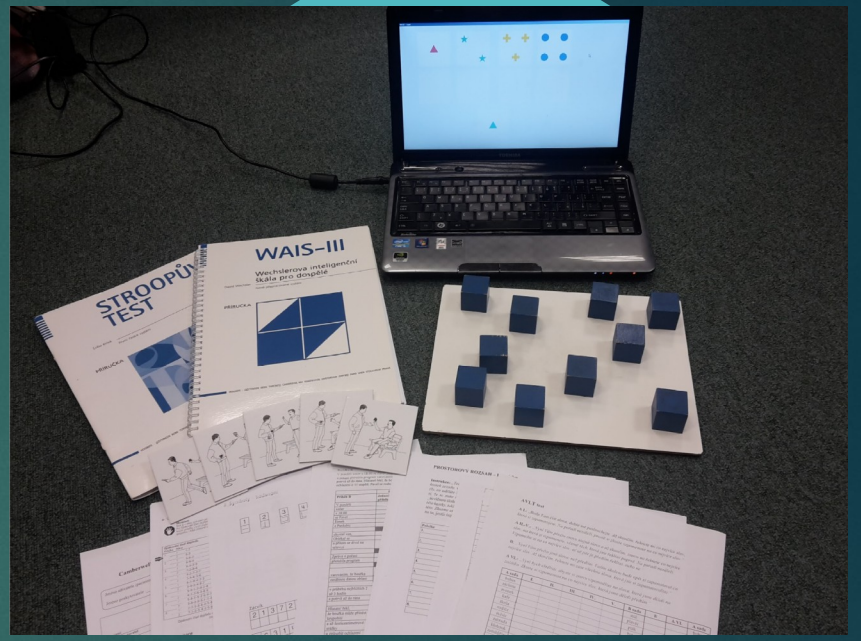
Cross-Cultural Psychology,
Summer Term 2020,
Department of Psychology,
Charles University in Prague

Cognition and culture

(HOW WE THINK DIFFERENTLY)

What is cognition – very brief summary

- Cognition – system, which gathers, processes, assesses information from outer and inner world and chooses the most appropriate answer (which responds with our goals)
- Is an adaptive function
- Cognitive functions – distinct functions, which help us to adapt effectively (e.g. attention, verbal memory, working memory, executive functions, etc.)
- Someone has a better capacity to adapt to their environment than others (i.e. better cognitive functions) – intelligence



- Different populations live in different environment and therefore:
- We cannot say one population is more (or less) intelligent than other – each adapts to the different environment differently
- We can say, that cognition (its structure) differs

"Easterners and Westerners"

- Which of these three is least like the other two:
- a dog,
- a carrot
- a rabbit

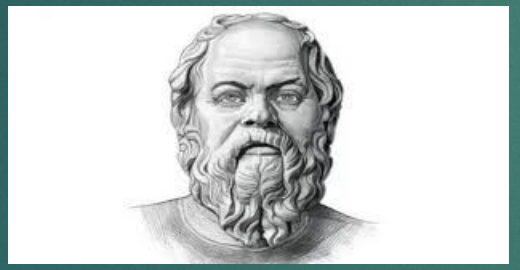
- **<u>two kinds of answers:</u>**
- the carrot (both the dog and the rabbit are animals, so they share common attributes that differ from the attributes of the carrot, which is a vegetable).
- the dog (rabbits and carrots go together because rabbits eat carrots. Rabbits and carrots have a relationship, which dogs don't share).

- Taxonomic choice
- more typical for Westerners

- Thematic choice
- more typical for Eastern Asians

“Easterners and Westerners”

- **Analytic thinking**
- Focus on objects (independent on context) and attributes and they constitute fixed categories and abstractions
- Knowledge through fixed rules
- Westerners



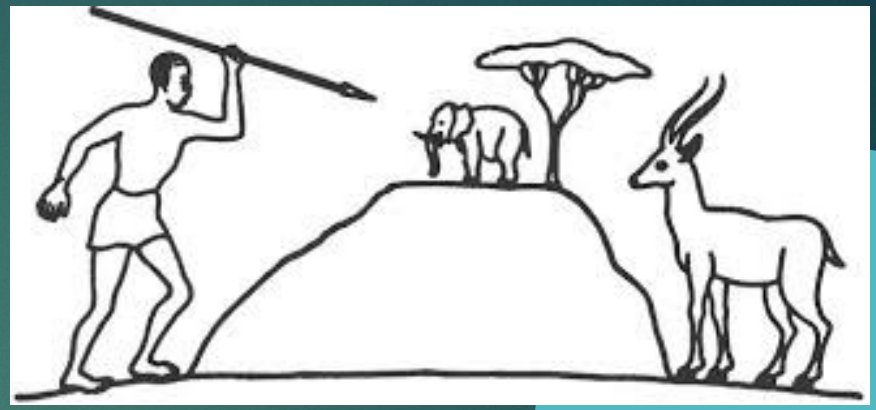
- **Holistic thinking**
- Focus on context as a whole, associations and relations
- Knowledge through experience
- Eastern Asians

- This difference originate in different experience in individualistic and collectivistic societies
- This distinction can be seen on philosophical roots of both types (Greek and Chinese philosophy) – and also language structure

Nisbett, R. E. (2003). The Geography of Thought How Asians and Westerners Think Differently--And Why.

Perception

- What does the man on the picture do?



- Tested Bantu Africans, but do not specify which Bantu, because Bantu are a large language family

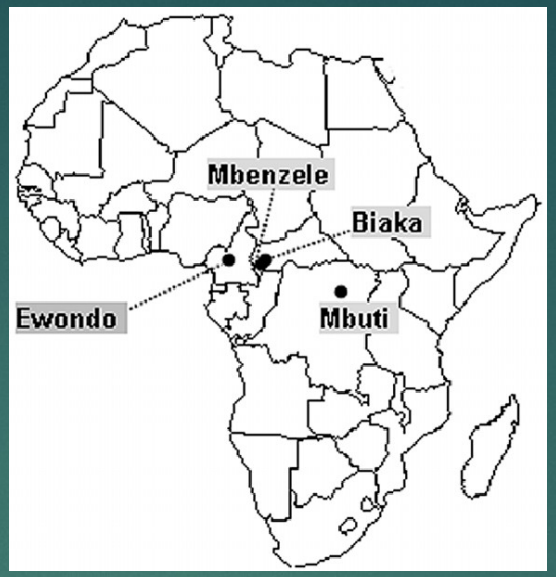
- Simple stimuli are perceived the same in all cultures
- As complexity rises, the interpretation differs

- Participants with education: "man kills antilope"
- Participants without education: "man kills elephant"

Hudson, W. (1960). Pictorial depth perception in sub-cultural groups in Africa. The Journal of Social Psychology, 52(2), 183-208.

Perception

(these are Mbuti Pygmies, but not Kenge)

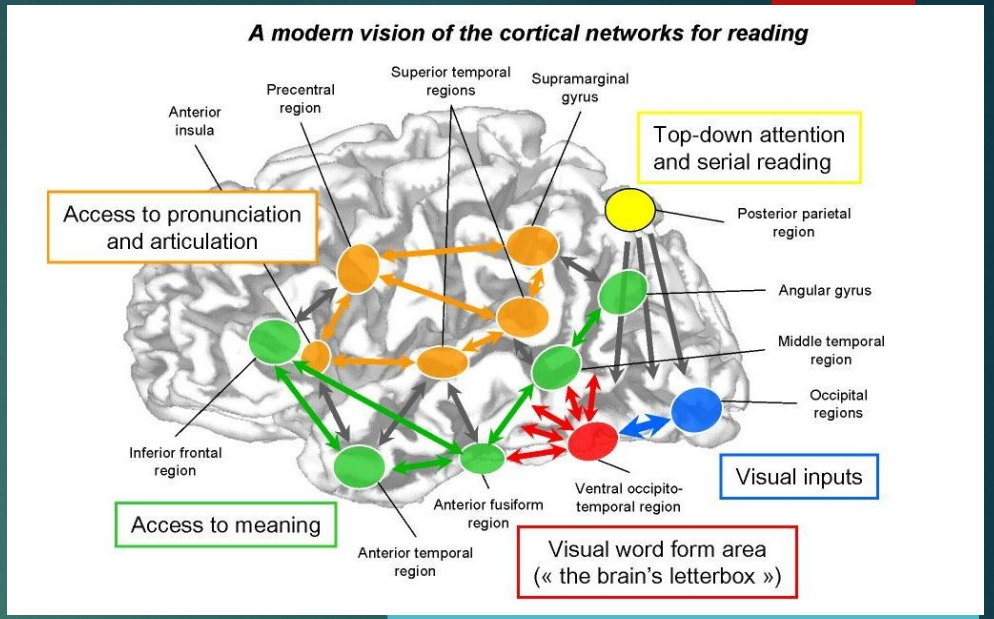


- Pygmy Mbuti man Kenge spend all his life in the rain forest. Walked with Turnbull to the clearing for the firs time in his life, Kenge saw the distant herd of buffalo
- Kenge asked, what kind of insect it was
- When he was explained, these were normal-sized buffalo, he did not understand
- When they got closer and animals n size, Kenge asked, what witchcraft it is

- Turnbull, C. M. (1961). Some observations regarding the experiences and behavior of the BaMbuti Pygmies. The American journal of psychology, 74(2), 304-308.

Effects of literacy

- Illiterates perform worse in tests focused on:
- deductive reasoning,
- abstract thinking,
- short-term memory,
- long-term memory (schooled utilize taxonomization and other mnemotechnic tools)
- categorization,
- visuo-spatial discrimination,
- numerical abilities
- Neuropsychological tests do not predict learning-to-read scores, but learning to read reinforces these cognitive functions



Ability to read is evolutionary new and complicated:
It integrates cortical regions to more effective network (processing visual, phonological, grapho-motor and symbolic information)

See Kotik-Friedgut, B., & Ardila, A. (2014). 15 Cultural-historical theory and cultural neuropsychology today. The Cambridge handbook of cultural-historical psychology, 380.

Effects of literacy – reading tips

Dehaene, S. (2009). Reading in the brain: The new science of how we read. Penguin.

- More of a neuroscience. If we could speak about bestseller in neuroscience, this would be one of them.

Luria, A. R. (1976). Cognitive development: Its cultural and social foundations. Harvard university press.

- This is classic from time when psychology was done on the green field, in the place where it was more than difficult – therefore cut out the "communist" rhetoric (mandatory for those, who wanted to present something really new those days) and you get pure psychological science in its best.

Kotik-Friedgut, B., & Ardila, A. (2014). 15 Cultural-historical theory and cultural neuropsychology today. The Cambridge handbook of cultural-historical psychology, 380.

- Nice review of culture and neuropsychology … section about illiteracy is especially good.

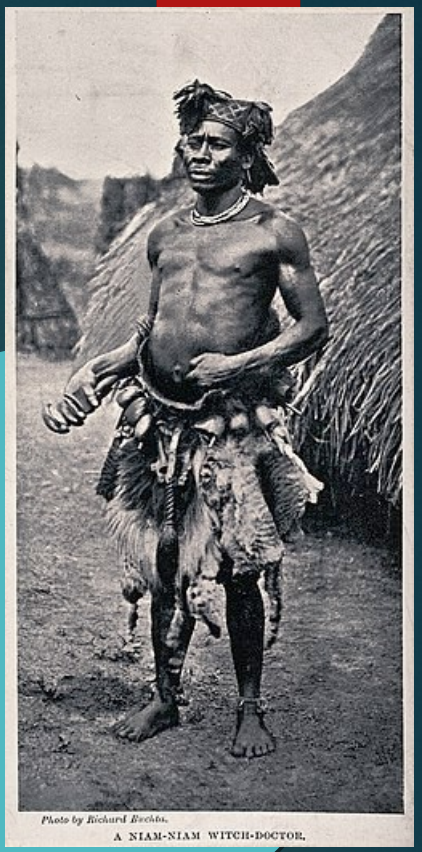
Memory – more of recreating than storing

- English participants read the Native American Folklore called "War of the Ghosts". Participants were told to remember the story, they would be asked to reproduce numerous times at extended intervals .
- At longer intervals between reading the story and remembering it, participants were less accurate and forgot much of the information from the story.
- Where the elements of the story failed to fit into the schemata of the listener, these elements were omitted from the recollection, or transformed into more familiar forms. Each participant's report of the story mirrored his or her own culture.

- Cultural models or schemata are crucial cues for remembering (in what to remember and in what order)

Bartlett, F. C. (1932). Remembering: A Study in Experimental and Social Psychology.

Magical thinking



Azande witch doctor

- Azande of South Sudan:
- the house fell, because it was bewitched.
- They acknowledge the fact, that termites ate the wood, and therefore the house fell
- But it was not the primal reason, primal reason is witchcraft
- Why would it fall just now?
- Their way of thinking is not irrational per se, only more teleological (things don't happen without reason) → also ways to cope with it are aimed at their primal reasons (i.e. witchcraft, not termites)

Evans-Pritchard, E. E. (1937). Witchcraft, oracles and magic among the Azande (Vol. 12). London: Oxford.

Executive functions

- Micronesians of Caroline Islands often sail 400 miles (or more) through sea → they developed a unique navigating system
- The navigator imagines, that the boat is static, while the world around floats
- While navigating they use one of 16 referential star, which positions remain the same during the year – and they join the stars, so they get 32 horizontal connectors
- Navigator must know exact distances – they use referential islands … where there are no islands, they imagine one (as relative to the sky) – only a small deviation from the course would mean they would get lost!
- So they divide each journey into phases (etak)
- This model is explicit and verbally shared through learning
- Bottom-line: sometimes it gets really different, really complicated and it still might work

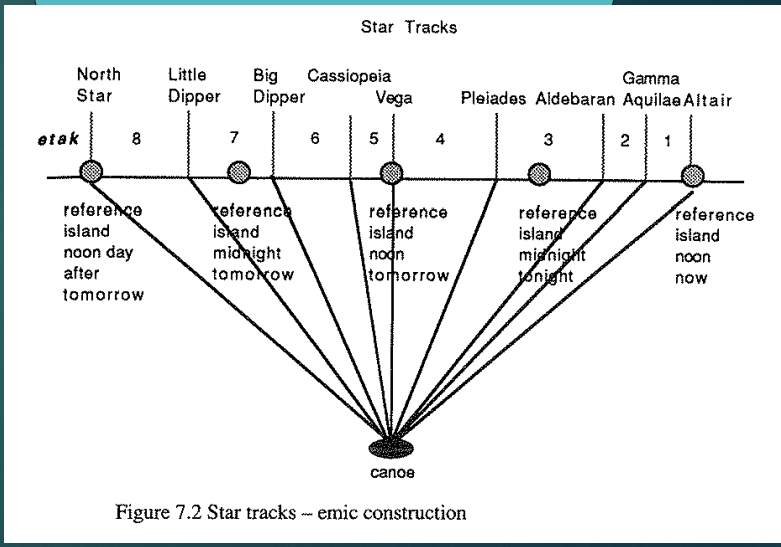


Figure 7.2 Star tracks – emic construction

GLADWIN, T. (1970). East Is a Big Bird. Harvard University Press.

Take home messages

- These examples should have shown the diversity of cultural cognition
- There is a huge number of studies, which study the effect of culture on cognition (for more comprehensive insight, look into the recommended literature)
- For these reasons, when doing cognitive tests, we need culture fair testing (i.e. tests must have a variant applicable in the particular environment and norms based on normative study on this population)