

On the role of distributivity in the online comprehension of VP-conjunction

THEORY

distributive interpretation $\{x : P(x) \wedge Q(x)\}$
Champollion, 2015; Winter, 2001

the meaning of
VP-conjunction

non-distr. interpretation $\{x : \exists y, z [y \oplus z = x \wedge P(y) \wedge Q(z)]\}$
Heycock & Zamparelli, 2005; Krifka, 1990

Exp. Evidence

N-D.I. only found in disjoint predicates (Winter, 2001) or untypical combinations (Poortman, 2014)

N-D.I. more difficult for children?

QUESTIONS

Q2. Which readings of VP-conjunction are **available**? which are **preferred**? which are easier to **process**?

Q3. How do **children and adults** differ in **interpretation** (availability & preference) and **processing** (delays? reanalysis?)

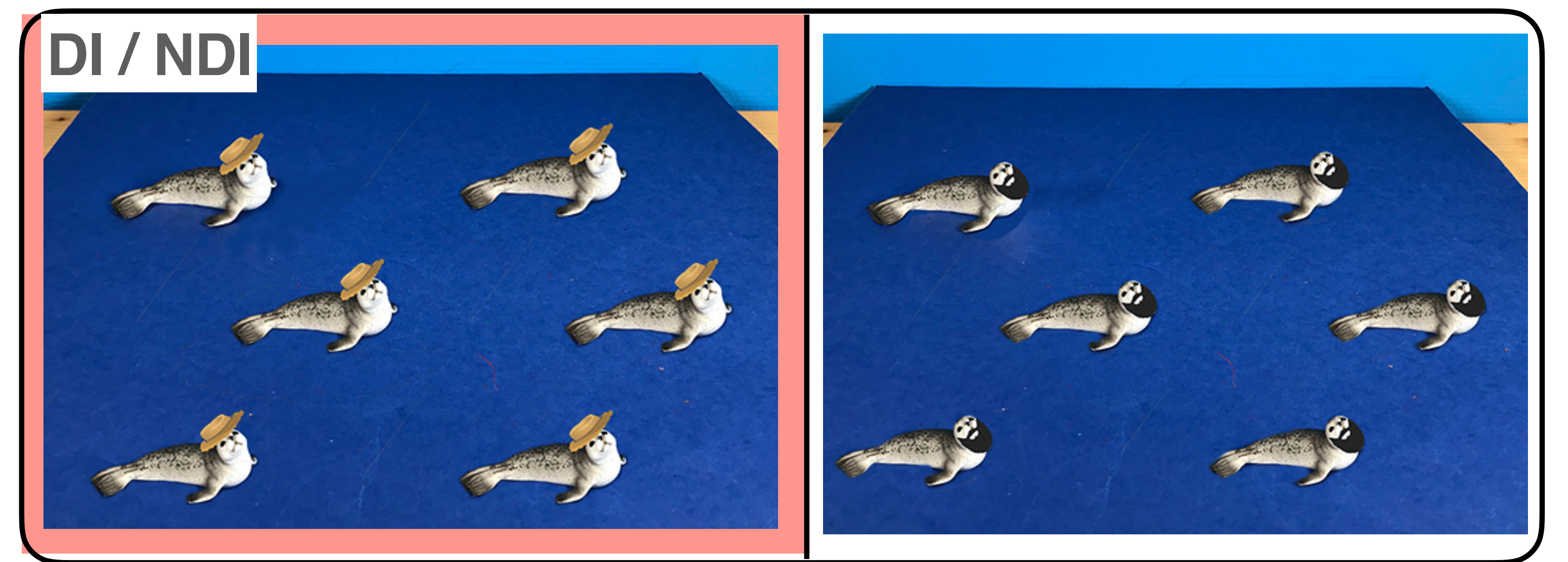
Q1. How do the **semantic properties** of the predicate and the context contribute to:
a) the final interpretation
b) the online processing of VP-conjunction?

HYPOTHESES

1. non-dis. readings are **unexpected**
Winter, 2001[2]
2. non-dis. readings are **exceptional**
Poortman, et al. 2014; Winter, 2001[4]
3. non-dis. readings are **not exceptional**
Heycock & Zamparelli, 2005; Krifka, 1990

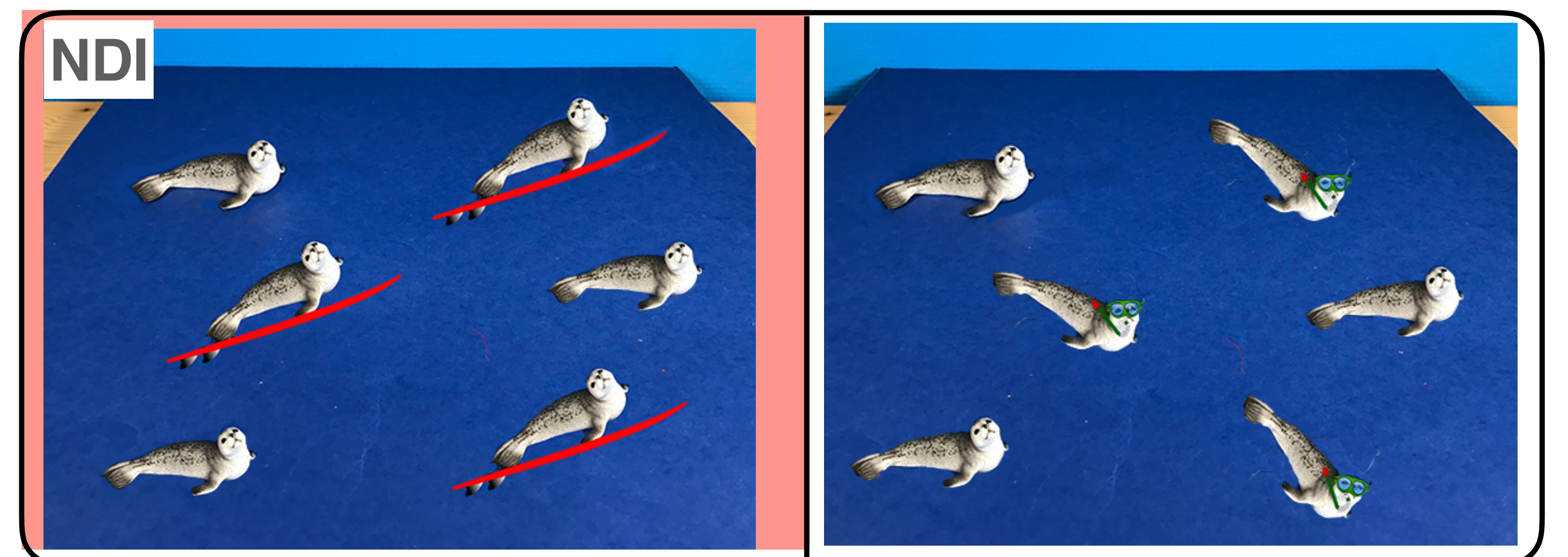
	Cond. 1	Cond. 2	Cond. 3
1. non-dis. readings are unexpected	✓	✗	✗
2. non-dis. readings are exceptional	✓	👷	✗
3. non-dis. readings are not exceptional	✓	✓	?

Condition 1 Distributive Scen. (non-disjoint pred.)



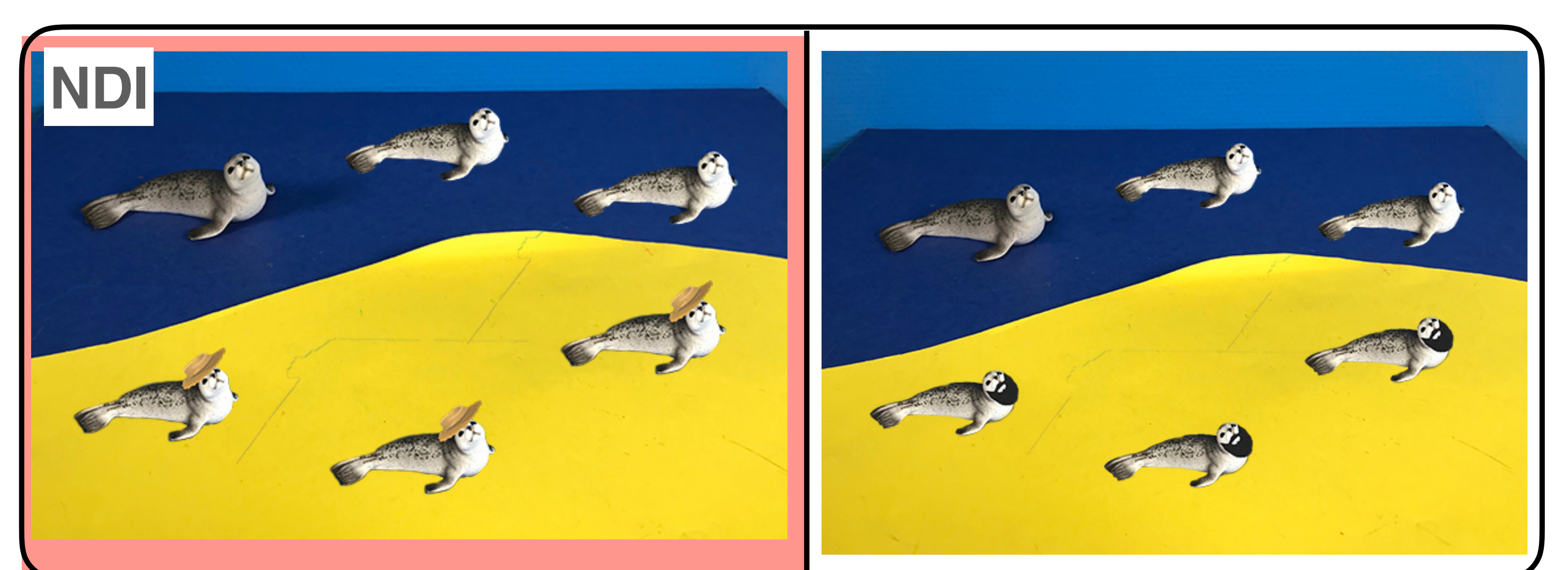
"The six seals are swimming **and** wearing hats"

Condition 2 Cumulative Scen. (disjoint pred.)



"The six seals are swimming **and** surfing"

Condition 3 Cumulative Scen. (non-disjoint pred.)



"The six seals are swimming **and** wearing hats"

METHODS & PARTICIPANTS

Participants: 48 German speaking adults 48 German speaking 6-to-10-year-old children (M=7.8)

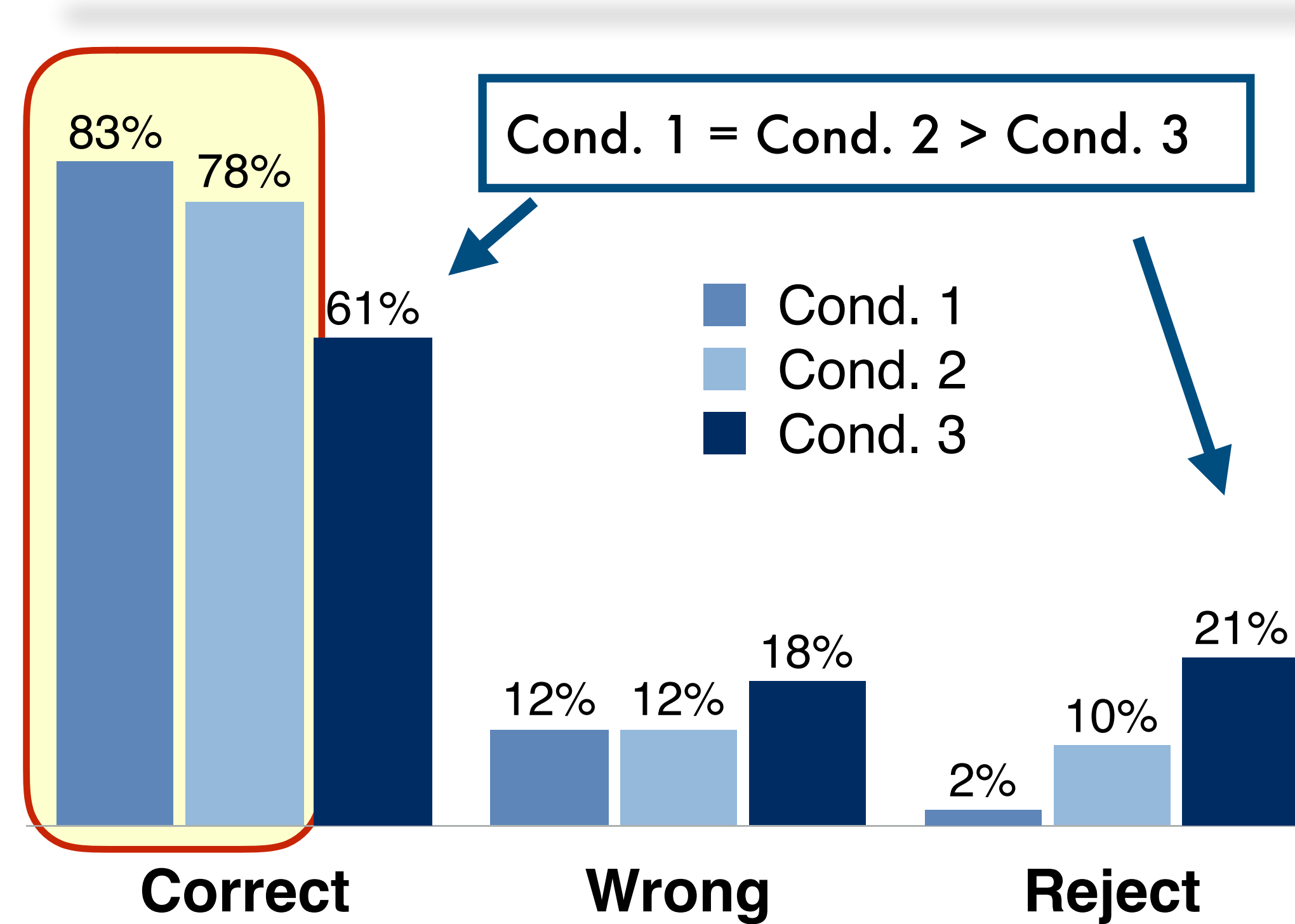
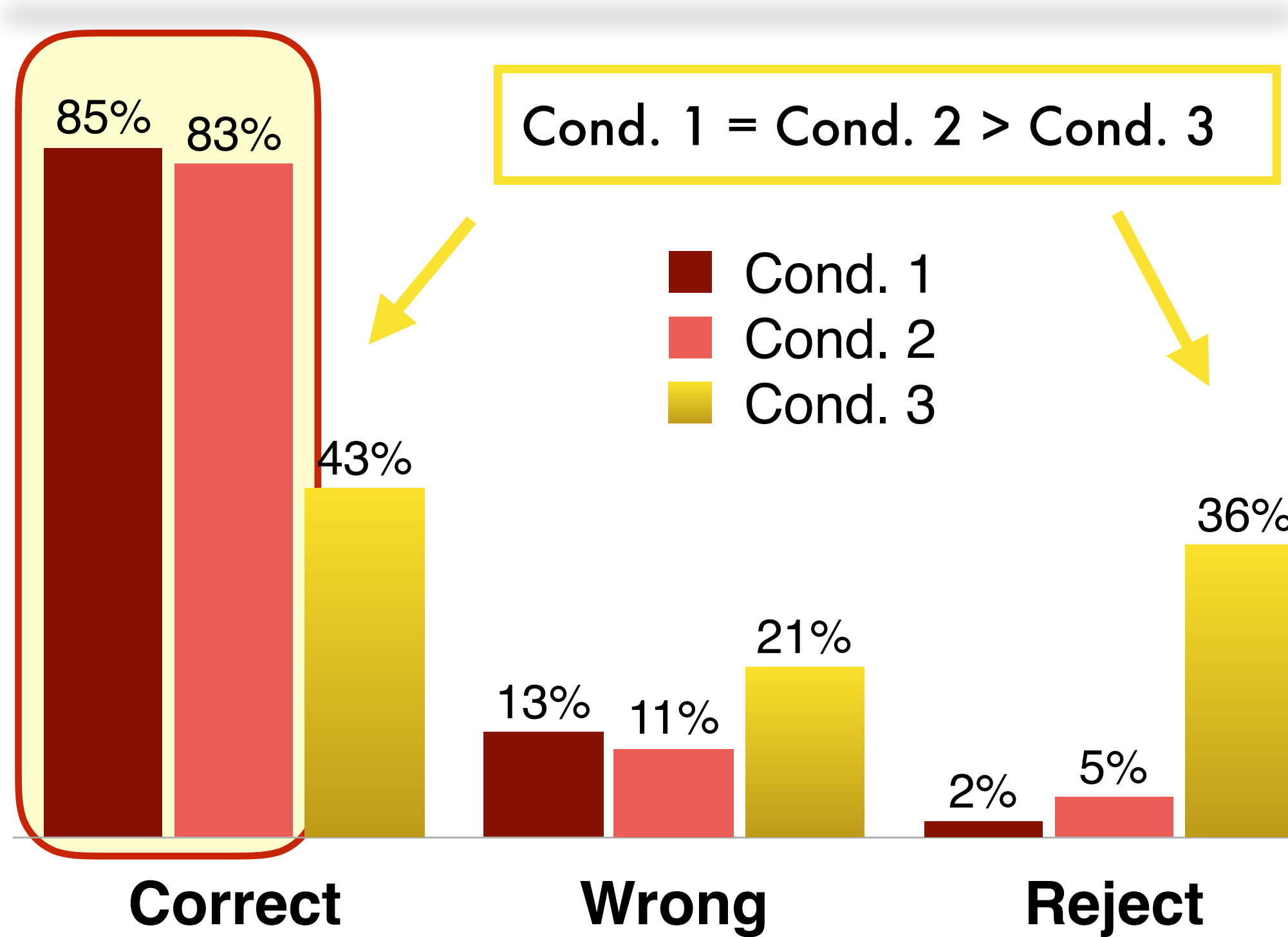
Analysis: Generalized Linear Mixed Models on participant choices/fixated quadrant

Semantic Choice Task: picture matching task with eyetracking; two scenarios presented simultaneously: ACCEPT one / REJECT both

Offline Results

Adults

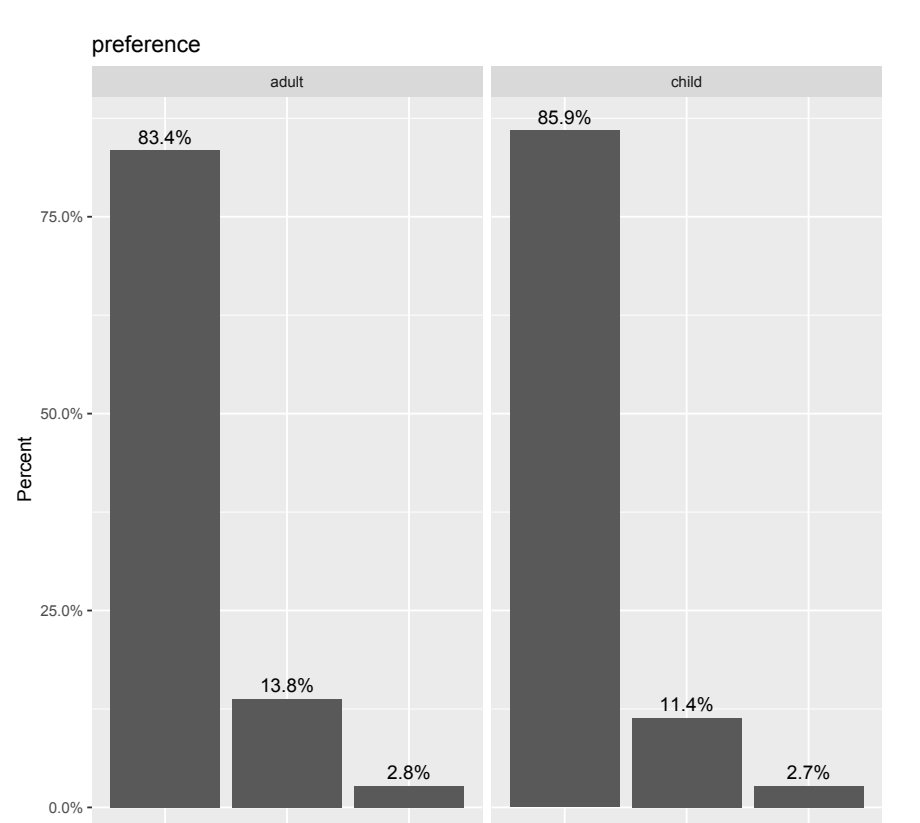
Children



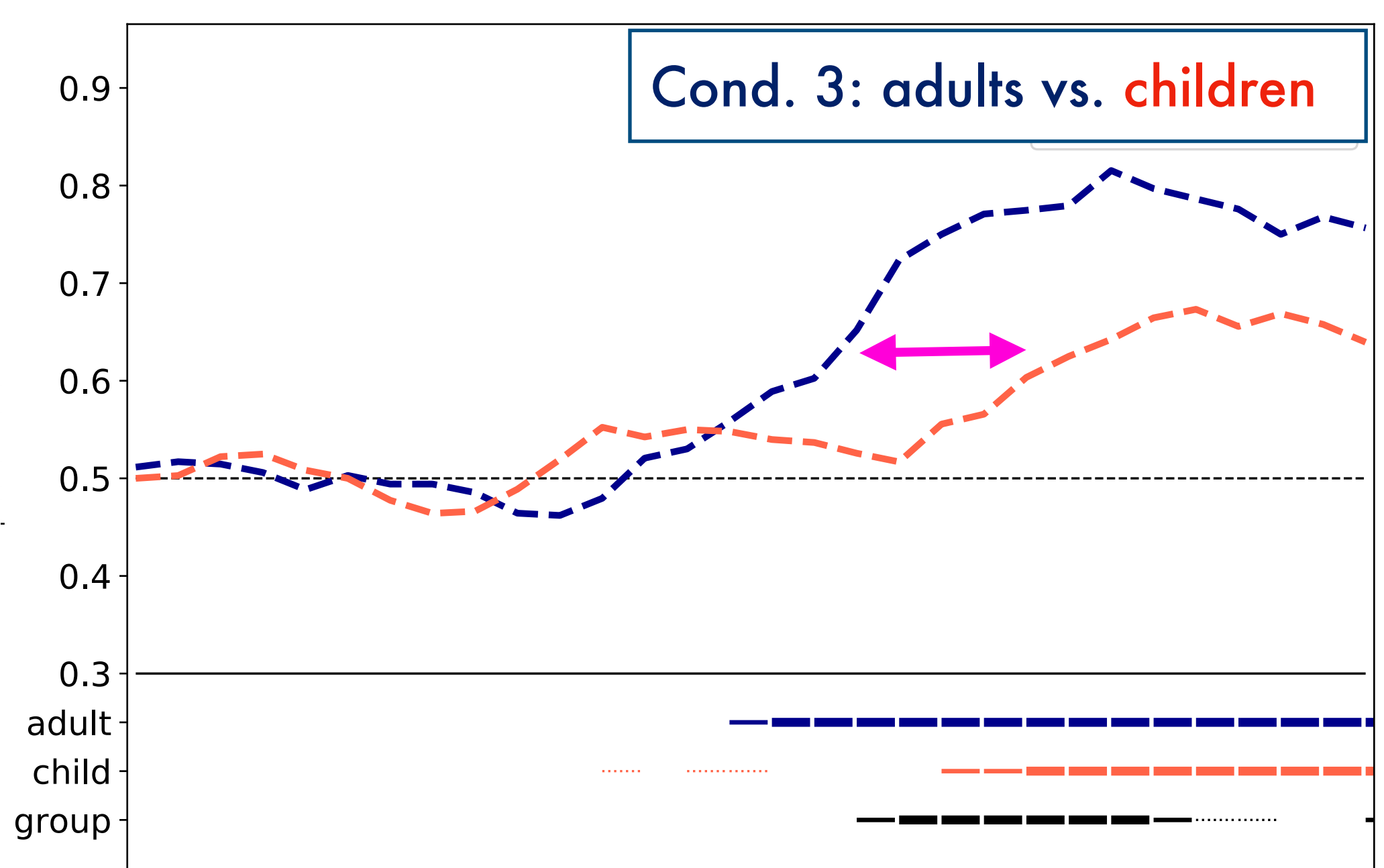
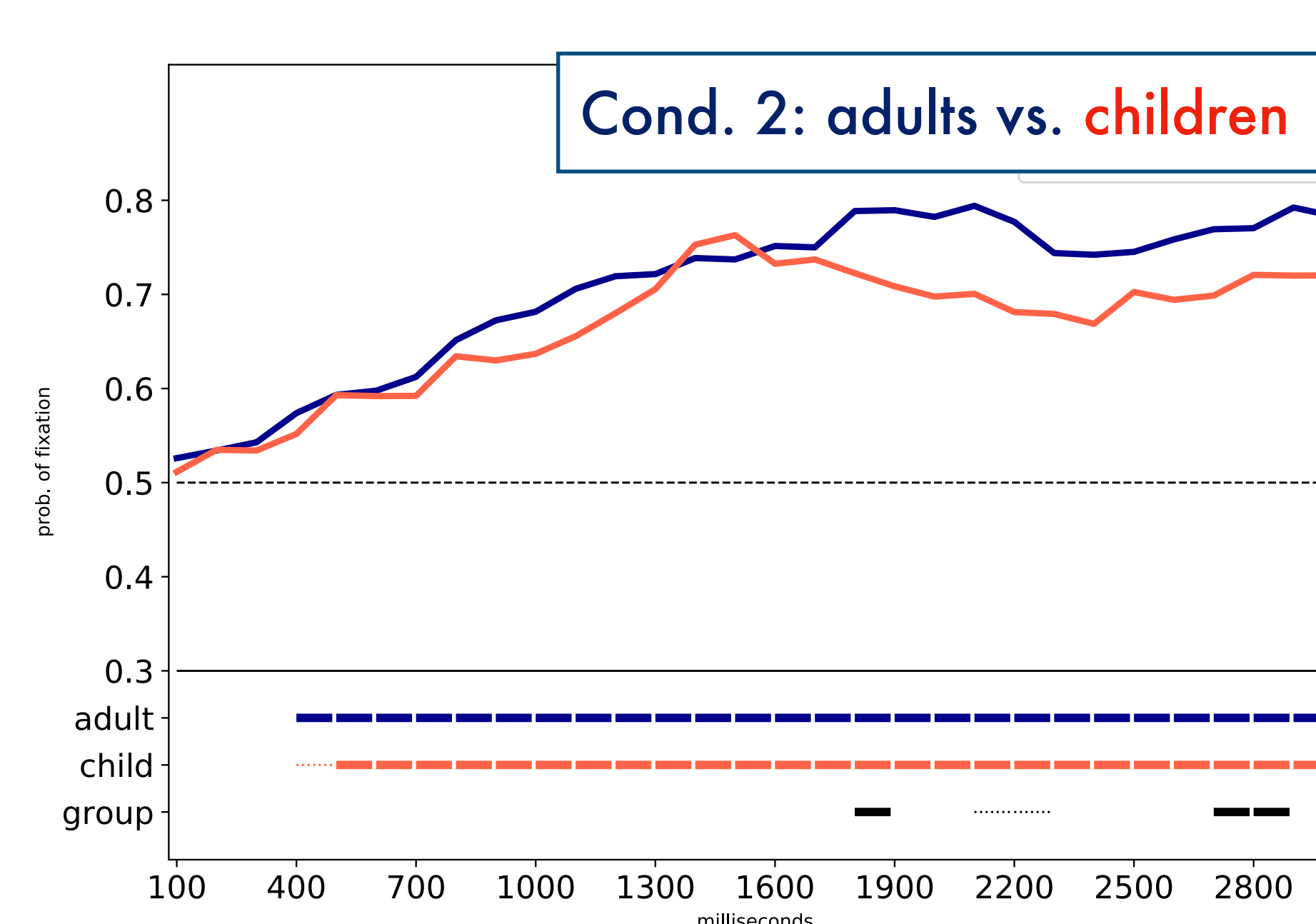
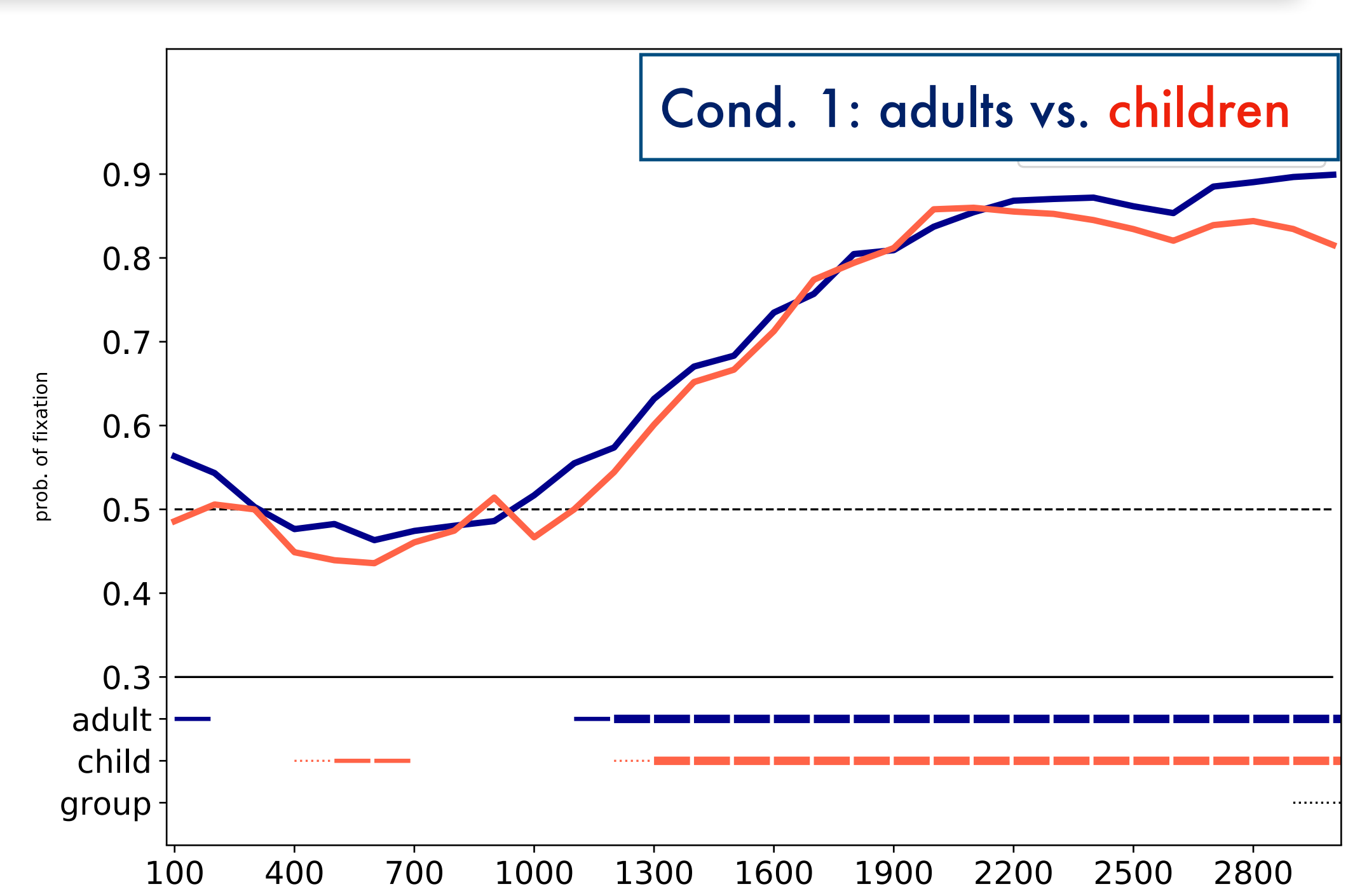
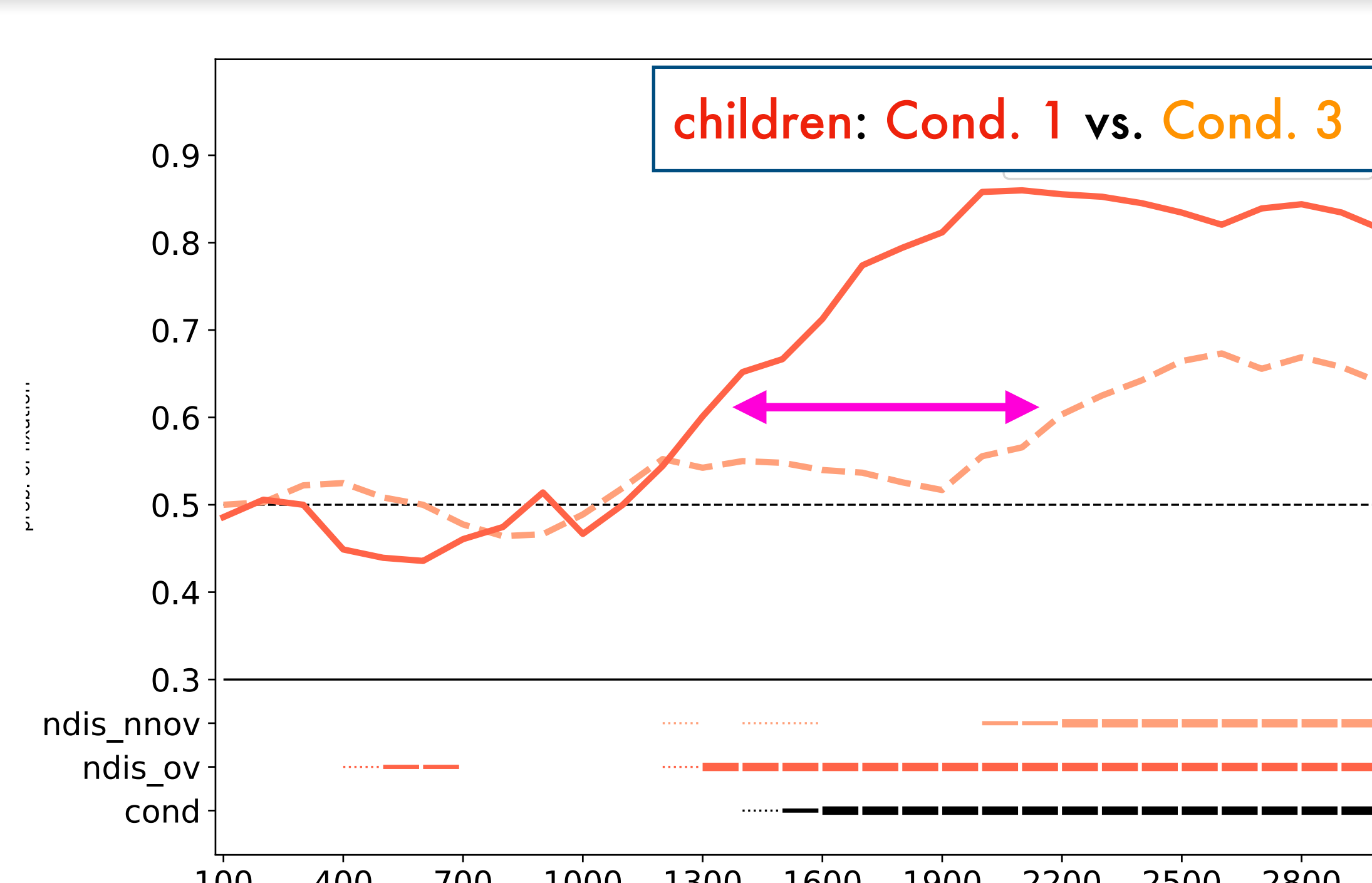
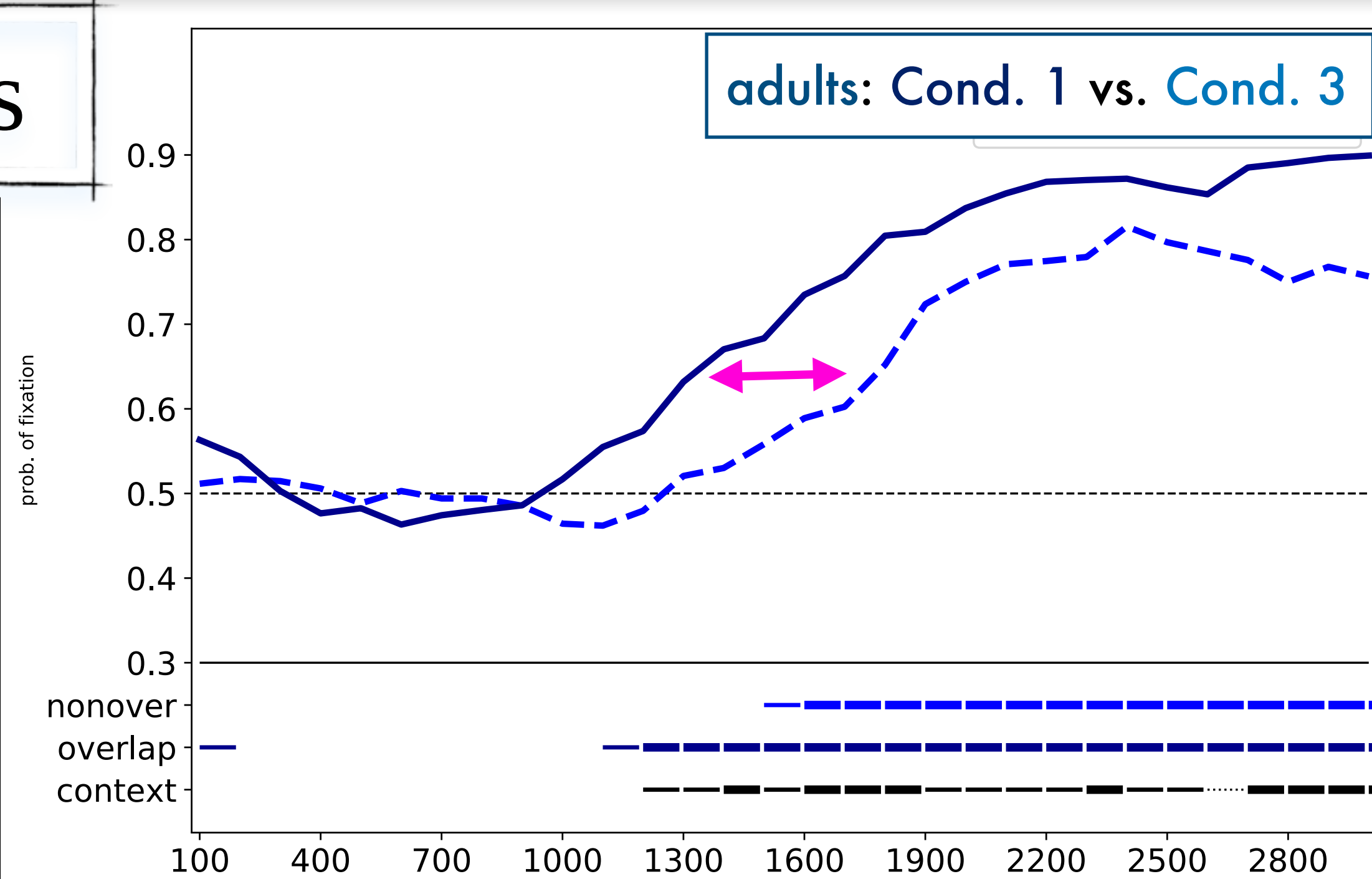
✓ Adults and children accept distributive interpretations in distributive scenarios (Cond. 1) and non-dist. interpretation in cumulative scenarios with disjoint pred. (Cond. 2) at ceiling

👷 They both accept less often non-dist. interpretations in cumulative scenarios with non-disjoint pred. (Cond. 3); adults even more so

→ They both strongly prefer distributive readings over non dist. ones in Preference Cond.



Online Results



DISCUSSION

Q2: non-dis. readings are **not exceptional** (Hyp 3 > Hyp 1 & 2) nor harder to process (see Cond. 2)

→ Q1&Q2: initial interpretation determined by **semantic property of predicate** over visual context (strongest meaning compatible with the predicate: Cond. 1 & 2 vs. Cond. 3)

→ Q2: if context does not support an **early commitment**: **revison** (Cond. 1 vs. Cond. 3)

→ Q3: children struggle with revision more than adults (cf. Cond. 3, see Trueswell et al., 1999)