Wisdom and Human Beings

What "Human Beings" Means Knowing Human Beings

Yutaka Saeki

Global Focus on Knowledge Lecture（3）

What Does it Mean: "Infants Understand Other's Minds."?

- Acquiring "theory of mind" enables infants to understand behavior when they see it in others.
- This "theory of mind" means knowledge as follows;

  (1) Human beings have "mind" which is invisible.

  (2) "Mind" consists of their wants and beliefs.

  (3) The wants and beliefs result in their "behavior."

  - Originally, "theory of mind" of chimpanzees was in the spotlight.
    - Premack, D., & Woodruff, G. 1978 "Does the Chimpanzee Have a Theory of Mind?"*Behavioral and Brain Sciences*, 1, 515-526.
  - The first study about "theory of mind" of infants followed, then "false belief task" was in the spotlight.
    - Wimmer, E., & Perner, J. 1983 "Beliefs Aabout Beliefs: Representation and Constraining Function of Wong Beliefs in Young Children's Understanding Deception." *Cognition*, 13, 103-128.

Experiments to Study the Acquisition of Theory of Mind: Guessing Another's Mind

- False Belief Task
  - Maxi put chocolate into the green box, and they leave the room.（scene 1）
  - During her absence, her mother changed it into blue box.（scene 2 ）
  - Maxi comes back, where do you think Maxi looks for her chocolate?
- Under four years; " blue box" (depending on their own belief at present)
- Over five years; "green box" (guessing other's false belief)

What Makes Infants Under Four Years Old Make a Mistake On The False Belief Task?

- “Because they don’t have “theory of mind” which means ‘ others behave rationally according to his wants and beliefs which are not always the same as “my own.”
- Since 1983, various experiments were held, but they said infants under four years old mistook the false belief task, which was established theory.

But...
A 15-month-old baby answered the false belief task correctly. "Water-Melon Moving" Experiment

Onishi, K. H., & Baillargeon, R. (2005): "Do 15-Month-Old Infants Understand False Beliefs?" *Science*, 308, 255-258

Argument About "Water-Melon Moving" Experiment

- (1) Onishi, K. H., & Baillargeon, R. (2005): "Do 15-month- Old Infants Understand False Beliefs?" *Science*, 308, 255-258.
- (2) Perner, J., & Ruffman, T. (2005): Infants' insight into the mind: How deep? *Science*, 308, 214-216
- (3) Leslie, A. M. (2005): "Developmental Parallels in Understanding Minds and Bodies." *Trends in Cognitive Sciences*, 10, 459-462.
- (4) Ruffman, T., & Perner, J. (2005): "Do Infants Really Understand False Beliefs?" *Trends in Cognitive Sciences*, 9, 462-463.
- (5) Csibra, G., & Southgate, V. (2006): "Evidence for Infants' Understanding of False Beliefs Should not be Dismissed." T*rends in Cognitive Sciences*, 10, 4-5.
- Onishi & Baillargeon; The result of experiment says that it shows that even15-month-old babies can guess rationally that another`s behavior depends on his beliefs which are different from my own belief's belief.

Why Infants Under Four year Mistook "False Belief Task" in Traditional Experiments

- People should acquire "theory of mind" at a certain age.
- The acquired "theory" is the knowledge like law or rule. (the same as the law of physics et al.)
- Once the "theory" was acquired, people can obtain the answer according to the logical structure of the task without relation to situation.
- In addition, they can say the right of the "answer" clearly with rational reason.

（It is the same method as Piaget's " conservation task）

At present, it is said that infant under 4 years have "theory of mind", though in the past they were said not to have theory of mind.

Precisely, "Theory of Mind" is a Theory, Isn't It?

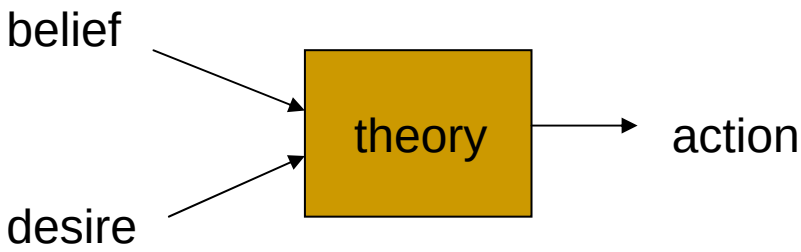
Theory-Theory: TT

vs.

Simulation-Theory: ST

Theory-Theory School

- People's actions depends on their beliefs and desires.



- Children gradually acquire "theory of mind" the same way as the knowledge of the outside world; such as the laws of physics and biology and so on.

Simulation-Theory School

- People know what they would do in their situation as tacit knowledge. (They can imagine naturally.)
- People understand others by putting themselves on others' situation, that is, to become others enables them to understand others directly, not by guessing.
  - Gordon:
    - "When I simulate I do not imagine what I would do in your situation. Rather, I directly imagine being you in your situation; and I ask myself (in imagination) what the right thing to do is."

Simulation Means “Empathy”.

- G. Currie says:
- Human beings have the ability of “imagination” by nature.
- Simulation is the imagination “try to be another person”. That is empathy.
  - *Currie, G. 1995 “Imagination and Simulation: Aesthetics Meets Cognitive Science.” In M. Davis, & T. Stone (Eds.), *Mental Simulation*. Blackwell Pub. pp. 151-169.
- Does the experiment of Ohnishi and Baillargeion shows “Simulation-theory” is effective?

The Development of "Knowledge by Sympathy" Makes 'Man' a 'Human Being'.

- Intelligence of collaboration with others is at the heart of the evolution of man on the base of sympathy.
- So, human development follows this way.

- *Tomasello, M., Carpenter, M., Cal, J., Behne, T., & Moll, H. 2004" Understanding and Sharing Intentions: The origins of Cultural Learning." Behavioral and Brain Sciences (in press).

12- Month- Old Babies Understand the Intention of Another Person .

- Nine -month- old babies gaze at the other eyes “conjugate gaze.”
- 12 -month-old babies gaze goes where adult person looks on the screen to check what he watches.
- When letting babies imitate adults switching by a forehead, 14- month-old babies help to switch on by hand in case that both hands of adults were blocked.

* Michael Tomasello, “ Understanding and Sharing of Intent”, Japan Society of Developmental Psychology 16th Conference at Kobe University, the visited Lecture.

About "Theory of Mind", Tomasselo Agrees With Simulation-Theory

- "We can understand another person because we have special resources of knowledge. That is the analogy with ourselves."
- "When they try to understand another person, human babies apply what they have already experienced about themselves."
- "When experience about one`s own activity develops, as a result of direct, new understanding about an another person develops."
- "Therefore, it is no problem that you may think my approach to be a version of the simulation model."
  - M. Tomaselo(1991), "The Cultural Origins of Human Cognition", translated in 2006 by Ohori et al. ,KeisoShobo Japan

What is Saeki's "*Kobito* theory"?

The suggestion by Saeki（1978）＊
"Impersonative Epistemology"

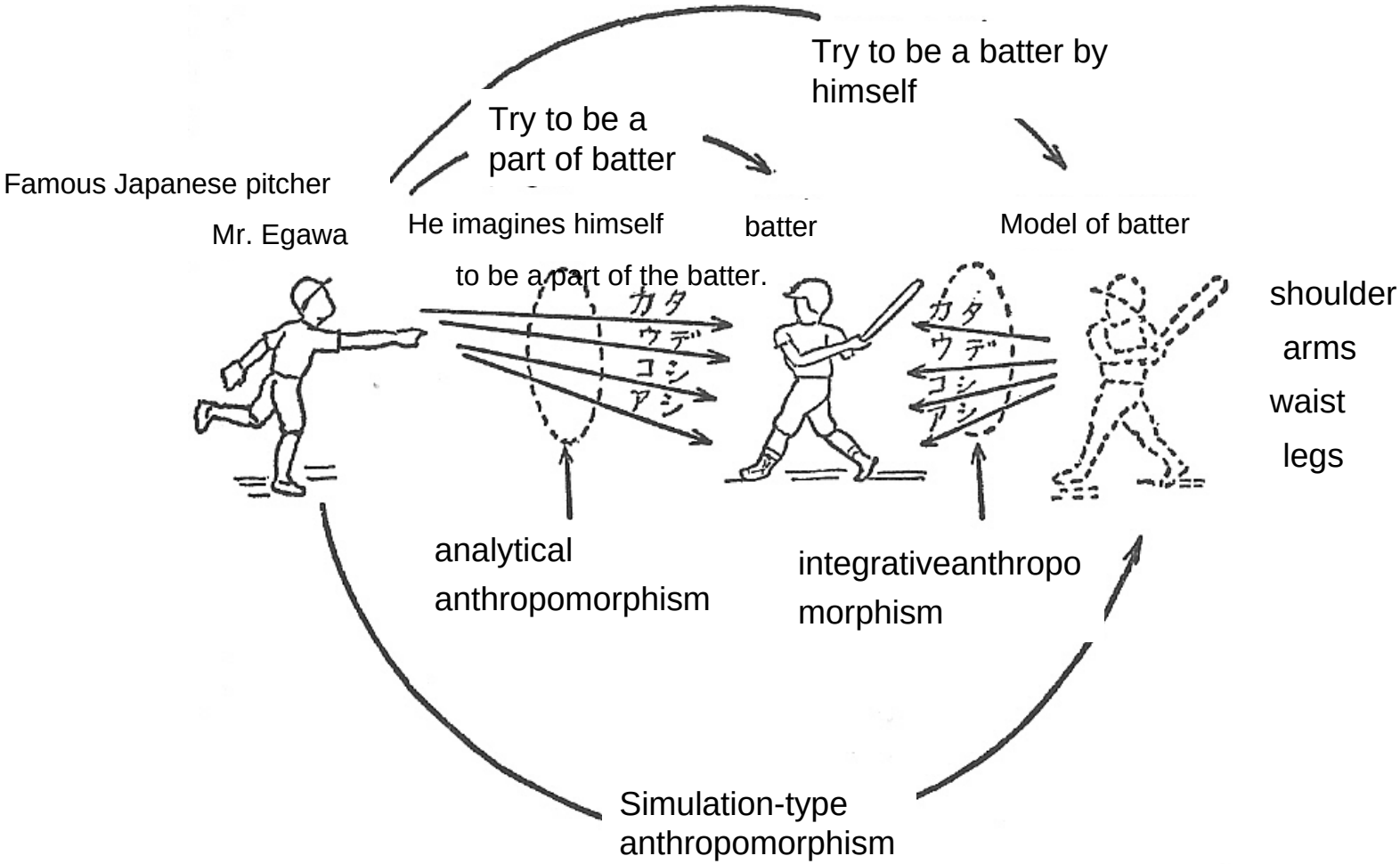
＊Y. Saeki "Knowledge and Learning by imagining" Toyokan Publishing Co.,Ltd.

30分経過　14:50

People Dispatch Their Children to the World.

- I separate many “I`s”, and then penetrate every world (thing, human being, incident)
- The “I” as child is *Kobit,* it “behaves” and “experience” without limits in the world with restriction,
- When every various experiences of *Kobit* are integrated, I “satisfied” the world.

Egawa The Pitcher Becomes a Batter.



Y. Saeki " Knowledge and Learning by Imagination" Toyokan, 1978

The Source of Epistemology About the Outside World : Activity

- All ten -week- old babies gazed with their hands closed and open.　Discovery of intention as the cause of change.
- Maine de Biran（1766-1824）thinks source of epistemology such as causality as sense of effort to
  - A. Kita “The world of Maine de Biran”, Keisoshoho, 1997, pp. 269-290.
  - MIchotte, A., (1954) showed that two points moving gives recognition of casualty, “ A leads B”, “ A blows off”, and so on.
- When babies look at “things”, they do that by bringing activities from their body. We think that Moving things move by their “intention(:cause)”（Gergely and Csibra’s experiment）。
  - Y. Saeki “ knowledge and learning by imagination Toyokan, 1978

17:05 半分(45分)経過

M. Polany “Personal Knowledge”

- “My startpoint is to remove the ideal of scientific detachment from the object. I create the new term (personal knowledge) as the title of this book. This term has seemingly contradictory adjectives. It is because authentic knowledge is non-personally and universally established thought to be objective. But, to change how to think about knowing breaks off this superficial contradiction. (Scientific detachment ： authentic knowledge leaves an individual, and assume it the objective universal existence.”detachment from personality” ）

  - Copernican Revolution: This idea put the idea that human beings were thought to be at the center of universe out of the position.
  - No. the panorama from the view of sun satisfied Copernicus more than that of the Earth

＊M.Polany (1977) “Personal Knowledge : Towards a Post-Critical Philosophy” translated by S Nagao, Harvest-sha, Inc.1985年、p. vii

Is Polany a *Kobito*-theorist ?

- “…I think that we can distinguish our inner ‘something personal’(This actively means to get into oneself) from subjective situation(This means that we are content with our feeling.) . This enables the establishment of the idea ‘something personal,’ but this is neither subjective nor objective. It is not subjective as far as it yield to demand which they request that ‘something personal’ is original in itself. But it is not objective as far as each passion leads to them. It is beyond the border between subjectivity and objectivity.”

  （translated by Nagao, p. 283, newly translated in-part by Saeki）

Again...
The Study of "Theory Of Mind"

Do Autistic Children Have a "Theory of Mind"?

- Autistic children(even over seven) can't correctly answer the false belief task (" Maxi and the Chocolate").
- Autistic children do not have "cooperative close observation."
- Autistic children do not have declarative pointing behavior.

- Autism : mind blindness？
  - S.Barron:Cohen (1995), "Mindblindness : An Essay on Autism and Theory of Mind" translated by K Nagano et al. SEIDOSHA.,Inc., 2002

Scott`s Experiment

- Unreal syllogisms
  - 1. All bananas are pink.
  - 2. John eats a banana.
  - 3. Is the banana pink?

  - 1. All fish live in trees.
  - 2. Totto is fish.
  - 3. Does Totto live in a tree?

- Participants（linguistic competence four to five years old）:ordinary children（49 months old）、LD children（12.3 years old）、autistic children（12.1 years old）

Scott, F. J., Baron-Cohen, S., & Leslie, A. 1999 "'If Pigs Could Fy': A Test of Counterfactual Reasoning and Pretence in Children With Autism." *British Journal of Development Psychology*, 17, 346-362.

Aha!
This Issue is Like Ones We Have Encountered Before.

“Logical Thinking” of Kpelle Adults

- Experimenter; The spider and the deer always eat together. Now, the spider is eating. and is deer eating now?
- Participant: Are they in the bush?
- Experimenter: Yes, they are.
- Participant: They always eat together, don’t they?
- Experimenter: Yes, they do.
- Participant:‥.

- Experimenter: (repeats the question.)
- Participant: I don’t know because I was not there. How can I answer the question?
- Experimenter: You said “no”? But you can answer if you think.
- Participant: Oh, yeah. The deer is eating.
- Experimenter: Please tell the reason.
- Participant: The deer walks around all day and eats leaves in the bush. Though it sometimes has a rest, after that it walks around and eats repeatedly.

What does the "Spider and Deer" Task Teach Us ? (About M. Cole's Shock)

- Stupidity; To study about thought without thinking of "culture" ("Piagetian" error)

  "logical thinking

  :thinking following "logic"

  :thinking by disregarding

  "the meaning of situation."

Strictly speaking, " the meaning of situation" was not disregarded, but regarded as school culture which thinks using formal logic.

Again, Back to Scott`s Experiment

- Autistic children think following formal logic.
- Normal children understand by control the character (: simulate :became *Kobito* ）when they were given the imaginative world.
- That is, “normal children” think in the world of the story.
  - Bruner says that human beings have two ways of thinking--narrative thinking and paradigmatic (logical and scientific) thinking and that psychology is under paradigmatic thinking for a long time.
    “Narrative thinking” : with literary and like drama, to express the world which the agent has the literary and dramatic intent and conflict .

J.Bluner, “Actual Minds, Possible Worlds,” translated by K. Tanaka, Misuzu Shobo, 1998

J. Bluner, “Acts of Meaning,” translated by N. Okamoto et al. MINERVA SHOBO MINERVA SHOBO, 199

Again, Back to the "Spider and Black Deer"

- In psychology, they study the paradigmatic thinking in paradigmatic way.
  - Ex. Piaget's conservation task, "Maxi and the Chocolate."
- That continued from behaviorism to cognitionism ("information processing" centerism).
- The task " Spider and Black Deer" tells us this trends to cause mistakes and the importance of "narrative" (simulation) thinking with the importance of "Culture."

What Saeki was “Taught” While Studying in the U.S.

The difference between “What *(you really think)* is true.” and “What is supposed to be true.”

17:40 あと10分

Actually, Real Scientists Think by Simulation. Becoming *Kobito* Empathetically

- Einstein: " I imagine that I run with light in the light and look around."

  This is when he was 16 years old and was the germ of the "Theory of relativity. "

M.Polany (1977) "Personal Knowledge :Towards a Post-Critical Philosophy" translated by S Nagao, Harvest-sha, Inc. p. 10

- Barbara McClintock（**She** studied chromosomes and won the Nobel Prize in Medicine) "I got into the chromosome and became a part of them, felt surrounded by component in chromosome -my colleagues I know well. "

An episode in J. R. Martin, *The Schoolhome*. Harvard University Press, 1992, p. 15.

Dr. Katsuhiko Sato(Research Center for the Early Universe) "Reasons For the Study of the Universe"

- Saeki: "Why do you think science attracted you?"
- Sato："I think it is basically I want myself that because I do science. My study is really abstract ,which is space science, but my biggest interest is where I am in the nature, and it is the best motivation of my study."
  - Space science for Dr. Sato is his own Odyssey.

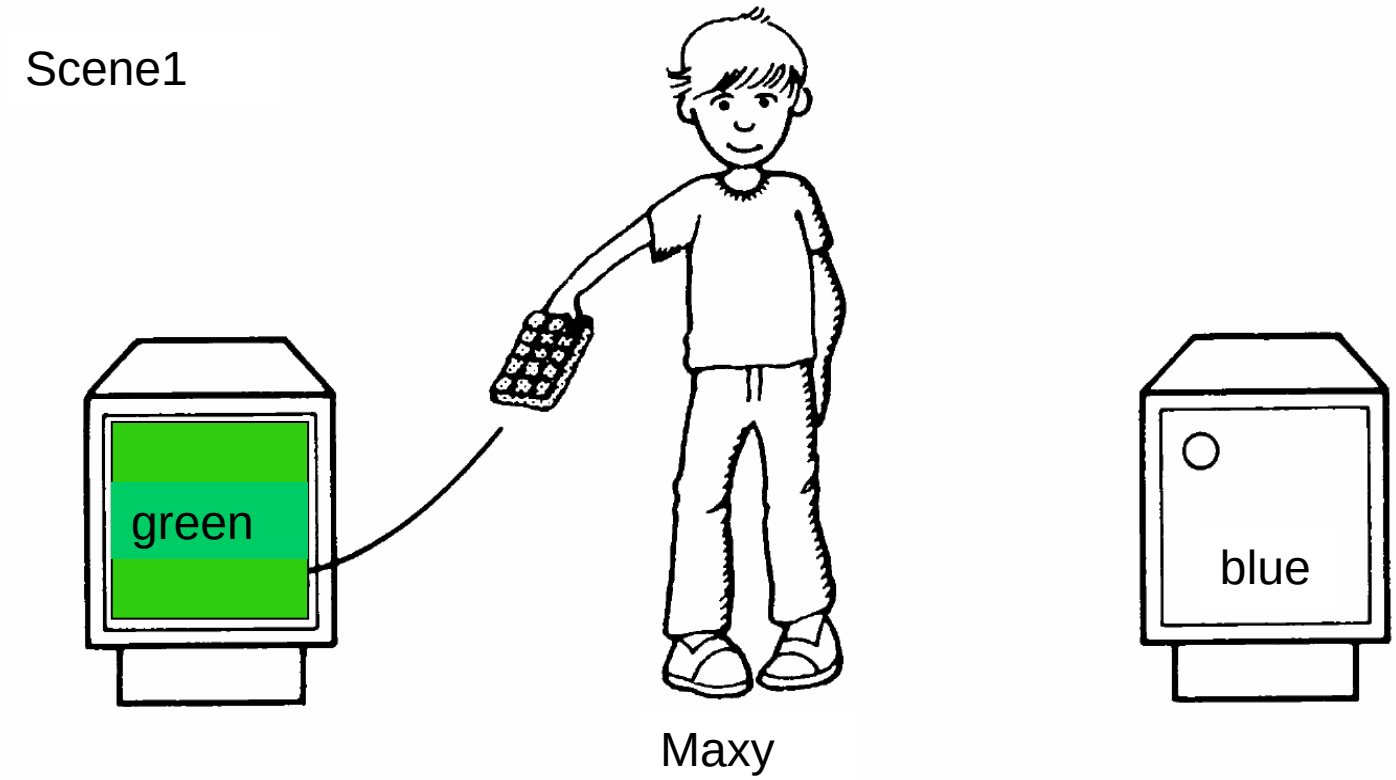
Y. Saeki, H. Fujita, M. Sato (ed.) " Scientific Culture" (series "Learning and Culture iii" University of Tokyo Press. 1995, pp. 112-113 [Discussion: convey scientific interest]

Summary

- Behaviorism ; human beings as “things”
- Cognitivism ; human beings as scheme constructs
  which request and create the meaning.
- Situated theory; human being as the existence living in the
  society and culture beyond the Interaction with
  the external world (Affordance) and
  the interaction network (connectionism)
- By the way, what has become of “individuals”?

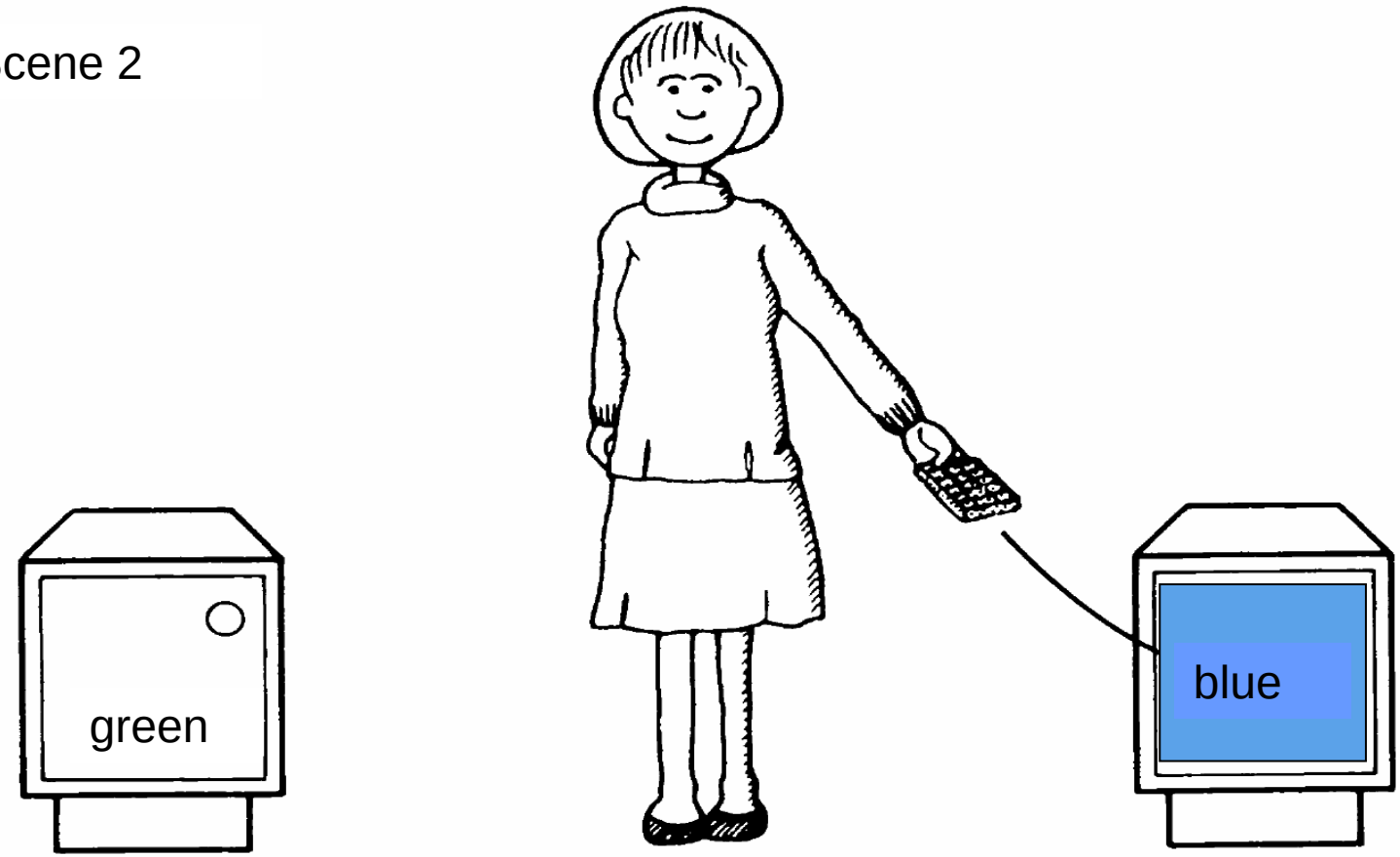
- *“ ’I’ as the existence which make interactions, work on the interaction, and have primitive activity am the existence which is satisfied by empathizing and working on anything “to know the world as the human being.”*

Appendix



Figure; P. Mitchell. “Introduction to Theory of Mind : Children, Autism and Apes,” translated in MINERVA SHOBO, 2000, p. 103

Scene 2



Criticism of "Representation"

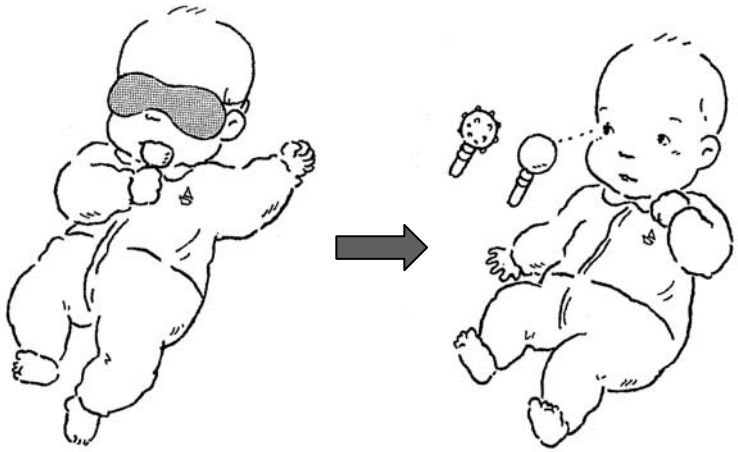
- Affordance theory
- Connectionism
- Situated theory

Common view :relationalism

That is

Relationalism Evolution

What is “ Affordance”?(2)



- Meltzoff, A. N., & Borton, R. W. 1979 “ Intermodal Matching by Human Neonates.” *Nature*, 282, 403-404.（the picture in S. Simojoh, “The Birth of The Eye” Shinyosha, 1998)

Gibson, E. J., & Walk, R. D. 1960 The “visual cliff.” Scientific American, 202, 64-71.（the picture in S. Simojoh, “The Birth of The Eye” Shinyosha, 1998)