

Active Overhearing

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INTRODUCTION

Learning language through overhearing can be seen as a type of active learning: information-gathering is self-directed, attention is strategically oriented,¹ and given variation in child-directed speech practices,² may reflect children having 'learned to learn.'³

Background:

- Link between joint attention & vocabulary diminishes in 2nd year⁴
- Children can learn new words from overhearing by 18 months⁵

Present Study:

- Introduces naturalistic overhearing context (phone call)
- Increases quantity of learning targets (4 words, 6 facts)
- Compares overhearing to didactic learning in older children

To succeed at this task, children must:

- Recognize an information gap⁶ (names of novel toys)
- Close the gap by overhearing an expert's phone conversation

RESEARCH QUESTIONS

- Can children learn new words and facts from naturalistic overheard speech?
- How do self-directed and didactic language-learning compare at this age?

STIMULI & METHODS

Participants

47 children, 4;6 - 5;11 (25 girls, M = 5;2, SD = 6 mos)



Fig. 1: Stimuli (2 familiar, 4 novel toys)

STIMULI & METHODS

I. Introduction

Child's attention directed to toys individually by Experimenter (DIDACTIC) or Confederate (OVERHEARING)

CONFEDERATE:

...I've never seen these toys before! These are [Experimenter's] toys!

II. Learning (2 object-word mappings)

DIDACTIC

Child learns one word and fact for each of six toys through direct address

OVERHEARING

Experimenter delivers script in a phone call, while child plays independently with toys.

EXPERIMENTER:

....the last thing I brought was a *zav*. It's a yellow *zav* and it has a bunch of stickers in all different colors on it. You can take the stickers on and off the *zav*. I found this *zav* in the garden. I like this *zav* best...

III. Test (2 orders)

e.g., "Can you put the *zav* / one I found in the garden in the box?"

WORDS: 2 Blocks (12 trials)

FACTS: 1 Block (6 trials)

Measures

- Test Accuracy
- Videocoding (OH only)
 - matching-object touches
 - looks to experimenter

RESULTS: Test

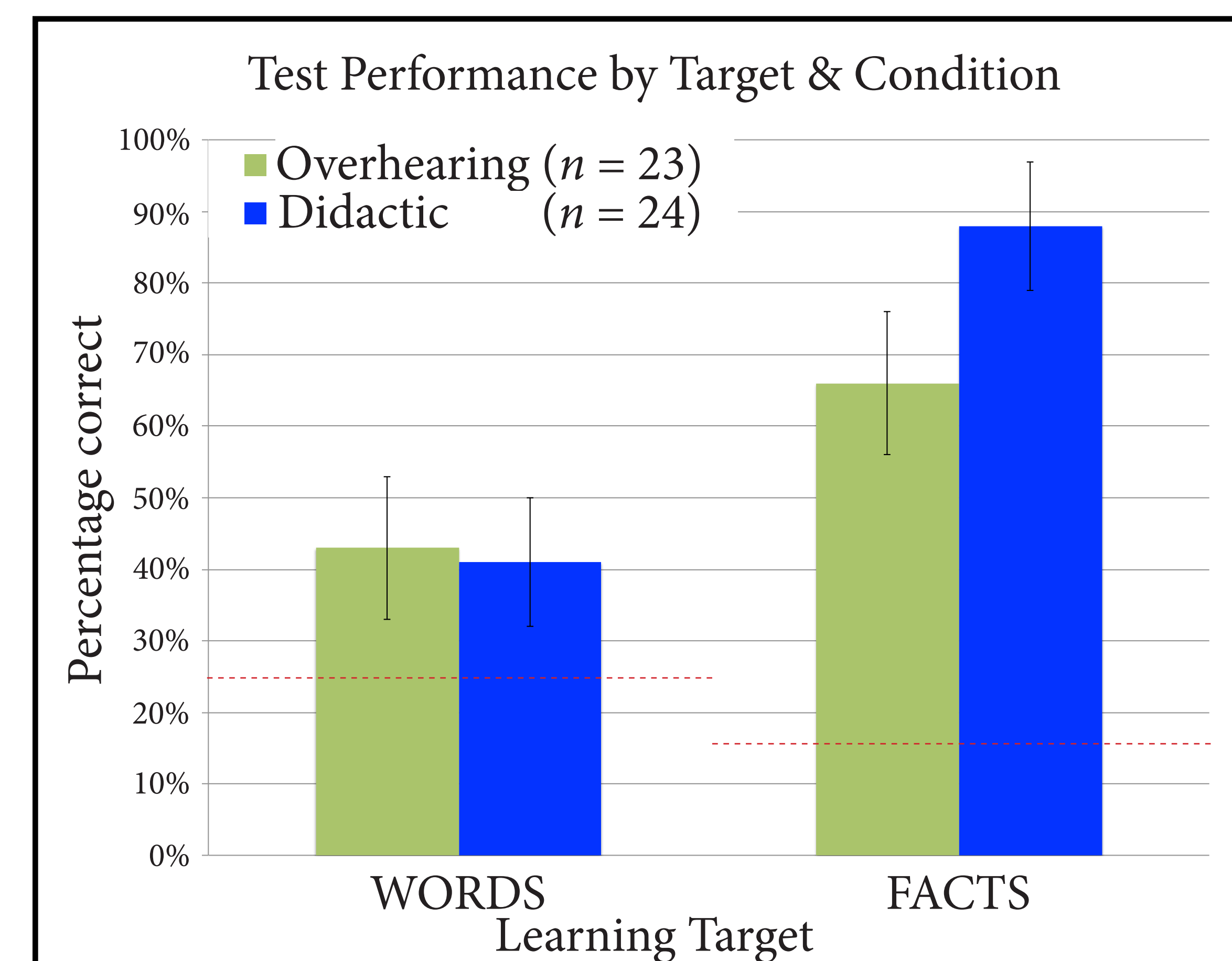


Fig. 2: Mean accuracy, SEM error bars, dashed line at chance

- No difference between conditions on word-learning ($t(373) = 0.46, p = 0.65$)
- Fact performance significantly greater in Didactic condition ($t(243.82) = -4.40, p < .001$)

OVERHEARING

- Above chance (.25) on words (43%, $t(183) = 5.04, p < .001$)
- Above chance (.17) on facts (66%, $t(137) = 12.17, p < .001$)
- Facts > words ($t(301.78) = 4.11, p < .001$)

DIDACTIC

- Above chance (.25) on words (41%, $t(191) = 4.53, p < .001$)
- Above chance on facts (88%, $t(143) = 25.61, p < .001$)
- Facts > words ($t(330.37) = 10.28, p < .001$)

RESULTS: Video

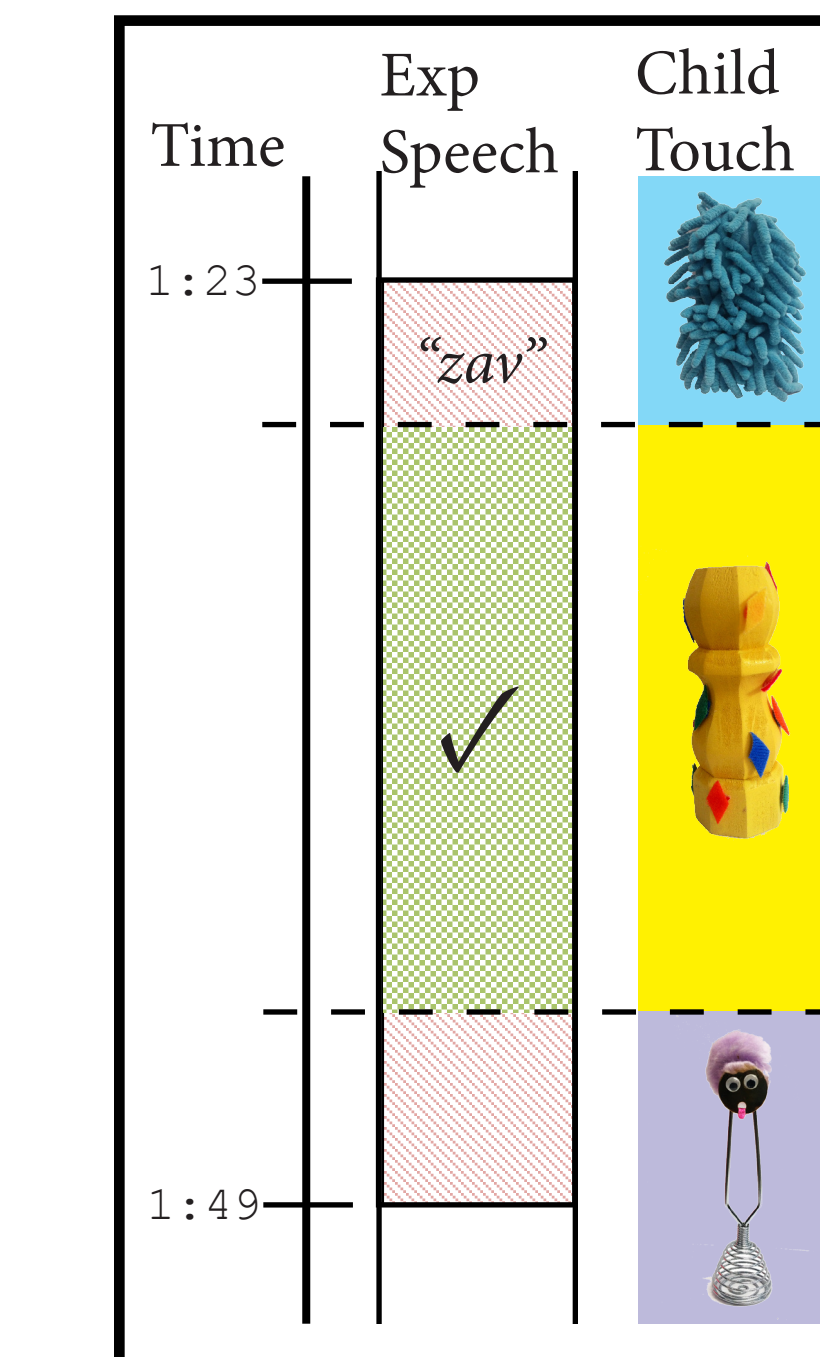


Fig. 3: For each child, a measure of attention was calculated from the proportion of each phone call segment in which the child was touching the same object the experimenter was discussing versus the other five objects (e.g., touched the *zav* as the experimenter described the *zav*)

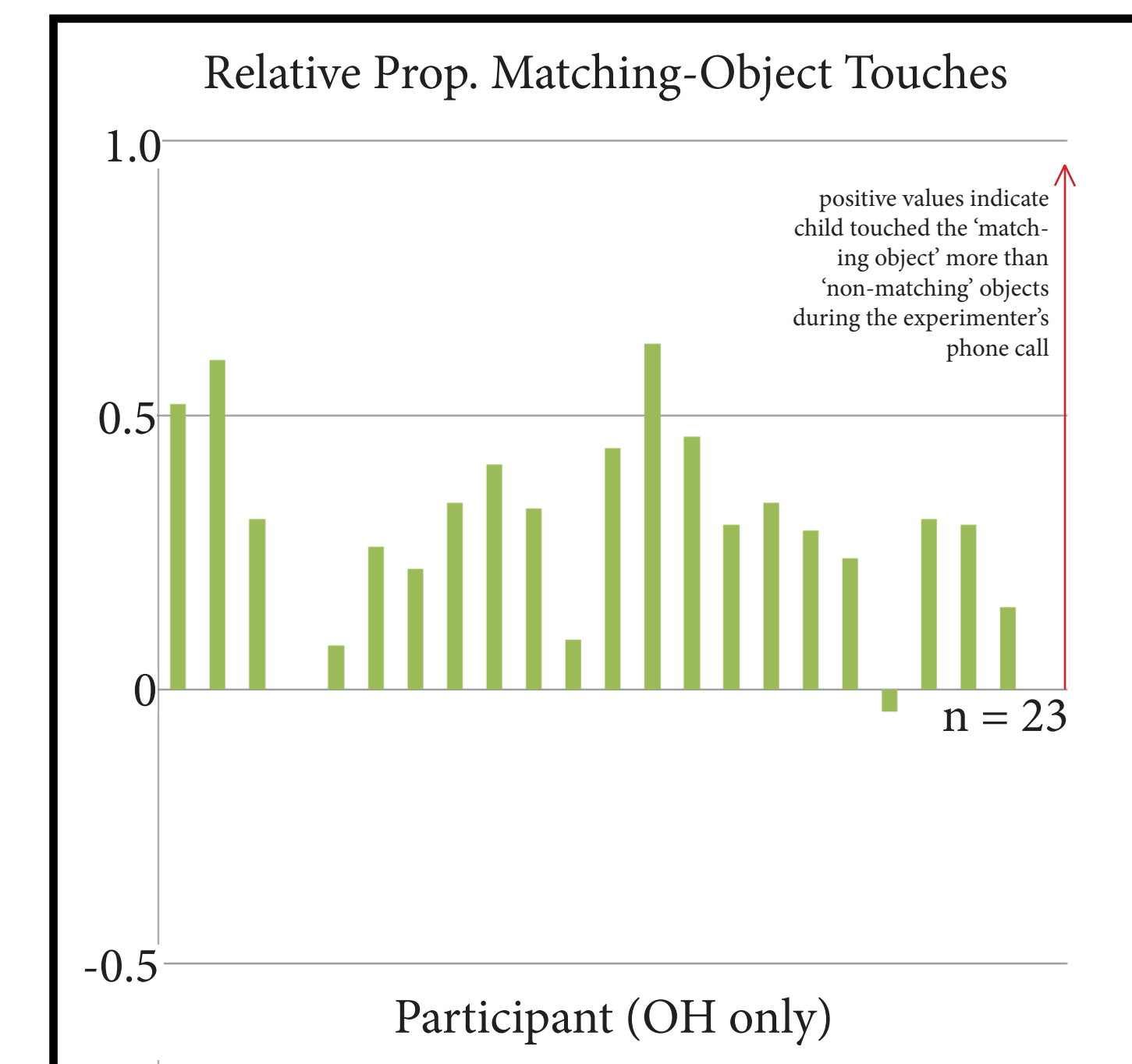


Fig. 4: Twenty-one out of 23 children reliably touched the matching objects

SUMMARY

- By 4½, children can learn new words equally well in an overhearing and didactic context
- Children in the current study learned both words and facts above chance in both conditions
- Fact-learning was reliably higher than word-learning in both conditions, and significantly greater when taught didactically
- Future studies will explore trade-offs in learning from overhearing contexts in younger children, as well as differences in the quality of information available to language-learners in overheard versus child-directed speech.

References

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