Children’s acquisition of the concept of belief and the mastery of folk psychology

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Outline

• Acquiring the concept of belief: a puzzle
• The theoretical framework: BDR
• Challenging BDR model
• The puzzle re-considered
False Belief Test

(Baron-Cohen, Leslie, & Frith, 1985)
“These results suggest that 15-month-old infants ... realize that others act on the basis of their beliefs and that these beliefs are representations that may or may not mirror reality.”

Onishi & Baillargeon (2005)

“Infants are born with a psychological-reasoning system that provides them with a skeletal causal framework for interpreting the actions of agents”

Baillargeon et al. (2010)

Onishi & Baillargeon (2005)
“15-month-old infants already possess (at least in a *rudimentary* and *implicit* form) a representational theory of mind”

(Onishi & Baillargeon, 2005)
Belief-Desire reasoning

A1: see \((x, y, z)\) $\rightarrow$ believe\((x, y, z)\)

A2: believe\((x, y, z)\) $\land$ desire\((x, y)\) $\rightarrow$ look_for\((x, y, z)\)

O: see(Sally, ball, basket)
desire(Sally, ball)

...
Do we really predict others’ behaviour through belief-desire reasoning?
“5-month-olds also interpret inanimate objects as goal-directed if they start by themselves and show persistent direct paths to another object. ... There is nothing in these descriptions that speaks about mind or intentions. They are descriptions of “moving to” something, rather than just moving. ... The first concept of goal is not derived from ascribing intentionality to an animate agent, but rather from ... combinations of the primitives of START PATH, PATH TO, END OF PATH, and LINK.”

(Mandler, 2012, p. 435)
Familiarization trial: 1
Familiarization trials: 2–3
False-belief Yellow condition
Test trial: old goal event
Test trial: new goal event

Spontaneous-answer False Belief Test (SA-FBT)

Onishi & Baillargeon (2005)
“... false belief understanding should be taken as *explanandum* instead of *explanans*. That is, we should try to explain different forms of false belief understanding by appealing to an explanatory terminology that does not include ‘false belief’ as an explanatory concept.”

(de Bruin & Newen, 2012)
Up to now

Do we really predict others’ behaviour through belief-desire reasoning (BDR)?

situated interactions: BDR is not necessary when action-reading capacities account for action prediction
“There are large areas in which it [FP] is extraordinarily reliable in its predictive power. Every time we venture out on a highway, for example, we stake our lives on the reliability of our general expectations about the perceptual beliefs, normal desires, and decision proclivities of the other motorists.”

(Dennett, 1987, p. 48)
1. Look left, then
2. look right, then:
3. if
   1. no car is arriving, look left again, and cross the road;
   2. a car is arriving, wait for the car to stop, then look left again, and cross the road.
1. If you want to turn, first use the turn signal to indicate it;
2. other drivers will first use their turn signal to indicate their intention to turn.

1. If you are going to turn, first use the turn signal to indicate it;
2. other cars will first blink before turning.
"Someone don't know phones me at my office in New York from Arizona. 'Would you like to lecture here next Tuesday?' are the words that he utters. 'Yes, thank you. I'll be at your airport on the 3 p.m. flight' are the words that I reply. That's all that happens, but it's more than enough; the rest of the burden of predicting behavior ... is routinely taken up by theory. And the theory works so well that several days later ... and several thousand miles away, there I am at the airport, and there he is to meet me. Or if I don't turn up, it's less likely that the theory has failed than that something went wrong with the airline."

(Fodor, 1987, p.3)
Making appointments
• not an unusual event
• shared social practice

Social Regulators
cultural tools we use in everyday life to plan and coordinate behaviour

- conventions
- stereotypes
- scripts
- roles
- norms
- psychological traits & temperaments
Social Regulators: successes

• Social regulators define standards for social interaction, thereby
  – reduce the cognitive load of decision making
  – support coordination among individuals
Social Regulators: failures

- The automaticity of following SRs makes the interpretation of others’ behaviour both:
  - extremely fast and effective
  - sensitive to the context and prone to error

- In unusual situations:
  - SRs fail
  - BDR becomes inaccurate (Hutto 2008, Andrews 2009)
Up to now

Do we really predict others’ behaviour through belief-desire reasoning (BDR)?

**present situations:** BDR is not necessary when action-reading capacities account for action prediction

**non-present situations:**
- in standard situations, action prediction is supported by “social regulators”
- in non-standard situations, BDR does not help action prediction more than SRs
The function of folk psychology

• Attributing mental states is the normal way to “repair”/normalise unusual situations (Bruner, 1990; Hutto, 2008)

• Folk psychology has an important regulative function (McGeer, 2007). Attributing mental states helps
  – discharging responsibility for what went wrong
  – avoiding punishment and/or contempt
Acquiring the concept of belief

- Predictive use of BDR
- Capacity to explain reasons for actions

1. Children learn to explain others’ reasons for action in conversation with their caregivers
2. This capacity allows them to correctly understand social situations where agents possess wrong information about the environment (e.g., FBT)
Evidence

Quality of parental conversation
- Elaborative discourse (Ontai & Thompson, 2008)
- Connectedness (Ensor & Hughes, 2008)

Conversation involving mental discourse
- Frequency of mental terms
- Psychological discourse (Turnbull, Carpendale, & Racine, 2008)

Syntax acquisition
- de Villiers & Pyers, 2002; de Villiers, 2005
- Training studies (Hale & Tager-Flusberg, 2003)
- Comparative studies (Schick, de Villiers, de Villiers, & Hoffmeister, 2007)

Prediction vs. Explanation
- Bartsch & Wellman (1989), Bartsch, Campbell, & Troseth (2007)
Conclusions

- Acquiring the concept of belief: a puzzle
- Common assumptions: BDR
- Challenging BDR model
  - Contextual interaction (infants & adults)
  - Non-contextual interaction
- The false belief test re-considered
That's all Folks!