ANTHROPOLOGY IN COGNITIVE ERA: THE CASE OF CULTURAL MODELS THEORY[1]

Dr. Leila Ardebili[2] (Assistant Professor)

Email: ardebili@iscs.ac.ir

1. Introduction

Since cognitive revolution many disciplines have tried to reconsider their subject matters through cognitive lens, among them is anthropology. After E.B. Tyler's well-known definition of culture in 1871, anthropologists have attempted to offer presumably better definitions of the term and cognitive era provide a fruitful milieu for them to study culture from a cognitive perspective and this is how cognitive anthropology was founded.

According to D'Andrade (1995:1) Cognitive anthropology addresses the ways in which people conceive and think about events and objects in the world. Since culture is the key term of cognitive anthropology, this subfield of anthropology tries to provide a link between human thought processes and the physical and ideational aspects of culture. The scholars in this field explain the mental representations and processes that make up cultural content. On the other hand, cognitive anthropology considers Culture as mental entity.

Cognitive anthropology along with Psychology, linguistics, neuroscience, computer science/artificial intelligence and philosophy aim at contributing to a comprehensive picture of human reasoning and action by taking a cognitive perspective on cultural and psychological phenomena. However, these disciplines

[1] To cite this essay: Ardebili, L. (2024). Anthropology in Cognitive Era: The case of Cultural Models Theory, *Wisdom House*. Available at https://www.wisdomhouse.at

[2] Leila Ardebili is Assistant Professor at the Research Institute of Cultural and Social Studies, Tehran, Iran. Her area of research includes linguistic anthropology and cognitive anthropology, which are concerned with the relationship between language, mind and culture, and how these three elements interact in the cognitive ecosystem which they form together. She is the author of an *introduction to cognitive semantics* and *an introduction to cognitive anthropology*.

take different aspects on these topics with respect to content and methods. For example, while cognitive psychology is the study of the process of thought in individuals, observed in experimental settings, cognitive anthropology is the study of the content of thought (or knowledge) of community of individuals in a natural settings.

Cognitive anthropologists maintain that culture is composed of logical rules that are based on ideas that can be accessed in the mind. They emphasize the rules of behavior, not behavior itself. In order to study behavior this discipline considers a range of domains including Folk taxonomies, Interaction of language and thought and Cultural Models. In this article I want to consider Cultural Model theory as one of the most important theories of cognitive anthropology which help scholars to investigate culture.

2. Cultural Model theory

Cultural model is one of the most outstanding contemporary themes of cognitive anthropology .According to Holland and Quinn (1987) interest of cognitive anthropology in description of cultural models was inspired in 80s of the twentieth century. In anthropology, model means a certain kind of representation which is used for processing of ethnographic data or for generalization of research results (Kronenfeld, 2011: 211). Cognitive anthropologists argue that cultural models are anticipated and naturally accepted models of reality that are shared by members of society and play significant role in understanding of their world as well as of their actual behavior (Holland, Quinn, 1987: 4). Roy D'Andrade (1992) defines cultural model as cognitive scheme which is shared in inter–subjectivity by a particular group. Indeed, cultural models, generally conceptualized as shared mental constructs, are taken by people to be the basic units of culture. They are the key to forging social connections and communication, because without them we would never know whether our behaviors are appropriate and understood by others as we intended or, for that matter, whether we understand the intentions behind the behavior of others. So cultural models can be comprehended as interpretational frames (See, Trajtelová. 2013). However, they do not necessarily have to be characterized by strictly defined boundaries. The boundaries are more of flexible, permeable and pliant character. If there is a personal experience in accordance with accepted meaning or if there is an assigned and commonly accepted meaning to such individual experience, a model is reinforced. However, when encountering a different culture, an inter–cultural interaction and interlacing occurs, which can contest, modify and even change the model (ibid). Shore (1996: 49) states that long–term inter–cultural experience, creating new and unimaginable dimensions and possibilities of world perception, can significantly influence individual consciousness and cause profound changes. Cultural models emerge; they can be transformed and can also disappear.

The main assumption of Cultural Model Theory is that culture is mental knowledge shared by members of a community. This knowledge is organized into a number of mental models that are called 'cultural models'. Another assumption of Cultural Model Theory is that culture is not a whole but componential.

3. Culture is Composed of Components

Kroeber and Kluckhohn (1952:319) in their famous book *Culture: A Critical Review of Concepts and Definitions* have stated "Most anthropologists would agree that no constant elemental units like atoms, cells, or genes have as yet been satisfactorily established within culture in general. Many would insist that within one aspect of culture, namely language, such constant elemental units have been isolated: phonemes, and morphemes. It is arguable whether such units are, in principle, discoverable in sectors of culture less automatic than speech and less closely tied (in some wavs) to biological fact...". In this regard, cognitive anthropologists have tried to find the minimal unite of culture. They believe that culture can be dissected into minimal unite such as Categories, Schema and Metaphors, and by studying them we can find how mind conceptualizes phenomena in the world.

4. Conceptualization

Conceptualization is a cover term that refers to fundamental cognitive processes such as schematization and categorization and conceptual metaphors and via them we can communicate with the world and people. Schematization refers to "a process that involves the systematic selection of certain aspects of a referent scene to present the whole, disregarding the remaining aspects" (Talmy, 1983: 225) and categorization is a process by which distinct entities are treated as somehow equivalent (Rosch, 1978) and conceptual metaphors refers to the understanding of one idea, or conceptual domains in terms of another (Lakoff and Johnson, 1980). These cognitive processes naturally lead to the development of schemas (e.g. Bartlett, 1932; Rumelhart, 1980) and categories (e.g. Rosch, 1978) and conceptual metaphors (e.g. Lakoff and Johnson, 1980). Cognitive anthropologists refer to such products of human cognition collectively as conceptualizations.

Cognitive anthropologists borrow these terms from different disciplines and add "cultural" prefix to them. For example, they borrow schema and categories as the products of our cognitive capacity from psychologists, and then argue that cultural schema and cultural categories are among the most important minimal unites of culture which can be used as the analytical tools for studying cultural models. Unlike cognitive psychologists and neurologists, cognitive anthropologists claim that schemas, categories and conceptual metaphors are cultural-dependent mental entities and they vary from culture to culture. For example, In some societies, people believe that the family consists of father, mother, children, grandmother, grandfather, aunt and uncle, what anthropologists call it extended family structure. On the contrary, in some

other societies, especially modern societies, the family is made up of father, mother and children, what is called the nuclear family structure. It means that categorization of the family member vary in different societies and generation. The same thing is true with the conceptual metaphors. For example consider the metaphors of rain in different cultures. In some cultures, such as Indigenous Australians, the rain is a sign of the ancestors crying, but in some other societies, like among the Arabs, rain is conceptualized as divine mercy. The same evidence can be found about cultural schema. For example, consider funerals in different cultures. In some cultures, the Attendees at the funeral have to cry out loud, while in others, this ceremony is held in silence, and according to the social norms, the Attendees have no right to mourning loud. In other words, the voiced funeral ceremony and silent one are among the indicators that refer to the variable cultural schema in different societies.

Cognitive anthropologists claim that studying categories, schemas, and metaphors and other entities like them in a culture can help researchers to depict cultural models of societies in a given subject.

5. Concluding remarks

As it is shown in figure (1), we can compare the depth and complexity of cultural models to an Iceberg. Like an iceberg, only 10% of a cultural model is visible at any time that a large part of it is hidden beneath the surface, it means beneath people's behaviors and actions. The majority of cultural model, about 90% is hidden in Cultural Schema, Cultural Categorizations, Cultural Metaphors, and Linguistic Structures etc. Studying these components, cognitive anthropologists could illustrate how cultural models are deeply set in our mind as members of society.

We should keep in mind that cultural model as an iceberg, like any metaphor and analogy, is limited. For example, the image of iceberg is static and fixed, while cultural models are dynamic and complex. Cultural model is not a "thing" as it is shown in figure 1, ant this metaphor is just used as a means of illustration the concept of cultural model.

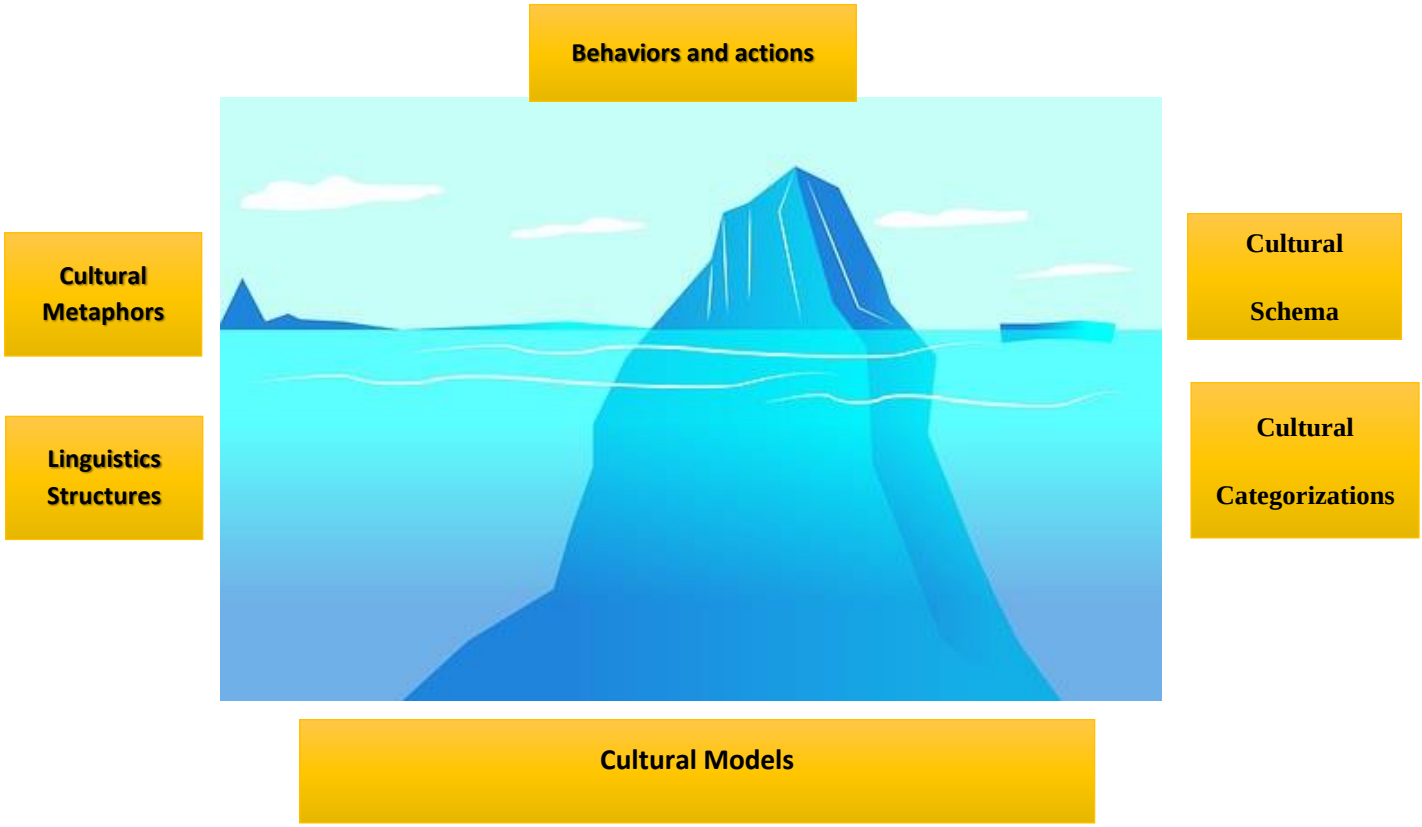

Figure 1. Cultural model as Iceberg

References

Bartlett, F. C. (1932). Remembering. Cambridge: Cambridge University Press.
D'Andrade, R. (1995). The Development of Cognitive Anthropology. Cambridge University Press.
D'Andrade, R., & Strauss, C. (Eds.). (1992). Human Motives and Cultural Models. Cambridge: Cambridge University Press.
Holland, D., & Quinn, N. (Eds.). (1987). Cultural Models in Language and Thought. Cambridge: Cambridge University Press.
Kroeber, A. L., & Kluckhohn, C. (1952). *Culture: A Critical Review of Concepts and Definitions*. New York: Vintage Books.
Kronenfeld, D. B. (Ed.). (2011). *A Companion to Cognitive Anthropology*. Malden Mass: Blackwell (Wiley-Blackwell).
Lakoff, G., & Johnson, M. (1980). Metaphors We Live By. Chicago: University of Chicago Press.
Rosch, E. (1978). Principles of categorization. In E. Rosch & B. B. Lloyd (Eds.), Cognition and Categorization (pp. 27–48). Hillsdale NJ: Lawrence Erlbaum.
Rumelhart, D. E. (1980). Schemata: The building blocks of cognition. In R. J. Spiro, B. C. Bruce & W. F. Brewer (Eds.), Theoretical Issues in Reading and Comprehension (pp. 33–58). Hill-sdale, NJ: Erlbaum.
Shore, B. (1996). Culture in Mind: Cognition, Culture, and the Problem of Meaning. Oxford: Oxford University Press.
Talmy, L. (1983). How language structures space. In H. Pick & L. Acredolo (Eds.), Spatial Orientation: Theory, Research, and Application (pp. 225–282). New York: Plenum Press.
Trajtelová, J. (2013). Cognitive Anthropology: Selected Issues. Towarzystwo Słowaków w Polsce.

COGNITIVE SCIENCE AND CULTURAL TURN[3]

Fatemeh Shafiei[4] (PhD in Cognitive Science)

Email: s.shafiee@alumni.ut.ac.ir

1. A brief introduction to cognitive science

Humanity has undergone several main stages during its evolution. The most significant ones include Agriculture and Animal Husbandry, Industrial Revolution, Information Technology, Technological Convergence which itself incorporates Nanotechnology, Biotechnology, Information Processing, and Cognitive Science. This brief note provides a broad overview of one of the branches of the convergent sciences that is cognitive science.

Cognitive science is the interdisciplinary and scientific study of the mind and its processes, drawing on insights from linguistics, psychology, neuroscience, philosophy, computer science/artificial intelligence, and anthropology. In fact, it examines the nature, the tasks, and the functions of cognition. Here, "mind" refers to a collection of brain functions and activities that can be conceptualized and modeled through scientific description and explanation. "Cognition," on the other hand, encompasses any type of mental function that can be analyzed using precise terms and concepts. Accordingly, it can be asserted that the primary focus of cognitive science is indeed the mind. The mind is a highly complex entity that simply cannot be fully examined in all its dimensions. To grasp the complexity of the mind, consider the research conducted by Lorina Naci's team (2014). Lorina Naci's research team conducted an experiment where they showed Sam, who had been in a coma for 16 years, some captivating scenes from Hitchcock's TV shows while simultaneously using advanced brain imaging devices to record his brain activity. The results were astonishing, as Sam's brain displayed a similar arousal pattern to that of individuals who had previously watched the film. Unlike what it may seem at first glance, this means that it feels as if someone is inside Sam's mind and is not entirely unaware of the surrounding events. This experiment illustrates the complexity of our minds, and when discussing the mind, we encounter something peculiar and unknown.

The fields that contributed to cognitive science development include psychology, computer science, linguistics, anthropology, neuroscience, and philosophy. These disciplines have played varying roles in the growth and evolution of cognitive science. Initially, psychology and computer science were key players,

---

[3] To cite this essay: Shafiei, F. (2024). Cognitive Science and Cultural Turn, *Wisdom House*. Available at https://www.wisdomhouse.at

[4] Fatemeh Shafiei holds a Ph.D. in Cognitive Science. Her doctoral research focused on conceptual metaphors and memory under the supervision of Professor. Habibollah Ghassemzadeh. Her thesis was recognized as an outstanding work at the *13th Farabi International Award*. She is currently conducting research in the areas of language, cognition, and culture, and has published numerous articles and research papers in this field.

followed by linguistics, anthropology, and philosophy. Although neuroscience was somewhat overshadowed in the 1970s, pioneers like Lashley and Hebb paved the way for its resurgence in the 1980s. Neuroscience, with its long history of studying the brain, has provided invaluable insights into the mind and mental processes. Since the mid-19th century, researchers have sought to identify brain function centers through the study of brain injuries. Advances in brain imaging technology have allowed for more precise examination of brain functions. Today, the study of cognitive science is inseparable from neuroscience, given the extensive research on neural mechanisms underlying human cognitive activities and processes.

During the intersection and interaction of different disciplines, the mind, which had long been overlooked in the field of psychological studies, has experienced a resurgence in prominence. Behaviorists once considered the mind to be a black box that was beyond study, leading them to focus solely on observable behavior. However, the advent of cognitive science ushered in new concepts, theoretical models, approaches, and methods for studying the mind, sparking advancements in psychology, linguistics, anthropology, neuroscience, and computer science. The era of relying on just one approach and one discipline has passed, as it is now widely accepted that no single discipline can alone fully explain the nature, function, formation, and structure of the mind and cognitive processes.

A beautiful story from ancient times perfectly illustrates the interdisciplinary nature of cognitive science, which focuses on studying complex concepts such as the mind. The parable of *The Blind Men and The Elephant* recounts the tale of six blind men who each examine a different part of an elephant and draw entirely different conclusions about what an elephant is. While each blind man is partially correct in their observations, they are also all completely mistaken. For instance, one blind man, whose hand landed on the elephant's trunk, described the elephant as "like a thick snake," while another blind man who touched the elephant's ear likened it to "a kind of fan." Similarly, the remaining blind men touched various parts of the elephant's body and formed their own interpretations based on their limited experiences. This story serves as a powerful metaphor for cognitive science, likening the mind to an elephant and the blind men to cognitive researchers. Each discipline may make significant advancements in understanding the mind, but without sharing their findings and collaborating, they risk failing to grasp the true essence of their subject—the mind. Hence, the crucial factor in comprehending an enigmatic and intricate concept such as the mind is the communication and collaboration across disciplines. This is what we mean when we talk about cognitive science.

The primary fields of cognitive science are psychology, linguistics, and computer science, as previously mentioned. Anthropology is concerned with the cultural dimensions of cognition, while neuroscience explores its biological foundations. In 1978, Miller depicted the disciplines contributing to cognitive science in a hexagon diagram. Since then, the interconnections have undoubtedly expanded and evolved into a more intricate network. Before September 11, 1956, on the second day of the *Information Theory Symposium* held at the Massachusetts Institute of Technology, each discipline had its own unique history and trajectory in the study of the mind. The events that unfolded during this symposium gradually united the various sciences in their exploration of the mind.

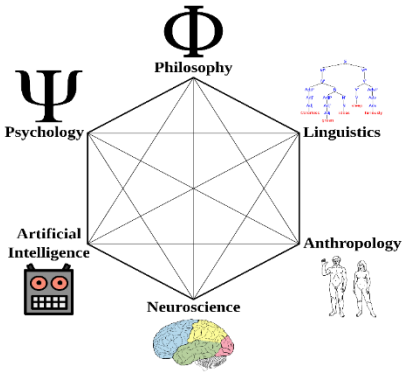

Figure 1. The Cognitive Hexagon

Adapted from Miller, George A (2003). "The cognitive revolution: a historical perspective". *Trends in Cognitive Sciences* 7.

2. Cognitive revolutions

In the field of cognitive sciences and related disciplines, we have witnessed two epistemological revolutions or better to say, development, in the modern era. These two advancements are commonly referred to as first and second generation of cognitive science. The underlying theme of both revolutions is a critique of the philosophical underpinnings of the preceding era regarding the nature of cognition and the connection between language and the mind. When examining the philosophical origins of cognitive science, it is worth noting that the first generation of cognitive science emerged from the principles and beliefs of Anglo-American philosophy and disembodied theories. In the 1950s, Hilary Putnam proposed that the mind could be analyzed based on the functions it carries out, with these cognitive functions being separate from the brain and body. These mental functions could be simulated akin to how computers operate, using abstract visual symbols. In psychology, the mind is viewed as engaging in information processing, utilizing visual cues for this processing.

The first cognitive development, which focused on the principles of analytical philosophy, formal logic, and artificial intelligence, evolved into a machine revolution. However, the second cognitive revolution protested against the machine-centric view of cognition, which ignored the bodily and cultural identity of humans. George Lakoff was a pioneer of the second generation of cognitive science. Though he was steeped in the Chomskyan school of linguistics, he raised concerns about the inefficiency of transformational grammar and linguistics. Alongside philosopher Mark Johnson, Lakoff authored two highly influential books: "Metaphors We Live By" (1980) and "Philosophy in the Flesh: The Embodied Mind and Its Challenge to Western Thought" (1999). In their book "Philosophy of the Flesh," Lakoff and Johnson assert that humans are neural creatures and that our brains receive inputs from our bodies. The authors address the question "Who are we as humans?" by highlighting three general principles: the human mind is inherently embodied, human thoughts are predominantly unconscious, and abstract concepts are largely metaphorical.

In contrast to the first cognitive revolution, which viewed the body and brain as distinct entities and cognition as an abstract concept, the second cognitive revolution, influenced by the principles of cognitive linguistics, posits that all human learned concepts are grounded in empirical evidence and shaped by embodied experiences. In the second generation of cognitive science, cognition was no longer seen as an abstract phenomenon, and the emphasis shifted to the role of embodied experience in forming cognition.

However, culture has not yet found its rightful place in the framework and remains on the periphery of more foundational cognitive research and the investigation of cognitive processes.

3. Cognitive processes and the influence of culture

Now, let me briefly discuss cognitive processes and how the role of culture is often ignored in the study of cognition. Cognitive processes are essential for our mental abilities, shaping how we perceive, think, remember, and learn. These processes play a foundational role in our interactions with the world and our comprehension of it. The key cognitive processes include attention, memory, language, thinking, reasoning, problem-solving, and executive functions. The discoveries made by cognitive scientists about these concepts have been quite surprising, particularly with the use of advanced brain imaging technologies. They argue that their findings are universal and apply to all humans. However, there is a significant gap in their research: a lack of attention to cultural influences. To better understand this point, consider the following example. Cognitive scientists have a thorough understanding of the mechanisms of attention and have identified several helpful categories, such as selective attention, flexible attention, distributed attention, and more.

But the research and literature have largely overlooked the impact of culture on attention. This may also strike you as peculiar. Broadly speaking, an individual's society and culture significantly influence what they consider worthy of attention and what they choose to disregard. For example, in some societies, individuals place significant emphasis on political matters, whereas in others, there is minimal focus on such issues. What factors contribute to this disparity? According to universalists, the structure and functioning of attention are consistent across all healthy individuals, suggesting that culture plays a decisive role in shaping these differences.

Another example that can be mentioned in explaining the impact of culture on cognition is related to the connection between flashbulb memory as a cognitive component and collectivist culture as a cultural dimension or factor. Collectivist cultures typically exhibit lower rates of flashbulb memories (Kulkofsky et al., 2011). A flashbulb memory is a vivid recollection of an emotionally significant event, typically a historic or otherwise notable occurrence. People often remember these events in great detail, as if captured in a photograph, and can recall specifics such as their actions at the time of the event or how they received news about it. For instance, where you were when you found out whether you were accepted or rejected from your dream college. On the other hand, a collectivist culture is one in which the emphasis is placed on valuing the needs of a group or community over those of individuals. Kinship, family, and community are of significant importance, with people often working together to foster harmony, where group cohesion is highly valued. Studies have shown that flashbulb memory is formed in people's memory in a different way in collectivist cultures compared to individualistic cultures. In fact, this type of memory is less common in collectivist cultures, which tend to have lower rates of flashbulb memories. As it mentioned before, memory is a cognitive component. Cognitive scientists claim that it has a somewhat universal structure across individuals. But what causes it to function so differently in two distinct cultures? If culture is not the decisive factor in shaping this type of memory, then what other factor has had such a significant impact?

4. Conclusion

The increasing number of questions, research studies, and similar cases have gradually led researchers to pay more attention to Cognitive Social Sciences and the role of culture in shaping cognition. Until now, most studies and discoveries in the field of cognitive science have focused on universals. However, in this

new era, it seems that cognitive studies are gradually shifting towards a more cultural perspective. There is increasing reflection on the significance and impact of culture on cognition formation, leading to what we now refer to as the "cultural turn" in cognitive science.

References

Kulkofsky, S., Wang, Q., Conway, MA., Hou, Y., Aydin, C., Mueller-Johnson, K., & Williams, H. (2011). Cultural variation in the correlates of flashbulb memories: an investigation in five countries. *Memory*. 19(3):233-40. doi: 10.1080/09658211.2010.551132.

Lakoff, G., & Johnson, M. (1999). *Philosophy in the Flesh: The Embodied Mind and Its Challenge to Western Thought*. New York: Basic Books.

Miller, GA. (2003). The cognitive revolution: a historical perspective. *Trends in Cognitive Sciences;* 7(3):141-144.

Naci, L., Cusack, R., Anello, M., Owen, AM. (2014). A common neural code for similar conscious experiences in different individuals. *Proc Natl Acad Sci U S A*;111(39):14277-82.