Prosocial Effects of Perspective-Taking Through LEGO Play

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LEGO?
LEGO Six Bricks Booklet

• Contains activities for children to develop certain skills:
  • creativity, organization, descriptive language use, problem-solving, social cooperation, and perspective-taking (LEGO Foundation, 2015).

• Recently, these tasks are also being encouraged for college students as a tool in the classroom for social cooperation (Golinkoff, 2017).
The Task

Back to Back

Children learn to:

* Use descriptive language
* **Think from another person’s perspective**
* Speak about own and others’ behaviour and consequences
Perspective-Taking

• Defined as a mental capability to **adopt another’s perspective** and consider another’s thoughts, feelings, and internal mental states (Epley & Caruso, 2009).

• Theory of Mind (ToM) is typically defined as the **insight** into other people’s minds and reasoning about how mental states influence behavior (Imuta et al., 2016).

• **Self-other overlapping perspective** that incorporates and induces the self to the other or vice versa (Galinsky, Ku, & Wang, 2005).
Prosocial Behavior

• Defined as behavior that benefits another and is intended to do so in actions that include (but are not limited to) sharing, comforting, and helping (Dunfield, 2014).

• Higher scores for prosocial behavior were found in children who scored high on ToM, the theoretical framework of perspective-taking (Imuta et al., 2016).
LEGO Link?

Three step process:
1. activating ability by ascertaining existence of another’s mind
2. adjusting egocentric view on perspective
3. accessing accurate information about others by overcoming default assumptions about other people (Epley & Caruso, 2009).

Three different types:
1. visuospatial
2. cognitive
3. affective perspective-taking (Erle & Topolinski, 2017).

The research indicates that LEGO play is an effective medium for social skills intervention (LeGoff, 2004).
Kindness Traits

- Influenced by two situational factors: (Dunfield, 2014).
  1. salient or unique events
  2. temporary *external* conditions or transient *internal* states
- Traits and individual differences act as sources of *influences* within *helping behaviors* (Lefevor et al., 2017).
- **Kindness** trait measures had a significant *correlation* to helpful behavior compared to mood and agreeableness.
- Kindness levels are *developed* over an extended period of time.
Research Question and Hypothesis

Do the LEGO perspective-taking tasks prime prosocial behavior?

Hypothesis: engaging in a LEGO Six Bricks perspective-taking task increases prosocial behaviors, regardless of trait kindness.
Methods: General Procedure

- **IV**: LEGO task conditions
- **DV**: Michigan Prosocial Game
  - 4 times
  - 6 trials
- **DV**: Kindness Scale
- **Debrief**

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Methods: LEGO conditions

- **Condition 1 (Back-to-Back):** researcher sat back-to-back with the participant, who verbally explained their model and coordinated with the researcher to match LEGO models.

- **Condition 2 (Face-to-Face):** participant and the researcher sat face-to-face. The subject built any model and the researcher simply copied the model.

- **Condition 3: (Neutral Solo):** participant created any LEGO structure with the bricks and then showed it to the researcher.

<table>
<thead>
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<th>Creativity</th>
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Methods: Michigan Prosocial Game (MPG)

- **Goal:** Players collect 8 resources as fast as possible.
- Designed to simulate playing against another person.
- **Option:** players could help the other player collect resources
- 6 trials (2 practice, 4 actual)
- Alternating non-helpful/helpful trials
Methods: MPG (contd.)

• Reports:
  • Resources collected
  • Time completed

• Prosocial measure:
  • Helping proportion = helping decisions / opportunities to help
**Methods: MPG Background**

- The prosocial measure is based on the Zurich Prosocial Game (ZPG) (Leiberg, Klimecki, & Singer, 2011).
- Both MPG and ZPG fall under “helping,” which aids another person complete a goal (Dunfield, 2014; Leiberg, Klimecki, & Singer, 2011).
- The ZPG is an obstacle removal game
- Uses a face element for the players
- ZPG issues:
  - Not publically available
  - assumes that participants will notice that they could help
  - gives fewer helping opportunities per trial
Methods: Kindness Traits

• The **Kindness Scale** from the Values in Action Inventory of Strengths ($\alpha = .84$) (McGrath, 2014).

• Examples statements:
  
  • “I am never too busy to help a friend”
  
  • “I go out of my way to cheer people up who appear down.”

• Rated statements using five-point Likert scale (1 = “very much like me” to 5 = “very much unlike me”).
Research Question and Hypothesis (again)

Do the LEGO perspective-taking tasks prime prosocial behavior?

Hypothesis: engaging in LEGO Six Bricks perspective-taking tasks increases prosocial behaviors, regardless of trait kindness.
Results: Subjects

• Behavioral Science Research Pool, social media, and convenience sampling
• Total N = 68
• Age (M = 20)
• Female 41 (60.3%)
• Asian / Pacific Islander (47%)
• Highly SDA (94.1%).
Results: Graphs
Results: Graphs

![Graph showingKind vs Category with data points and error bars. The x-axis represents BACK TO BACK, FACE TO FACE, and SOLO categories, while the y-axis represents KIND. The data points are marked with circles, and the error bars indicate the 95% CI.](image-url)
## Results: Correlation

### Correlation Matrix

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<th>RELATIONSHIP</th>
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<td></td>
<td>p-value</td>
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Discussion: Implications

• Hypothesis **not supported**

• **No helping effect** for each LEGO tasks

• **Contradiction** of our understanding of perspective-taking in its relation to prosocial behaviors (Epley & Caruso, 2009; Galinsky et al., 2005; Imuta et al., 2016).

• Back-to-Back task may **not be strong influencer** of perspective-taking (LEGO Foundation, 2015).
Discussion: Implications (contd.)

• **No relationship** between kindness and prosocial effects

• **Does not support** the role of kindness as predictor of helping behaviors (Lefevor et al., 2017).

• **Relationships** between the participants and the researcher revealed no significant influence on prosocial outcomes.
Discussion: Implications (contd.)

Prosocial behaviors were not significantly influenced by neither the perspective-taking LEGO task nor the levels of kindness.
Discussion: Limitations

- Lack of sensitivity in prosocial measure (MPG)
- Too little calculated trials
- Misunderstanding of game as competition or goal-directing
- No face element compared to the ZPG
- Some notice the AI player
- Participation as helpful behavior
Conclusion: What Now?

• **unclear** whether the LEGO task significantly primes the perspective-taking needed to measure prosocial outcomes.

• Future studies:
  • must continue to **explore** these explicit **outcomes** of Six Bricks Booklet tasks and their implications within social settings.
  • consider creating an experimental **design** that measures the effects of longer or more regular exposure to specific LEGO activities.
  • **improve** the sensitivity of the tools and **measurements** of prosocial outcomes.
References


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Questions?