Lecture 01

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1. The Question

How do humans first come to know about—and to knowingly manipulate—objects, causes, words, numbers, colours, actions and minds?

'... 'tis past doubt, that Men have in their Minds several Ideas, such as are those expressed by the words, Whiteness, Hardness, ... and others: It is in the first place to be enquired, How he comes by them?' (Locke 1689, p. 104)

'How does it come about that the development of organic behavior into controlled inquiry brings about the differentiation and cooperation of observational and conceptual operations?' (Dewey 1938, p. 12)

'the fundamental explicandum, is the organism and its propositional attitudes ... Cognitive psychologists accept ... the ... necessity of explaining how organisms come to have the attitudes to propositions that they do.' (Fodor 1975, p. 198)

2. From Myths to Mechanisms

'the soul inherently contains the sources of various notions and doctrines which external objects merely rouse up on suitable occasions' (Leibniz 1996, p. 48)

'Men, barely by the Use of their natural Faculties, may attain to all the Knowledge they have, without the help of any innate Impressions' (Locke 1689, p. 48)

'Developmental science [...] has shown that both these views are false' (Spelke & Kinzler 2007, p. 89).

3. Davidson's Challenge

'We have many vocabularies for describing nature when we regard it as mindless, and we have a mentalistic vocabulary for describing thought and intentional action; what we lack is a way of describing what is in between' (Davidson 1999, p. 11)

3.1. Uncomplicated Account of Minds and Actions

For any given proposition [There's a spider behind the book] and any given human [Wy] ...

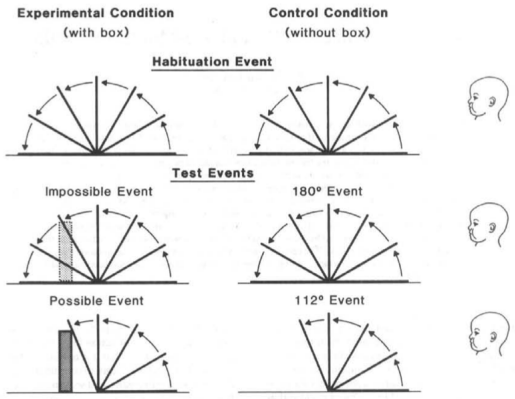
1. Either Wy believes that there's a spider behind the book, or she does not.

2. Either Wy can act for the reason that there is, or seems to be, a spider behind the book, or else she cannot.

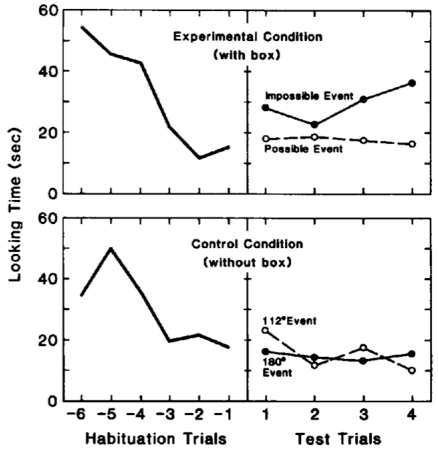
3. The first alternatives of (1) and (2) are either both true or both false.

4. Unperceived Objects: An Illustration of Davidon's Challenge

When do humans first come to know facts about the locations of objects they are not perceiving?



Baillargeon 1987 figure 1



Baillargeon 1987 figure 2

'action demands are not the only cause of failures on occlusion tasks' (Shinskey 2012, p. 291).

'violation-of-expectation experiments, using looking-time measures, suggested that infants have object permanence in occlusion conditions; but simplified-search studies confirm that infants fail to reach towards occluded objects, suggesting that infants do not have object permanence in occlusion conditions. This discrepancy, however, is only the tip of the iceberg. Results of studies attempting to measure infants' cognitive abilities using reaching measures often contradict results gained while using looking-time measures.' (Charles & Rivera 2009, p. 994)

'there are many separable systems of mental representations … the task … is to … [find] the distinct systems of mental representation and to understand their development and integration' (Hood et al. 2000, p. 1522).

Object permanence: the ability to know facts about objects you aren't currently perceiving.

5. Social Interaction: Acquiring Your First Words

5.1. A Conjecture

'humans acquire knowledge at a pace far outstripping that found in any other species. Recent evidence indicates that interpersonal understanding … plays a pivotal role in this achievement.' (Baldwin 2000, p. 40)

'functions traditionally considered hallmarks of individual cognition originated through the need to interact with others … perception, action, and cognition are grounded in social interaction.' (Knoblich & Sebanz 2006, p. 103)

Vygotskian Intelligence Hypothesis: 'the unique aspects of human cognition … were driven by, or even constituted by, social co-operation.' (Moll & Tomasello 2007, p. 1)

'human cognitive abilities … [are] built upon social interaction' (Sinigaglia & Sparaci 2008)

5.2. How do children acquire words?

'we grasp the concept of truth only when we can communicate the contents—the propositional contents—of the shared experience, and this requires language' (Davidson 1997, p. 27).

'The ability to discriminate, to act differentially in the face of clues to the presence of food, danger or safety, is present in all animals and does not require reason. Nor does the learning, even of complex routines, require reason, for it is possible to learn how to act without learning that anything is the case.' (Davidson 1982, p. 326)

'A child learning to speak is learning habits and associations which are just as much determined by the environment as the habit of expecting dogs to bark and cocks to crow' (Russell 1921, p. 71)

'[t]he child learns this language from the grown-ups by being trained to its use. I am using the word 'trained' in a way strictly analogous to that in which we talk of an animal being trained to do certain things. It is done by means of example, reward, punishment, and suchlike' (Wittgenstein 1972, p. 77)

'the child's early learning of a verbal response depends on society's reinforcement of the response in association with the stimulations that merit the response' ((Quine 1960, p. 82); compare (Quine 1974, pp. 28–9))

'Before we have an idea of truth or error, before the advent of concepts or propositional thought, there is a rudiment of communication in the simple discovery that sounds produce results. Crying is the first step toward language when crying is found to procure one or another form of relief or satisfaction. More specific sounds, imitated or not, are rapidly associated with more specific pleasures. Here use //p. 71// would be meaning, if anything like intention and meaning were in the picture. A large further step has been taken when the child notices that others also make distinctive sounds at the same time the child is having the experiences that provoke its own volunteered sounds. For the adult, these sounds have a meaning, perhaps as one word sentences. The adult sees herself as doing a little ostensive teaching: "Eat," "Red," "Ball," "Mamma," "Milk," "No."

There is now room for what the adult views as

error: the child says “Block” when it is a slab. This move fails to be rewarded, and the conditioning becomes more complex’ (Davidson 2000, pp. 70–1)

Children acquiring language create their own words before they learn to use those of the adults around them.

‘From the time they first use words until they are about two or two-and-a-half, children noticeably and systematically overextend words. For example, one child used the word “apple” to refer to balls of soap, a rubber-ball, a ball-lamp, a tomato, cherries, peaches, strawberries, an orange, a pear, an onion, and round biscuits’ (Clark 1993, p. 35)

Children can create their own languages with no experience of others’ languages (Kegl et al. 1999; Senghas & Coppola 2001; Goldin-Meadow 2003).

References

Baillargeon, R. (1987). Object permanence in 3.5-and 4.5-month-old infants. *Developmental psychology*, *23*(5), 655–664.

Baldwin, D. (2000). Interpersonal understanding fuels knowledge acquisition. *Current Directions in Psychological Science*, *9*(2), 40–5.

Charles, E. P. & Rivera, S. M. (2009). Object permanence and method of disappearance: looking measures further contradict reaching measures. *Developmental Science*, *12*(6), 991–1006.

Clark, E. V. (1993). *The Lexicon in Acquisition*. Cambridge: Cambridge University Press.

Davidson, D. (1982). Rational animals. In *Subjective, Intersubjective, Objective* (pp. 95–106). Oxford: Clarendon Press.

Davidson, D. (1997). Seeing through language. In J. Preston (Ed.), *Thought and Language*, Royal Institute of Philosophy Supplement, vol. 42. Oxford: Oxford University Press.

Davidson, D. (1999). The emergence of thought. *Erkenntnis*, *51*, 7–17.

Davidson, D. (2000). Truth rehabilitated. In R. Brandom (Ed.), *Rorty and his Critics* (pp. 65–80). Oxford: Blackwell.

Dewey, J. (1938). *Logic: The Theory of Inquiry*. New York: Henry Holt.

Fodor, J. (1975). *The Language of Thought*. New York: Harvard University Press.

Goldin-Meadow, S. (2003). *The resilience of language : what gesture creation in deaf children can tell us about how all children learn language*. Essays in developmental psychology. New York, N.Y.: Psychology Press.

Hood, B., Carey, S., & Prasada, S. (2000). Predicting the outcomes of physical events: Two-year-olds fail to reveal knowledge of solidity and support. *Child Development*, *71*(6), 1540–1554.

Kegl, J., Senghas, A., & Coppola, M. (1999). Creation through contact: Sign language emergence and sign language change in nicaragua. In M. DeGraff (Ed.), *Language creation and language change: Creolization, diachrony, and development*. Cambridge, Mass.: MIT Press.

Knoblich, G. & Sebanz, N. (2006). The social nature of perception and action. *Current Directions in Psychological Science*, *15*(3), 99–104.

Leibniz, G. W. (1996). *New essays on human understanding*. Cambridge texts in the history of philosophy. Cambridge: Cambridge University Press.

Locke, J. (1975 [1689]). *An Essay Concerning Human Understanding*. Oxford: Oxford University Press.

Moll, H. & Tomasello, M. (2007). Cooperation and human cognition: the vygotskian intelligence hypothesis. *Philosophical Transactions of the Royal Society B*, *362*(1480), 639–648.

Quine, W. V. O. (1960). *Word and object*. Studies in communication. Cambridge, Mass.: MIT Press.

Quine, W. V. O. (1974). *The roots of reference*. Paul Carus lectures ; no, 14. La Salle, Ill.: Open Court.

Russell, B. (1921). *The Analysis of Mind*. www.blackmask.com: Muirhead Library Of Philosophy / electronic edition by Blackmask Online.

Senghas, A. & Coppola, M. (2001). Children creating language: How nicaraguan sign language acquired a spatial grammar. *Psychological Science*, *12*(4), 323–328.

Shinskey, J. L. (2012). Disappearing décalage: Object search in light and dark at 6 months. *Infancy*, *17*(3), 272–294.

Sinigaglia, C. & Sparaci, L. (2008). The mirror roots of social cognition. *Acta philosophica*, *17*(2), 307–330.

Spelke, E. & Kinzler, K. D. (2007). Core knowledge. *Developmental Science*, *10*(1), 89–96.

Wittgenstein, L. (1972). *The Blue and Brown books* (2nd ed.). Oxford: Blackwell.