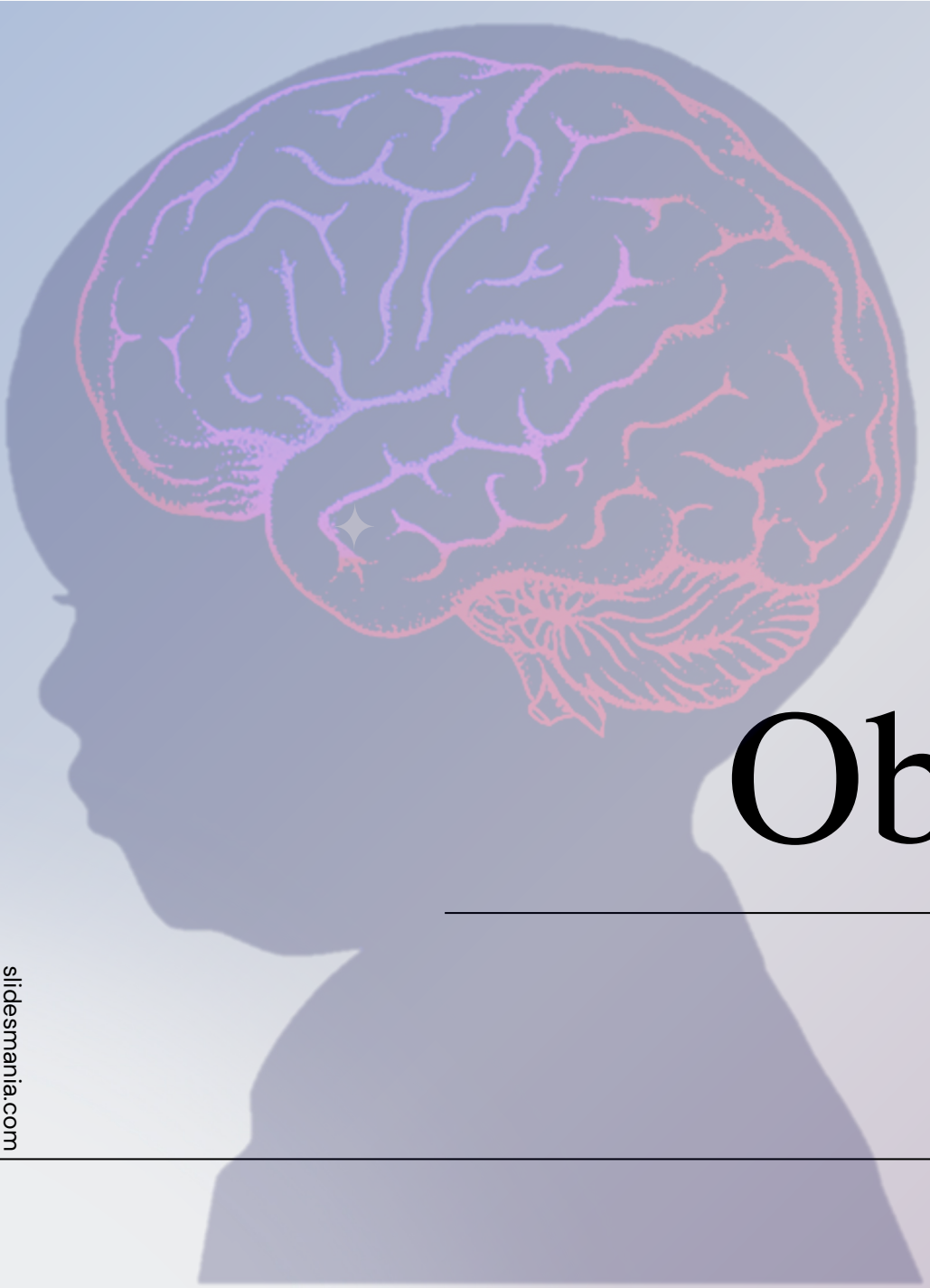
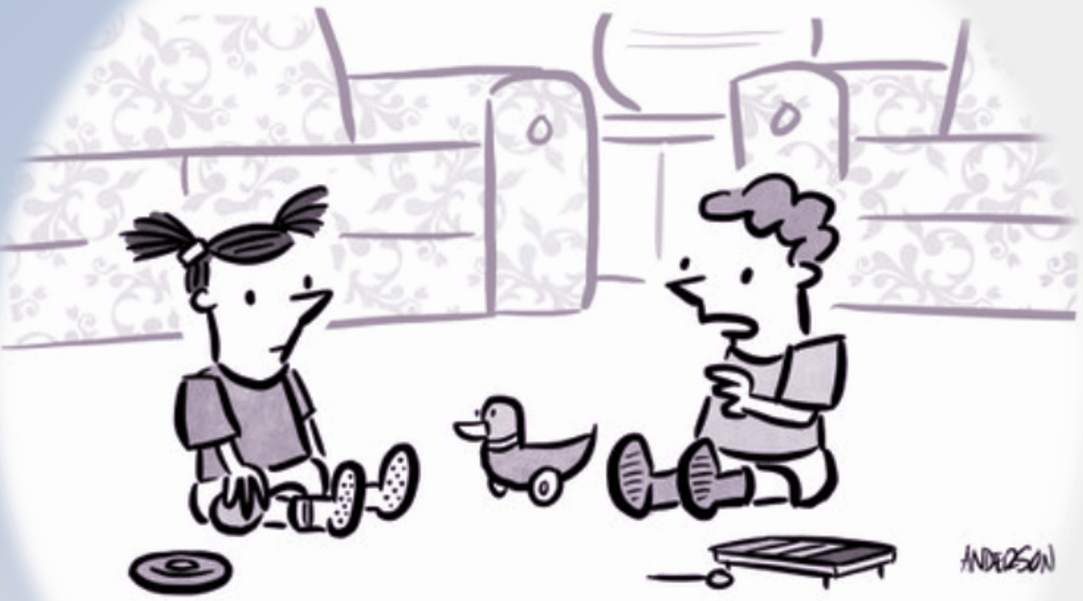


Object Cognition

Isabel Khudr, Lindsay Springer, & Victoria Parker



"Is it just me or has peekaboo lost its luster since object permanence."

(Anderson, n.d.)

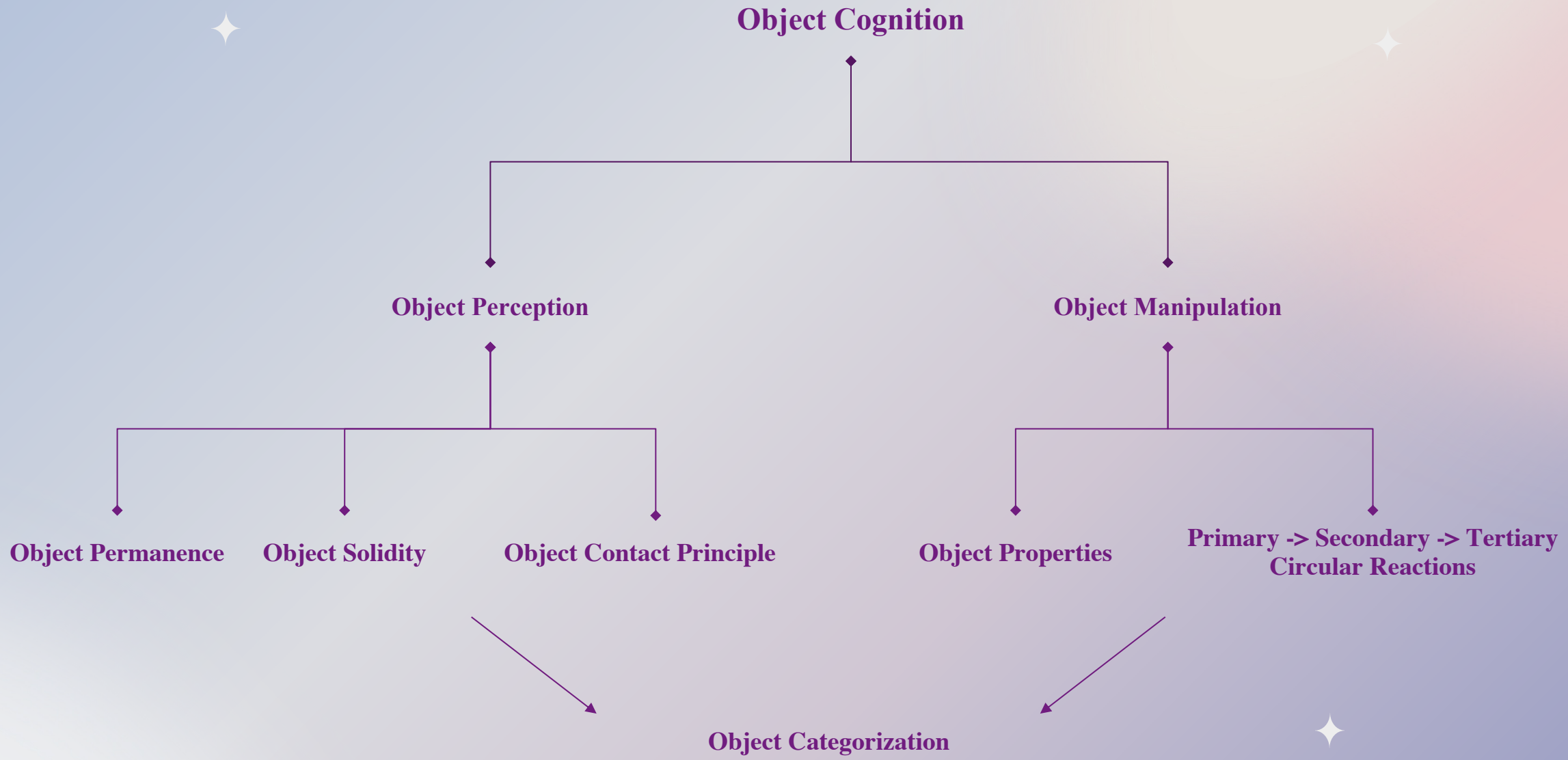
Agenda

1. Background knowledge activation activity
2. Conceptualizing Object Cognition
3. Pulling it together & next direction
4. Atypical Object Cognition exploration
5. Understanding the mechanisms
6. Why it matters

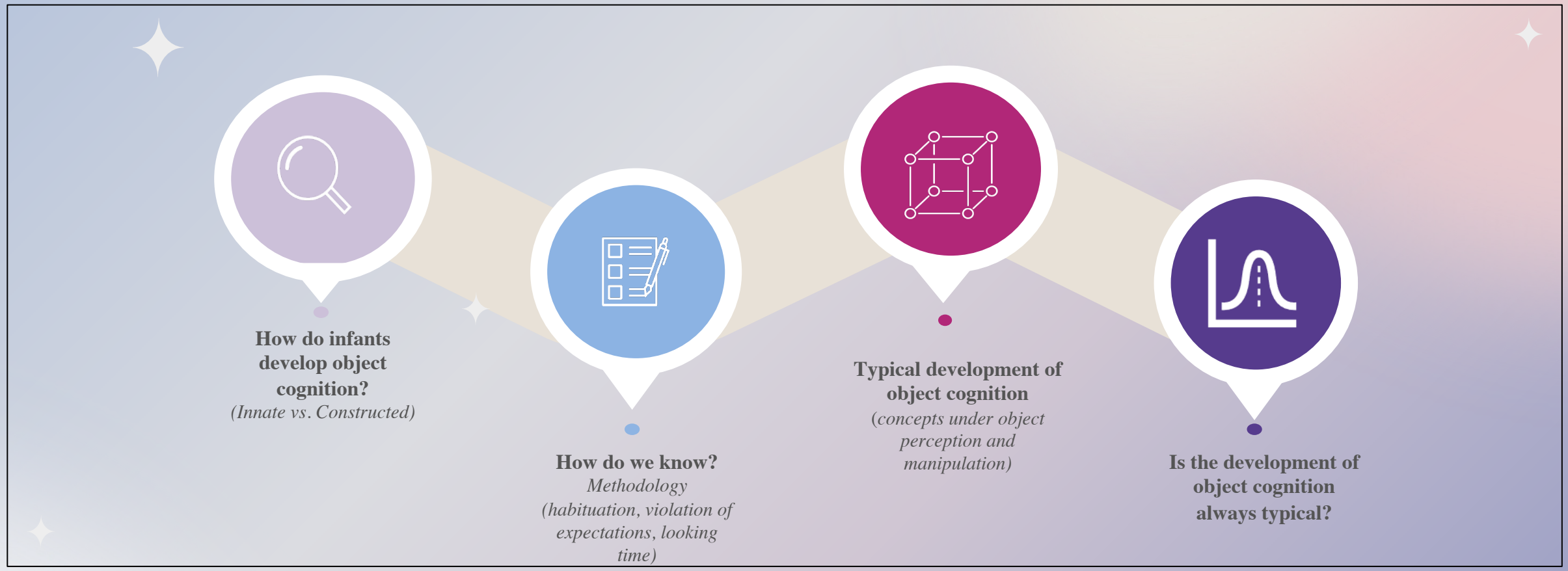
Discuss & Play Kahoot !

Go to Kahoot.it type in the game pin or scan the QR code to join!

(Kahoot, 2019)



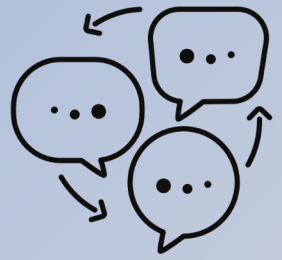
What We Know So Far & Where We Go Next…



Babies in Action!

Baby Nathan at 6 months and 13 months demonstrating typically developing object permanence

(Aboals, 2018)



Discussion

Considering your lived (academic, professional or personal) experiences, what would you predict object cognition development might look like in a infant with neurodivergence?

(i.e., an infant is diagnosed with autism at 3 years of age, what might you see regarding object cognition at 6 months?)

(Goodman, 2023)

Object Exploration in At-Risk Infants?

HR = Heightened Risk
LR = Low Risk
RS = Rattle Sound
RNS = Rattle No Sound

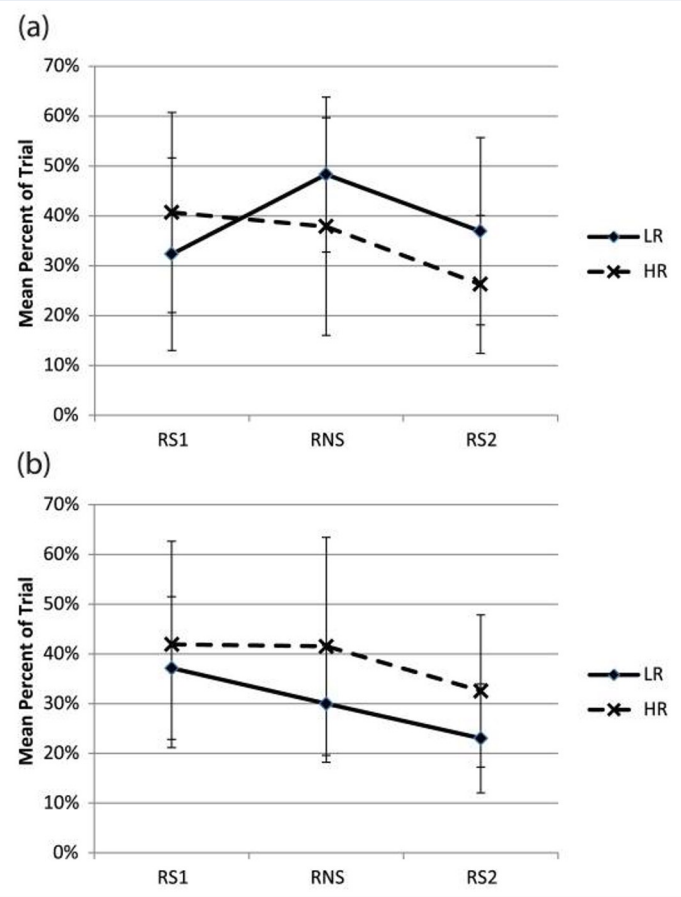


Figure 1: Percent of trial infants spent *looking* at rattles

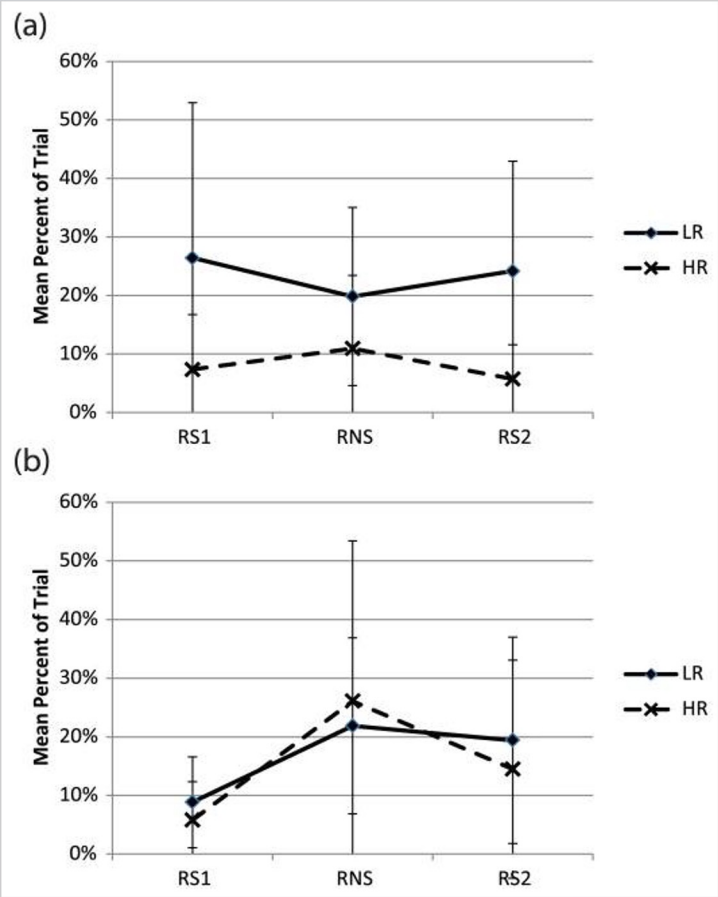


Figure 2: Percent of trial infants spent *mouthing* rattles

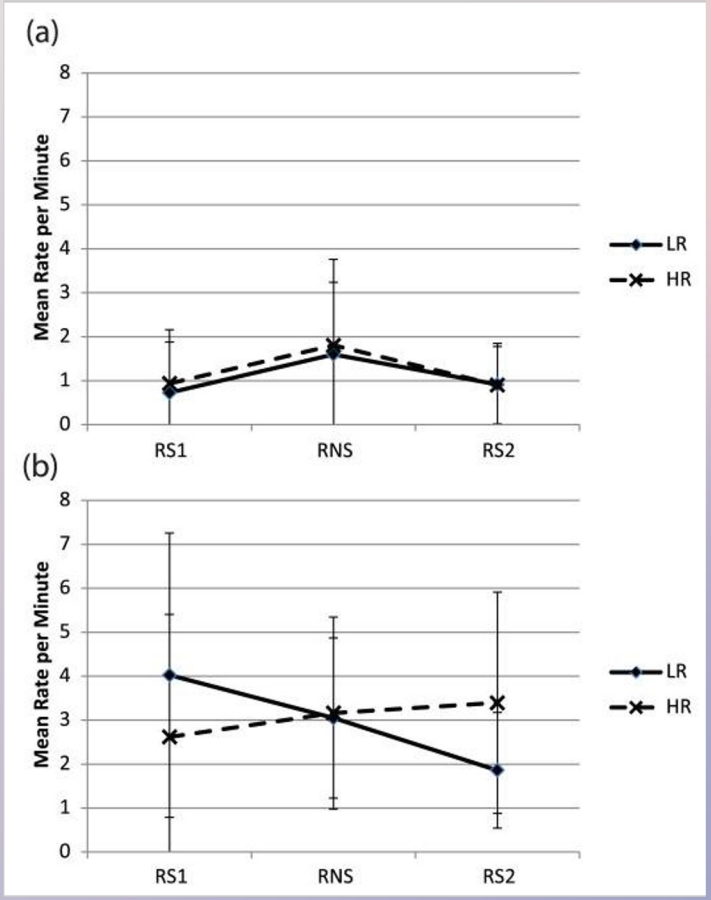
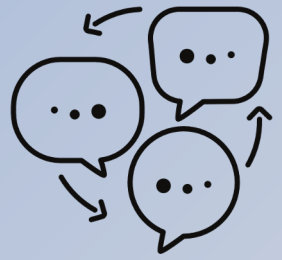


Figure 3: Percent of trial infants spent *transferring/rotating* rattles

(Koterba et al., 2014)



Discussion

Use the Padlet to generate reasons for this difference. What mechanisms (i.e., pathways) may explain the link between atypically developing object cognition and other predictive factors for ASD?

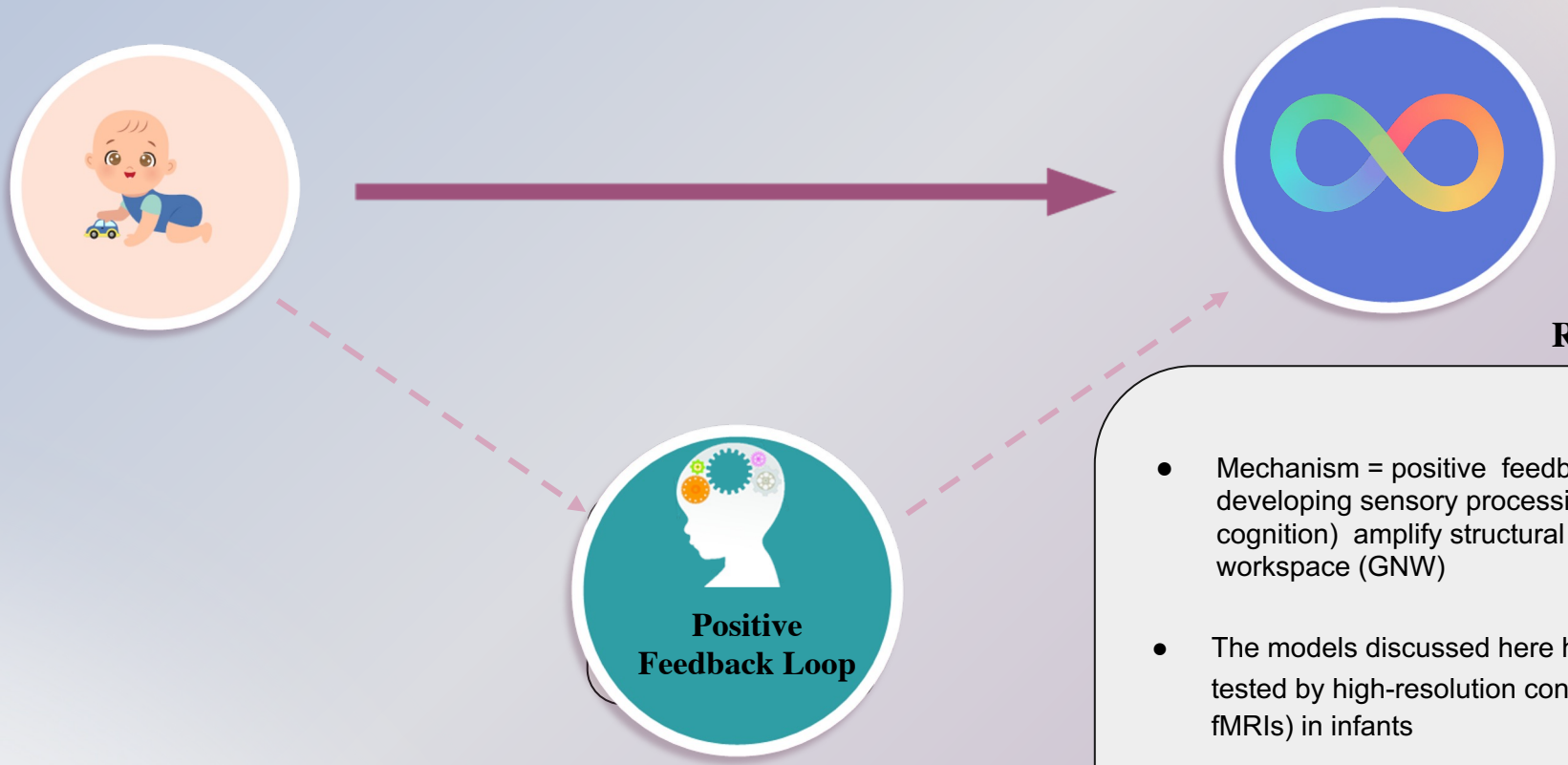
OR

https://tinyurl.com/objectcog

Hint: biological pathways… think neuroconstructivism

Neuroanatomical Feedback Amplification

(Fields & Glazebrook, 2017)



Review Takeaways:

- Mechanism = positive feedback loop where small functional variations in early developing sensory processing and sensory motor pathways (including object cognition) amplify structural & functional imbalances in the global neuronal workspace (GNW)
- The models discussed here have yet to be directly tested by high-resolution connectivity studies (like fMRIs) in infants
- These variations are consequences, not causes

Why Does It Matter?

1. **Clinical Implications:**
   - group differences exist (low vs. high risk of ASD)
   - infant screening (Well-Baby Checkup; Bailey Scales)

1. **Therapeutic Interventions**
   - visual & motor processes
   - study findings & early interventions

1. **Medical vs. Social Phenomenological Models**
   - possible educational implications

Koterba et al., 2014; Fields & Glazebrook, 2017; Glock, 2021

Application Discussion

1. ***What or any possible therapeutic interventions may support object exploration and cognition for infants with indicators of ASD to exploit the positive, neuroanatomical feedback loop?***

1. ***How might you apply what you learned today to inform decision at the policy level to support children and families?***

1. ***What are the implications of trying to change the HR infants' behaviours for both parents/caregivers and the infant themselves? What would intervention at this stage reasonably achieve, given what we know from the literature?***

Thank You!
Questions?

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