Implicit Attitudes and Theories and Social Attributes

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April 2, 2014
Outline


Implicit Gender Bias

Implicit gender biases:
– associations (e.g., attitudes; stereotypes) that are not explicitly expressed, but rather are implied.

This chapter discusses:
• Evidence suggests the origins of implicit gender bias
• How implicit gender bias impacts children’s sense of self
Implicit Level Analysis

Baron et al., argue for examination at the implicit level:

• Less susceptible to self-presentation
• Stable across development
• No reliance on language
• Automatic cognitive associations of traits and attitudes
Development of Implicit Associations

- Implicit associations arise from a **domain-general computational mechanism**
  - Stereotypical
  - Evaluative
  - Same process and shape associations between gender and the self
  - Links form independently and are part of larger cognitions
Development of Implicit Associations

- **Balanced Identity Theory**: if the configuration among three constructs is balanced, and two concepts are associated with a third, the association between two should strengthen e.g.,

  - Gender Identity
  - Self-Concept
  - Cultural Stereotype
Math Identity Example

Gender Identity: Girl

Cultural Identity: Girls are poor at math

Self-Identity: I am poor at math
Implicit Association Test (IAT)

Provides an index of the strength of association between concepts

- Participants are presented with a series of words and are asked to categorize them
  - gender (male/female) and Self (me/other)
  - Assumption is that the stronger the association is, the faster and more accurate responses will occur when the categories share the same key

- e.g., Math Gender Stereotype IAT
  - Words classified on Gender (male/female) and Subject (math/reading)
Stereotypes Impair Performance

Girls do worse at math because of implicit math stereotypes

• Motivation decreases
• Fear they conform to the negative stereotype
• Attitude
Development of Implicit Gender Attitudes

Implicit attitudes develop because:

• Preference for own gender group
• Preference for gender of salient caregiver
• Media influences
• Combination effect
Time for Change

1. Change becomes more difficult with age

2. With age, comes an overall increase in flexibility

3. Best time to change early associations is early childhood

Baron et al. argue that gender attitudes occur around 4-5 years old and math attitudes around 7-8 and interventions at this point would be more effective.
A Few Questions

• Are implicit measures actually explicit?
• How could implicit measures be improved?
• Why do implicit attitudes seem to affect girls more strongly than boys? What impacts girls but not boys?
• Other than math, what activities might show these implicit gender stereotypes?
Cognitive Consistency & Math–Gender Stereotypes in Singaporean children

• Examined:
  – if children from Asian culture organize their beliefs in a balanced way (i.e., cognitive consistency)
  – if math stereotypes occur in Singapore where children excel at math
  – If there are changes across development
Math Gender Stereotypes in Singaporean Children

• **Participants:** 172 children from grades 1, 3 and 5

• **Method:**
  – Children completed IATs on the computer
  – assessed gender identity, math self-concept and math- gender stereotype
Math-Gender Stereotype

1) **Math-Gender Stereotype IAT:** stimuli of boys and girls things would appear and pressed one button if “boy” and other if “girl”

2) **1st Combined Task:** sort stimuli *as fast as they could* by pressing one of two keys, that shared two responses -e.g. boy/math key; girl/reading key

3) **Single Task:** categorize images into math/reading

4) **2nd Combined Task:** children were asked to sort them *as fast as they could* by pressing one of two keys, that shared two responses -e.g., math/girl; reading/boy
Gender-Identity & Math Self-Concept

Gender Identity IAT: categorized stimuli as me/not me and boy/girl as fast as they could

1) 1\textsuperscript{st} Combined Task: me/boy; not me/girl
2) 2\textsuperscript{nd} Combined Task: me/girl; not me/boy

Math Self-Concept: categorized me/not me; math/reading

1) 1\textsuperscript{st} Combined Task: math/me; reading/not me
2) 2\textsuperscript{nd} Combined Task: reading/me; math/not me
Explicit Self-Reports

- Children were shown a pair of drawings (boy/girl)
- **Gender Identity**: “which one is more like you?”
- **Math-Gender Stereotype**: “who likes to do math more?”
- **Math Self-Concept**: “who is more like you?” when shown same gender reading/math
Implicit and Explicit Results

• **Gender Identity:**
  – Implicit & Explicit: For boys and girls, me = own gender

• **Math-Gender Stereotype:**
  – Implicit: Boys associated math with *own* gender; girls associated math with *other* gender
  – Explicit: Boys said the boy was more likely to say they “like math more” than girls

• **Math Self-Concept:**
  – Implicit: Boys more likely to associate me with math and this was stronger for boys than girls
  – Explicit: Boys more likely to associate me with math; girls more likely to associate me with reading
Developmental Data

A

<table>
<thead>
<tr>
<th>Gender identity</th>
<th>Math–Gender stereotype</th>
<th>Math self-concept</th>
</tr>
</thead>
<tbody>
<tr>
<td>* me = boy</td>
<td>* math = own gender</td>
<td>* me = math</td>
</tr>
<tr>
<td>* math = opposite gender</td>
<td>* me = reading</td>
<td></td>
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IAT score (D)

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<tr>
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<td>0.5</td>
<td>0.75</td>
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</table>

Boys | Girls
Developmental Data

![Developmental Data Graph]

- Gender Identity
- Math-Gender Stereotype
- Math Self-Concept

Self-report rating

School grade

- me = boy
- math = own gender
- math = opposite gender
- me = girl
- me = math
- me = reading

Boys vs. Girls
Overall Findings

• Evidence for cognitive consistency (i.e., finding balance) in Asian cultures and it increases as children get older

• Math-Gender stereotype exists in Singapore where children are good at math, and it increases with age
Developmental Differences in Weighing Informants’ Social Attributes

Children want information from those they can trust

• Often choose accurate informant
• But, when accuracy is not available, they examine social cues:
  – e.g., kind informant
  – e.g., physical similarity
  – e.g., psychological similarity
Developmental Differences in Weighing Informants’ Social Attributes

Previous studies have examined learning from informants in social situations.

The goal of this study was to examine how children weigh trustworthy cues, when no other information is available to them for epistemic information.
Experiment 1

Participants: 3, 4 and 5 year olds

Questions:
• Do children want to learn from informants who are similar to them?
• Does preference for informants change with age?

Similarity
Experiment 1 Phases

• **Similarity**
  – Puppet and Child were matched on hair colour, food preferences and gender

• **Uncertainty**: preference for each puppet was measured
  – “Do you know what this object is called?...Which puppet would you like to ask for help?”
  – Both puppets would label the object and then the child chose which label they prefer
Experiment 1 Phases

• **History**
  – Children were told how accurate each of the puppets were

• **Endorsement**
  – Children could endorse any puppet they wanted when presented with three new objects
Experiment 1 Results

Endorsing
• Main effect of question type: Children requested and endorsed the similar informant over the dissimilar

History
• 86% accurate in identifying accurate informant

Test
• Requesting: children were more likely to identify accurate over inaccurate similar informant
• Endorsing: children were more likely to endorse accurate labels

Inaccurate Source
• 3 and 4 year olds did not endorse an inaccurate source, if informant was similar or not
• 5 year-olds were more likely to forgive previous inaccuracy of a similar informant
Experiment 2

Participants: 3 and 5 year olds

Familiarity

• If repeated exposure to an informant would trigger a knowledge preference for that informant?

• If this familiarity and preference for this informant change with age?

No feedback on accuracy
Experiment 2 Phases

- **Familiarity**: exposed to the puppet
- **Uncertainty**: preferences were measured
- **Similarity**: puppet’s preferences (i.e., food, TV, colours) were highlighted to child
- **Testing**: Assessed familiarity and similarity
Experiment 2 Results

**Uncertainty:** Children would request and endorse familiar informant

- 3 year-olds were more likely than 5 year-olds to request labels from the familiar informant

**Test Phase:** 5 year olds were more likely to endorse labels from familiar informant, but no difference for 3 year olds

- 5 year olds weighed similarity more than familiarity
Conclusion

• Children like to learn from someone who is familiar
• For 3 year olds, familiarity was most important
• For 5 year olds, similarity was weighed more heavily
• Older children were more likely to forgive a previously inaccurate informant
Accuracy and Conventionality

- Examined who children trust when information about accuracy of the informant is not available

- Research has shown consistently that children prefer accurate informants and this has been replicated in various contexts
Accuracy and Conventionality

• Children pay special attention to accuracy when determining the trustworthiness and reliability of a source

• However, it could be that children attend to the conventional, rather than the accurate source

• If accuracy, trust informant because they know what is right

• If conventionality, trust informant because they say what others do.
Accuracy and Conventionality

• Instead asked children to reason about actions
  – Actions include a process independent of its outcomes
  – Actions can cross conventionality with accurate outcomes
Accuracy and Conventionality

Participants: 48 3 and 4 year olds

4 Trials:
• Unconventional but successful actor
• Conventional but unsuccessful actor
• Three familiar actions followed by a fourth unfamiliar one
  – e.g., ‘nexing’ the clips
Accuracy and Conventionality

- Children introduced to each actor and the experimenter told them that they were going to perform an action
- successfully, but unconventionally
- conventionally, but unsuccessfully
Accuracy and Conventionality

• Children were then asked to identify each actor

• Next, children were presented with unfamiliar action presented by both actors
  – e.g., who ‘fepped’ the stick? And “Show me how to fepp the stick” and participants could use any combination
Results

Explicit Judgment Task:

• Children were able to differentiate between the actors (81% accurate)

• 3 and 4 year olds did not differ from one another
Results

Endorsing and imitating

• Did children trust one actor over another?

• For endorsing, children preferred to endorse the unconventional successful actor

• For imitating, 4 year old children preferred to endorse the unconventional successful actor,

• Children who endorsed also imitated
Conclusion

• Children value accuracy over conventionality when examining reliable sources of information.

• Children were no less willing to imitate vs. endorse, even though that meant acting unconventionally in front of the experimenter.

• Unclear how these results generalize to other domains.

• Or why children prefer accuracy.
Discussion Questions

• Children prefer accurate sources. In what cases would children not take into account an accurate source? Is there any situation where accuracy is overcome?

• Why do children weigh accuracy so highly?
  – Educational experiences?
  – Cultural experiences?

• What is more important for adults? Familiarity, similarity or something else?
Discussion Question

• What if the schema of what children expect from the actors/informants changed?
  – They were similar, but now they are not
  – They were friendly, but now they are not etc.
  – Updating information