

# Temporal Contiguity in Incidentally Encoded Memories

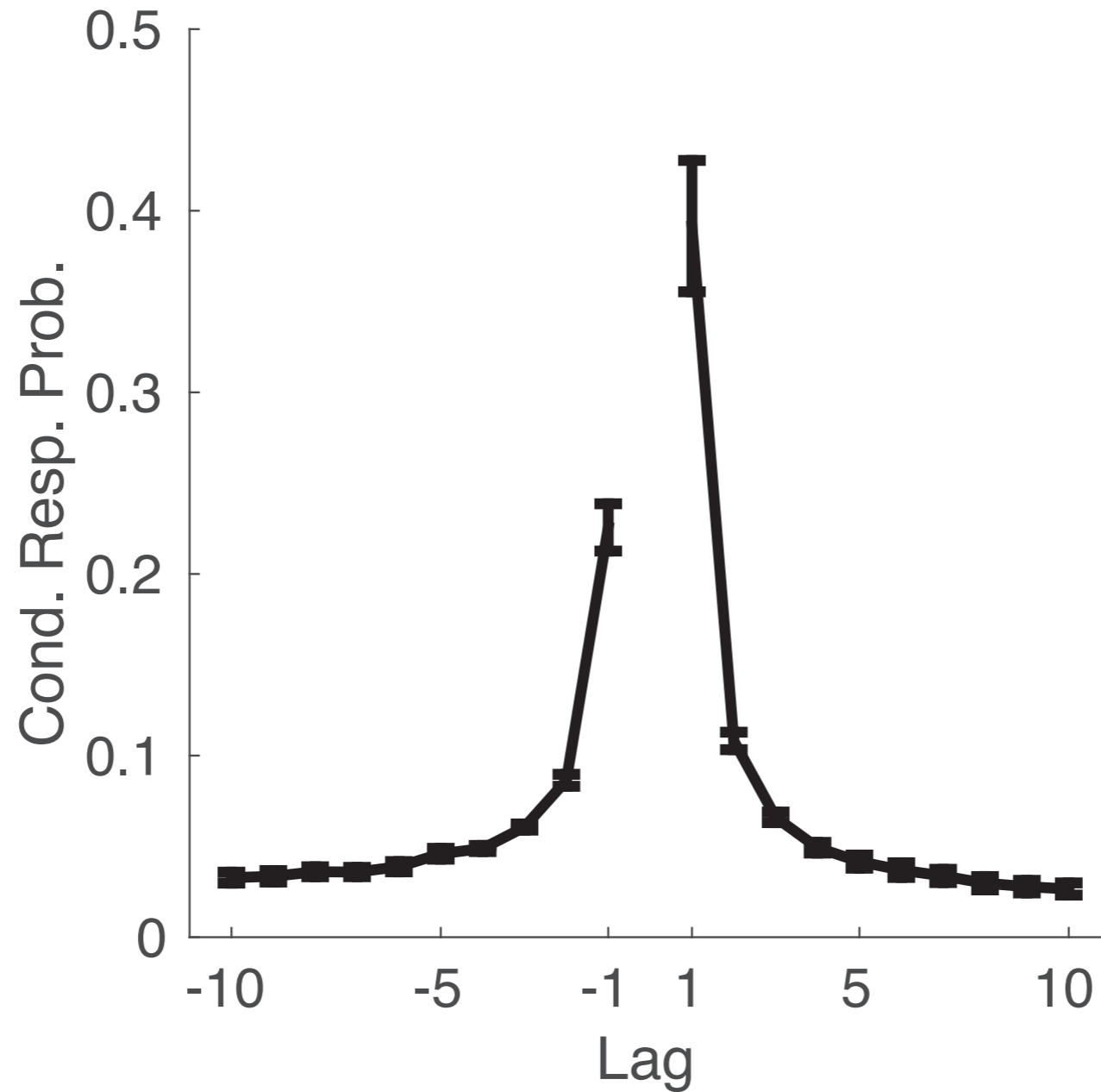
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# What is Temporal Contiguity?

- Recalling one event,  $i$ , tends to trigger recall of another event that occurred near in time to  $i$

# Temporal Contiguity



If you look for it, it is almost  
always there

# Why does temporal contiguity influence memory search?

1. Memory system naturally encodes information about temporal distance as it forms memories, regardless of the task (e.g., Healey et al., 2014)
2. Control processes that implement ad hoc encoding strategies to meet the demands of rote list learning tasks (e.g., Hintzman, 2016)

# Intent to encode should act like a switch

- Very little work on contiguity under incidental encoding
  - Nairne et al. 2017

# Experiment 1

- A single 16-item list per subject
- $N = 629$  collected online

# Experiment 1

- Incidental condition:
  - “We are interested in how people make simple judgments about common words”
- Explicit condition:
  - “We are interested in how people make simple judgments about common words **and how they subsequently remember the words**”



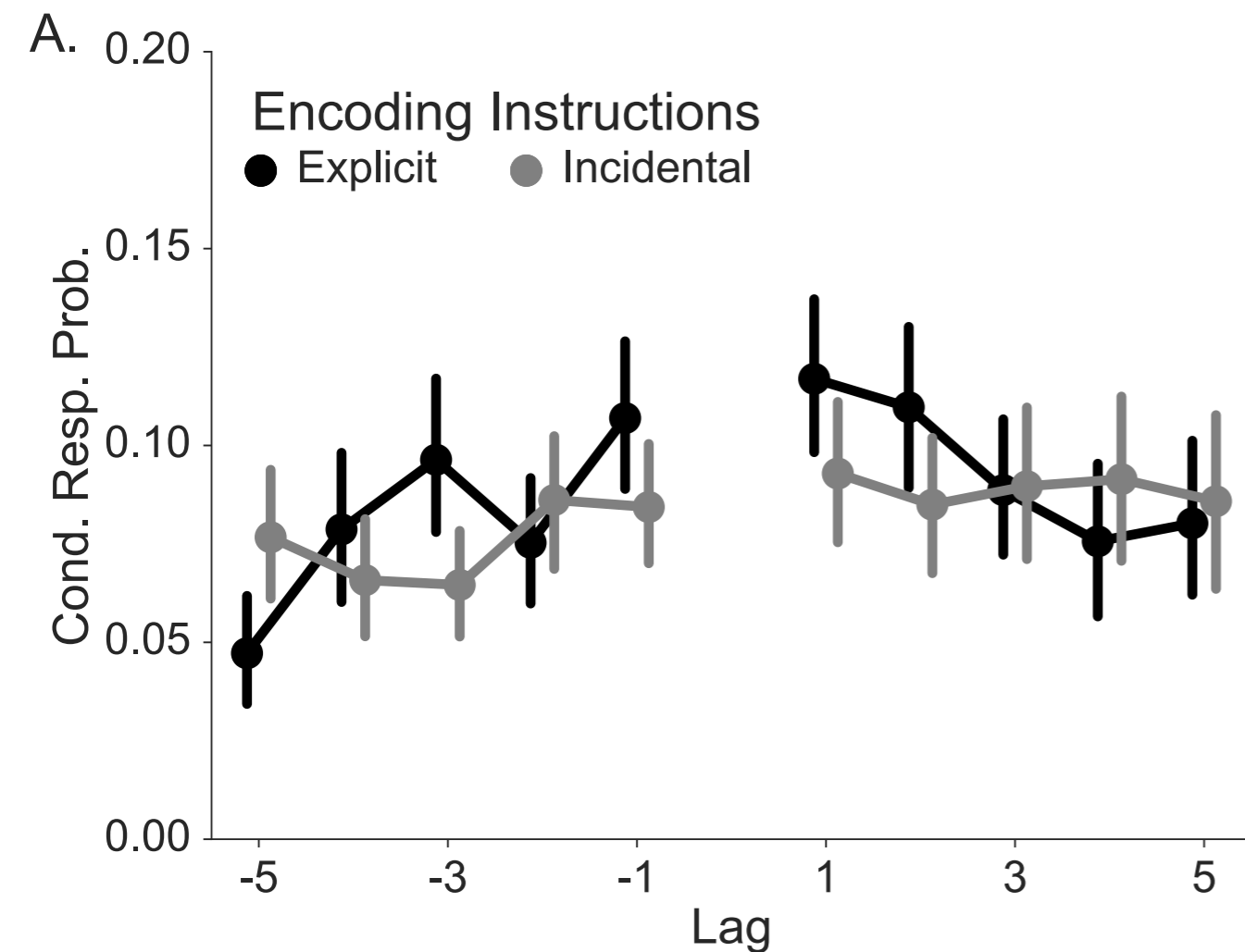
# Experiment 1

- Judgment task:
  - “you will decide whether or not the word refers to an object that could fit into a regular shoebox”

# Experiment 1

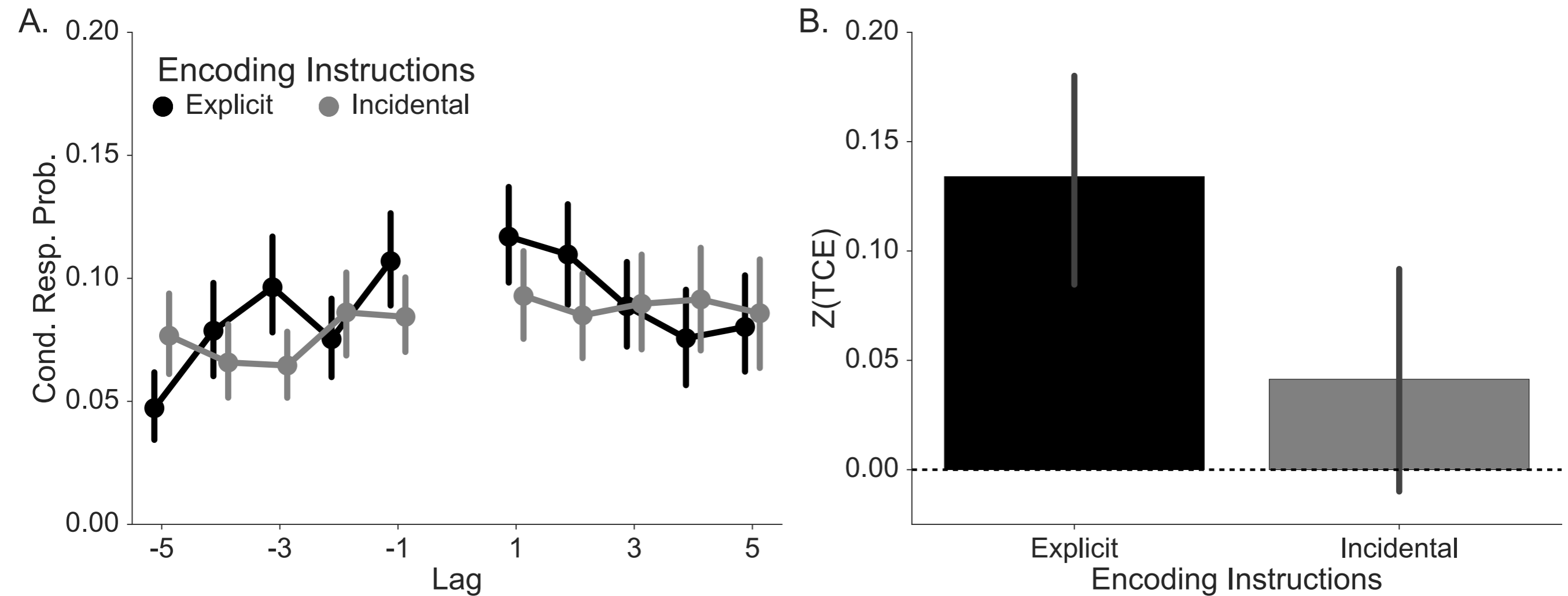
- Surprise free recall test 17 seconds after the last word

# Does removing intent to encode eliminate contiguity?



- Need a single number to quantify the effect
- Temporal factor score  
(Polyn et al., 2009; Sederberg et al., 2010)

# Does removing intent to encode eliminate contiguity?



# Does removing intent to encode eliminate contiguity?

- It seems like it can...

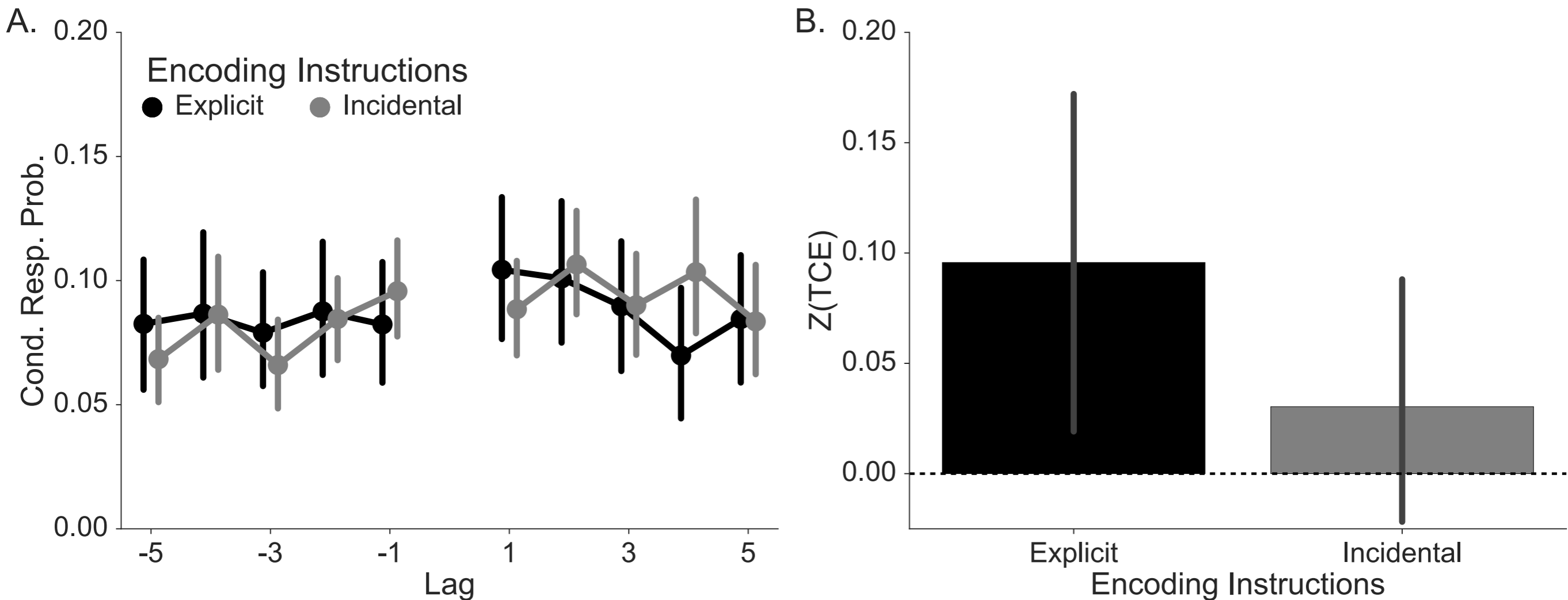
# Why does temporal contiguity disappear?

- Thinking of a shoebox may reduce the *psychological* distance between *temporally* distant events
- Replicate with a different processing tasks which encourages maintaining a mental image

# Experiment 2

- A single 16-item list
- $N = 349$
- Same incidental vs explicit conditions
- New Judgment task:
  - “try to imagining yourself moving that object through the front door of your home”

# Does removing intent to encode eliminate contiguity?





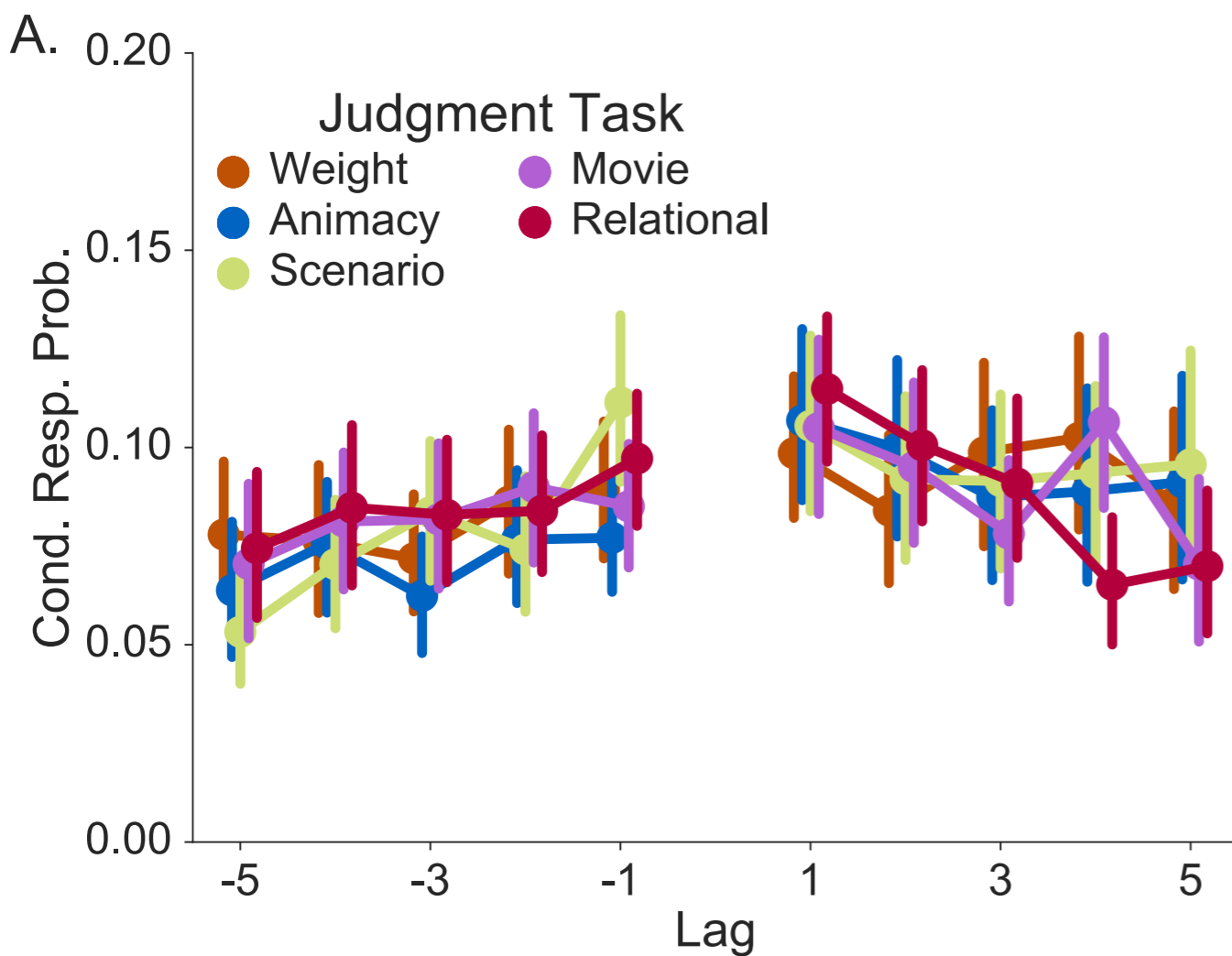
Can we ever observe temporal contiguity under incidental encoding?

- Tasks that do not encourage maintenance of an image

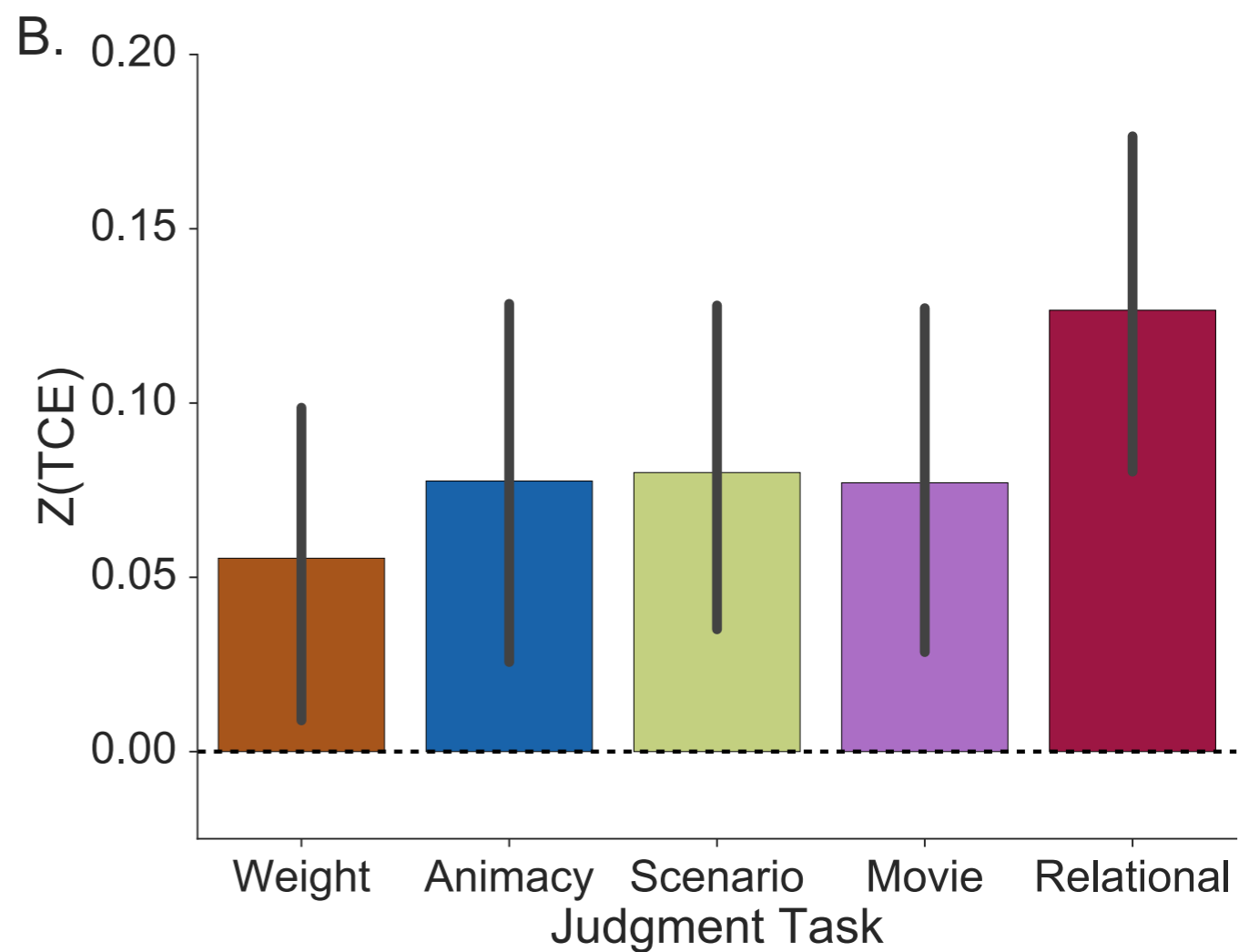
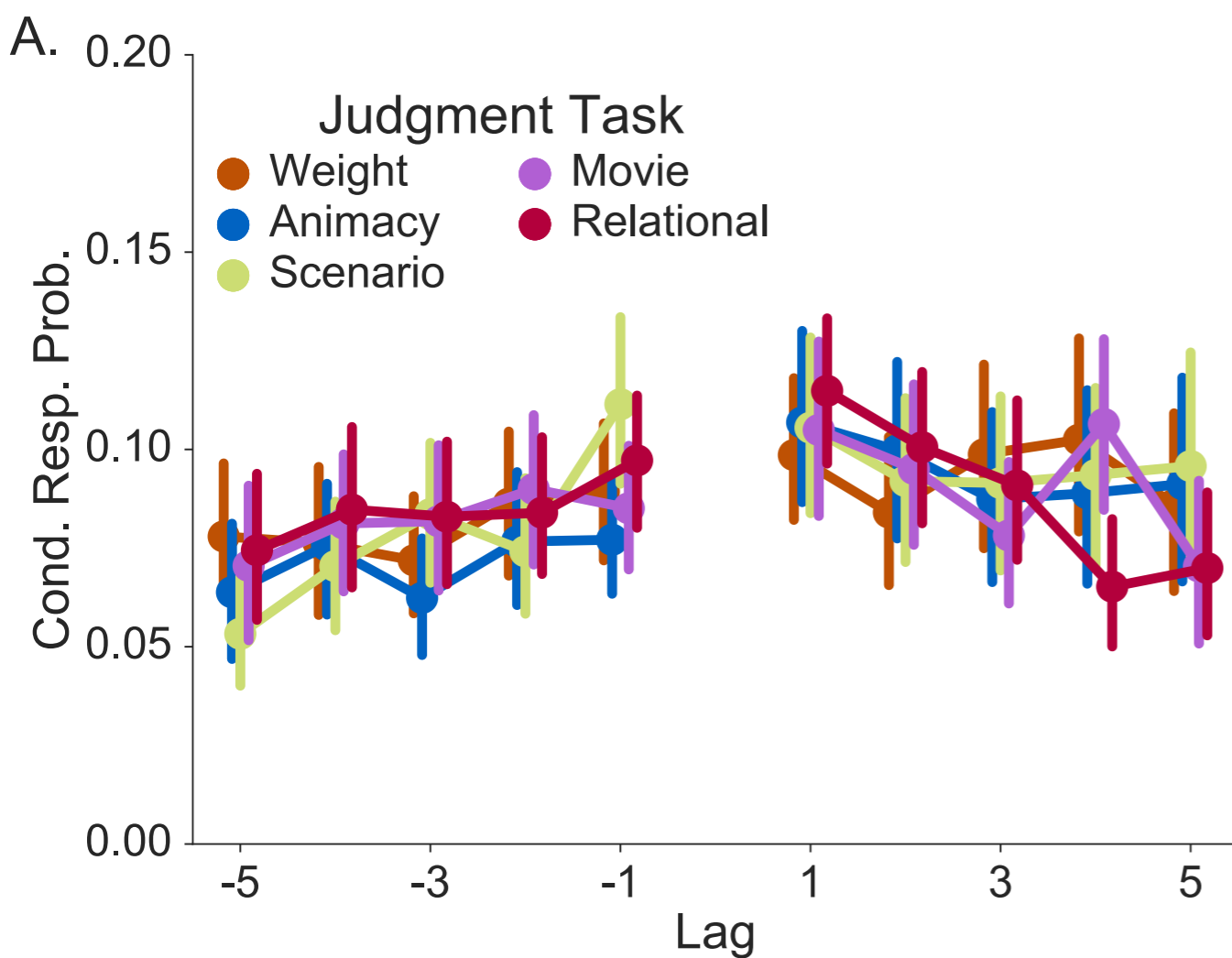
# Experiment 3

- A single 16-item list
- $N = 1524$
- All incidental encoding
- Five different judgment tasks
  1. Heavier than a bottle of water?
  2. Living or non-living?
  3. Relevant for moving to a foreign land?
  4. Make a mental movie starring the item (Deep Item-Specific)
  5. Make a mental movie that incorporates each new item (Deep Relational)

# Does removing intent to encode *always* eliminate contiguity?



# Does removing intent to encode *always* eliminate contiguity?



# Conclusions

- E1 & E2: Nature of processing at encoding matters a great deal
- E3: Contiguity is **not** completely dependent upon controlled, strategic encoding processes

Thanks!

