

# Kellman & Arteberry

"Theories that focus on events in perception open the possibility that more of human knowledge is perceptual than has previously been assumed. Few would quibble with the idea that extracting information about the movement or stationary positions of objects is part of *perception*. But consider *object permanence*. Human adults appear to have several core beliefs about physical objects, including the belief that an object experienced at different times has continued to exist in the interim. Stated this way, the principle appears to be part of our *cognitive structure*, not a product of perception."



## Question

**Question:** If cognitive structure is not the same as perceptual knowledge then is it appropriate to use perceptual methodologies and perceptual measures to study inherently cognitive questions?

**The Long Answer:** Stay tuned for discussion of Haith's critique of this line of work.

**The Short Answer:** Kellman & Arteberry suggest that "studies of early object permanence may be interpreted in an event perception framework as indicating the early appearance of perceptual mechanisms that produce representation of persistence from certain optical transformations (i.e., shrinkage of visible portion of object, deletion of object and its texture at the occluding edge)" In other words, results from such studies may simply indicate that infants are sensitive to changes in various perceptual object attributes, NOT that infants are reasoning about them!



## Object Perception - What's Required?

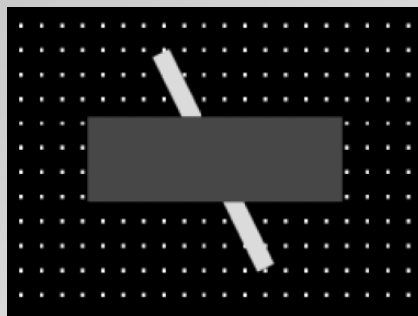
- Object location is one type of object knowledge, but there are other types of object knowledge
- Typically, the world consists of many objects, placed at different distances from us
- Problem: as objects move vis-à-vis one another they may block other objects either partially, or totally, either for some of the time or all of the time
- Solution: we need a perceptual system that can “fill in” for us and, thus, permit us to perceive bounded, whole, and persistent objects
- Example: an object moves behind another and only a part of the moving object is now visible
- Question: At what point in development do we see the hidden object as whole?



## Kellman & Spelke (1983)

4-Month-Old  
Infants

Habituation



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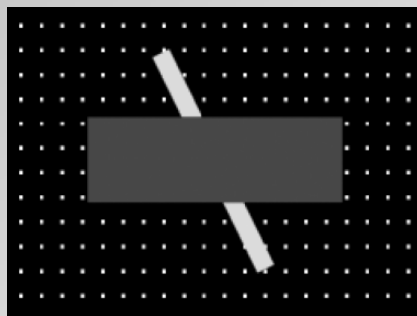
Movie



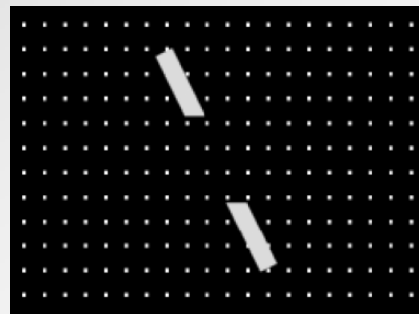
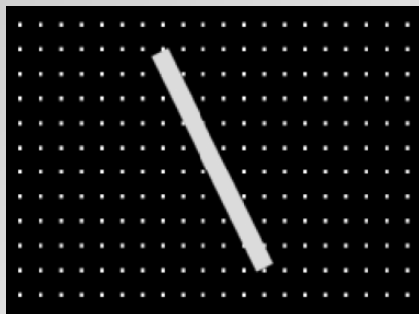
# Kellman & Spelke (1983)

4-Month-Old  
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Habituation



Test



# Kellman & Spelke (1983)

4-Month-Old Infants -  
"fill in" perceptually

