

## Chapter 4. Culture and Academic Disciplines

So, language, thought and culture are intimately tied. The impact of culture on human thinking process can not be denied.

### 4.1 Definition of Culture:

*American heritage dictionary of the English language* (3rd ed.). (1992) provides the following definitions:

“ The totality of socially transmitted behavior patterns, arts, beliefs, institutions, and all other products of human work and thought. b. These patterns, traits, and products considered as the expression of a particular period, class, community, or population: *Edwardian culture; Japanese culture; the culture of poverty*. c. These patterns, traits, and products considered with respect to a particular category, such as a field, subject, or mode of expression: *religious culture in the Middle Ages; musical culture; oral culture*. 2. Intellectual and artistic activity, and the works produced by it. 3.a. Development of the intellect through training or education. b. Enlightenment resulting from such training or education. 4. A high degree of taste and refinement formed by aesthetic and intellectual training” (p. 454).

Boas (1938) wrote

“Culture may be defined as the totality of the mental and physical reactions and activities that characterize the behavior of the individuals composing a social group collectively and individually in relation to their natural environment, to other groups, to members of the group itself, and of each individual to himself. It also includes the products of these activities and their role in the life of groups. The mere enumeration of these various aspects of life, however, does not constitute culture. It is more, for its elements are independent, they have a structure .... It has been customary to describe culture in order as material culture, social relations, art and religion” (p. 159).

Kroeber, & Kluckhohn (1952) observed

“Culture consists of patterns, explicit and implicit, of and for behavior acquired and transmitted by symbols, constituting the distinctive achievements of human groups, including their embodiments in artifacts; the essential core of culture consists of traditional (i.e., historically derived and selected) ideas and especially their attached values; culture systems may, on the one hand, be considered as products of action, on the other as conditioning elements of further action” (p. 181).

Geertz (1973) stated

“The concept of culture...is essentially a semiotic one; ...man is an animal suspended in webs of significance he himself has spun. I take culture to be those webs, and the analysis of it to be therefore not an experimental science in search of law but an interpretive one in search of meaning” (p. 5). “[Culture] denotes an historically transmitted pattern of meaning embodied in symbols, a system of inherited conceptions expressed in symbolic forms by means of which men communicate, perpetuate, and develop their knowledge about and attitudes toward life” (p. 89).

## **4.2 Cultural relativism:**

Cultural relativism infers that significant dimensions of human experience, including morality and ethics, are inherently local and variable rather than universal. Most relativists interpret and evaluate such diverse beliefs and practices in relation to local cultural frameworks rather than universal principles.

There are many variations on the theme of cultural relativism. Important variants are described below:

1. *Epistemological relativism*, the most general phrasing of cultural relativism, proposes that human experience is mediated by local frameworks for knowledge (Geertz , 1973). Most epistemological relativism assumes that experienced reality is largely a social and cultural construction and so this position is often called “social constructionism”.
2. *Logical relativism* claims that there are no transcultural and universal principles of rationality, logic and reasoning. This claim was debated in the 1970s in a series of publications featuring debates among English philosophers, anthropologists, and sociologists about the nature and universality of rationality in logical and moral judgment.

3. *Historical relativism* views historical eras as a cultural and intellectual history of diverse and changing ideas, paradigms, or worldviews.

4. *Linguistic relativism* focuses on the effects of particular grammatical and lexical forms on habitual thinking and classification.

5. *Ethical relativism* claims that behavior can be morally evaluated only in relation to a local framework of values and beliefs rather than universal ethical norms. Proponents advocate tolerance in ethical judgments to counter the presumed ethnocentrism of universalistic judgments. Opponents claim that extreme ethical relativism is amoral and potentially immoral since it can justify, by an appeal to local or historical context, any action, including acts like genocide that most people would condemn. This debate engages the highly visible discourse on the doctrine of universal human rights, and the extent to which it reflects natural rights rather than the cultural values of a politically dominant community. Important and emotionally salient issues engaged in this debate include the status of women, abortion, religious tolerance, the treatment of children, arranged marriages, female circumcision, and capital punishment.

Cultural relativism implies a fundamental human psychic diversity. Such diversity need not preclude important universals of thought and feeling. Relativism and universalism are often seen as mutually exclusive. Local cultural differences are viewed as relatively trivial compared with the shared cognitive abilities that are the products of hominid evolution.

Many cognitive anthropologists see in the relativist/universalist distinction a false dichotomy. An adequate model of mind must encompass both universal and variable properties. Although they acknowledge the importance of a shared basic cognitive architecture and universal process of both information processing and meaning construction, many cognitive anthropologists do not see cultural variation as trivial but stress the crucial mediating roles of diverse social environments and variable cultural models in human cognition.

Although cultural relativism has rarely been treated as a problem of cognitive science, Cognitive Anthropology is a useful perspective for reframing the issues of cultural relativism. For cognitive anthropologists, a cultural unit comprises a population sharing a large and diverse stock of *cultural models*, which differ from community to community. Once internalized, cultural models become conventional cognitive models in individual minds. Cultural models thus have a double life as both *instituted models* (public institutions) and conventional *mental models* (individuals' mental representations of public forms (Shore, 1999)).

### **4.3 Academic Disciplines as Culture:**

Modern science is a very complex cultural phenomenon, which admits of no simple definition. Its topics range from daily phenomena to the most abstruse corners of the cosmos – and its practitioners show an anthropological spread from individual scholars poring over ancient manuscripts to groups of workers in factory-like laboratories.

The result of scientific enquiry are *culture products* such as certified information, theories, methods, algorithms, codified in books, papers, machines, or software: transferable cultural heritage. But more important than these is the individual and social *process*. Science works

thanks to a number of individual attitudes of people participating in it (methodical, abstract, objective), as well as a largely transnational social organization which provides guarantees for the right kinds of interaction between its practitioners: criticism, objectification, cooperation across barriers of many kinds. It is this process which is ultimately the crucial concern. Cultural treasures mean nothing if they no longer correspond to a vital practice.

The birth of science is based on a strict dissociation of scientific knowledge from the various aspects of principal knowledge the conception of science and the relationship between science and the life-world has undergone major changes differences between basic, applied and trans disciplinary research, as specific forms of research stem from whether and how different scientific discipline, and actor in the life-world, are involved in problem identification, and problem structuring, thus determining how research question relate to problem fields in the life-world. Trans disciplinary research is challenged by the following requirements : to grasp the complexity of the problems, to take into account the diversity of scientific and societal views of the problems, to link abstract and case specific knowledge and constitute knowledge with a focus on problem-solving for what is perceived to be the common good (Hadron et al., 2008).

Disciplines shape scientific research by forming the primary institutional and cognitive units in academia, which the internal differentiation of science into specialize curricula, professions and research, is based Members of a discipline are specialist who build a scientific community.

Members communicate within their community, share basic assumption and examples about meaningful problems, standards for reliable and valid methods, as well as what is considered a good solution to a problem (Kuhn, 1996). What modern science gains and preserves is based

with large extent on disciplinary structures. However, boundaries between disciplines are changing.

Societal knowledge depends for a better understanding of, and solutions to, concrete issues in the life-world.

Inter disciplinary research (IDR) is a mode of research by teams of individuals that integrates information, data, techniques, tools, perspective, concepts, and/or theories from two or more discipline or bodies of specialized knowledge to advance fundamental understanding or to solve problems whose solutions are beyond of the scope of a single discipline or area of research practice (National Academies, 2005).

#### **4.4 Two Cultures and C.P.Snow**

On May 7, 1959, Charles Percy Snow gave the lecture “The Two Cultures and the Scientific Revolution” at Cambridge University (Snow & Collini, 1998). The lecture essentially contains three themes: the distinction and non-communication between the scientific culture and the literary culture in the West, the importance of the science revolution (defined by Snow to mean the application of the “atomic particles,” presumably nuclear physics and quantum mechanics), and the urgency for the rich countries to help the poor countries. Very interesting, big themes—but nothing original, as admitted by Snow himself .

The lecture generated tremendous interest and much discussion around the world, which helped to earn Snow 20 honorary degrees (mostly from universities outside of England) and carve his name in

history. While the other two themes are definitely worth talking about, it is the “two cultures” theme that causes the most controversy and debates. This is not at all surprising. Many in the literary circle felt slighted by Snow in his lecture and had to defend themselves or their profession.

The structures of knowledge, the separation of facts from values into the two cultures of what eventually would come to be called the sciences and the humanities, emerged as fundamental components of the modern world-system along with the axial division of labor and the interstate system in the long sixteenth century in Europe. The restructuring of the late nineteenth century resulted in the creation of the social sciences between the poles of the sciences and the humanities. This structure is now in crisis. Developments in complexity studies and cultural studies put into question not only the utility of the presently accepted disciplinary boundaries, but as well the attendant received epistemological, methodological, and theoretical approaches (Lee, 2011).

#### **4.5 Culture and Thought:**

Ranganathan assumed that human thinking process is universal. Based on that assumption, he formulated the idea of Absolute Syntax. He gave less importance on the role of culture on human thought. Neelameghan also followed the path of Ranganathan. Perhaps the overwhelming influence of Chomskyan revolution in the 1960's led them formulate the idea of Absolute Syntax in such way. However, the relationship between culture and thought is very complex.

The two key thinkers in this domain are Jerome Bruner and Lev Vygotsky. In the following paragraphs, their views are discussed.

Bruner proposes that it is culture, not biology, that shapes human life and human mind, that gives meaning to action by situating its underlying intentional states in an interpretive system. It does this by imposing the patterns inherent in the culture's symbolic system – its language and discourse modes, the forms of logical and narrative explication, and the pattern of mutually dependent communal life. Indeed neuroscientists and physical anthropologists are coming increasingly to the view that cultural requirement and opportunities played a critical role in selecting neural characteristics in the evolution of man ( Takaya, 2013). Bruner also finds the role of folk psychology in this regard:

Folk psychology continues to dominate the transaction of everyday life. For it is routed in a language and a shared conceptual structured that are steeped in intentional states-in believes, desirers and commitments. Folk psychology is not once for all. It alters with the cultures changing responses to the world and to the people in it. It is in terms of folk psychological categories that we experience ourselves and others. It is through folk psychology that people anticipated and judge one another, draw conclusion about the worth-whileness of their lives, and so on. Its power over human mental functioning and human life is that it provides the very means by which culture shapes human beings to its requirements. Scientific psychology after all, is part of the same cultural process, and its stance toward folk psychology has consequences for the *culture* in which it exists (Bruner, 1990, pp. 14-15)

Lev Semyonovich Vygotsky (1896 – 1934) was a Soviet Belarusian psychologist, the founder of a theory of human cultural and bio-social development commonly referred to as cultural-historical psychology. Vygotsky's main work was in developmental psychology, and he proposed a theory of the development of higher cognitive functions in children that saw the emergence of the reasoning as emerging through practical activity in a social environment. Vygotsky's most important contribution concerns the inter-relationship of language development and

thought. He proposed a theory of the development of higher cognitive functions in children that saw the emergence of the reasoning as emerging through practical activity in a social environment (Wikipedia).

If academic disciplines are considered as culture, then the obvious questions come in mind. Do the people with different subject background have different way of thinking? Do biologists and physicists have different way of thinking? Francis Crick, the Nobel Prize winner scientist has written:

“I myself knew very little biology, except in a rather general way, till I was over thirty, since my first degree was in physics. It took me little time to adjust to the rather different way of thinking necessary in biology. It was almost as if one had to be born again. Yet such a transition is not as difficult as all that and is certainly well worth the effort ”  
(Crick, 1988, p. 6).

Mathematics is the language of science. This language has its own vocabulary , syntax and semantics through which people understand the world. Apparently, it seems that mathematics is cultural neutral discipline and it is universal in nature. But it is not true. The famous mathematician Leonhard Euler (1707–1783) wrote:

“Mathematics was born and nurtured in a cultural environment. Without the perspective which the cultural background affords, a proper appreciation of the content and state of present-day mathematics is hardly possible”  
(Ben-Menahem, 2009, prelim.).

It is natural that people used to do counting in different manner before the invention of zero.

People learned counting in different way when they encountered with the concept of zero.

Anthropologists have discovered that some indigenous group can not compute fractional quantity as there is no concept of fraction in their society.

Similarly, time is a universal phenomena. It is assumed that all people perceive time in same manner.

Boroditsky (2001) pointed out that English and Mandarin talk about time differently. English predominantly talks about time as if were horizontal, while Mandarin also commonly describes as vertical. This difference between the two languages is reflected in the way their speakers think about time. In one study, Mandarin speakers tended to think about time vertically even when they were thinking for English. Another study showed that the extent to which Mandarin-English bilinguals think about time vertically is related to how old they were when they first began to learn English.

Boroditsky (2001) concluded that (1) Language is a powerful tool in shaping thought about abstract domain and (2) Once native language plays an important role in shaping habitual thought ( as for ex., how one tends to think about time) but does not entirely determine one's thinking in the strong Whorfian sense.

Merlin Donald published an excellent book entitled "*Origins of the modern mind*" in 1991. In this book, Donald proposed a theory of 'Cognitive evolution'. To establish claim, he reviewed data from various disciplines viz., neuropsychology, psycholinguistics, evolutionary biology, archaeology. He proposes:

Human symbolic culture constitutes a distinctive, species universal trait, usually thought to be the result of evolved special cognitive capacities, such as language... the flow of influence runs from cognition to culture... According to this doctrine, the co-evolutionary brain-culture spiral that characterized hominids must have been driven primarily at the cognitive level. Thus, cognitive evolution triggers cultural evolution, which triggers further brain evolution, and so on. This is the conventional meaning of brain-culture co-evolution (Donald, 2000).

He also argues that the interaction between culture and cognition is more complex, and the influence sometimes runs in the other direction, from culture to cognition. Human brains and minds can be deeply affected by the overwhelming influence of symbolic cultures during development... Some cultural changes can actually remodel the operational structure of the

cognitive system. He exemplifies the effect of literacy on cognition. In this case the brain's architecture has not been affected, at least not in its basic anatomy or wiring diagram. But its functional architecture has changed, under the influence of culture ((Donald, 2000).

Donald establishes that human thought and culture are intimately tied and both are influenced by one another. He firmly comments:

“In accepting that culture plays a major role in the development of cognition, focus must be widened permanently to include the cultural environment. The aloof, solipsistic Aristotelian mind, magnificent in its Olympian contemplation of the outside world, is dragged into the cultural streets, and forced to acknowledge that much of the representational machinery with which it contemplates the cultural world, and represents reality, had its humble beginnings in culture itself” (Donald, 2000).

#### **4.6 Multidisciplinarity-Multiculturalism-Multilingualism:**

Multidisciplinarity can be viewed from multiculturalism and multilingual point of view. People residing in multicultural and multilingual environment obviously bear different worldviews than single culture and monolingual environment. Similarly people with multidisciplinary knowledge perhaps bear a common worldview generated from the common characteristics of individual interacting disciplines.

Every discipline has its own vocabulary, principles, theories, models, and community. Some disciplines are nearer / neighbour with respect to others. For example, Physics is nearer to chemistry , politics is nearer to sociology and linguistics is nearer to psychology. The neighbourhoodness depends on common characteristics of the disciplines. A person studying a particular discipline would have grown a particular worldview. But for multidisciplinary scholars, a different type worldview will be generated out of the nature of interacting individual disciplines as multicultural people have.

## 4.7 Nisbett and Geography of Thought:

Whereas psychologists have assumed universality, many scholars in other fields believe that Westerners (primarily Europeans, Americans, and citizens of the British Commonwealth) and East Asians (principally the people of China, Korea, and Japan) have maintained very different systems of thought for thousands of years. Nisbett studied the thought patterns of Asian and American people elaborately. He reported results in his book, *“The geography of thought: How Asians and westerners think differently . . . and why.”*

Nisbett (2003) expresses his experience as follows:

“I was skeptical but intrigued. I had been a lifelong universalist concerning the nature of human thought. Marching in step with the long Western line, from the British empiricist philosophers such as Hume, Locke, and Mill to modern-day cognitive scientists, I believed that all human groups perceive and reason in the same way” (p. xii-xiii).

The shared assumptions of this tradition can be summarized with a few principles.

- Everyone has the same basic cognitive processes. Maori herders, IKung hunter-gatherers, and dotcom entrepreneurs all rely on the same tools for perception, memory, causal analysis, categorization, and inference.
- When people in one culture differ from those in another in their beliefs, it can't be because they have different cognitive processes, but because they are exposed to different aspects of the world, or because they have been taught different things.

- “Higher order” processes of reasoning rest on the formal rules of logic: for example, the prohibition against contradiction—a proposition can’t be both true and false.
- Reasoning is separate from what is reasoned about. The same process can be used to think about utterly different things and a given thing can be reasoned about using any number of different procedures.

Nisbett notes,

“The Chinese believe in constant change, but with things always moving back to some prior state. They pay attention to a wide range of events; they search for relationships between things; and they think you can’t understand the part without understanding the whole. Westerners live in a simpler, more deterministic world; they focus on salient objects or people instead of the larger picture; and they think they can control events because they know the rules that govern the behavior of objects.” (p.xii).

European thought rests on the assumption that the behavior of objects—physical, animal, and human—can be understood in terms of straightforward rules. Westerners have a strong interest in categorization, which helps them to know what rules to apply to the objects in question, and formal logic plays a role in problem solving. East Asians, in contrast, attend to objects in their broad context. The world seems more complex to Asians than to Westerners, and understanding events always requires consideration of a host of factors that operate in relation to one another in no simple, deterministic way. Formal logic plays little role in problem solving. In fact, the person who is too concerned with logic may be considered immature.

If the scholars in the humanities and other social sciences were right, then the cognitive scientists were wrong: Human cognition is not everywhere the same. Without putting it in so many words, the humanities and social science scholars were making extremely important claims

about the nature of thought. First, that members of different cultures differ in their “metaphysics,” or fundamental beliefs about the nature of the world. Second, that the characteristic thought processes of different groups differ greatly. Third, that the thought processes are of a piece with beliefs about the nature of the world: People use the cognitive tools that seem to make sense—given the sense they make of the world.

If people really do differ profoundly in their systems of thought—their worldviews and cognitive processes—then differences in people’s attitudes and beliefs, and even their values and preferences, might not be a matter merely of different inputs and teachings, but rather an inevitable consequence of using different tools to understand the world. And if that’s true, then efforts to improve international understanding may be less likely to pay off than one might hope.

The research shows that there are indeed dramatic differences in the nature of Asian and European thought processes.

Nisbett (2003) put some questions :

*Science and Mathematics* Why would the ancient Chinese have excelled at algebra and arithmetic but not geometry, which was the forte of the Greeks? Why do modern Asians excel at math and science but produce less in the way of revolutionary science than Westerners?

*Attention and Perception* Why are East Asians better able to see relationships among events than Westerners are? Why do East Asians find it relatively difficult to disentangle an object from its surroundings?

*Causal Inference* Why are Westerners so likely to overlook the influence of context on the behavior of objects and even of people? Why are Easterners more susceptible to the “hindsight bias,” which allows them to believe that they “knew it all along”?

*Organization of Knowledge* Why do Western infants learn nouns at a much more rapid rate than verbs, whereas Eastern infants learn verbs at a more rapid rate than nouns? Why do East Asians

group objects and events based on how they relate to one another, whereas Westerners are more likely to rely on categories?

*Reasoning* Why are Westerners more likely to apply formal logic when reasoning about everyday events, and why does their insistence on logic sometimes cause them to make errors? Why are Easterners so willing to entertain apparently contradictory propositions and how can this sometimes be helpful in getting at the truth?

Where to look for the causes of such vastly different systems of thought? Do they lie in biology? Language? Economics? Social systems? What keeps them going today? Social practices? Education? Inertia? And where are we headed with the differences? Will they still be here fifty or five hundred years from now?

Nisbett presented participants with sets of three words (e.g., panda, monkey, banana) and asked them to indicate which two of the three were most closely related. The American participants showed a marked preference for grouping on the basis of common category membership: Panda and monkey fit into the animal category. The Chinese participants showed a preference for grouping on the basis of thematic relationships (e.g., monkey and banana) and justified their answers in terms of relationships: Monkeys eat bananas.

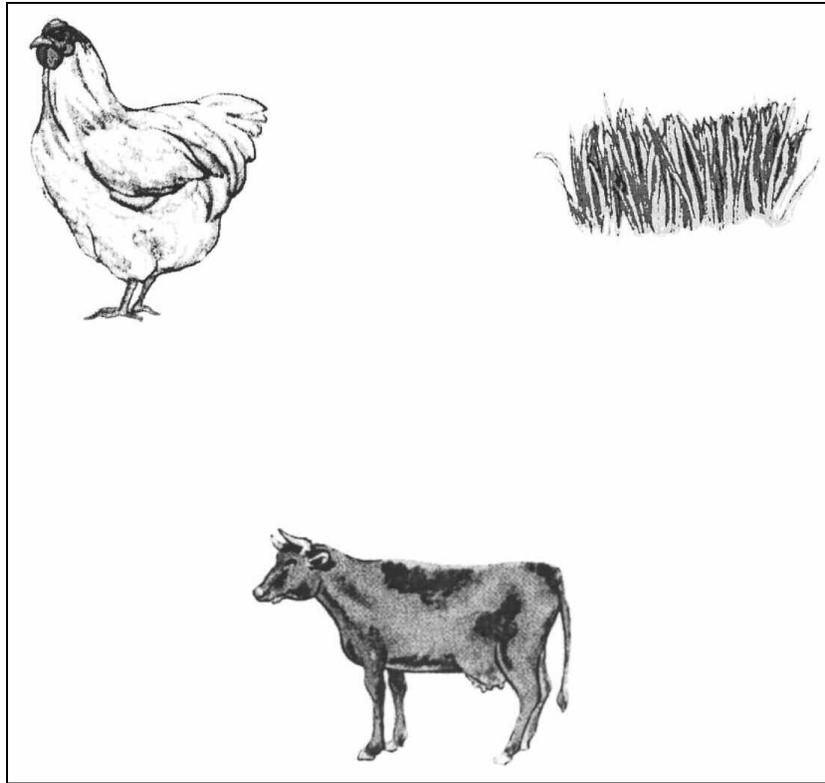


Figure 4.1: What goes with this? A or **B**. Example of item measuring preference for grouping by categories vs. relationships (Nisbett, 2003, p.141)

Developmental psychologist Liang-hwang Chiu showed triplets like that in the illustration to American and Chinese children. Chiu found that the American children preferred to group objects because they belonged to the "taxonomic" category, that is, the same classification term could be applied to both ("cow," "hen"). Chinese children preferred to group objects on the basis of relationships. They would be more likely to say the cow and the grass in the illustration go together because "the cow eats the grass."

Are the findings about knowledge organization simply due to the fact that Western languages encourage the use of nouns, which results in categorization of objects, and Eastern languages encourage the use of verbs, with the consequence that it is relationships that are emphasized? (Nisbett, 2003,p. 155).

According to linguistic anthropologists Edward Sapir and Benjamin Whorf, the differences in linguistic structure between languages are reflected in people's habitual thinking processes. This hypothesis has moved in and out of favor among linguists and psychologists over the decades, but it is currently undergoing one of its periods of greater acceptance. Some of the evidence about language and reasoning speaks directly to the Sapir-Whorf hypothesis (Nisbett, 2003, p.159).