

Prof. Rex Li's Writings

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Title: Reading Notes on Alison Gopnik (2010): *The Philosophical Babies* - Chapter 4 What is it Like to Be a Baby?

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Summary/ Abstract: These are reading notes on Gopnik's *The Philosophical Babies*: Chapter 4 What is it Like to Be a Baby?

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Reading Notes on Alison Gopnik (2010): *The Philosophical Babies*

Chapter 4 What is it Like to Be a Baby?

P. 107 Nagel: What's like to be a bat?

p. 108 Robots have no awareness.

p. 108 Atom → life problem

Consciousness → human existence problem

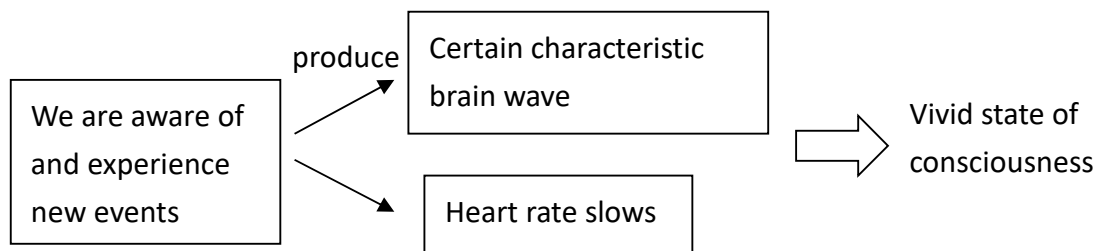
p. 109 Blind spot in retina

(R: that's the nose problem and left hemisphere, right hemisphere, RH issue)

p. 110 Gopnik starting claim: Baby consciousness \neq adults (systematic difference)

p. 110 R: "Attention and consciousness seem to be closely related." (p. 110) From then on Gopnik discussed attention and awareness, little on conscious.

p. 111 Habituation



p. 111 "Unexpected silence" can attract attention!

p. 112 New → focus attention —— consciousness

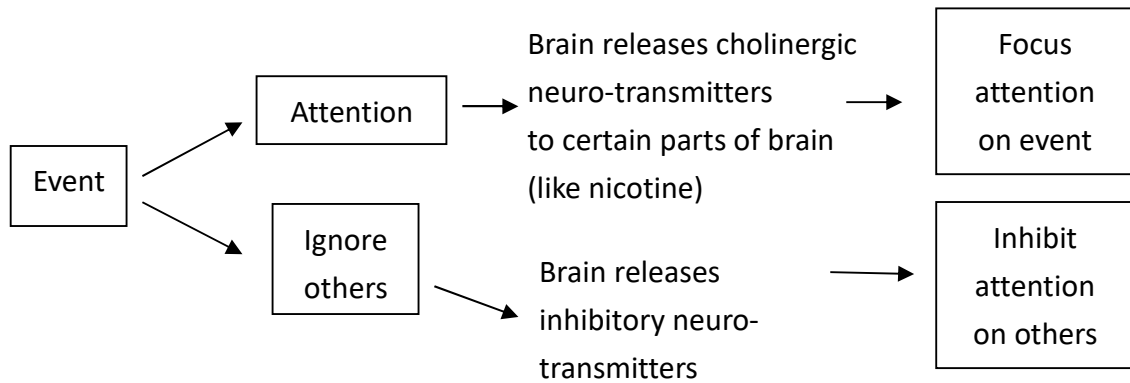
Old → habituation → autopilot —— unconsciousness

p. 112 Dan Simons: Gorilla experiment on attention in

consciousness → ignore background, even unconsciousness

(Focus attention)

(inattentional blindness)



- R: (1) The above can be volitional
 (2) It implies a limited cognitive resources / attention.

Attention → lead to more brain plasticity → learning → change brain cells rewiring (mediated by cholinergic NT)

R: Michael Merzenich’s experiment on monkey brain cells:

by Michael Merzenich and his colleagues. Neuroscientists can actually record the activity of a monkey’s brain cells and see that different cells respond to different kinds of events. Some cells respond to particular kinds of sounds, for example, and others respond to touch.

The experimenters got the monkeys to pay attention to one type of event instead of another. A monkey hears a stream of sounds, say, and feels a sequence of touches. If he moves his hand when he hears a particular sound he gets some juice, but touch isn’t rewarded. The monkey pays more attention to the sounds as a result, just as in a crowded room you might focus your attention on overhearing a potentially rewarding conversation and ignore the irrelevant ones.

When they checked the monkeys’ brains they discovered that the sound cells had been rewired by these experiences—they responded differently—but the tactile cells were the same. In fact, more of the monkeys’ brain cells responded to sound after they had been trained, but the number of touch-responding cells stayed the same. When they reversed the experiment so that touch was more rewarding, they got the reverse effect. These changes seem to be at least partly mediated by the cholinergic transmitters. If the

- R: Observation:
- (1) Difference brain cells / areas relate to different senses.
 - (2) Clear training effect / experience on brain cells.
 - (3) Implication:

monkeys were given a chemical that blocked those transmitters, the changes were less likely. This plasticity effect also seems to fit our intuition that when we attend to things carefully we can learn more about them than when we do not. When we learn we literally change our minds and brains in the light of new information.

p. 115

Gopnik's summary

we do have a story about how a particular kind of vivid, narrowly focused awareness is related to the mind and the brain. When we have this kind of consciousness our minds take in information about some parts of the world and shut out distracting information from others. And we can use the attended information to learn something new. Certain things also happen in our brains—they release cholinergic and inhibitory transmitters appropriately. In turn those transmitters both make the relevant parts of the brain function more efficiently and allow them to be reshaped more easily.

- R: (1) Many things become unconscious when they are familiar to us. Things novel come to our attention / consciousness → evolutionary reasons
- (2) The real issue is: unconscious learning
- (3) Is an intellectual brain different from a less-intellectual one e.g. less knowledge nodes / connections (learning is like writing a program on brain and storage)
- (4) There are ways to make
More intellectual babies
- (5) From the ongoing research, I can predict the following about baby brains:
- a) Baby brains are more plastic. This thinking is as old as a hundred years (Dewey 1915).
- b) When babies pay more attention, they will have:
more cholinergic NT
more dendrites to form
more capable of basic learning
less habituation (habitatory NT)
- Attention → learn → create richer neuro-network → even forming program routines (O.S!) to monitor incoming information and respond → keep growing
- c) Is individual difference conspicuous very early?
e.g. linguistic / logic / music / spatial intelligence?

- d) Is ability / capacity (genetics) conspicuous very early?
Probably yes.

Babies are easily distracted by external events

- p. 117 (1) mostly exogenous attention (less internal goal)
- p. 118 (2) less ability to inhibit extraction
(less focused)
- p. 119 (3) capacities of very general attention
- p. 119 children beat adults at card games of overall / spatial memory
- p. 116 – 119 Baby / adult similarity in attention
- (1) Information intake, interest in novelty
 - (2) Wave length
 - (3) Heart beat
 - (4) Habituation
- Baby / adult difference
- (1) Baby less endogenous
 - (2) Baby exogenous —— pick up as much from external
- p. 118 (3) Baby less inhibition to distraction (development of frontal cortex).
- p. 118 – 119 (4) Able to pick up more overall information without focus.

the two types of learning are much more similar. In fact, the younger children actually do better at remembering the unattended card than the older children do.

So rather than determining what to look at in the world, babies seem to let the world determine what they look at. And rather than deciding where to focus attention and where to inhibit distractions, babies seem to be conscious of much more of the world at once. They aren't just picking up information about the specific

- p. 123 Evolution dictates baby learning

The evolutionary imperative for babies is to learn as much as they can as quickly as possible. Their job is just to make accurate maps of the world around them. They learn and infer, make causal maps and draw counterfactual conclusions, and they don't need to worry if what they learn is relevant to some particular plan or goal.

- p. 124 – 125 John and Ellie Flavell

p. 125 Babies have less unconsciousness and more consciousness than adults

Babies also seem less subject to certain kinds of unconsciousness than we are. Less of their experience is familiar, expert, and automatic, and so they have fewer habituated unconscious behaviors. While they inhibit distractions less well, more of the field of consciousness will be available to them. This also suggests that they are more conscious than we are.

p. 127 – 128 Gopnik ventured into meditation — a way to manipulate attention:

Focus attention — on an object (mandala, Koan or crucifix)

Overwhelm attention — open awareness of everything, defeat intentional blindness, avoid attention inhibition / Zen / Caffeine. (face blank wall, attention inwards).

The experience that results, at least for brief moments, is very striking. Suddenly, as your attention to specific external events and internal plans diminishes you become vividly aware of everything around you at once. The texture of the floor, the delicate movement of light on the walls, the sound of the birds and passing cars, even your aching knees, all seem to be illuminated simultaneously, with little distinction between the trivial and the important, or the internal and the external.

p. 130 Lantern consciousness, happiness and childhood

Lantern consciousness leads to a very different kind of happiness. There is a similar feeling that we have lost our sense of self, but we lose our selves by becoming part of the world. Lantern consciousness is invoked by writers like Virginia Woolf and Emily Dickinson and artists like Henri Cartier-Bresson. It is William Blake's world in a grain of sand, William Wordsworth's splendour in the grass.

This kind of phenomenology has historically often been associated with childhood. The Zen master Shunryu Suzuki called it "beginner's mind," the mind as it is uncontaminated by expertise. The Romantic poets such as Wordsworth, who made something of a specialty of invoking this sort of experience, explicitly identified it with childhood. They thought childhood was especially valuable because children experienced the world with this sort of infinite wonder.

Developmental psychology and neuroscience suggest that this intuitive identification is accurate. I think lantern consciousness is what it is like to be a baby. Babies, like Buddhas, are travelers in a little room. They are immersed in the almost unbearably bright and exciting novelty of walls, shadows, voices. William James, the greatest writer of all psychologists, has a typically striking image that might help invoke the experience. He himself applied it not to babies but to the brilliant but scatterbrained among adults. In some people, he says, the field of consciousness is like a narrowly focused beam with darkness all round it. For others, and I would argue for babies, “we may suppose the margin to be brighter, and to be filled with something like meteoric showers of images, which strike into it at random, displacing the focal ideas.”

p. 131 – 132 R: Gopnik is able to use lantern consciousness to illustrate a child’s mind. She is able to integrate internal subjective experience with a young mind, where another thread can be tied to “beginner’s mind”, Romantic poetry etc. The conclusion is striking: babies can tell us what consciousness is like! The babies have an unpolluted young conscious mind.

Developmental psychology and neuroscience can help tell us what it is like to be a baby, and travel, meditation, and Romantic poetry can even give us an empathetic first-person taste of infant experience. Babies can also tell us about consciousness itself. Just