous
- The fact that we still see more implicated presuppositions might be due to the competition with the partitive construction (one of the...)

Open questions

- This is potentially problematic for cases where they *are* in competition:

(8) # John looked at a sun.

- Potentially conflicting notion of *novelty* versus *familiarity* (Heim, 1982; Grønn and Sæbø, 2012)

Open questions

- Why is this reading available when uniqueness is granted by a picture, not in the presence of linguistic contexts that assert uniqueness:

(9) There is a/exactly one shirt in my closet. #A shirt is blue.
- Conceptual distinction between “visual” and “linguistic” givenness

Open questions

- Why is this reading available when uniqueness is granted by a picture, not in the presence of linguistic contexts that assert uniqueness:

(9) There is a/exactly one shirt in my closet. #A shirt is blue.

(10) A girl entered the room and sat on a nearby chair. Then a boy came in and knocked {a/the} chair over.

Thank you!

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