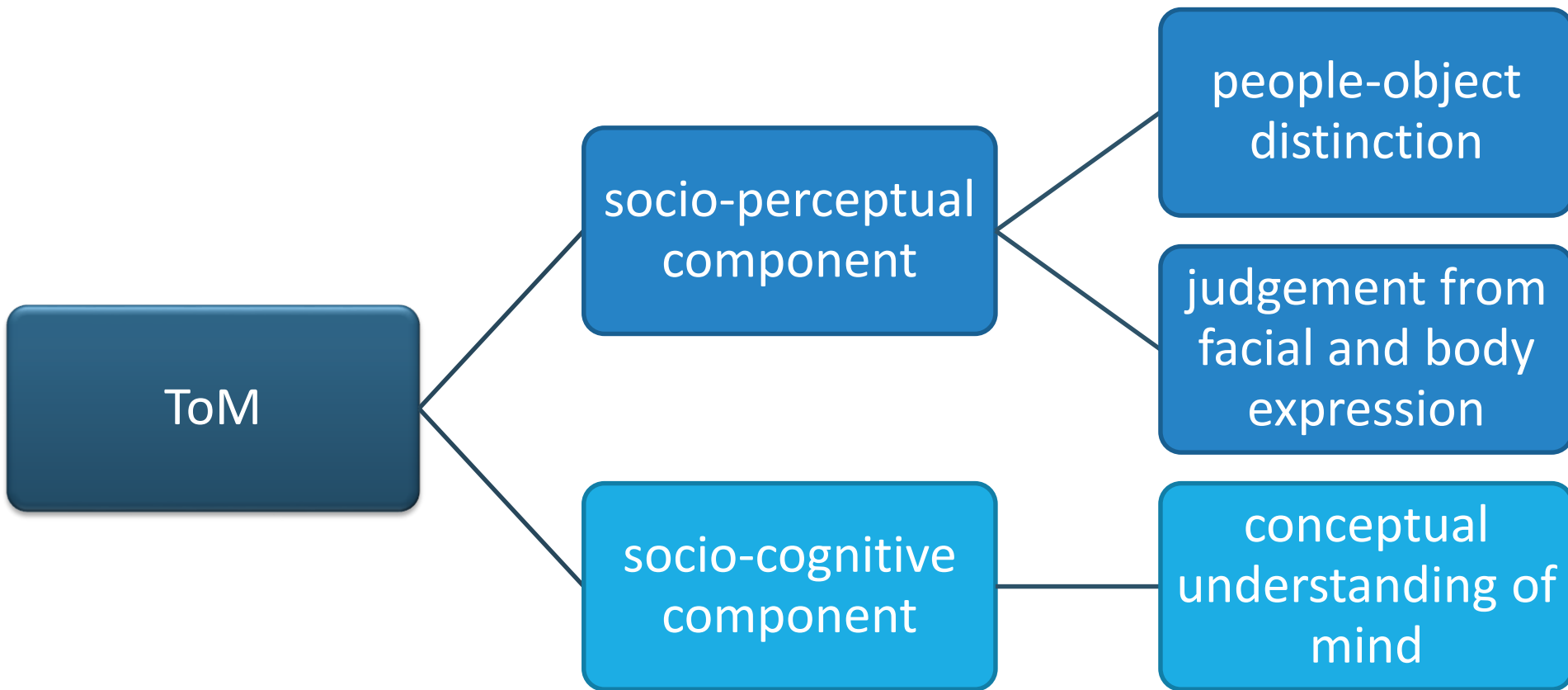


Emotions in early social cognition. Can a componential view of theory of mind be confirmed?

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Componential view of theory of mind (Tager-Flusberg & Sullivan, 2000)



Evidence for the componential view of ToM

developmental timing

- SP emerges earlier in development

relation to other cognitive abilities including language

- SP: less cognitive abilities, more affective system

the neurobiological substrate for each component

- SP: amygdala, medial temporal cortex
- SC: orbito-frontal cortex, medial-frontal cortex

selective sparing or impairment found in different populations

- SP: relative sparing in Williams syndrome, impairment in autism
- SC: impairment in autism

Componential view of ToM in last 14 years

What kind of evidence has been found?

- Neurological evidence (emotion vs cognition) (Corradi-Dell'Acqua et al., 2014)

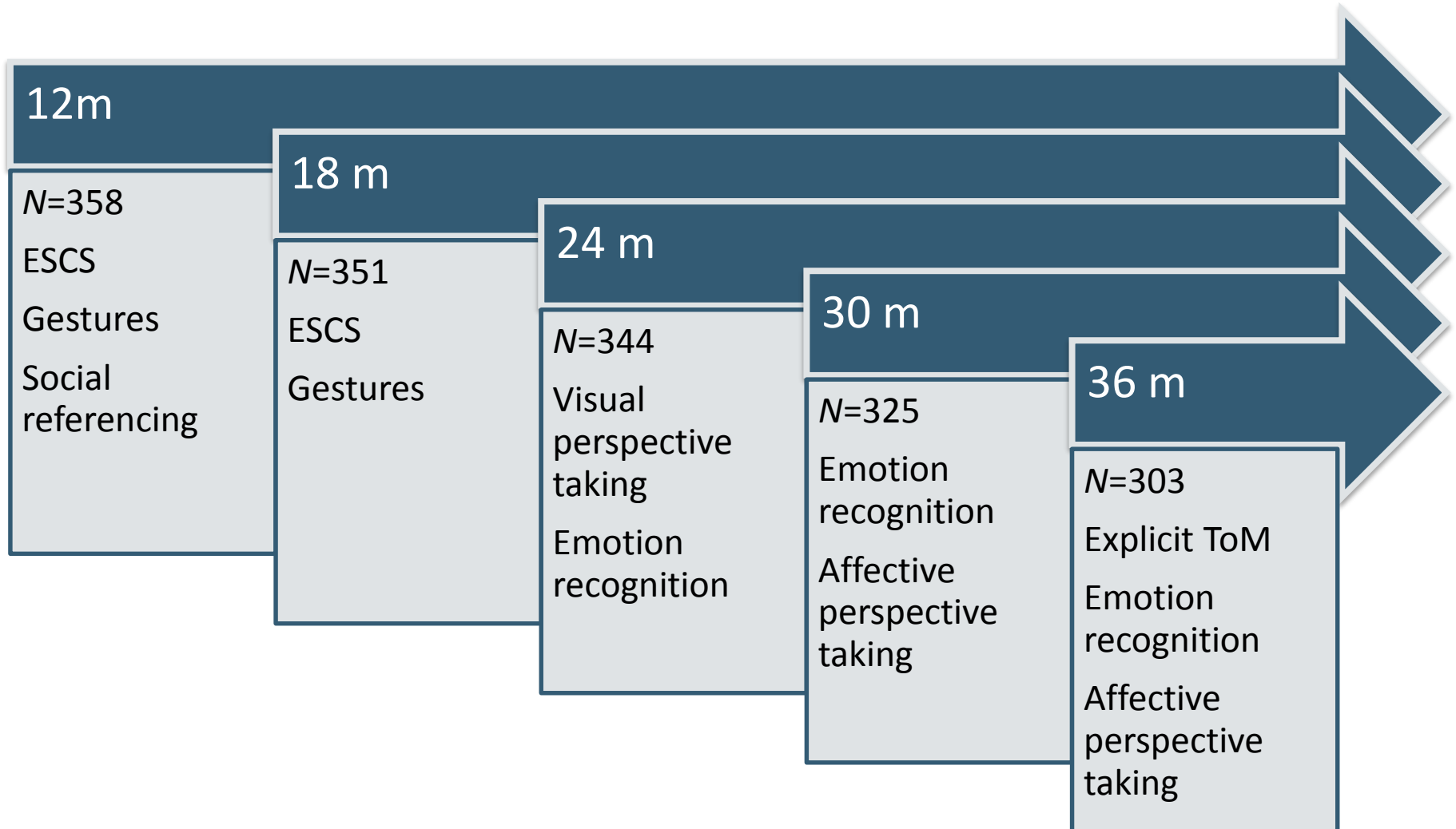
What kind of abilities constitute each component?

- SP: on-line attribution of person-related knowledge (Tager-Flusberg & Sullivan, 2000) to eye gazing and emotional contagion (Hepburn et al., 2011)
- SC: mostly false belief (FB) understanding (Tager-Flusberg & Sullivan, 2000) to joint attention (Hepburn et al., 2011)

The role of emotion perception in early social cognition

- Is emotion perception a base for development of explicit theory of mind?
 - No relations of emotion and ToM (Dunn & Hughes, 2002)
 - Emotion understanding and cognitive understanding as distinct, but related aspects of ToM (Leerkes et al., 2008)
- Is this relations different for an (implicit) emotion processing (social referencing) and (explicit) emotion recognition?

Our study



Methods: social referencing at 12 (Walden & Ogan, 1988; Repacholi, 1998)



We measured:

- Time looking at E' face during (1) presentation of boxes and (2) child's exploration of boxes
- Latency in reaching for each box and time spent playing with each box/toy

Methods: emotion recognition (Denham, 1986) at 24, 30 and 36



Methods: affective perspective taking (Denham, 1986) at 30 and 36



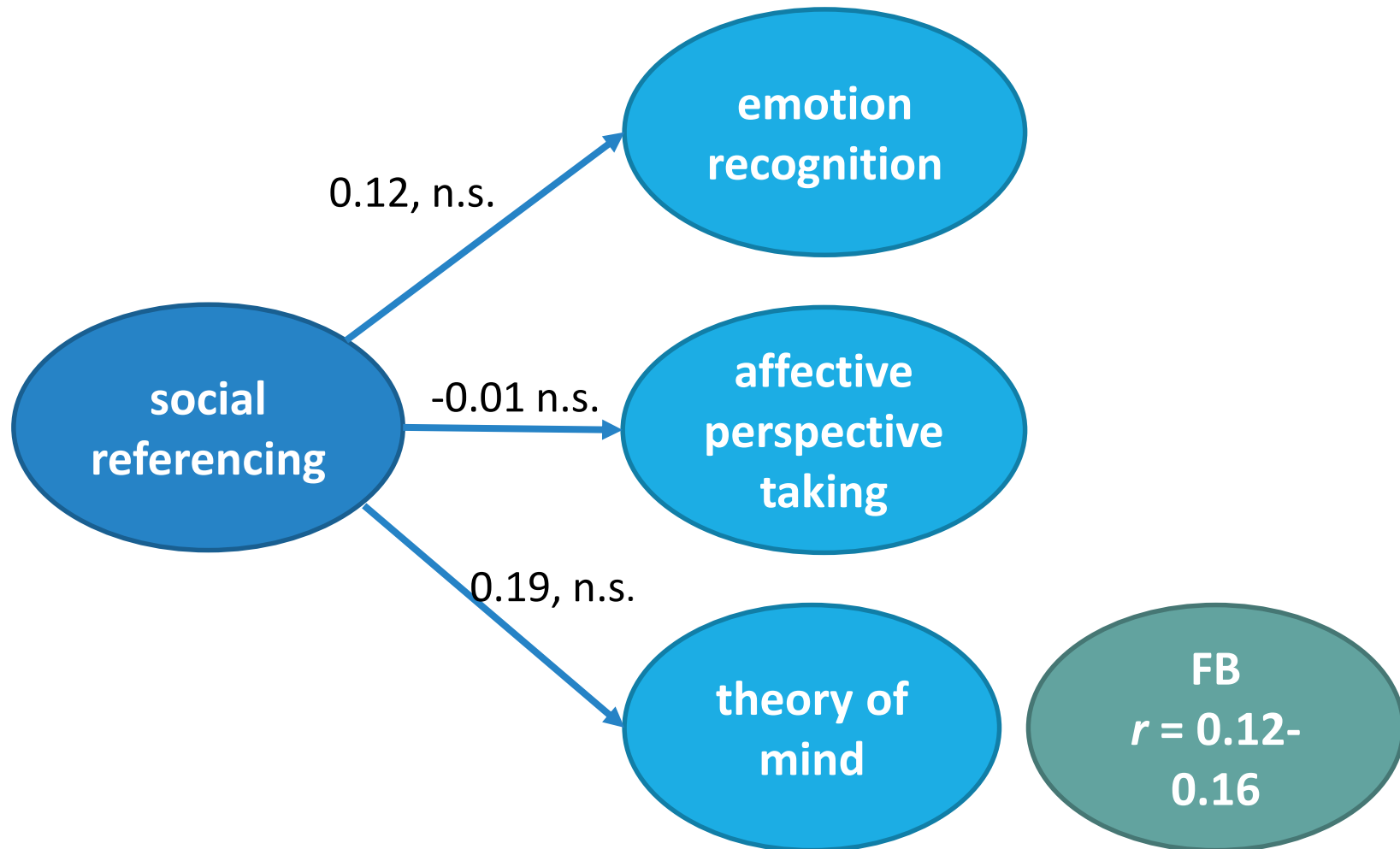
4 vignettes

Max 4 points

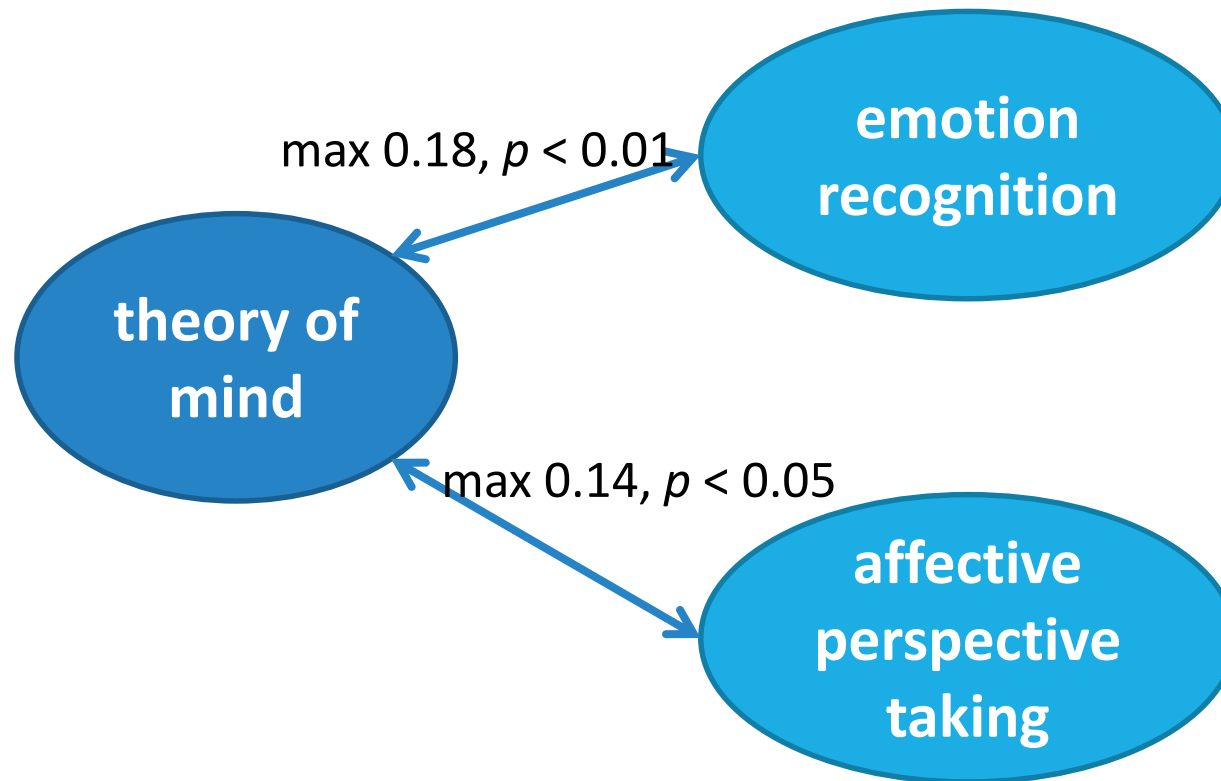
Hi! I'm Nancy/Johnny. Here is my brother/sister. Ah! She/he gave me some ice cream. YUM, YUM!!"

How does Nancy feel? Give Nancy a face.

Results: is early social referencing ability related to later EK and ToM?

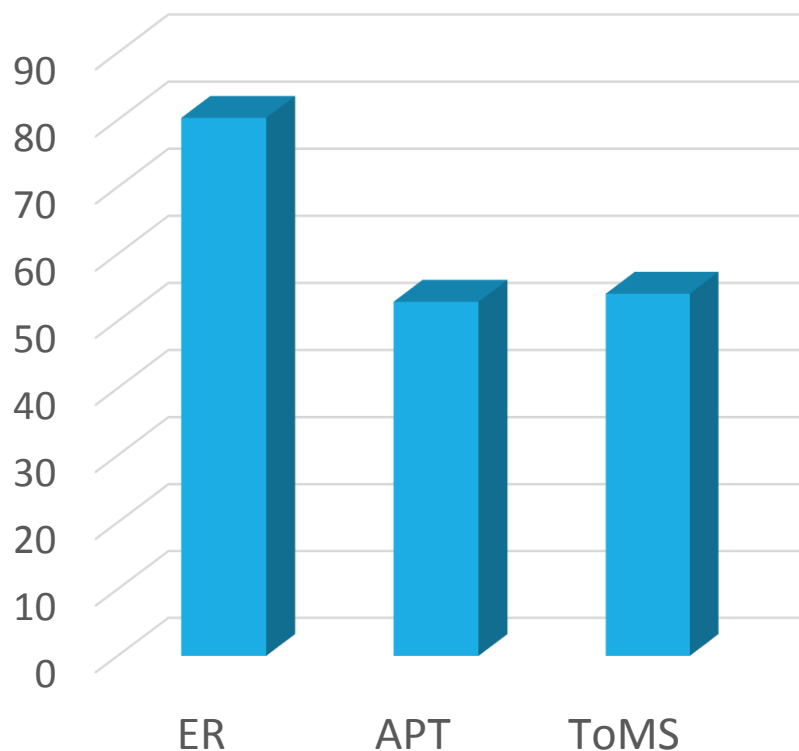


Results: is emotion recognition and affective perspective taking related to theory of mind?

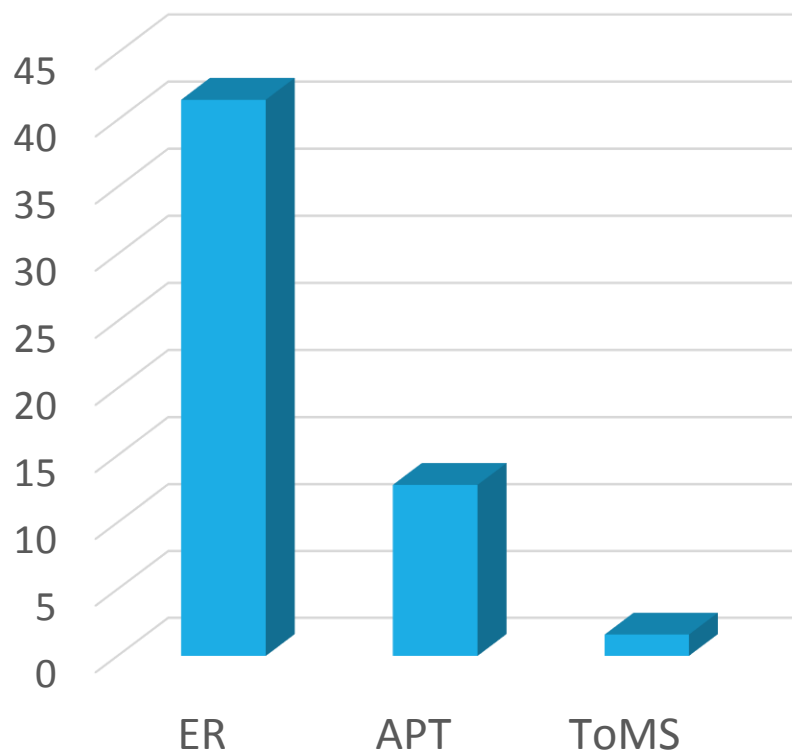


Results: developmental timing

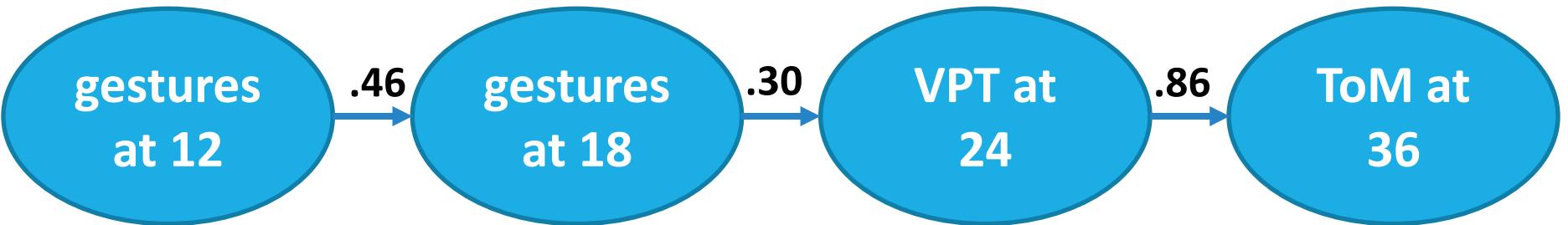
50% score at 36 months



100% score at 36 months

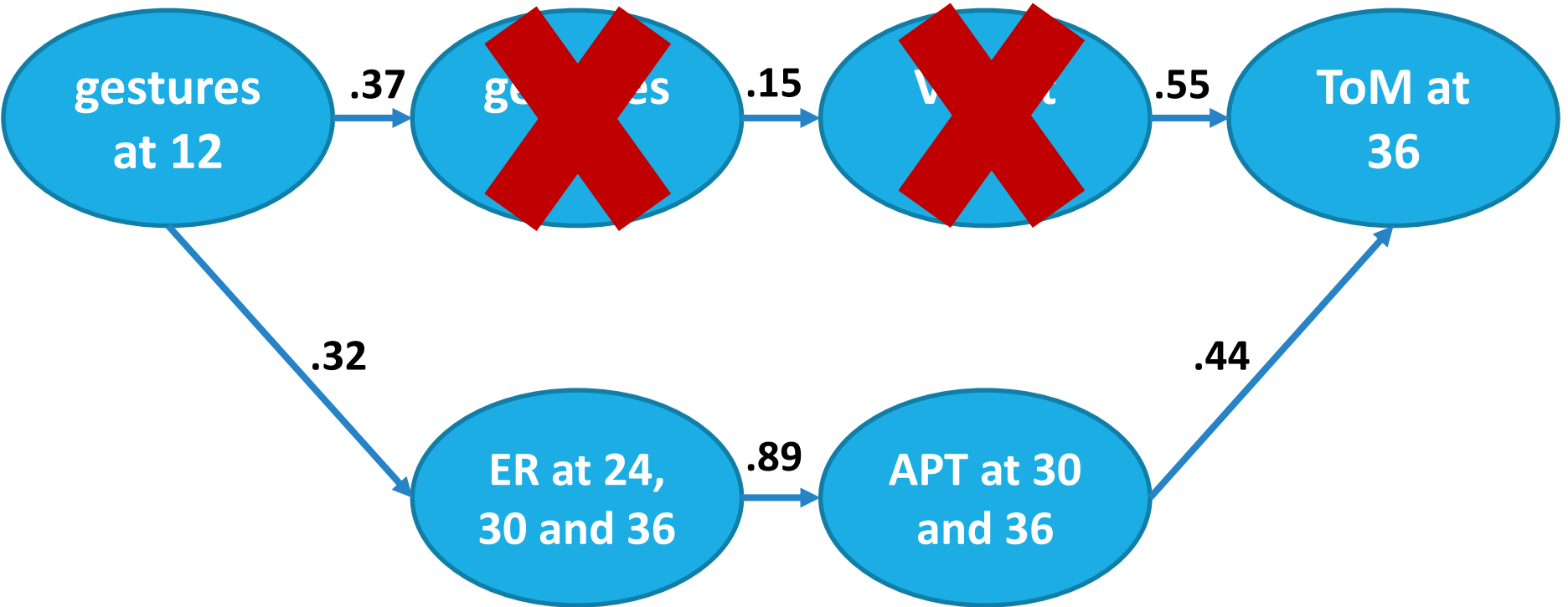


Results: predictors of theory of mind



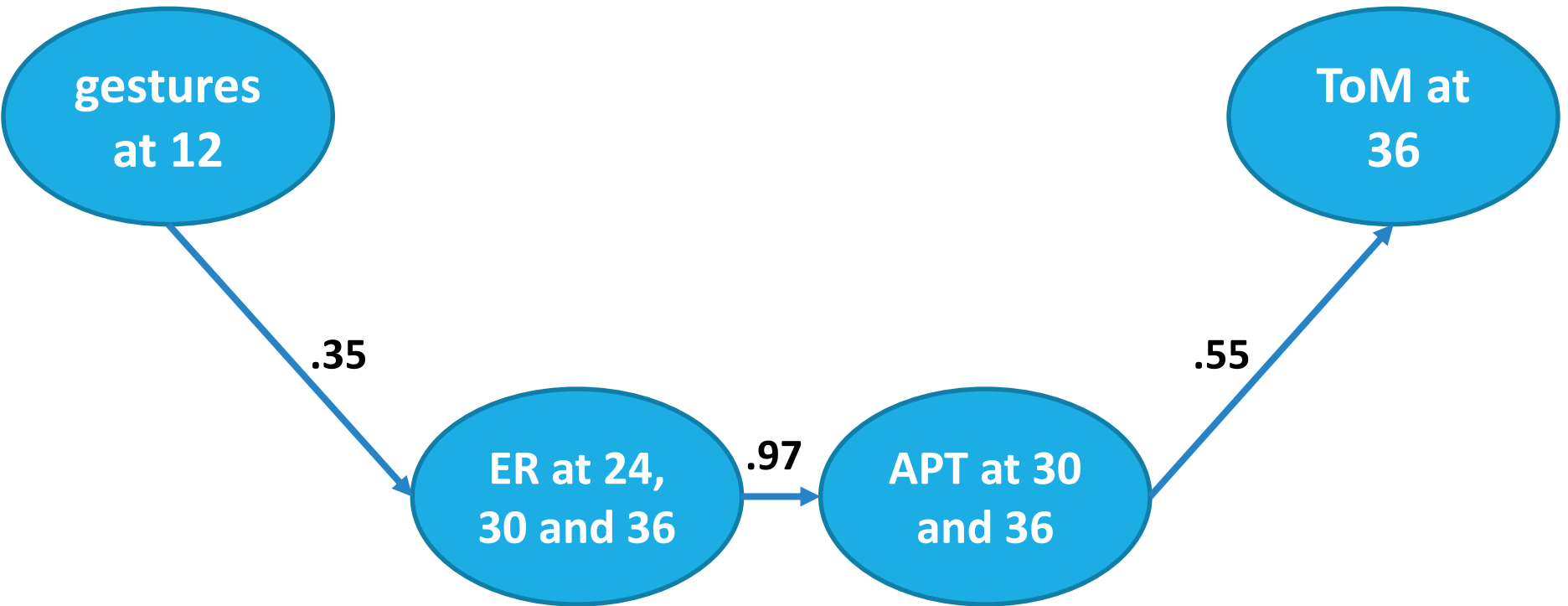
Chi2 = 119.2; df = 101; RMSEA = 0.022 [0.000 - 0.036]; CFI = 0.974

Results: predictors of theory of mind



Chi2 = 195.4; df = 183; RMSEA = 0.018 [0.000 - 0.035]; CFI = 0.969

Results: predictors of theory of mind



Chi2 = 79.3; df = 74; RMSEA = 0.018 [0.000 - 0.044]; CFI = 0.98

Discussion

- Simple gazing and eye contact are not precursors of neither EK nor ToM
- Are EK and FB understanding distinct components of mentalizing ability?
 - different developmental timing
 - different predictors (only early gestures are common)
 - EK can be seen as an antecedent of ToM
- There are two different paths of ToM development
 - Can two paths of ToM development be dissociable?

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