

【Grant-in-Aid for Transformative Research Areas (A)】

Materia-Mind: Constructing a New Human Historical Science of the Co-creation of Material and Mind (Materia-Mind)

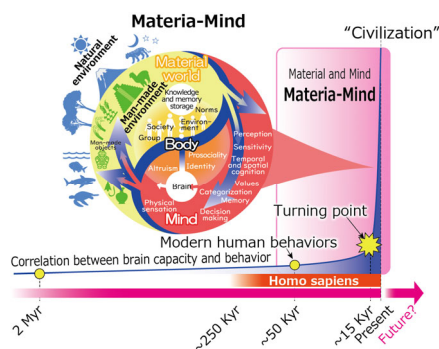
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	Project Information	Project Number : 24A102 Keywords : Materia-Mind, Human Historical Science, Niche Construction, Dynamics of Civilizations, Cognitive Archaeology	Project Period (FY) : 2024-2028

Purpose and Background of the Research

● Outline of the Research

With large and complex social organizations, advanced science and technology, and a variety of religious beliefs, including world religions, the formation of civilizations is among the qualities unique to humans. The changes seen are expanding qualitatively and quantitatively even now. To understand why this human-specific evolution occurred and how we got to where we are today, we must clarify how our civilizations developed. In other words, we need to understand how, after the appearance of Homo sapiens, the long period of nomadic hunter-gatherer life gave way to settled life and eventually led to the development of a complex society supported by various artificial tools and environments. To this end, it is necessary to understand that mind and material are inseparably linked and to clarify the process and mechanism of the “co-creation of mind and material” unique to humans, in which humans create objects and objects create humans.

This research area aims to elucidate the mechanism of the intertwining of human niche construction and changes in human cognition, body, and behavior through transdisciplinary joint research that transcends the boundaries of the humanities and sciences and to present a new model for understanding humankind's past and future in an integrated manner.



Materia-Mind: Modern human mind (Co-creation of material and mind).

● From “Out of Eurasia” to “Materia-Mind”

In the preceding project, “Out of Eurasia,” we conducted comparative and interdisciplinary research on the civilizations that developed independently by groups that left Eurasia and expanded into the Japanese archipelago, the Americas, and Oceania. The “Materia-Mind” project will further develop the leading-edge aspects of these results to clarify the mechanism by which the mind develops in tandem with the objects produced by humans.

● Collaboration of six research groups

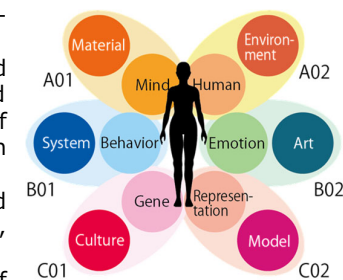
A01 (Material & Mind): Long-term change of the mind-body-cognition system evidenced in material culture

A02 (Human & Environment): Entanglement of nature and human activities, co-creation between environment and mind
B01 (Behavior & System): Limitations and possibilities of human cognitive abilities, mechanism of a major shift in cognitive abilities

B02 (Art & Emotion): Integration of cognitive science and historical science for a new understanding of behavior, brain, and culture

C01 (Gene & Culture): Evolutionary biological basis of “humanness,” modeling of new evolutionary causal structure

C02 (Representation & Modeling): Systematic acquisition of 3D models, quantitative analysis, and modeling of the formation of Materia-Mind

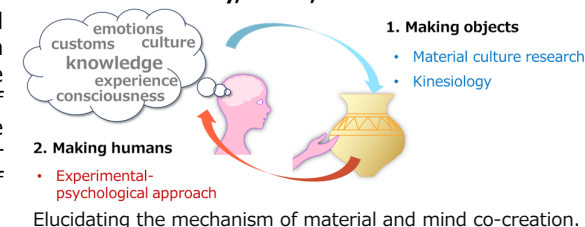


Collaborative research by six research groups.

Expected Research Achievements

● How material culture has created the human body, brain, and mind

Focusing on the role played by objects (material culture) in human history, we will clarify the process and mechanism of “material mind co-creation.” The result will help to deepen our understanding of the nature of human evolution.

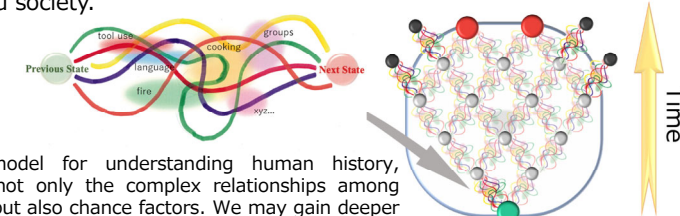


● Penetration of humanities knowledge into science (transformation of the academic knowledge structure)

The solutions to the environmental destruction, wars, poverty, and gender inequality that we are currently facing cannot be achieved through scientific and technological advances alone. Researchers involved in technological development must also be infused with “knowledge” from the humanities and social sciences. This new concept of “material mind” from joint humanities-science research will contribute to this goal.

● Proposal of a new evolutionary model

We propose a new cultural evolutionary model combining genes, neurophysiology, cognition, behavior, and society.



A new model for understanding human history, including not only the complex relationships among elements but also chance factors. We may gain deeper insight into human history through the extraction and discovery of histories that “could but didn’t happen.”

Homepage
Address, etc.

Official website <https://materiamind.ridc.okayama-u.ac.jp>

X accounts <https://twitter.com/MateriaMind>

Research group's X accounts, e.g. <https://twitter.com/materiamindA01>