

# Social Network Dynamics and Social Development

## Among Preschoolers

Ava Raffel<sup>2</sup>, Carrie Wang<sup>5</sup>, Elissa Harris<sup>2</sup>, Jaden Snyder, Kelsey Zhong<sup>2</sup>, Mihika Rajvanshi<sup>3</sup>, Rhayoung Park<sup>4</sup>

Tom Wolff<sup>1</sup>, Margaret O'Brien, Michael S. Gaffrey, Ph.D.<sup>2</sup>, Craig Rawlings, Ph.D.<sup>1</sup>

<sup>1</sup>Sociology, <sup>2</sup>Psychology and Neuroscience, <sup>3</sup>Neuroscience, <sup>4</sup>Data Science, <sup>5</sup>Computer Science

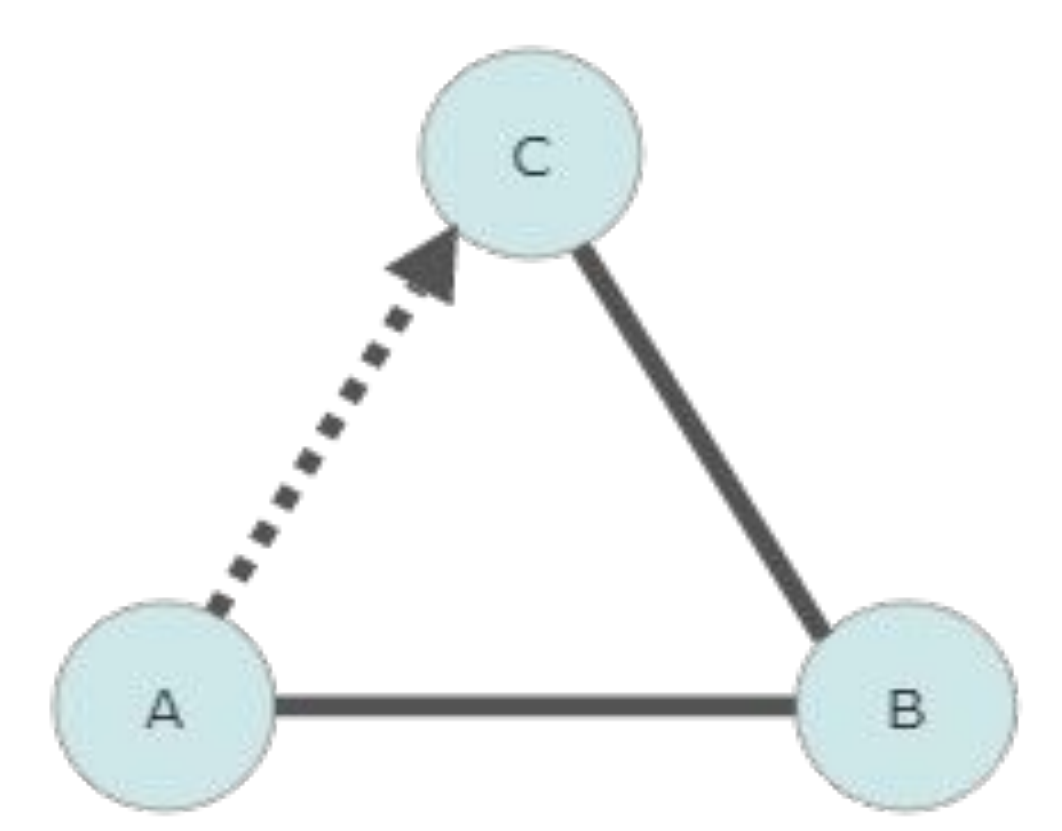


### IS THE FRIEND OF A FRIEND A FRIEND?

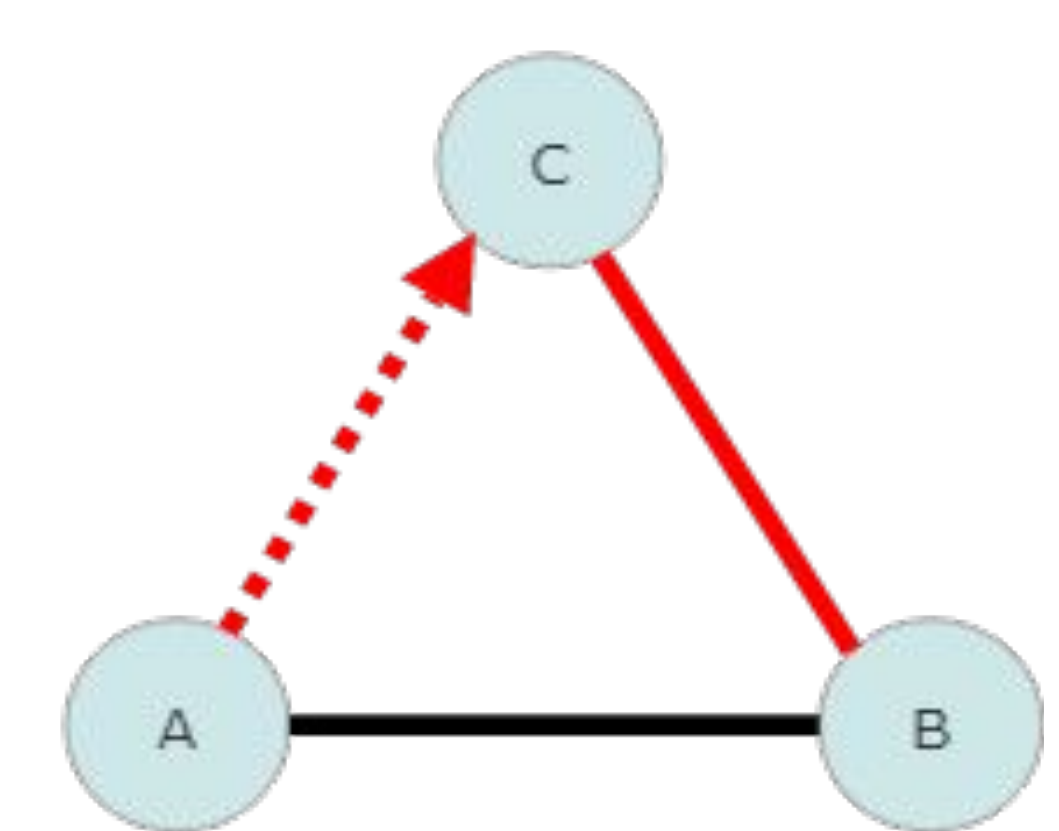
- Balance theory (Heider 1946) suggests that people learn how to be social through largely unconscious triadic “rules” of who is a friend or an enemy.
- Current research does not know *when* humans develop an understanding of balance theory.
- By observing patterns of cooperation and conflict among children in natural states of play, we can infer a lot about when children come to understand these important “rules” of being social.

### OUR PROJECT

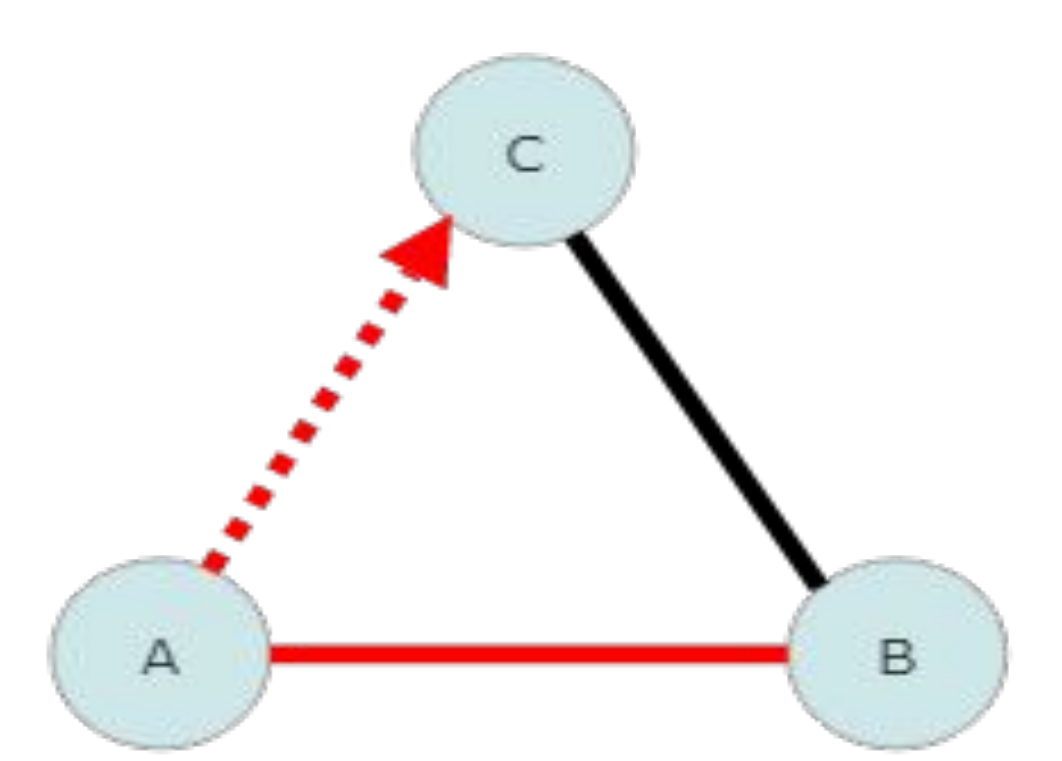
- Since preschool is when consistent patterns of relationships emerge, we recorded and coded moment-to-moment daily interactions of children at play.
- Evaluated the four “rules” of balance theory - A1, A2, A3, and A4 - based on patterns of observed cooperation and conflict over time.



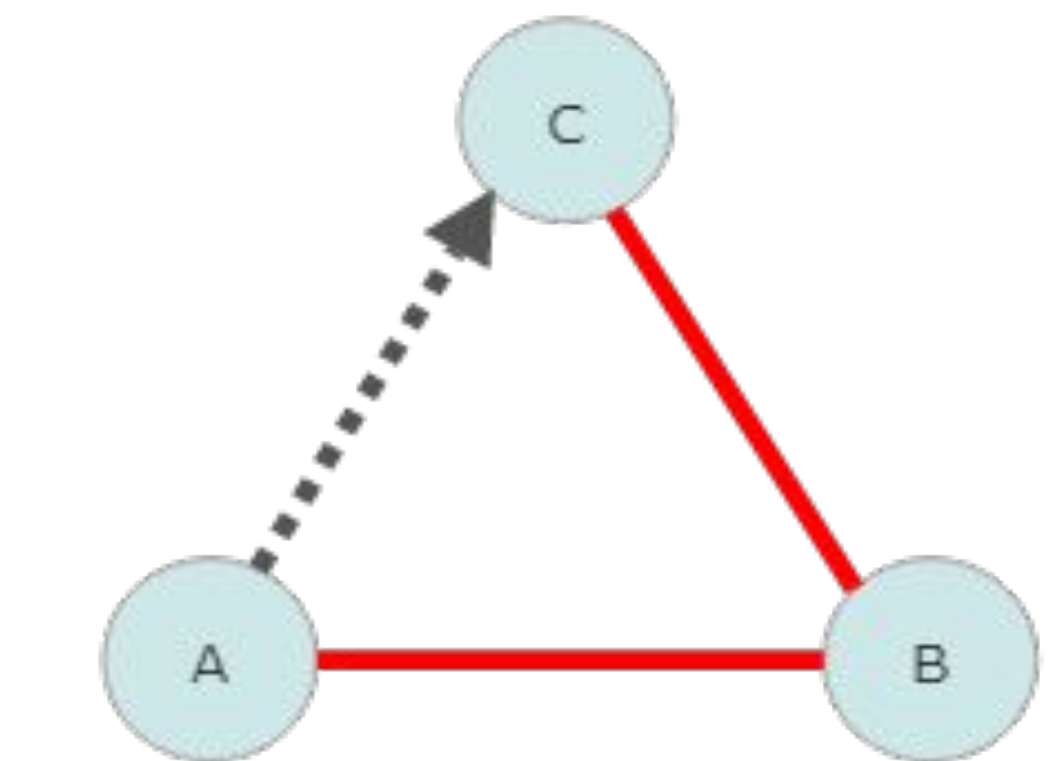
A1 Is the friend of a friend a friend?



A3 Is the enemy of a friend an enemy?



A2 Is the friend of an enemy an enemy?



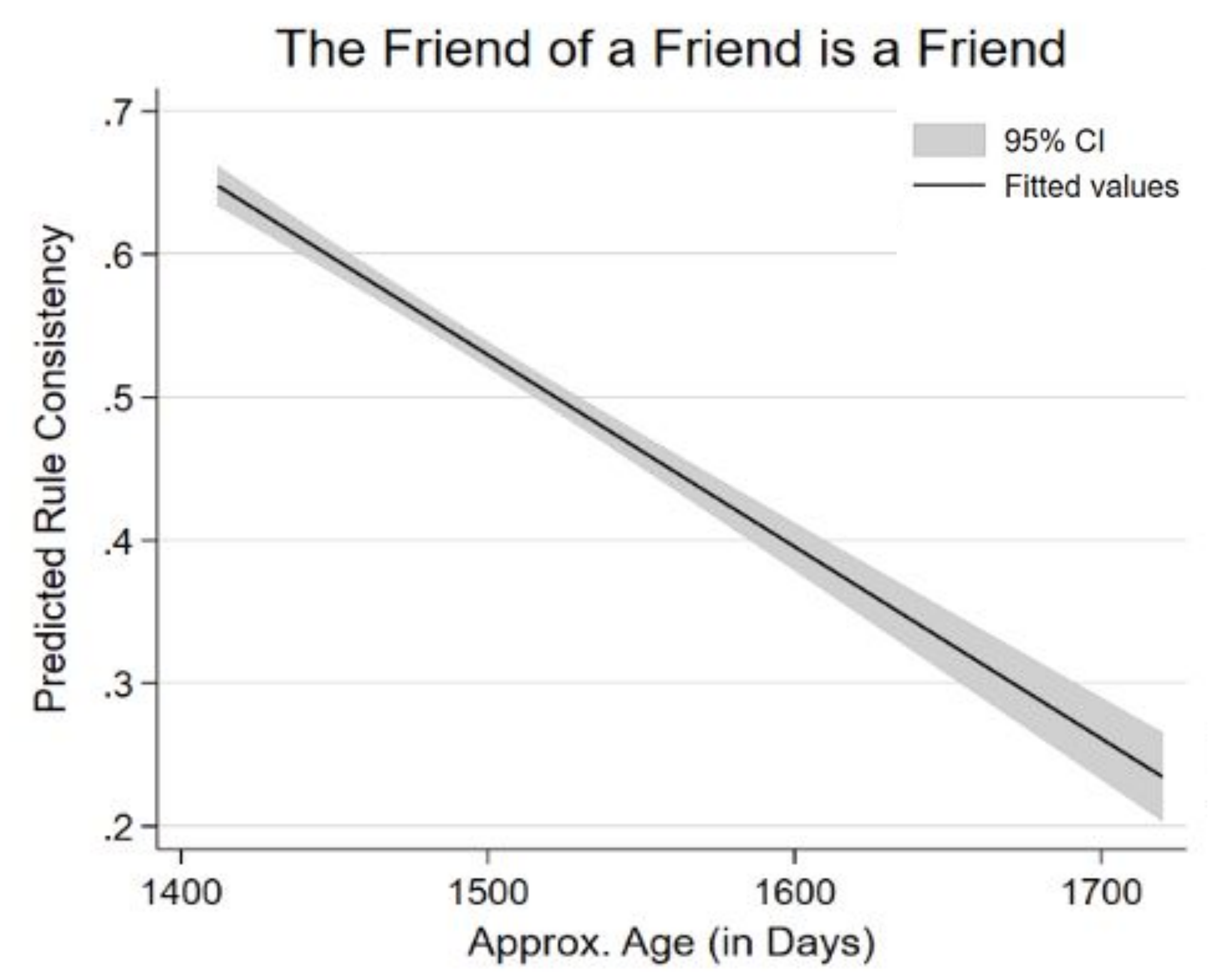
A4 Is the enemy of an enemy a friend?

\*black indicates cooperation and red indicates conflict\*

### METHODOLOGY

- Recruited 7 children (3-4 years old)
- 15-minute recordings taken twice a week via 4 cameras
- Coded dyadic interactions for conflict vs. cooperation, directionality, and physical vs. non-physical
- Totaled 164,194 observations (in dyad-secs) with 18,1224 cooperation and 847 conflict dyad-secs

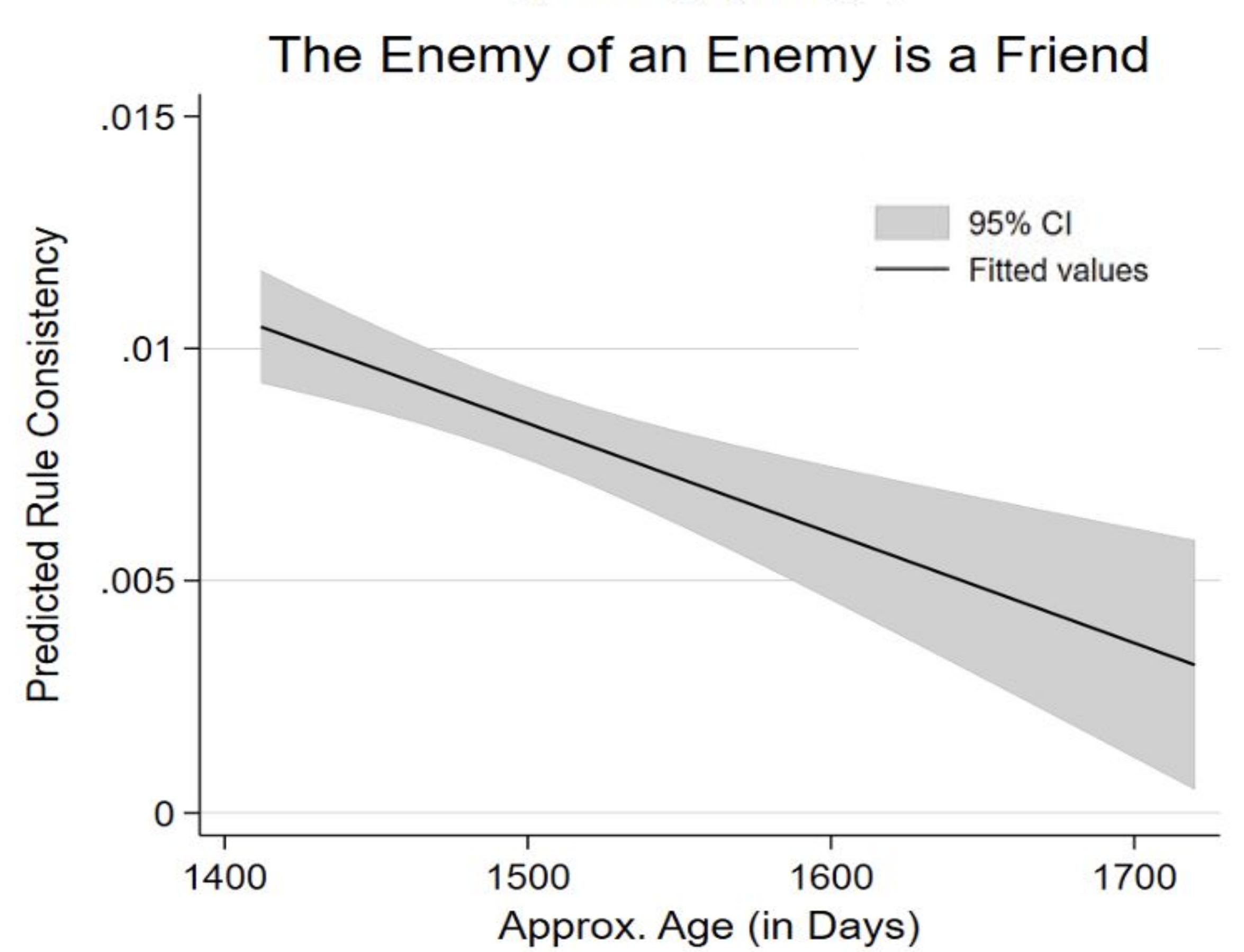
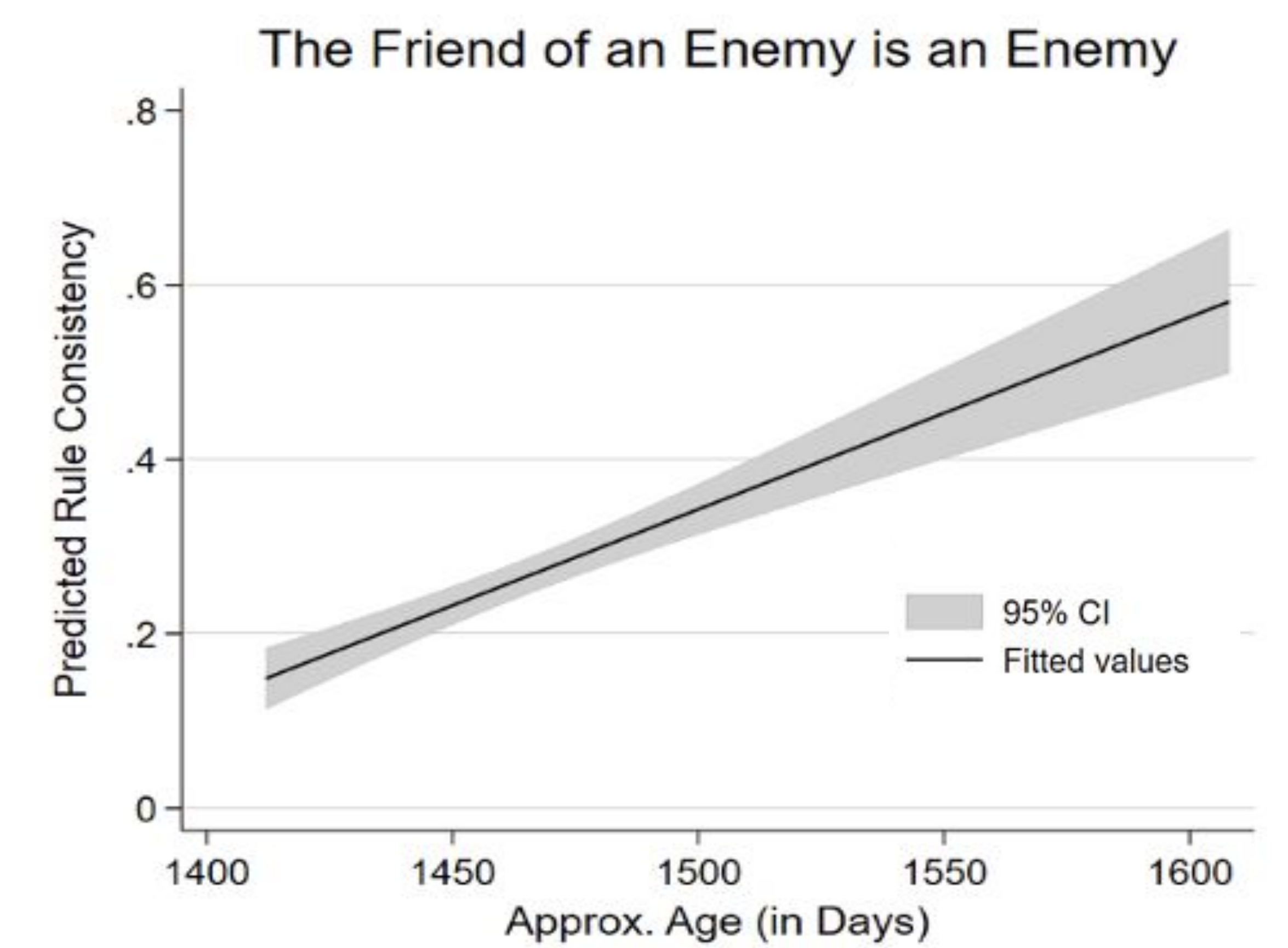
### OUR FINDINGS (1)



- Cooperation and conflict events statistically more likely when conforming to rules of balance theory
  - All four rules apply across all ages
  - However, A3 did not show sensitivity to age
- Younger kids’ behaviors are more consistent with rules A1 and A4 shaping cooperation
  - In-group behavior
  - More likely to have cooperation shaped by reciprocity
- Older kids are more consistent with rules A2 guiding conflict
  - Out-group, exclusionary behavior
  - Conflict more “structural” for older kids

### OUR FINDINGS (2)

- As children age, they respond less automatically to the structure of interactions shaping their play
  - Cooperation may occur outside one’s group
  - Conflict appears more strategic



### FUTURE IMPLICATIONS

- Implications for social development
  - Are those children who appear to understand balance more/less integrated, more/less popular, more/less disruptive, etc.?