

Revolution in Social and Cultural Neuroscience: Impact on Epistemology and Philosophy of Science

Valentin A. Bazhanov (Ulyanovsk State University)

<http://staff.ulsu.ru/bazhanov>

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- *Introduction*
- ***The idea of cultural dependence of neural networks activity***
- ***Human genes and culture: a chain of mutual influences***
- ***Collectivist vs individualistic cultures: the different neurocognitive strategies***
- ***Cultural and neurobiological determination of subject of cognition activity***

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- Introduction

New understanding of the nature of subject of cognition often mean a significant turn in the development of epistemological thought.

Subject of cognition since I. Kant represented due to idea of transcendentalism. As a matter of fact this idea is a core of logocentric position of Western rational philosophy with its inclination toward cognitive reductionism.

Are latest advancements in social and cultural neuroscience suggest the reassessment of these judgements?

- ***The idea of cultural dependence of neural networks activity***

Culture has a significant impact on the objective biochemical processes in the brain and results in changes of human genome.

Genes variations, in their turn, may imply the formation and support of certain social and cultural environment, changing cognitive features of human activity in general (Baldwin effect).

Thus, we should speak of **co-evolution** of the human genome and its culture in the presence of two intertwined and interdependent trajectories of Homo sapiens: natural and historico-cultural.

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- **Human genes and culture: a chain of mutual influences**

In cultures that are considered to be *collectivist*, which are usually related to Eastern culture, dominate individuals with short alleles such as 5-HTTLPR, which mean more percentage of serotonin. Individuals with this type of alleles are less prone to anxiety.

Representatives of western deemed *individualistic* cultures, genetically (in the sense of the prevailing composition of the genome) are prone to higher levels of anxiety.

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- **Collectivist vs individualistic cultures: the different neurocognitive strategies**
- Experiments in the field of cultural neuroscience carried out in East Asia (China, South Korea, Japan), North America (European origin) and Western Europe show noticeable difference in the cognitive strategies that are characteristic of different cultures and an appropriate sets of genes.
- Some cognitive abilities genetically are present at any living creature. For example, "the sense of number", due to some basic brain structures of animals and infants - regardless of their other traits, including language and learning.

- **Cultural and neurobiological determination of subject of cognition activity**

The idea of universality of subject (transcendentality) traits should be reassessed under the angle of its socio-cultural relativity.

- Concentration at the *concrete object* or *the context* in which the object exists,
- the reliance upon *formal logic operations* or relationship of the *whole and the part*,
- *classification based on certain firm rules* or following the *situational considerations*,

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- the interpretation of the *logical contradiction as a challenge* to reason or the treatment the contradiction as *appeal to find “middle” way*,

It seems that due to advancements of modern cultural neuroscience we *are at the threshold of a new understanding* of the nature of the subject and new *expansion of relativity* idea.

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Thank you for the attention!