Why it's great to be a baby

Dr Caspar Addyman
CBCD 2005
Birkbeck 2001

Goldsmiths
UNIVERSITY OF LONDON

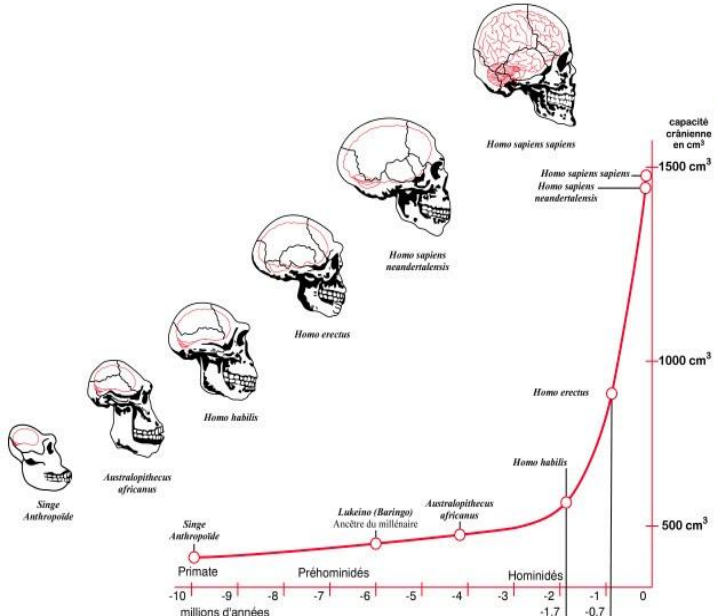
@czzpr

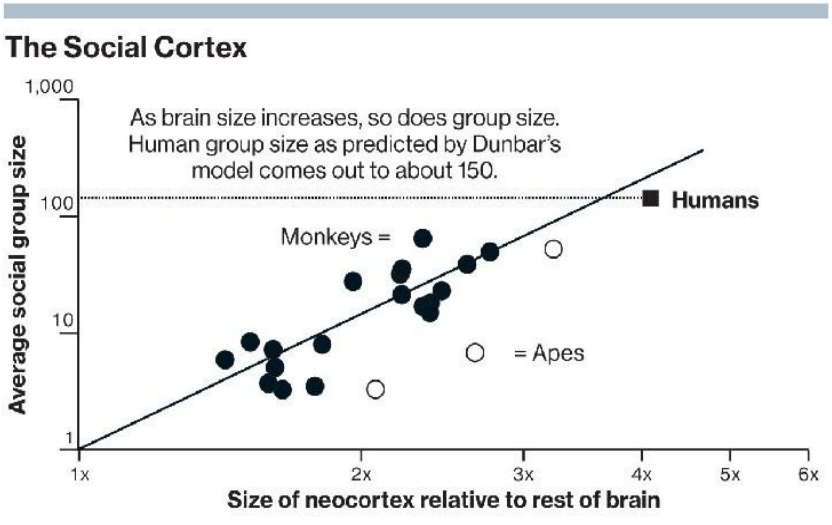

THE LAUGHING BABY
Tickling: understand an amusement that is millions of years old.
Peekaboo: discover why this game is the ultimate in baby laughter.
Eureka: learn how babies delight in discovering the world.
The Extraordinary Science Behind
What Makes Babies Happy
CASPAR ADDYMAN

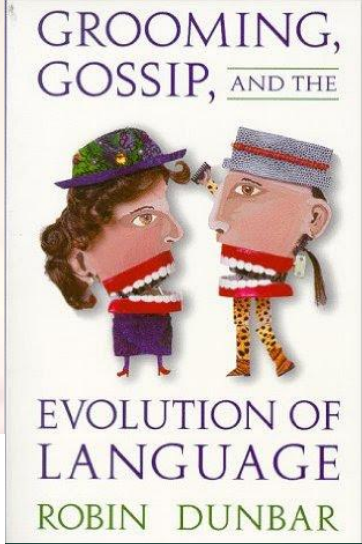
April 2020

Nick Nyugen
flic.kr/p/7bvvk4

1. Being social requires bigger brains.
2. Bigger groups require bigger brains
3. Big social groups require an alternative to 1-on-1 grooming
4. Laughter & emotional vocalization can be 1 to many
5. Later language (gossip) evolves for sociability







1. Good parents require big brains.
2. Bigger brains requires giving birth to more helpless babies
3. More helpless babies require better parents

PNAS PNAS

Extraordinary intelligence and the care of infants

Steven T. Piantadosi[a,1] and Celeste Kidd[a,1]

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Edited by C. Owen Lovejoy, Kent State University, Kent, OH, and approved March 30, 2016 (received for review April 23, 2015)

We present evidence that pressures for early childcare may have been one of the driving factors of human evolution. We show through an evolutionary model that runaway selection for high intelligence may occur when (*i*) altricial neonates require intelligent parents, (*ii*) intelligent parents must have large brains, and (*iii*) large brains necessitate having even more altricial offspring. We test a prediction of this account by showing across primate genera that the helplessness of infants is a particularly strong predictor of the adults' intelligence. We discuss related implications, including this account's ability to explain why human-level intelligence evolved specifically in mammals. This theory complements prior hypotheses that link human intelligence to social reasoning and reproductive pressures and explains how human intelligence may have become so distinctive compared with our closest evolutionary relatives.

cognitive science | evolutionary dynamics | developmental modeling

childcare. As we show, weaning time—a measure of the helplessness of newborns—is a strong predictor of primate intelligence, over and above a variety of other measures. We conclude by discussing several other pieces of evidence in support of our account. In particular, the theory explains why human-level intelligence occurred in mammals and not in other lineages that had millions of years more time to evolve highly intelligent species. Under our account, the requisite dynamics only become possible through linking large brains and live birth, characteristic features of higher mammals.

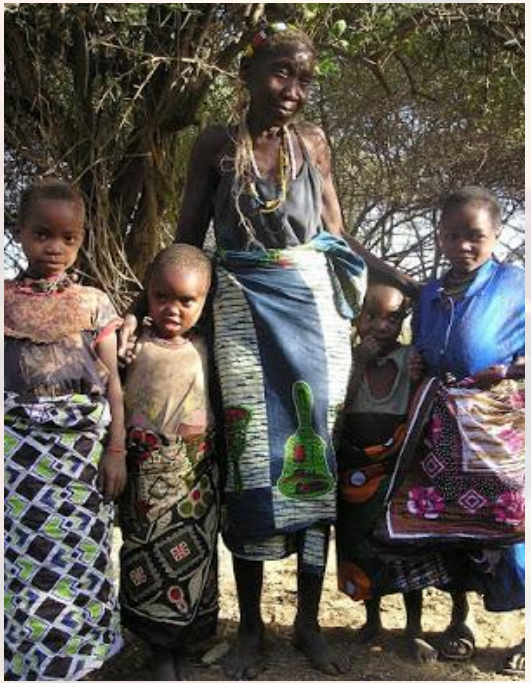
The Evolutionary Model

The model presented here is meant to provide a demonstration that runaway selection for unusually large brains and high intelligence can occur from nothing more than the demands of caring for children who must be born early to accommodate their own large brains and who must have large brains to care for their own children. Our formalization is meant to illustrate the key

Piantadosi & Kidd, 2015

1. Grandmothers actively invest in their children's children
2. The longer they live the more grandchildren they can care for
3. Long lived grandmother pass on their genes, including those for longevity

Kristen Hawkes



1. A study in rural Gambia found toddlers with maternal grandmother were twice as likely to survive as those who did not.
2. The presence or absence of a father made no difference.

ELSEVIER

Evolution and Human Behavior 29 (2008) 1 – 18

Evolution and Human Behavior

Who keeps children alive? A review of the effects of kin on child survival

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Parental Care
Bigger brains
Bigger social groups
Long lived grandmothers
Laughter & Language
Cultural knowledge

7,705,022,851

What is culture?

“Culture is activity of thought and receptiveness to beauty and humane feeling. Scraps of information have nothing to do with it.”
Alfred North Whitehead, 1916

“Human beings have a specially adapted capacity for sympathy of brain activity that drives cultural learning.“
Colwyn Trevarthen, 2005

Copresence & synchrony

“meaning is discovered in playful collaborative friendships, and that its discovery is motivated by pleasure in dynamically responsive company” - Colwyn Trevarthen, 2005

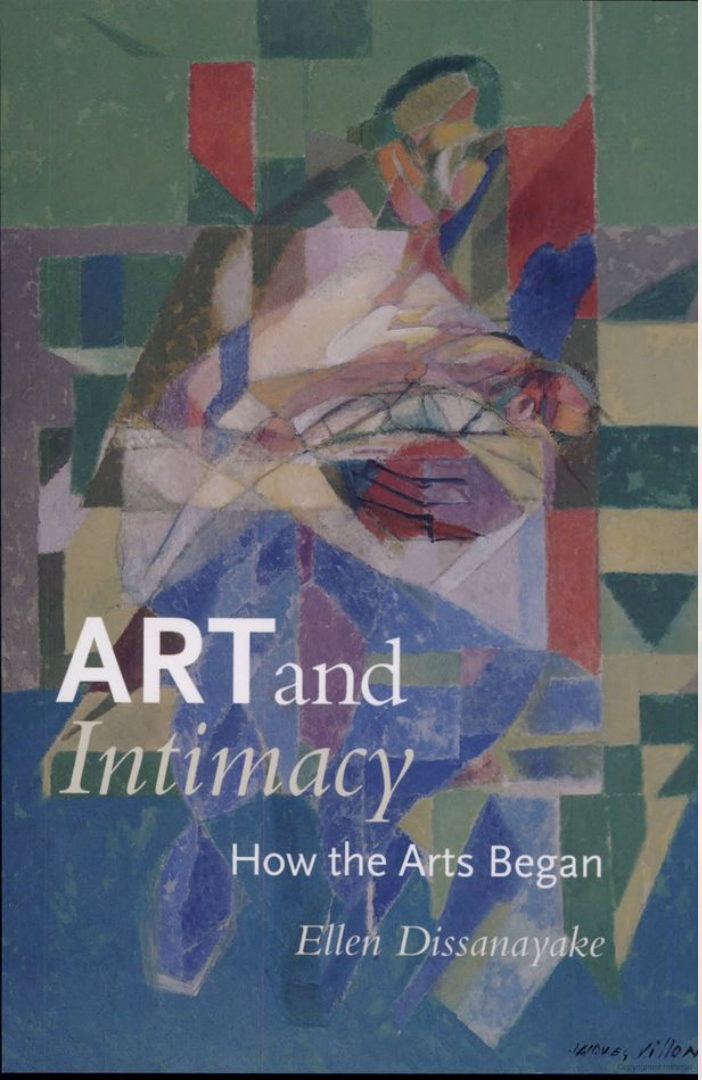
Peekaboo

Copresence & synchrony

“meaning is discovered in playful collaborative friendships, and that its discovery is motivated by pleasure in dynamically responsive company” - Colwyn Trevarthen, 2005

Peekaboo

Still face procedure



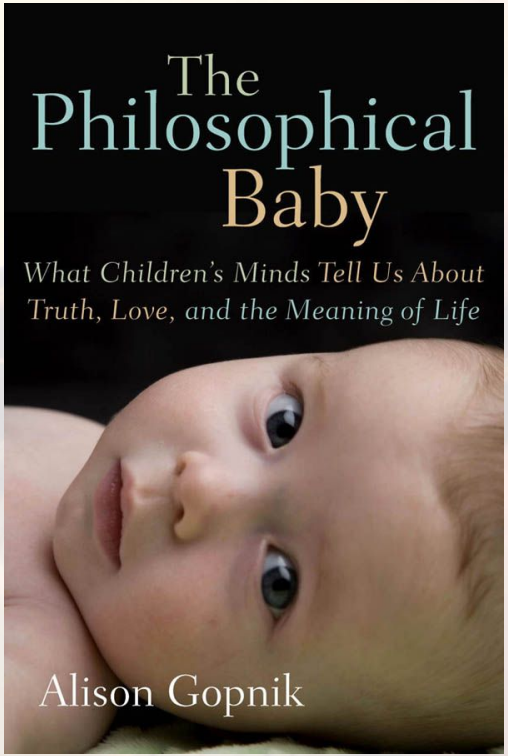
Ellen Dissanayake

"all over the world have developed these nodes of culture that we call ceremonies or rituals, which do for their members what mothers naturally do for their babies: engage their interest, involve them in a shared rhythmic pulse, and thereby instill feelings of closeness and communion."
Dissanayake, 2000


Parental Care
Bigger brains
Bigger social groups
Long lived grandmothers
Language, Laughter, Music & Dance
Emotional connection
Cultural knowledge


E = M C
2

Scientists are big kids



"... specifying the parallels between cognitive development and science not only can help us to understand cognitive development, it also can to understand science itself. ***The moral of my story is not that children are little scientists but that scientists are big children.***"
- Alison Gopnik, 1997


E = M C
2

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Bringing science home

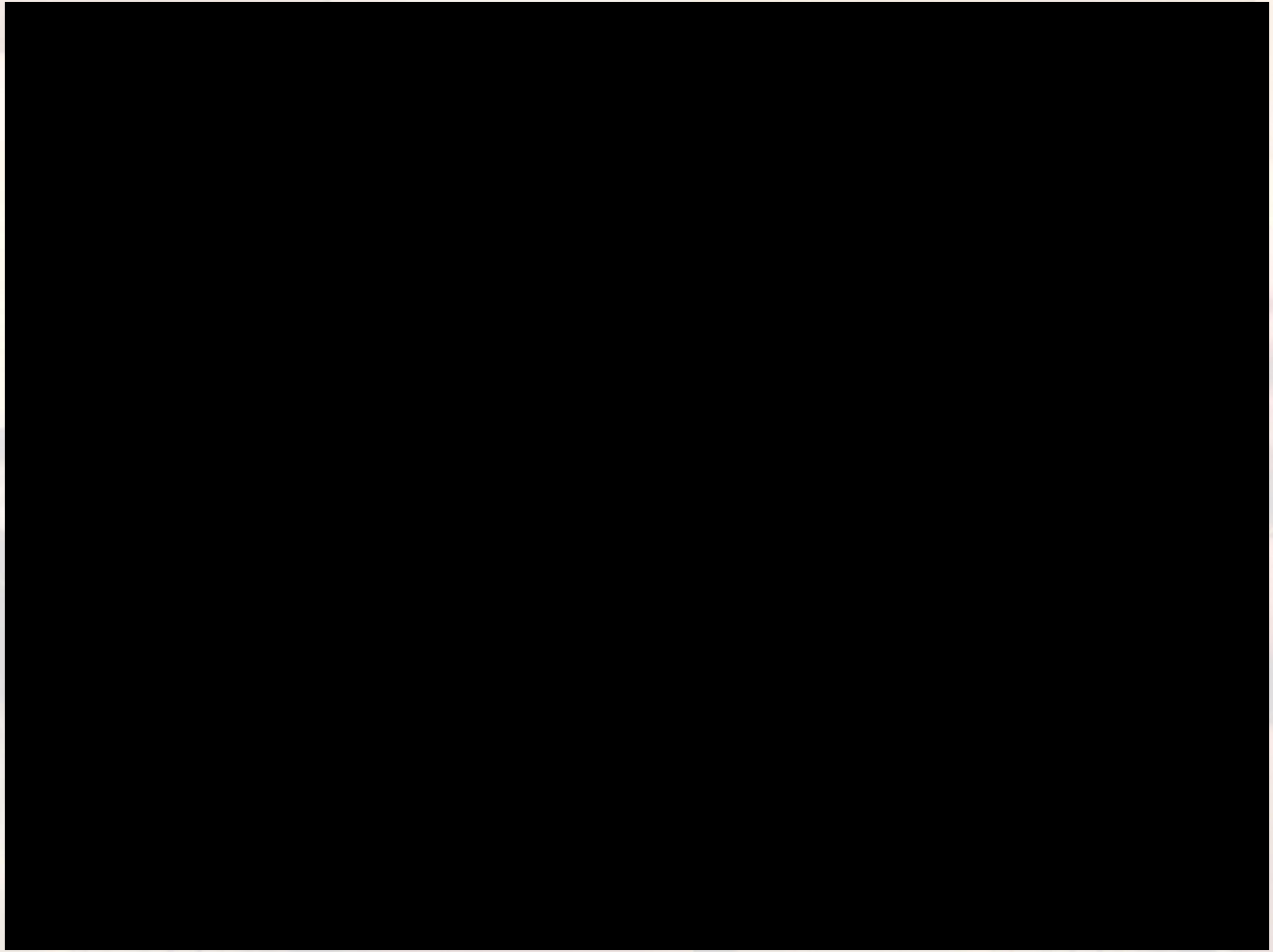
Here at MIT's Early Childhood Cognition Lab, we're trying a new approach in developmental psychology: bringing the experiments to you.

Help us understand how your child thinks

Our online studies are quick and fun, and let you as a parent contribute to our collective understanding of the fascinating phenomenon of children's learning. In some experiments you'll step into the role of a

Participate whenever and wherever

Log in or create an account at the top right to get started! You can participate in studies from home by doing an online activity with your child that is videotaped via your webcam.



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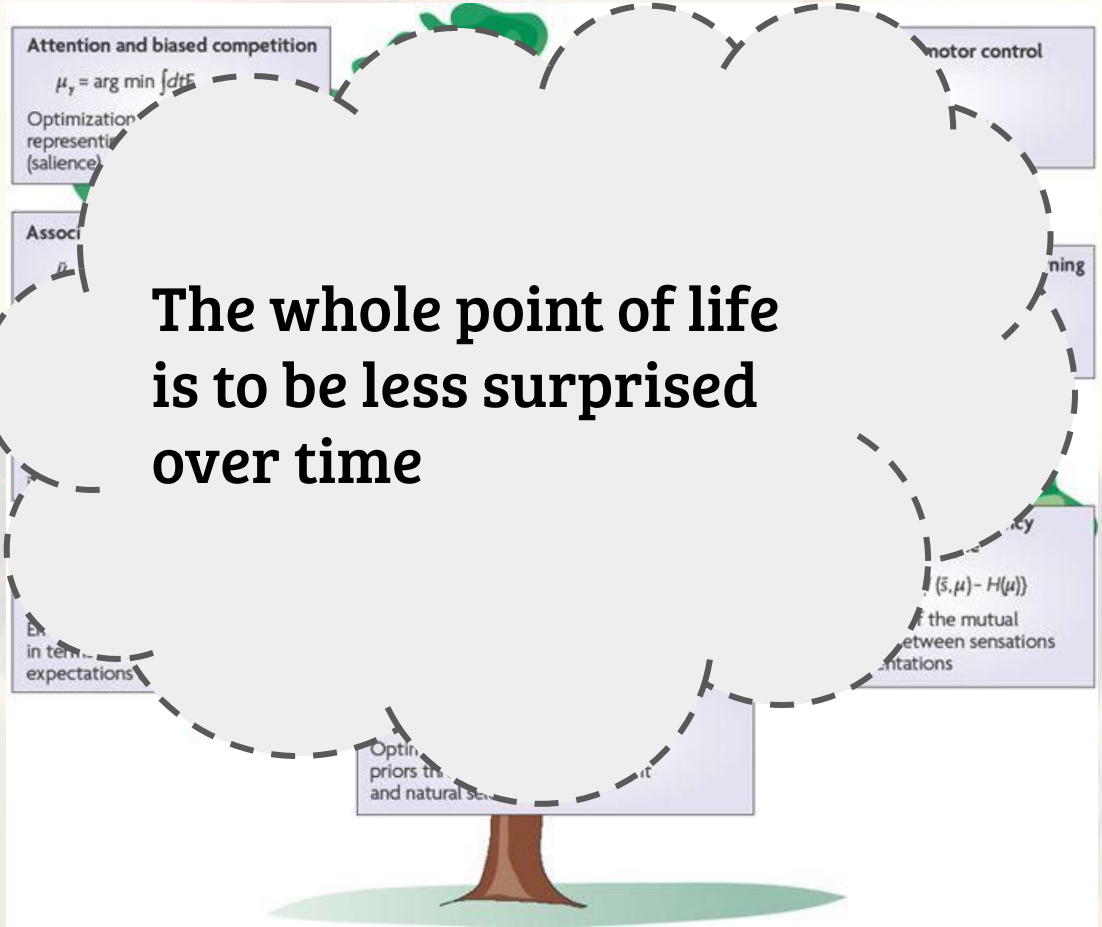
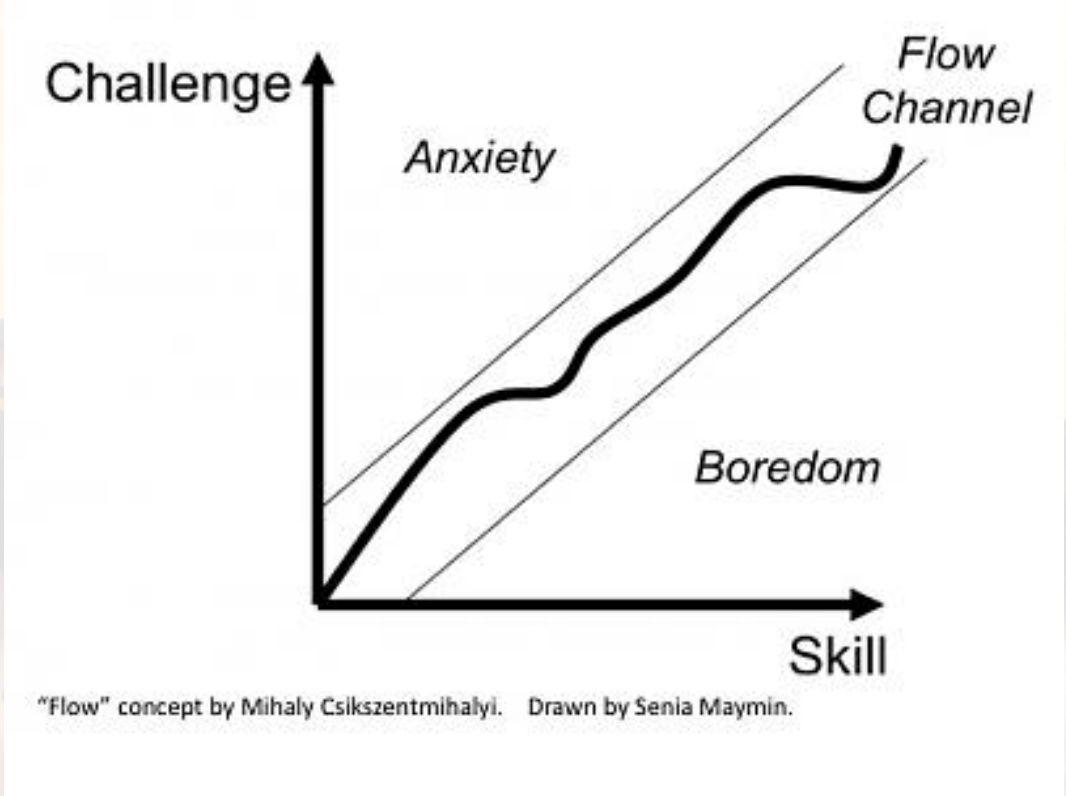
Free energy principle

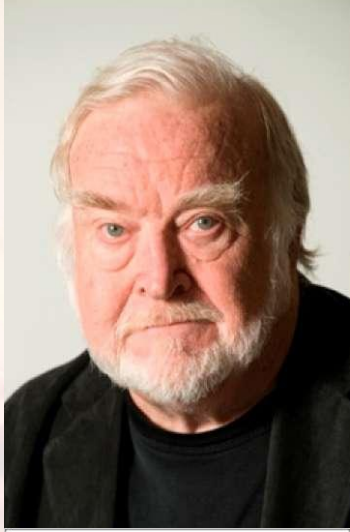


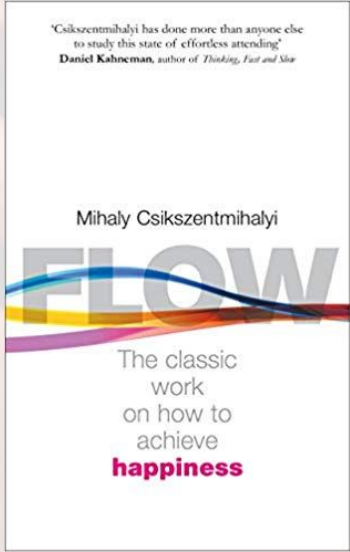
Karl Friston, 2010

Flow – Mihaly Csikszentmihalyi



"Flow" concept by Mihaly Csikszentmihalyi. Drawn by Senia Maymin.



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