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Outline of the Out of Eurasia Project

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The Out of Eurasia project focuses on the human being itself, linking nature and culture, mind and matter, and human action and cognition, and advances a new theoretical model of the development of civilization. We strategically consider the Americas, the Japanese Archipelago, and Oceania—the final destinations of Homo sapiens who left Eurasia and dispersed by overcoming bottlenecks and extreme conditions—to observe human initiatives toward the natural environment, the emergence of specific cognitions or behaviors, and the construction of relations with cohabitant species through comparative analyses. By focusing on material culture belonging to the period of the development of civilization, we aim to construct an integrative history of humankind that will clarify how the specifically human niche (ecological position) has been formed. A model of the mutual permeation of matter and mind as mediated by the body is situated at the core of transdisciplinary research to develop a clearer model to overcome both biological determinism and cultural relativism.

El proyecto “Fuera of Eurasia” se enfoca en el ser humano en sí, vinculando naturaleza y cultura, mente y materia, y acción y cognición, y presenta un nuevo modelo teórico del desarrollo de las civilizaciones. En este proyecto hemos considerado estratégicamente las Américas, el archipiélago japonés y Oceanía, destino final del Homo sapiens que abandonó Eurasia y se dispersó superando los denominados cuellos de botella y las condiciones extremas, para estudiar las iniciativas humanas de adaptación el medio natural, el surgimiento de cogniciones o comportamientos específicos y la construcción de relaciones con especies convivientes a través de análisis comparativos. Centrándonos en la cultura material perteneciente al período del desarrollo de la civilización, nuestro objetivo es construir una historia integradora de la humanidad que aclare cómo se ha formado el nicho específicamente humano (posición ecológica). Un modelo de la permeación mutua de la materia y la mente mediada por el cuerpo es escalable en el núcleo de la investigación transdisciplinaria para desarrollar un modelo más claro que supera tanto el determinismo biológico como el relativismo cultural.

At present, there are 7.7 billion humans living on earth and together with their domesticated animals they account for more than 90 percent of the terrestrial vertebrate biomass (Bar-On et al., 2018). Why have humans, with an estimated worldwide population of less than 10 million in 10,000 BCE, reached such an unusual biological “prosperity”?

Over the course of the development of civilization, specific characteristics appeared that greatly separated human behavior from other animal behavior, such as a large-scale and complex social structure, a high level of scientific technology, and a variety of religious beliefs, including massive world religions. “Civilization” is a controversial term which has often been used within a framework that considers modern Western society as the most advanced state. While such an ethnocentric view must be abandoned, the nature of this significant transformation remains an important question. In our project, we use the term “civilization” as a heuristic framework for comparative analysis of the processes that led to the significant transformation of human lives.

While the period and specific nature vary according to region, in the midst of the changes in the natural environment accompanying climatic warming from approximately 10,000 years ago, sedentism, plant and animal domestication, and the production of a diverse material culture (including pottery) began, and as population growth, concentrated settlement, and social complexity and integration proceeded, the construction of large-scale monuments and the development of rituals and religion occurred. The past development of civilization, centering on northern Africa, the Middle East, Europe, South Asia, East Asia, Mesoamerica, and South America, despite changing through subsequent exchange and development, became the sociocultural foundation of later ages. Accordingly, in order to understand how humans reached their present state, it is necessary to clarify how

the formation and development of civilization occurred.

Academic Background of the Research

Research focusing on the relationship between human biology and culture is gradually increasing, with research being advanced on how the human body (such as the brain and genetics) and culture have coevolved (Richerson & Boyd, 2004) or through attempts at describing human history from the perspective of “niche construction”, which posits that organisms modify their immediate environments in ways that in turn influence the evolution of subsequent generations (Feldman, 1992; Odling-Smee et al., 2003). There has been little advance, however, in our comprehensive understanding of what happened and in what manner over the period of the development of civilization. The reason for this can be traced to insufficient consideration of the role played by material culture produced by humans.

In multiple regions of the world, the shape of the material environment made by humans has greatly transformed both quantitatively and qualitatively over the past 10,000 years. What is common to this process during the “development of civilization” is that the social norms and behavioral patterns that had evolved within the nomadic hunting-and-gathering lifestyle and had until then been the basis of human livelihood underwent a major conversion. Understanding how this vital transformation in human history occurred will clarify the origins of urgent issues in modern society (population explosion, frequent warfare, prejudice, poverty, environmental degradation, the expansion in wealth inequality, etc.) and provide important guidelines when considering ways to remedy these problems.

In order to think about how culture is produced through the interaction of mind and matter, which have until now been conceptually treated as distinct, research perspectives

are needed which place the focus on the human body and behavior, and—(1) while falling neither into biological determinism nor an extreme cultural relativism, take humans, the living organism, and human-produced cultural variability as a single entity, and (2) overcoming the dualistic mind-body and mind-matter frameworks that have formed the basis of modern science—consider the transformation of matter, mind, and body as a single, tightly integrated system. Furthermore, in order to examine how material culture influences humans, it is necessary to undertake an integrative analysis of “art”, considering both the technological aspect that extends human physical functions and the artistic aspect that manipulates the heart by evoking symbolism and metaphor and engaging emotion.

In this regard, the Out of Eurasia project focuses on the human being itself, linking nature and culture, mind and matter, and human action and cognition, and advances a new theoretical model of the development of civilization. By focusing on material culture belonging to the period of the development of civilization, we aim to construct an integrative history of humankind that will clarify how the specifically human niche (ecological position) has been formed.

Perspective of the Research Project

Human groups that dispersed all over the world have developed a variety of cultures within the climate and topography of each location. At present, while there is some anxiety over the loss of diversity due to precipitous changes brought about by globalization, human physical and cultural continuity inherited across generations can be seen in each region. Although the interaction of mind and material as mediated by the body may change qualitatively and quantitatively within each situation, the basic mechanism should be common from the past until

the present.

What is needed now is the establishment of a new research methodology which, by focusing on that basic mechanism, integrates research results on what happened in the period of the development of civilization and what is happening at present, and achieves outcomes that could not be obtained in either of those areas separately. In research taking currently existing societies and individuals as the subject, it is difficult to isolate innate characteristics from what is formed socially and culturally; therefore, in order to clarify the specific characteristic of human nature that creates civilization, or how diversity is born, or how the human body, society, and culture have changed through those processes, it is essential to integrate multiple approaches: The study of material culture, which requires archaeological research from an empirical basis on how and in what manner change has occurred; the examination of the interaction between the environment and human cognition and behavior as mediated by the body, needing ethnographic investigation and research on neurological and psychological mechanisms; and the investigation of the movement of groups and physical changes, through studies in biological anthropology and genetic research.

Ordinarily it is difficult to test hypotheses within the field of history, as it is constituted by a series of unreproducible events. However, by systematically comparing as a “natural experiment” multiple examples of the processes of the “development of civilization” that unfolded independently under different natural environmental and historical circumstances, it becomes possible to extract relations among factors and common processes, the emergence of differences and their expansion, and so forth.

For the development of civilization on the Eurasian continent, such as in Western Asia, Europe, and China, where there was frequent interregional and intercultural exchange, it is difficult to extract from the complex

relations of influence the mutual interaction between human cognitive traits and the environment. The current project therefore considers the Americas, the Japanese Archipelago, and Oceania—the final destinations of *Homo sapiens* who left Eurasia and dispersed by overcoming bottlenecks and extreme conditions (Figure 1.1). Through this strategic regional selection in the midst of adapting to an environmental “blank page” (frontier) that no longer existed in Africa or the Eurasian continent, we can observe in purer form human initiatives toward the natural environment, the emergence of specific cognitions or behaviors, and the construction of relations with cohabitant species.

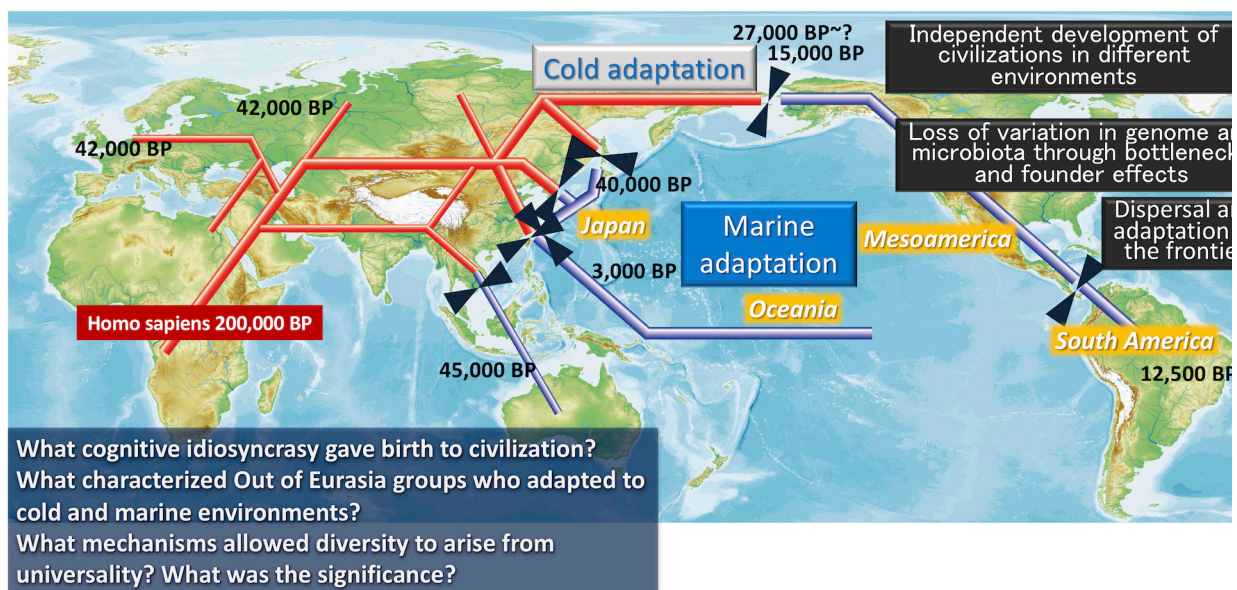
Basic Research Strategy

In order to conduct a comparative analysis of the large-scale construction of the material environment seen in the period of the development of civilization, we will situate at the core of our research strategy a model of the mutual permeation of matter and mind as mediated by the body

(Figure 1.2). Rather than taking individual cognition as confined within the brain, this perspective is based on lines of research on such concepts as the “embodied cognition” (Rosch et al., 1991), “extended mind” (Clark & Chalmers, 1998; Clark, 2003, 2008), and “distributed cognition” (Hutchins 1995), which hold that cognition is inextricably related to the material world as mediated by the body. Our model also has its roots in the continuing discussion on materiality (Ingold, 2007; Knappet, 2014) and in the idea of “external symbolic storage” as an indispensable part of human history (Donald, 1992; Mithen, 1998; Renfrew & Scarre, 1998). This line of argument has developed into the theory of material engagement, which holds that in archaeology material culture must be analyzed not simply as a product in which mind may be partially reflected, but rather as something which constitutes cognitive processes (Malafouris & Renfrew, 2010; Malafouris, 2013). Through transdisciplinary research, we aim to develop a clearer model to overcome both the established theory of biological determinism which regards man’s nature as genetically

Figure 1.1.

Map showing the regions to be studied with our research questions.



determined, and the position of cultural relativism which asserts that human society and culture should be considered independently of biological factors.

Based on this model, as a theoretical framework for considering temporal change, we adopt the theory of niche construction, which holds that organisms change their environments on their own and such changes influence the evolution of succeeding generations (Odling-Smee et al., 2003). Our working hypothesis to proceed with the project is the “triadic niche construction model” (Iriki & Taoka, 2012), which is based on experimental research on monkeys that suggests that the ability to use tools brings about changes in the brain, which in turn results in cognitive change. It holds that with the emergence of new ecological niches further changes occur in cognition and the brain. This theory is to be advanced in our project using an integrative approach centered on archaeology.

Through this integrative approach we aim to achieve an understanding of the dynamic process in which human beings as biological organisms (with genes, a body, and a brain) produced culture, while the artificially constructed environment and social norms formed thereby became the uniquely human niche (environment of adaptation), acclimation to which produced further changes in the human body and cognition.

Perspectives and Goals

The most salient of human cognitive idiosyncrasies are imaginative powers, the sharing of ideas, and, through environmental construction based on these, the ability to create new “realities”. Through comparative analysis of this process as it unfolded independently during the period of the development of civilization, the actual conditions of various locations in the Japanese Archipelago, Mesoamerica, the Andes, and Oceania will be clarified: In particular, the manner in which material culture came to

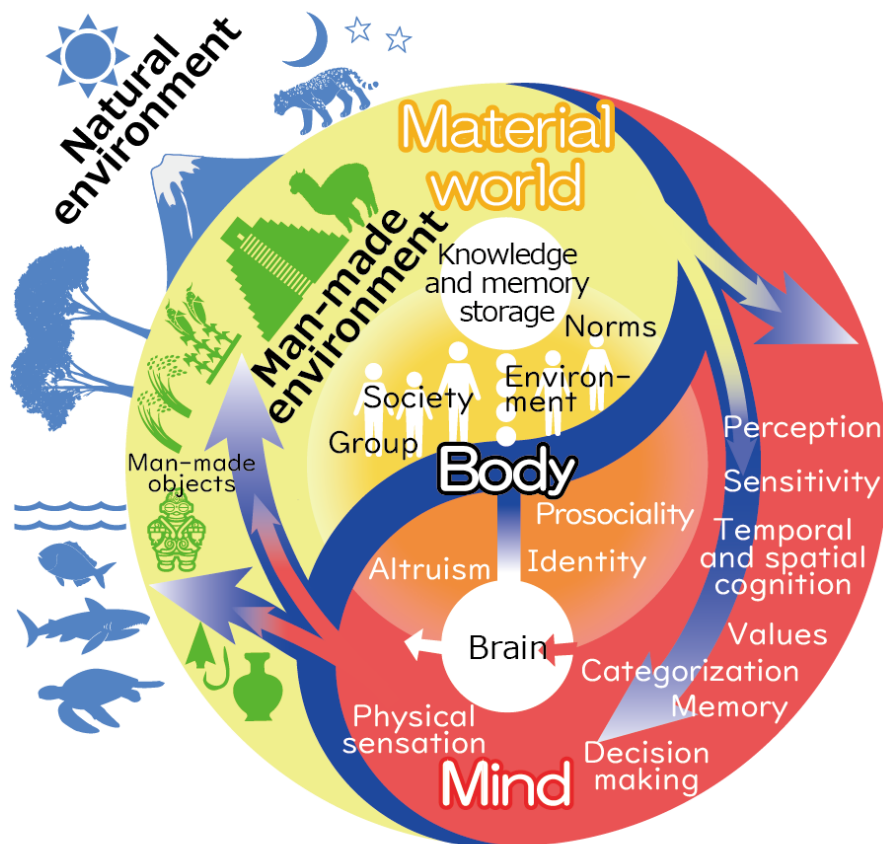
take on the role of information storage external to the brain; and how culture as a system of knowledge surpassing the abilities of individuals as biological creatures came to be formed through cognitive systems and shared information extending beyond any individual body. By shedding light on the actual state of material culture, not merely as an extra-physical means of adaptation or as a reflection of interior phenomena, but as a vital constitutive element of human cognitive activity that shapes the human mind, body, and social relations, a basis can be achieved for advancing further research.

Through archaeological, anthropological, and psychological analyses of the phenomenon by which the environment is humanized and humans are artificialized through art (technology, fine art, etc.), the historical process by which unique social realities (subjective realities that serve as norms for behavior) are formed will be clarified, thus providing new understandings of human beings and culture. Through experimental research utilizing data on social backdrops that can be inferred archaeologically, the relationship between artistic behavior and social change and the relationship of cognitive functions supporting that behavior will be made evident. Knowledge can thus be gained regarding why human artistic behavior, which has often been regarded as “impractical”, has progressed.

By matching material change with human physical change, the actual conditions of physical change resulting from artificial niche formation and adaptations to it will become clear. In this project we focus on the human groups that advanced throughout the Japanese archipelago, Mesoamerica, South America, and Oceania in order to elucidate the manner in which the processes of constructing social and cultural environments are interrelated with the following two areas: (1) The relationship between the processes of group and civilization formation and infectious diseases, health conditions, and changes in population; and

Figure 1.2.

Model of the mutual permeation of matter and mind as mediated by the body.



Mediated by the body, the mind and the material world permeate one another. Through the process of mutual creation between humans and the material world, the body also changes.

(2) differences in the ratios of particular types of genetic polymorphism that are connected to cognitive trends. These analyses will make clear in an empirical fashion the level and manner in which interaction with artificial environments, diet, and behavior influence the brain and cognition.

It will also be possible to clarify the manner in which, in the process of social stratification, the aggravation of inter-group disputes and intra-group hierarchical differentiation are related to material culture and physical changes. Additionally, cognitive and environmental factors related to the promotion and suppression of group identity and

inter-group violence will become evident.

By drawing from the perspectives of niche construction and material culture research and integrating the results of various fields regarding the relationship between cognitive niche construction and forms of environmental utilization and transformation (including domestication), a theoretical model will be constructed that integrates phenomena observed on a short-term basis with long-term change. By so doing, we hope to present a coherent view of human history linking the past and the present.

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