CATEGORICAL TEMPLATES: TYPICAL CATEGORY MEMBERS ARE FOUND AND IDENTIFIED QUICKLY DURING WORD-CUED SEARCH

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SAMSUNG
AT&T
12:45 PM
12:45 PM
Mon, February 24

MOTOROLA
Photo Viewfinder
Memory Used:71%
BACK
CAPTURE

PICTURE- CUED SEARCH VS CATEGORICAL SEARCH

Find the following:

Guided by features in VWM template

Find the following:

VEHICLE

Guided by...?

Please search for the following:

BIRD

Indicate if the target is PRESENT or ABSENT

(raise your hand if you find one)

Please search for the following:

BIRD

Indicate if the target is PRESENT or ABSENT

(raise your hand if you find one)

WERE YOU FOOLED?

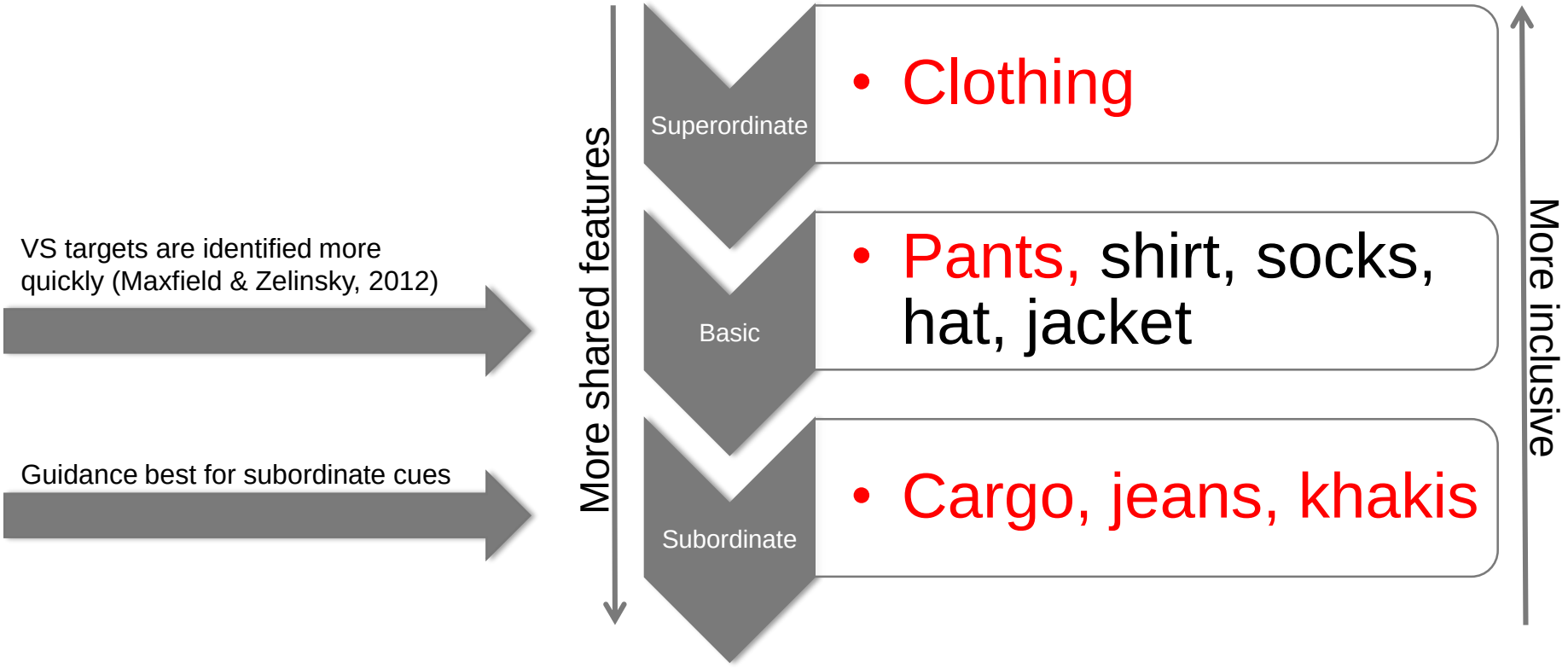
CATEGORY TYPICALITY

- **Through experience, we gain a sense of what an average/typical member of a category looks like**
  - Which of the dogs is most typical?
- **Typicality does indeed influence search and guidance (Maxfield, Stradler, & Zelinsky, 2014)**

EXPERIMENT 1

Does typicality affect all levels of the categorization hierarchy equally?

- **How does the level of categorization for distractors influence search?**



STEP 1: TYPICALITY RATINGS

CLOTHING

1) PANTS
2) SHIRTS
3) JACKETS
4) SHOES
5) HATS

PANTS

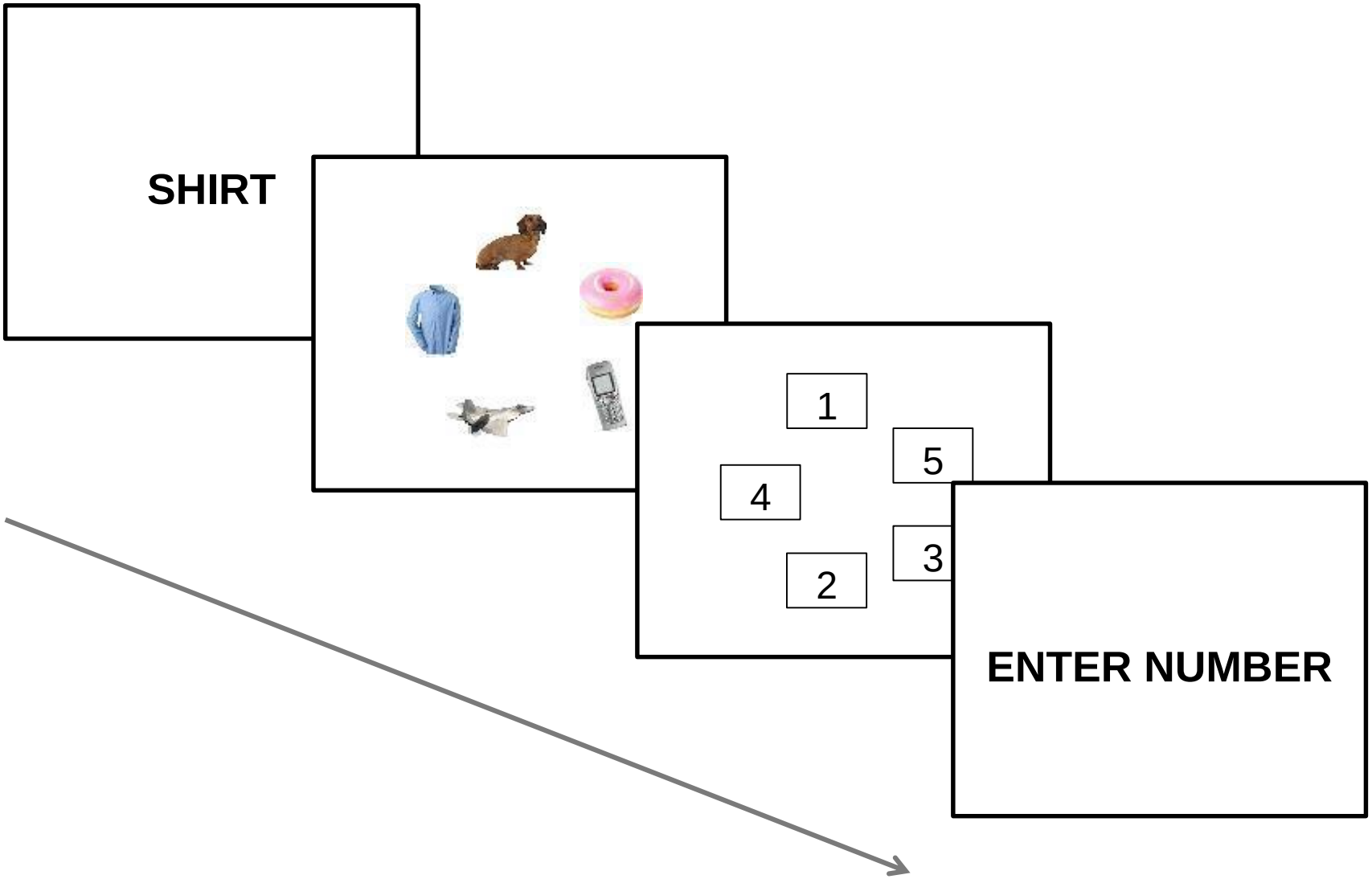
SHOES

HATS

JACKETS

SHIRTS

SEARCH PROCEDURE



TRIAL CONDITIONS

Superordinate

CLOTHING

Distractors from other super

Basic Across

PANTS

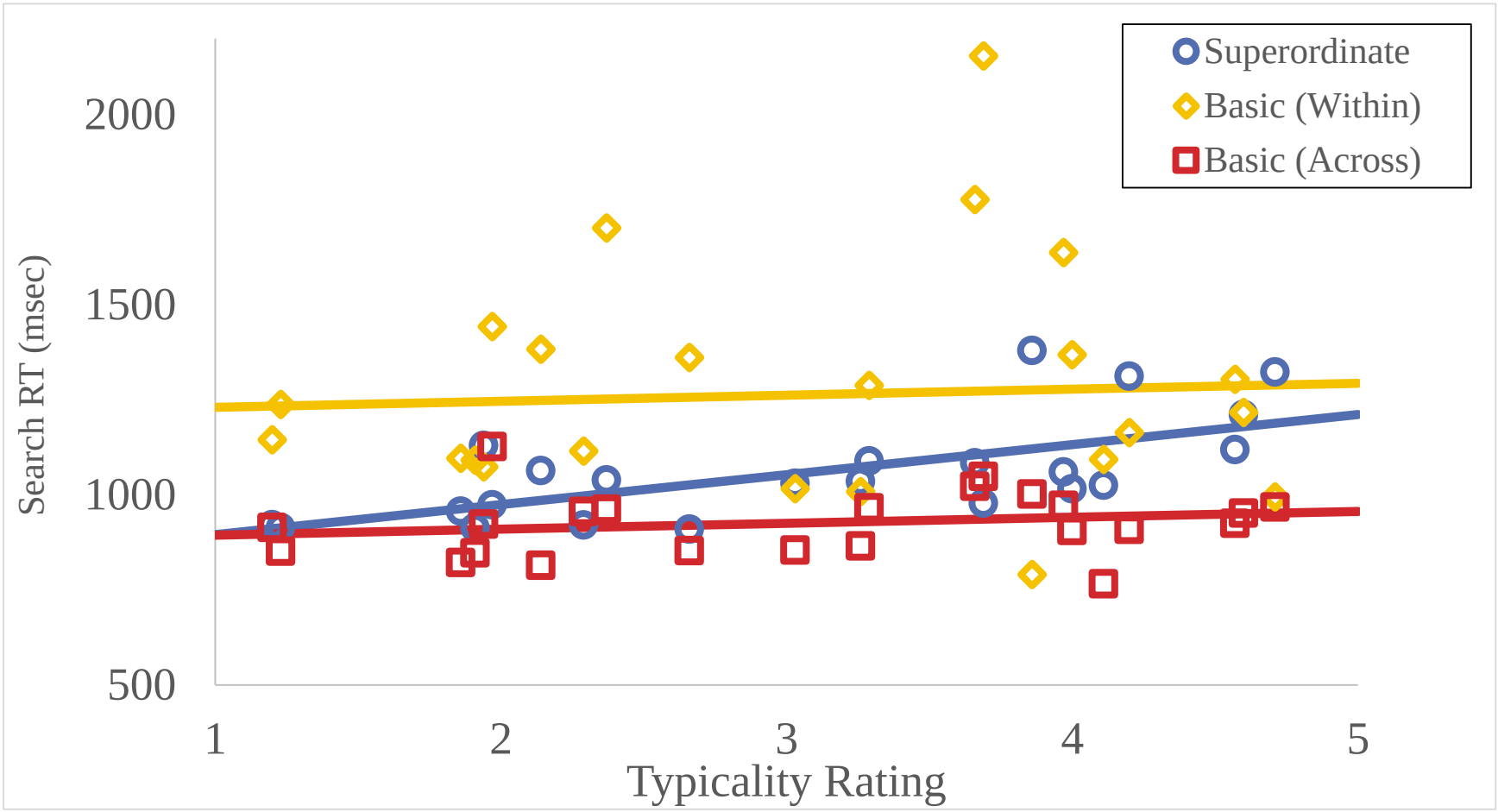
Distractors from other super

Basic Within

PANTS

Distractors from same super

EXP. 1 RESULTS



Typicality influenced search performance

- For the superordinate condition only

Basic across trials yielded fastest performance

- Specific cue, less overlap of features

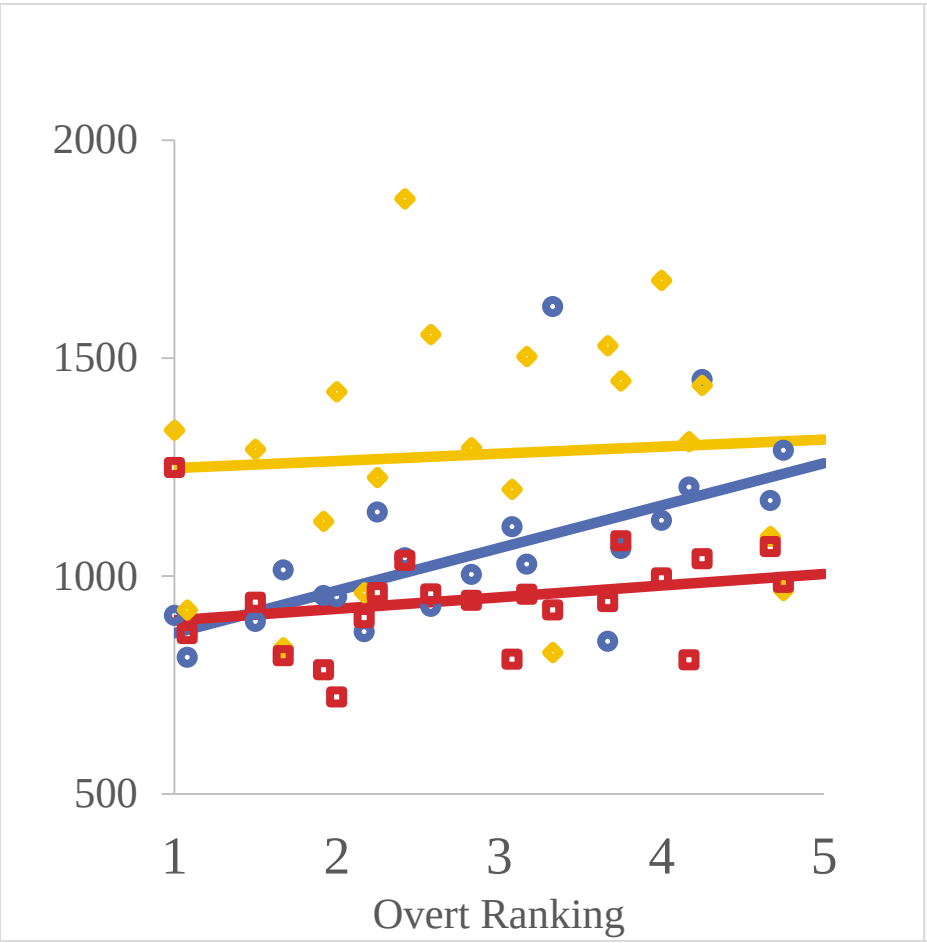
Basic Within yielded slowest

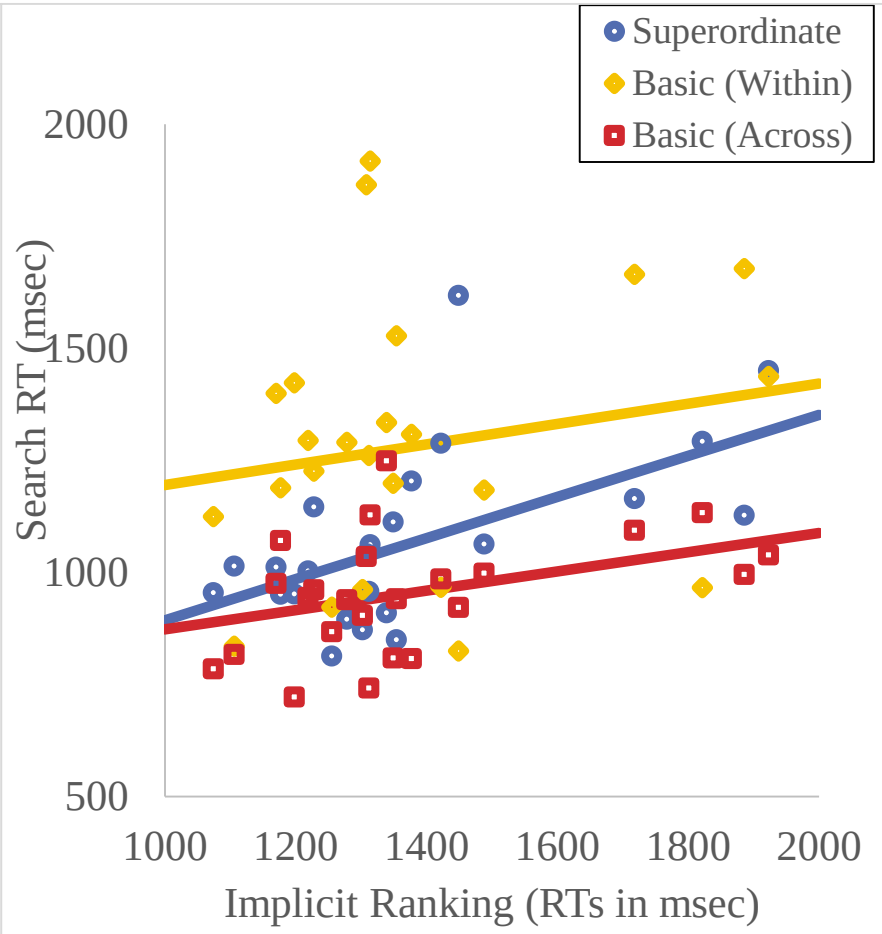
- Most overlap of features
- Interference from similar features

EXPERIMENT 2: GUIDANCE

- **Using eye tracking, we can observe how certain features draw eyes (attention)**
- **Same procedure, but with eye tracking and new typicality measure using RT.**
  1. “Are PANTS a member of CLOTHING?”
  2. Fastest responses would be most typical

EXP. 2 BEHAVIORAL RESULTS





CLOTHING

1)
2)
3)
4)
5)

PANTS
SHOES
HATS
JACKETS
SHIRTS

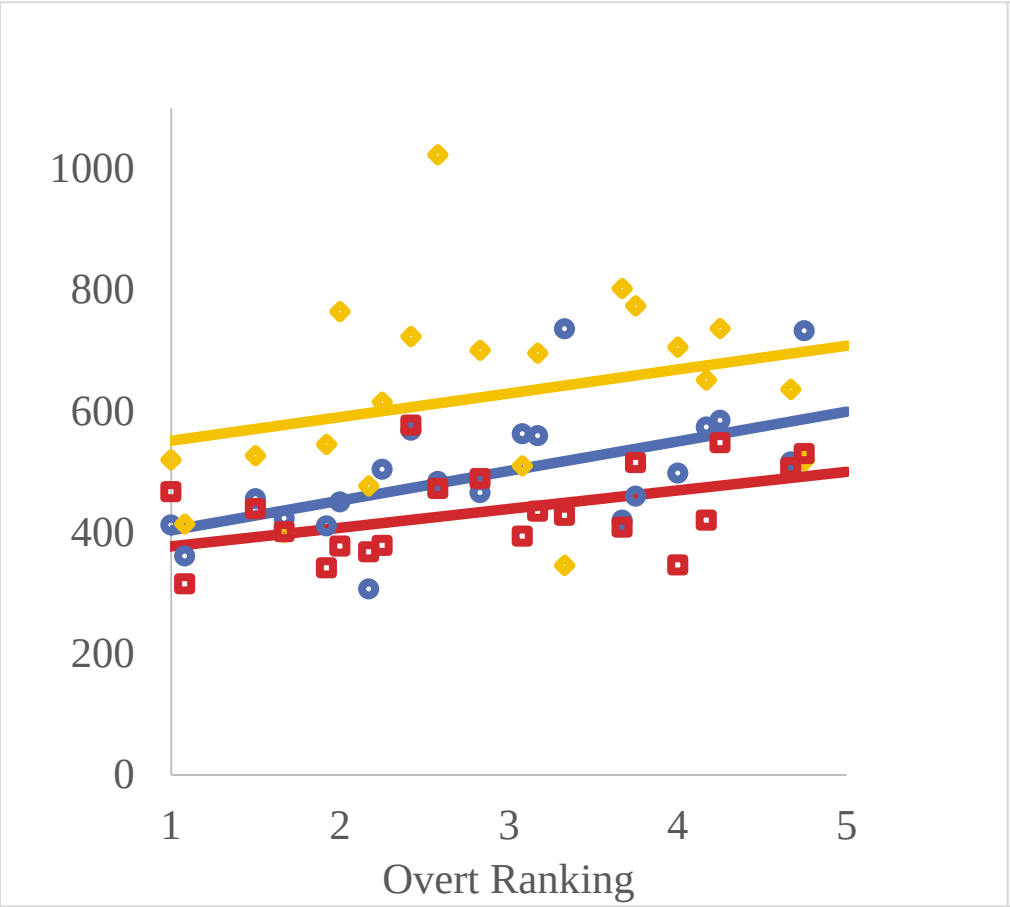
Are PANTS a member of CLOTHING?

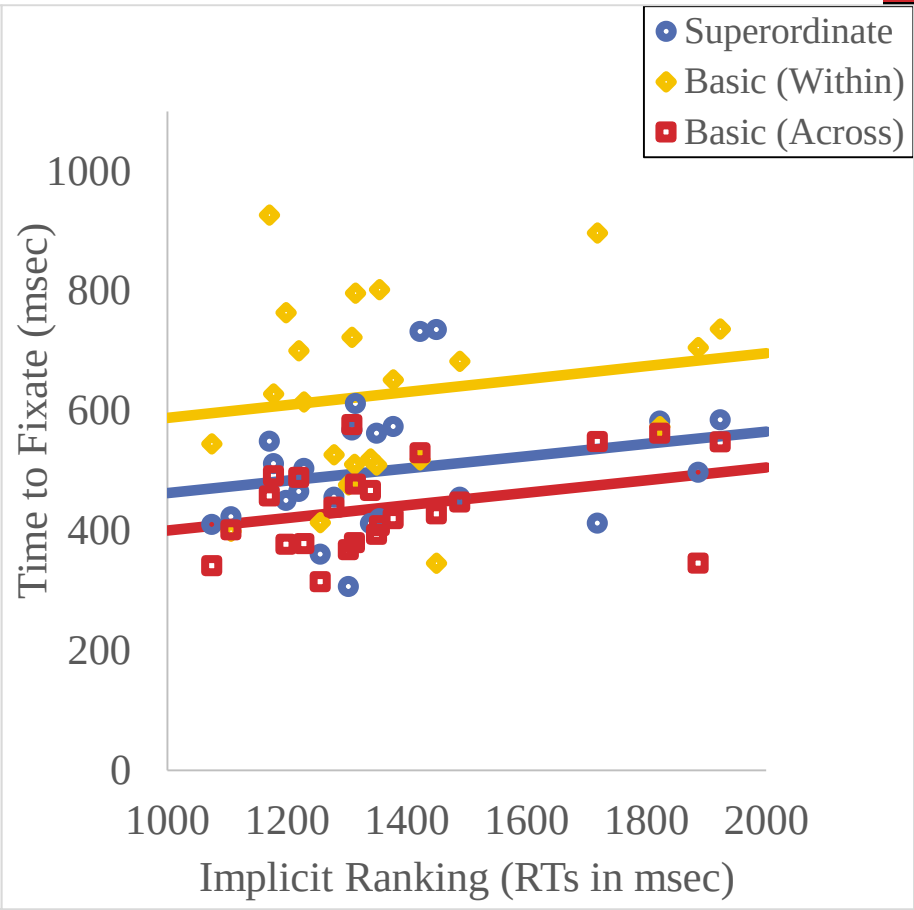
RESULTS SUMMARY

Does typicality affect...

CONDITION	RT	Time to Fixate	Time to Press	# Visits
Basic Within PANTS →	⊘			
Superordinate CLOTHING →	✓			
Basic Across PANTS →	✓ *			

EXP. 2 EYE TRACKING RESULTS





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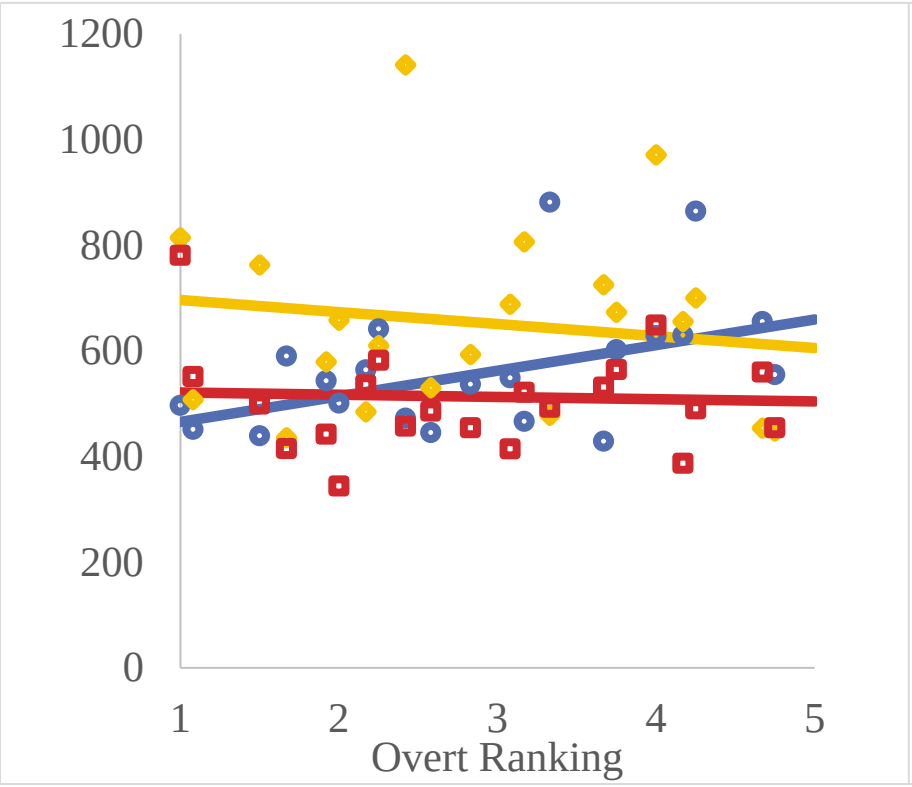
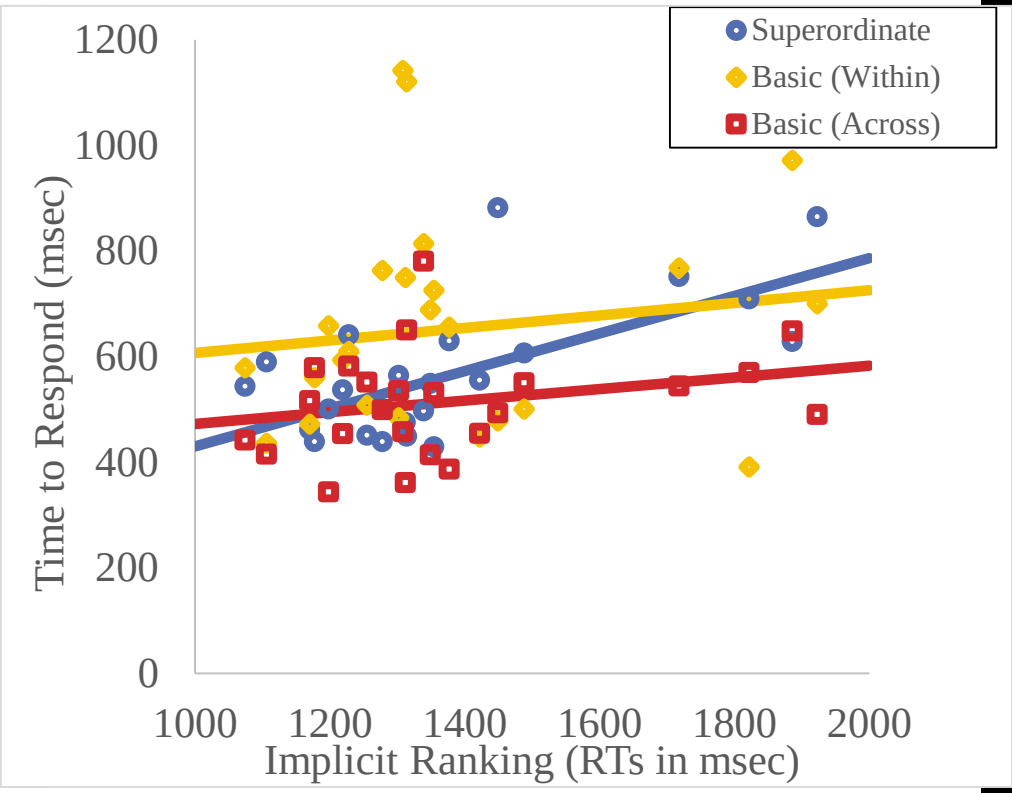
Superordinate CLOTHING →	✓	✓		
Basic Across PANTS →	✓ *	✓		

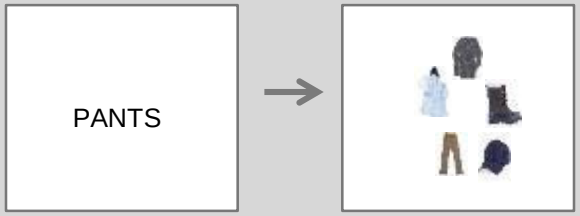
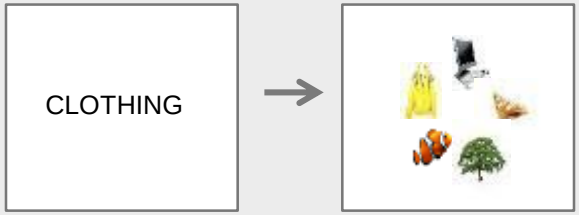
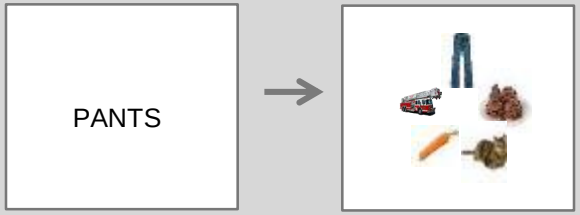
EXP. 2 EYE TRACKING RESULTS



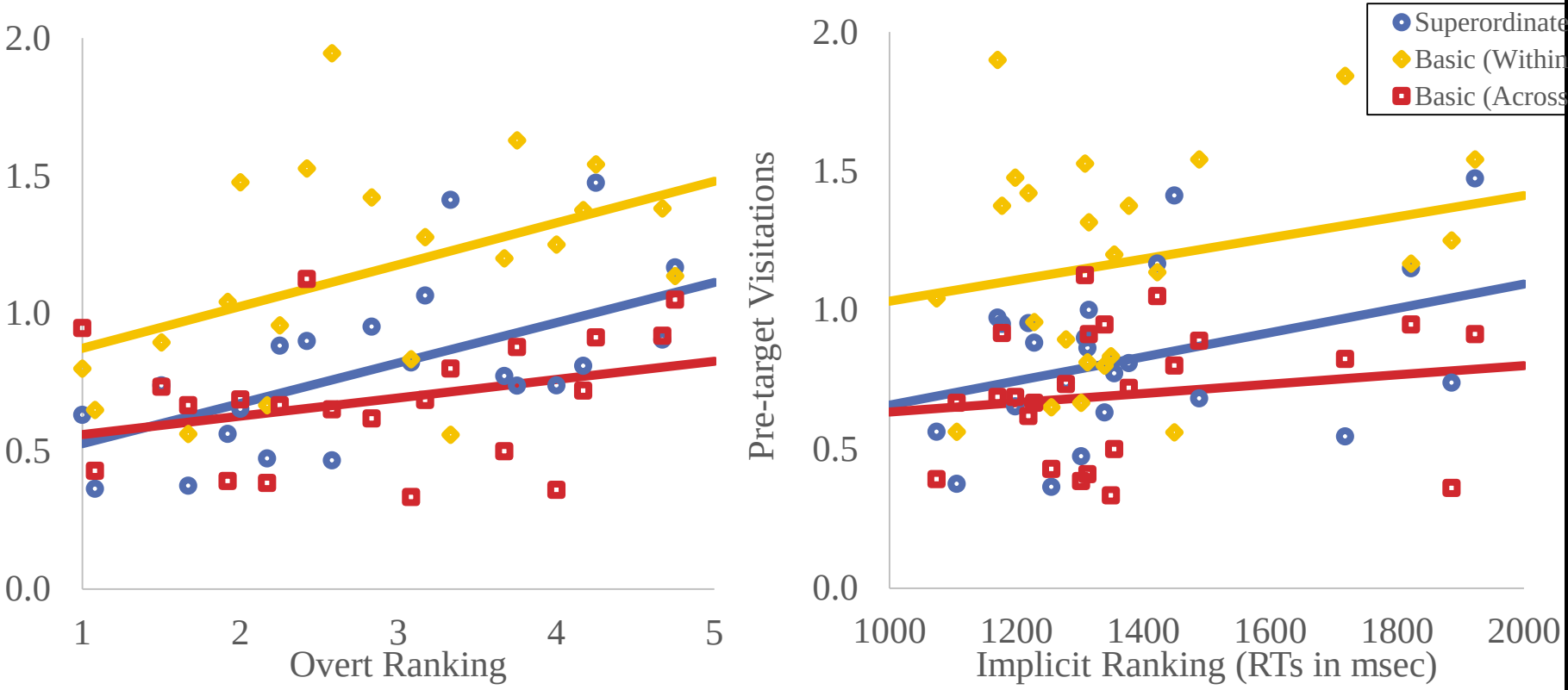


RESULTS SUMMARY

Does typicality affect...

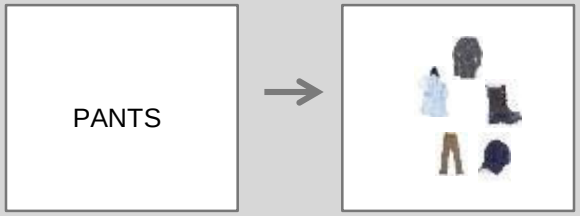
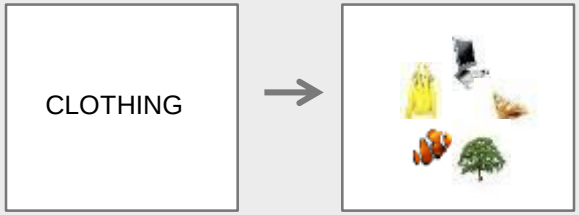
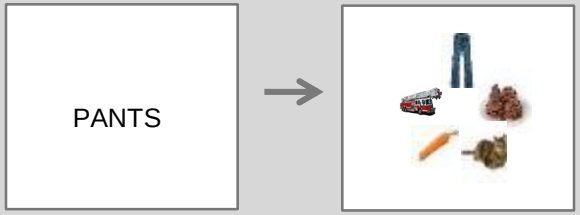
CONDITION	RT	Time to Fixate	Time to Press	# Visits
Basic Within 	⊘	✓	⊘	
Superordinate 	✓	✓	✓	
Basic Across 	✓	✓	⊘	

VISITS BEFORE TARGET



RESULTS SUMMARY

Does typicality affect...

CONDITION	RT	Time to Fixate	Time to Press	# Visits
Basic Within 	⊘	✓ *	⊘	✓ *
Superordinate 	✓	✓	✓	✓
Basic Across 	✓ *	✓	⊘	✓ *

CONCLUSIONS

When targets differ greatly from distractors (super cue, super level distractors), typicality matters.

CLOTHING →

THANKS!

Alexis Lopez & Garret Bennett

Collaborative Visual Search, OPAM Poster #34

Adam Underwood

Prospective memory, Friday evening posters, #3085