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Distributed, emergent cultural cognition, conceptualisation and language

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Abstract

This chapter presents an integrative view of cognition as a system that emerges from the interactions between the members of a cultural group. Members of a cultural group negotiate and renegotiate their *emergent cultural cognition* across time and space. Emergent cultural cognition is the locus of *cultural conceptualisations* such as *cultural models, cultural schemas* and *cultural categories.* Another integral aspect of emergent cultural cognition is language in that human languages largely embody the cultural conceptualisations of their speakers.

In terms of their representation, cultural cognition, cultural conceptualisations and language are *heterogeneously distributed* across the minds in a cultural group, rather than being equally imprinted in the mind of each individual. Overall, cultural cognition and language appear to reveal properties of complex adaptive systems. This chapter elaborates on these notions and provides examples of cultural conceptualisations and their instantiations in various aspects of human languages.

Key words: Heterogeneously distributed cognition, cultural conceptualisations, cultural cognition, cognitive linguistics, emergent cognition, cultural models, schema, complex adaptive systems.

1. Introduction: The locus of cultural cognition

In classical circles of cognitive psychology the word “cognition” has largely been associated with mind and mental activity. Different paradigms within cognitive psychology have, however, not agreed upon the nature of the human cognitive system. Proponents of what came to be known as *classicism* (Newell 1980) viewed cognition as a

symbolic system whereas advocates of connectionism (Davis 1992) viewed cognition as emerging from interactions among networks of interconnected processing units called *neurons*.

The notion of cognition did not remain a focus only within the field of cognitive psychology but attracted the interest of scholars from other disciplines such as biology, linguistics and anthropology. This led to the development of the mega-discipline called "cognitive science" and also to the emergence of sub-fields such as cognitive anthropology and cognitive linguistics.

One of the natural consequences of the development of interdisciplinary approaches to the study of cognition was a revisiting and in fact expansion of the notion of cognition. Not all scholars within the areas of cognitive science have been interested in finding out about what goes on inside the mind of an isolated individual. Some have been more inquisitive about population-level and group-level correlates or consequences of cognitive processes. The expansion of the notion of cognition took place along several lines. One group of scholars took interest in the interaction between the human mind and the environment. Hutchins, an anthropologist and a cognitive psychologist, and his colleagues, for example, observed that human cognition constantly interacts with an environment that is rich in organizational resources (Hutchins 1994). For Hutchins, cognition is distributed across individuals, tools and artefacts.

Another departure from the limited scope of cognition in traditional cognitive psychology has been equating cognition with action (see Bernárdez *this volume*) as well as activity that is socially situated. In an introduction to a field guide, Anderson (2003: 91) states that:

> For over fifty years in philosophy, and for perhaps fifteen in Artificial Intelligence and related disciplines, there has been a re-thinking of the nature of cognition. Instead of emphasizing formal operations on abstract symbols, this new approach focuses attention on the fact that most real-world thinking occurs in very particular (and often very complex) environments, is employed for very practical ends, and exploits the possibility of interaction with and manipulation of external props. It thereby foregrounds the fact that cognition is a highly *embodied* or *situated activity*

> – emphasis intentionally on all three – and suggests that thinking beings ought therefore be considered first and foremost as acting beings.

The above quote clearly highlights two directions in which the notion of cognition has been expanded, that is, "situated" activity and "embodiment". The embodiment thesis, in general terms, views cognition to be mediated by our bodily experience. The exact relation between the body and human cognition and the interpretations given to the word "body", however, have varied from overlapping views to conflicting and contrasting ones (e.g., Violi 2003, *this volume*; Wilson 2002). In this context, again, different interpretations of the notion of "cognition" have had epistemological consequences for how the notion of "body" has been viewed and for the role that has been attributed to it in relation to cognitive activities (see more in Violi 2003, *this volume*).

Another dimension along which the notion of cognition has been expanded is the dimension of culture. Scholars with interest in both cognition and culture have been exploring how culture and cognition interact with each other and with other systems such as language (e.g., Cole 1996; D'Andrade 1995; Hutchins 1994; Shore 1996; Strauss & Quinn 1997, 1995; Tomasello 1999). As in other approaches to the study of cognition, various scholars in this area have not totally agreed on the nature of the relationship between culture and cognition or even on what constitutes culture and/or cognition. For some, cognition is an aspect of culture in that culture influences various cognitive processes (e.g., Altarriba 1993; Redding 1980). Sperber and Hirschfeld (1999: cxv) view the relationship between culture and cognition along two dimensions, reflected in the following statement:

> The study of culture is of relevance to cognitive sciences for two major reasons. The first is that the very existence of culture, for an essential part, is both an effect and a manifestation of human cognitive abilities. The second reason is that the human societies of today culturally frame every aspect of human life, and, in particular, of cognitive activity.

Within the paradigm of cognitive linguistics many subscribe to the view of Langacker (1994), namely, that culture is primarily a cognitive phenomenon, with individual minds as its locus. Langacker, however, acknowledges that not all aspects of culture are represented in the human mind.

2. Emergent cultural cognition

I maintain that 'cognition' may also be viewed as a property of cultural groups, and not just individuals. I refer to this level of cognition as *emergent cultural cognition* in the sense that what is being described as cognition here is an *emergent* system (e.g., Johnson 2001) resulting from the interactions between the members of a cultural group across time and space. This of course does not confine the scope of culture to the cognitive domain. *Emergent cultural cognition* may be instantiated in various aspects of people's lives including aspects of their physical environments, artefacts, tools, rituals, painting, dance, etc.

Cultural cognition is *heterogeneous* in the sense that it is *heterogeneously distributed* across the minds in a cultural group. The distribution of cultural cognition extends across the dimensions of time and space. Members of a cultural group negotiate and renegotiate their cultural cognition across generations, vertically, and, horizontally, through a multitude of communicative events. The notion of cognition here encompasses complex systems that are dynamic and ever evolving, rather than a fixed set of representations that extend to a cultural group. Cross-sectionally, the notion of distributed, emergent cultural cognition may be diagrammed as Figure 1.

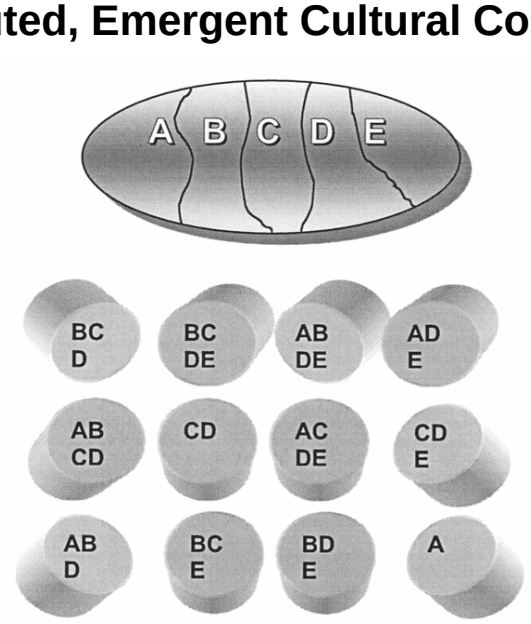

Figure 1. Distributed, emergent cultural cognition.

This simple figure is perhaps the closest visual depiction that can be offered of the distributed, emergent cultural cognition. In this figure the top part represents the "global" cultural cognition that emerges from the interactions between the members of a cultural group while the lower part is meant to represent the way in which cultural cognition is distributed "locally" across the individual minds of the group members. The overall figure here reflects how emergent properties of cognition at the group level supersede what is represented in the mind of each individual. It should of course be kept in mind that emergent properties arise from the interactions between the group members, a process that does not lend itself readily to a static visual sketch. A crucial point that needs to be kept in mind when viewing Figure 1 is that the distribution that is being modelled extends to the dimension of time, a diachronic aspect of cultural cognition that cannot be visually shown in a simple two-dimensional picture. Another point that is meant to be reflected in Figure 1 is that members of a cultural group might share some but not every aspect of their cultural cognition with other members and the pattern is not exactly the same for all individuals across the cultural group (see Borofsky 1994), that is, two members may share more from their cultural cognition than others. In other words, as mentioned earlier, cultural cognition is *heterogeneously distributed* across the members in a cultural group.

The above-mentioned view of distributed cognition is an initial step in the direction of constructing the type of ideational account of culture that Keesing (1987: 371) had in mind when he said: "An ideational theory of culture can look at cultural knowledge as distributed within a social system, can take into account the variation between individuals' knowledge of and vantage points on the cultural heritage of their people." It is this variation between individuals'

knowledge of cultural conceptualisations that my use of the term "heterogeneously distributed cultural cognition" is intended to highlight. It should be stressed here that I do not view the ultimate level of cultural cognition in terms of fixed representations inside the mind of individuals but as emergent properties resulting from the interactions between members of a cultural group. This conception of distributed cognition seems also to be implied in Kronenfeld's (2002: 430) statement that "culture has no existence outside of our individual representations of it, and since these representations are variable, there exist no single place where the whole of any culture is stored or represented. Thus, culture is necessarily and intrinsically a distributed system". Kronenfeld also observes that culture is not merely fixed knowledge, but productive representations of a growing repertoire capable of generating new responses to novel situations that still make sense to cultural groups. Such a view of cultural cognition constitutes a challenge for "cultural determinism" in that it allows for individual differences while acknowledging the existence of collective cognition. Cultural orientation, from this perspective, is seen as a continuum rather than either/or membership.

In terms of consciousness, members of a group may be conscious of the influence that a particular "collective" cognition has on their thought patterns and behaviour and in fact may try to opt out of it. What is at issue here is that even in those cases, the individual is very likely to recognize certain knowledge or conceptualisation to be characteristic of the culture they belong(ed) to. Cultural cognition is usually the basis for many aspects of our actions and behaviour in two senses: one is that our behaviour, including our linguistic performance, largely derives from our cultural cognition, and second is that we largely operate on the basis of the assumption that other interactants' behaviour draws on the same cultural cognition. In general we may say that cultural cognition serves as the basis for the "hypotheses" that people make regarding what they encounter during their cultural experience.

The above-mentioned view of cultural cognition is at least partly consistent with certain versions of other expansions of the notion of cognition. Hutchins (1994), for example, also views cognition as

"distributed", though in a slightly different sense. Hutchins (e.g., 1994), mainly emphasizes the distribution of *cognitive processes* and includes the material environmental within the domain of cognitive processing. I emphasise the emergent nature of cultural cognition, which is primarily cultural knowledge, and I use the term "distributed" in conjunction with the term "heterogeneous" to highlight the view that cultural cognition is not equally imprinted in the minds of the people in a cultural group. Despite these differences in the focus of research, the two strands should be viewed as complimentary, particularly given the fact that Hutchins acknowledges that cognition is a cultural process (see also Lindbloom & Ziemke *Volume 1*).

The notion of cultural cognition presented here is also consistent with the version of embodied cognition which regards "body" as a constructed notion (see Violi *this volume*). Whatever the role of body in our cognitive life, it should be kept in mind that conceptualisations of "body" may be culture-specific and in general body takes part and acts as a conceptual resource for our cultural experience. Even the number of senses that we assign to our bodies may vary across different cultures. On the other hand, the situations and contexts implied by the notion of "situated cognition" are in fact largely social and cultural. Anderson (2003: 126) also stresses the importance of the role of culture in situated and embodied cognition, maintaining that:

> Along with research in situated cognition, EC [embodied cognition] further suggests that intelligence lies less in the individual brain, and more in the dynamic interaction of brains with the wider world – including especially the social and cultural worlds which are so central to human cognition – and therefore suggests that fields like sociology and cultural studies can themselves be important resources for (and in some guises are part of) the cognitive sciences.

2.1. Emergent cultural cognition as a complex adaptive system

It is to be noted at this point that emergent cultural cognition may be viewed as a complex adaptive system (e.g., Frank *this volume*; Waldrop 1992) in that it has the properties that are generally

associated with complex systems. One of the main attributes of complex adaptive systems is that they reveal emergent properties. As mentioned earlier, cultural cognition is also an emergent system in that it results from the interactions between the members of a cultural group across time and space. The emergent properties of cultural cognition as a system at the global level (cf. Frank *this volume*), are not mirror images of those that characterize the cognition of each individual within the group.

A closely related property of complex systems is that the parts constituting the system cannot contain the whole. In this sense, also, cultural cognition is a complex system in that an individual's cognition does not capture the totality of their cultural group's cognition. Furthermore, when analyzing the case of cultural cognition, we find that its control is distributed throughout the group; rather than it being subject to centralized mechanisms of control.

Another characteristic of complex systems is that they are nested. That is, the agents that are components of the system are themselves complex adaptive systems. Similarly, members of a cultural group, as agents of cultural cognition, are themselves complex systems, controlled by nervous systems, endocrine systems, etc. Like other complex systems, cultural cognitions have their own unique history of interactions that constantly construct and reconstruct the system. Often small changes in the interactions of cultural groups have had a remarkable influence on the future direction of their cultural cognition. This view is largely reflected in the writings of Vygotsky (e.g., Vygotsky 1978), who viewed cognitive phenomena as embodying the characteristics of historically bound sociocultural relations.

One of the characteristics of complex systems is the difficulty involved in determining their boundaries: they are "open systems". The decision is usually based on the observer's needs and prejudices rather than any intrinsic property of the system itself. This aspect of complex systems also extends to cultural cognition in that the boundaries as to where one cultural group ends and another begins are difficult, if not impossible, to determine.

In relation to cultural cognition, as is the case with other types of

complex systems, the role of an individual agent can be viewed as two-fold. On the one hand, the individual is the locus of cultural cognition and can have an initial causal role in its development, dissemination and reinforcement. On the other hand, an individual's performance can be influenced or determined to a varying degree by the cultural cognition that characterizes the cultural group. Thus, the role of individuals in a cultural group may be described in terms of a circular pattern of cause and effect.

At this point, I would like to focus on conceptualisation and language as two integral aspects of cultural cognition. The whole field of cognitive linguistics is based on the assumption that various aspects of language embody conceptualisation of experience. While it is acknowledged that the locus of language and conceptualisation is the individual, the two ultimately emerge at the cultural level of cognition. This thesis will be explored further in the following sections.

3. Cultural conceptualisations: Cultural models, categories and schemas

Human conceptual faculties, which might be largely universal and innate, derive from various sources of experience, including bodily and environmental, which enable new experiences to be made sense of and organized. Such experiences lead to the development of our conceptual knowledge, which is both complex and systematic. The units of organization in our conceptual knowledge, such as *categories* (e.g., Rosch 1978) and *schemas* (e.g., Arbib 1992; Bartlett 1932; Bobrow & Norman 1975; Mandler 1984; Rumelhart 1980), appear to be based on certain associations that may help us tell them apart from each other. Robinson (1997: 263) maintains that such associations reflect "regularities in an organism's perception of and interaction with its environment". He considers schemas and categories to be higher-level representational networks that store conceptual relationships rather than simple stimulus-response patterns. He notes that "all of these schemata, categories and other

conceptual relationships are probabilistic functions which are not specific to any instantiations of the group they summarize" (Robinson 1997: 263).

Categories include concepts that enter into *x is a kind of y* association. In the case of schemas, the basis for association is rather experiential in the sense that elements of a schema may have co-occurred in the same context or an event. In general, the relationships that hold between the elements of a schema may be thematic, temporal and/or spatial. As an example, "bill" and "food" are related schematically, as "food" may evoke the event schema of paying a bill in a restaurant (Schank & Abelson 1977). Here the relationship is more spatial and obviously experiential. On the other hand, "food" and "pasta" are related to each other categorically, as "pasta" is an "instance" of the category of "food". Blewitt (1993: 104) makes a distinction between schematic representations and categorical representations, which she calls "taxonomic", in the following way:

> Schematically organized representations preserve the temporal sequences and the spatial and functional relations among units of experience. For example, "spaghetti" and "bib" may be related in lexical memory, because they label categories of objects that have been functionally connected and thus experienced together in the same event. […] Taxonomically organized representations are based on similarities among the units being represented, that is, on shared meanings. For example, the nouns "apple" and "spaghetti" may be related in memory because they refer to categories of objects that are foods.

Conceptualisation of experience, of course, does not end in forming categories and schemas but also involves setting up mental models (Johnson–Laird 1980) mapping across concepts, with the end result of *metaphors*, and also *perpectivizing* what is being conceptualised (Verhagen 2007). A major focus in cognitive linguistics is identifying such conceptualisations and recruiting them when delving into people's social experience (Dirven, Frank & Pütz 2003; Frank 2003a). The following important point needs to be made regarding the nature of conceptualisations such as schemas and categories: they have been conceived differently by the various and

sometimes competing paradigms in cognitive and social psychology, and naturally by scholars working in different (sub)disciplines. For example, generally speaking, earlier schools of psychology conceived of schemas as "structures" in the mind, while connectionists view schemas as patterns of activated knowledge (Rumelhart et al 1986).

Regardless of what the status of conceptualisations, such as schemas and categories, is within the boundaries of an individual's cognition, I would like to argue that these conceptualisations also largely emerge at the cultural level of cognition discussed above. People partly partake in similar experience and as such constantly negotiate and conventionalise the way they conceptualise their experience. Although, in all probability, no two individuals conceptualise experience in exactly the same way, it is often possible to perceive a collective cognition emerging from the interactions between the members of a cultural group. I refer to such conceptualisations as *cultural conceptualisations* (Sharifian 2003). The choice of "conceptualisation" over "concept" is meant to reflect and highlight the dynamic nature of such cognitive phenomena.

As aspects of cultural cognition, cultural conceptualisations appear to be heterogeneously distributed across the minds of a cultural group. That is, these conceptualisations are not equally imprinted in the minds of the members in a cultural group at any given point in time. A cultural group is not a collection of a number of individuals who live in a certain area, but rather people who *more or less* conceptualise experience in a similar fashion. As such, the notion of a cultural group is not intended to convey rigid boundaries. Within the popular classifications of culture there are still those who conceptualise experience more closely and as such create a sub-culture within a culture. While one might object to the looseness of such notions as "cultural group", our realities appear to be largely characterized by "looseness" rather than by rigid boundaries and units.

Cultural conceptualisations usually develop into complex, dynamic systems of knowledge, which are not totally and equally shared by the members of the target cultural group. Over time, such

dynamic systems may act as major anchor points for people's thought and behaviour and may even constitute a worldview. In other words, cultural conceptualisations enable the individuals across a cultural group to think, so to speak, with one mind. Often a simple clue or a gesture is enough to point to the cultural conceptualisations that are acting as the basis for a social interaction. The operation of such aspects of cultural cognition is often, but not necessarily always, salient to those who come from outside the cultural group. Stated differently, social interactions between the members of a cultural group may suggest the operation of some sort of a collective cognition to those who are not members of the cultural group, whereas the members of the in-group can be quite unaware that such cultural conceptualisation is being brought into play. It should be noted here that different cultural groups differ with regard to the coherence of their cultural conceptualisations. Some cultures, and some people within a given/single culture, develop more coherent conceptualisations.

To make a distinction between different forms of cultural conceptualisation, imagine that in a given society people interact with each other in conceptualising and establishing systems of kinship. One aspect of kinship conceptualisation would be to use linguistic labels to *categorize* people into "mum", "dad", "aunt", etc. Another would be to develop norms of conduct and responsibility towards each kin. These norms do not define the category but are associated with the category thematically and as such would need to be considered as *schemas*. A related notion that has been used in cognitive anthropology and more increasingly in cognitive linguistics is *cultural model* (e.g., D'Andrade 1995; D'Andrade & Strauss 1992; Frank 2003b; Holland & Quinn 1987; Wolf & Simo Bobda 2001). The term, initially intended to be used instead of "folk models" (Keesing 1987), has also been employed in the sense of "a cognitive schema that is intersubjectively shared by a social group" (D'Andrade 1987: 112). D'Andrade constantly refers to the notion of "schema" in his explication of the term "cultural model" (D'Andrade 1987: 112) and he regards models as complex cognitive schemas. Strauss and Quinn (1997: 49) also maintain that "another term for

cultural schemas (especially of the more complex sort) is *cultural model*". Polzenhagen and Wolf (2007) have used the notion of "cultural model" as more general, overarching conceptualisations that would encompass metaphors and schemas that are minimally complex.

For the sake of this writing I view cultural models as conceptualisations that hierarchically characterize higher nodes of our conceptual knowledge and that encompass a network of schemas, categories and metaphors. An example of such a model would be the cultural model of American Marriage (Quinn 1987). This cultural model includes conceptualisations such as GIVING AWAY schema, WEDDING GIFT category, and MARRIAGE AS JOURNEY metaphor. Returning to the hypothetical case of kinship mentioned above, then, we may refer to the "cultural model of Kinship". The content and the relationship between these conceptualisations may be summarized as follows:

CULTURAL MODEL OF KINSHIP
Kinship categories: categories such as "mum", "dad", "auntie", "close relative", "in-laws" etc. *Kinship schemas*: schemas that embody norms and values related to kinship, such as behaviour rules for every member of the family in view of their status, etc. An example of this would be RESPECT FOR PARENTS schema. *Kinship metaphors:* Conceptual metaphors that are used in relation to kin, such as Kwara'ae's kin metaphor EXTENDED FAMILY MEMBERS ARE ALL ONE HEARTH (Watson–Gegeo & Gegeo 1999: 230).

I would now like to make the observation that, although the locus of such conceptualisations may be the individual, eventually they

"spread" among the group members and are then constantly negotiated and renegotiated. The dynamics of such group interactions eventually lead to emergent properties that may no longer be reduced to individual representations. What this means is that schemas and categories become the objects of interactions between the members of a given cultural group and as such emerge as aspects of distributed cultural cognition. It is at this level that I consider these conceptualisations to constitute *cultural models*, *cultural categories* and *cultural schemas.* Such conceptualisations become "cultural" not only because they may differ across different cultures but also because they are the emergent properties of the interactions between the members of a cultural group. Schematically, conceptualisations such as cultural models may be visually represented using the same diagram that was presented earlier in this chapter (see below). This is due to the fact that these conceptualisations constitute an integral aspect of emergent, distributed cultural cognition.

A DISTRIBUTED, EMERGENT CULTURAL MODEL

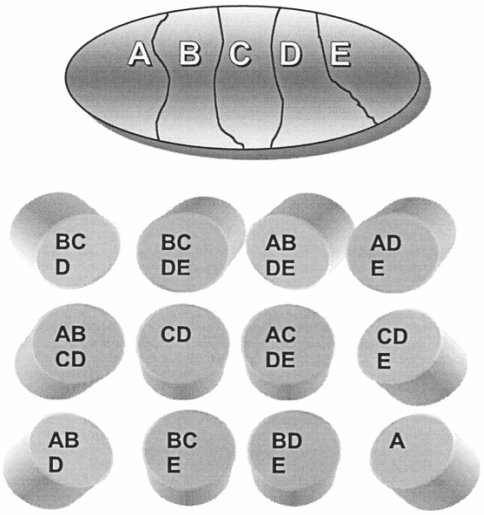

Figure 2. A distributed, emergent cultural model

Figure 2 is an attempt to visually render the locus of a cultural conceptualisation showing that such a cultural model has the two levels of abstraction. Again, the top part of the diagram represents the "global" level of the model, which emerges from the interactions between the members of a cultural group, while the lower section depicts the way in which the "local" level is instantiated in a distributed fashion across the individual minds composing the group. This explanation provides an account of the way in which some people know more than others about a given cultural model and also that two people might share more elements from a cultural model than some other members of the cultural group[1]. Factors such as age and gender might contribute to what people have in common and share with each other. One aspect of cultural development and, hence, the increased stability of the model/overall system is movement from a state where someone knows A to where the same person knows ABCD for example, from a cultural model. But of course, issues such as the extent to which one enters into interactions with the members of their cultural group would also determine how much a person knows from/about their cultural conceptualisations.

A point that needs to be made here is that in the above figure the person who knows A and the one who knows CD do not appear to belong to the same cultural group. This is because the figure only represents one cultural model. In reality, those two people might share more from other cultural models, and as such still belong to one cultural group. This pattern of sharing from two cultural models, X and Y, is represented in Figure 3.

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[1] See Borofsky (1994) for an account of intra-group diversity in cultural knowledge.

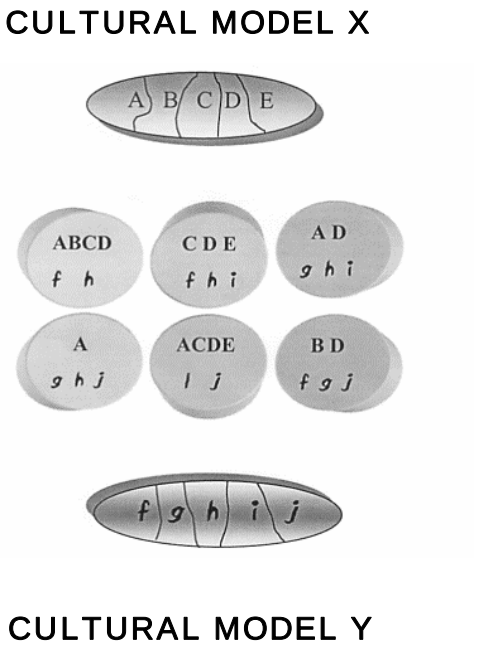

Figure 3. Two distributed cultural models

The figure depicts how two members may share more elements from one cultural model than from another. This pattern of distributed cultural cognition accounts for “fuzzy” understandings that characterise our daily cultural interactions. As mentioned earlier, people coming from the same cultural background generally work on the basis of the assumption that they have shared cultural models, whereas in reality this might not be totally the case, as has been discussed here. This situation often leads to misunderstandings and can even create conflicts between people.

The situation can of course get much more complex in intercultural communication contexts in which interlocutors may draw on different and even contrasting cultural models. In such situations, every interlocutor is likely to draw on the cultural models that characterise his/her ‘native’ culture. However, there is often the case that even one interlocutor may draw on the elements of two or

more cultural models to which they have been exposed during their life (Frank & Susperregi 2001; Frank 2003a, 2005). Conflict and miscommunication often takes place in such contexts due to the assumption made by the interlocutors that they are all drawing on the same cultural models. It should however be noted that often durable contact between groups of individuals from different cultural backgrounds results in the emergence of new, and in a sense 'blended', cultural models.

4. Emergent cultural cognition and language

Language is intrinsically related to distributed, emergent cultural cognition which has been discussed so far in this chapter. Cultural cognition is largely, but not solely, transmitted through language. It is also instantiated in the content and the use of language. Inherent within the system of every language are categories, schemas, conceptual metaphors and propensities for certain perspectives that reflect cultural cognitions of those who have spoken the language over the history of its existence. As Tomasello (1999: 169) puts it,

> […] in collaboration over historic time human beings have created an incredible array of categorical perspectives and construals of all kinds of objects, events and relations, and they have embodied them in their systems of symbolic communication called natural languages.

Indeed, the way and the degree to which these conceptualisations have been encoded in human languages appear to differ from one language to another (Palmer 1996). The following section gives examples of how various features of human languages may instantiate conceptualisations that have at one stage or another characterized the cultural cognition of their speakers.

At the level of lexicon, lexical devices that are considered to be equivalent in different languages, or even language varieties, may signify different conceptualisation of experience for their speakers (e.g., Sharifian 2001). Sharifian (2005), for example, observed that many speakers of Aboriginal English and Australian English

associate different conceptualisations with words such as “family” and “home”. For Aboriginal English speakers, the word “home” gives rise to conceptualisations that would be associated with the company of the extended family members whereas the Anglo-Australian speakers largely associate the word with a building that is being rented or owned by themselves or a member of their nuclear family. For an Aboriginal person, for instance, the word “home” may refer to the place of residence of one’s grandmother or aunt.

The word “family” for Aboriginal English speakers is associated with the Aboriginal model of Family. This cultural model includes categories that go beyond those associated with the same word in the case of Anglo Australians. Family for an Aboriginal person includes members of the “extended” family and largely whomever one comes into frequent contact with. A word such as “mum” for an Aboriginal person may evoke a category that includes people who are described as “aunt” by an Anglo Australian. Also responsibilities, obligations and behaviour rules that are often observed between the members of an Aboriginal family would give rise to schemas that appear to be largely culture-specific. In some Aboriginal cultures, a person may not be allowed to converse with their mother-in-law or whoever is regarded as a member of the same category.

Cultural conceptualisations may also be marked on morphosyntactic features of some languages. Aboriginal Australians have systems of conceptualisation of kinship that are often viewed as complex from the viewpoint of the Anglo-Australian culture. Aboriginal cultural conceptualisations of kinship are encoded in certain morphosyntactic features of Aboriginal languages. For example, Murrinh–Patha has various second person pronouns including those which categorise family members. These include *nhi* “you singular”, *nanku* “you two brothers and sisters” and *nanku ngintha* “you two who are not brothers or sisters and one or both are female” (Walsh 1993). In Arabana, there are pronouns which signify categories that highlight moiety as well as generation level, such as the following:

> Arnanthara = we, who belong to the same matrilineal moiety, adjacent generation levels, and who are in the basic relationship of mother, or mothers' brother and child. (Hercus 1994: 117)

Another reflection of kinship conceptualisations in the grammar of a number of Aboriginal languages is in the use of collective suffix forms (Dench 1987). The suffix is described as "a morpheme deriving a new verb lexeme which requires a nonsingular subject and has the added meaning that the activity is performed together by the participants denoted by the subject NP" (Dench 1987: 325). However, there appear to be cases where the collectiveness denoted by the suffix is more of a marker of kinship rather than of any "collective activity". Consider the following example:

(1) a. *Nyiya karlpa-nyayi-ku wiya-larta panti-jangu karnti-ka –ku*

This clim-COLL-PRES see –FUT sit -REL tree -LOC-ACC

This one is climbing up to see that one sitting in the tree. (Dench 1987: 326)

In the above example, the activity of "climbing up" does not appear to be "collective", at least in the usual sense of the verb, and thus the collective suffix may perform a different function here. Dench maintains that in such cases "*the appearance of the suffix indicates that the participants are in the same set of alternating generations* [italics original]" (1987: 327). That is, the speaker who has uttered sentence (a) above knows that the person climbing up the tree and the one to be seen are relatives in the same set of alternating generations, or people in a "harmonious kinship", as Hale (1966) would put it.

Another area of language that encodes cultural conceptualisations of experience is the area of metaphor (e.g., Frank 2003a; Kövecses 1999, 2000; Yu 2002, 2003a, 2003b, 2003c, 2004, *this volume*). Yu (2002, 2003a, 2003b, 2003c, 2004, *this volume*), for example, gives numerous examples from Chinese where the metaphors involving a

body part somehow embody Chinese cultural conceptualisations of experience and also of the human body. He maintains the relationship between body, culture and metaphor as "conceptual metaphors are usually derived from bodily experiences; cultural models, however, filter bodily experiences for specific target domains of conceptual metaphors; and cultural models themselves are very often structured by conceptual metaphors" (2003c: 29).

Cultural conceptualisations also provide analytic tools for explorations of pragmatic aspects of language. First, the use of pragmatic devices, such as pragmatic markers, may be associated with culture specific conceptualisations (see Sharifian & Malcolm 2003: 335). Also, at the heart of the usage of terms such as "inferencing", "implied meaning", etc., lies the notion of "conceptualisation". When we say the use of a certain linguistic device has a given implied meaning, we are in fact referring to conceptualisations that the speaker/hearer associates with the use of the device in a particular context. It is of course well-known in the area of pragmatics that different cultures may have different pragmatic norms and devices and thus it may be stated that across different cultures, different devices might be associated with similar or overlapping cultural schemas and in some cases similar devices may give rise to contrasting cultural schemas. In Persian, a speaker may use the phrase *sharmandeh-am* "I am ashamed" in achieving speech acts such as Offering Goods and Services, Making a Request, and Expressing Gratitude. In such cases, it appears that the formulaic expression is associated with a Persian cultural schema (Sharifian 2004). This schema encourages the speaker to consider the possibility that the action referenced by the speech act may give or has given some "burden" to the hearer, or the food that is being offered may not be tasty or correspond to the status of the guest. This schema then encourages the speaker to express the negative feelings that could arise out of such considerations in the form of an expression of "shame".

At the discourse level, both the content of discourse and its rhetorical organization may reflect cultural conceptualisations of experience (Malcolm & Rochecouste 2000; Malcolm & Sharifian

2002, 2005, 2007). Malcolm and Rochecouste (2000), for example, analysed excerpts of narrative produced by speakers of Aboriginal English and realised that the texts were largely governed by event schemas that reflected Aboriginal cultural experience. They named these schemas Hunting, Travelling, Observing and Encountering the Unknown, which encompasses the Spiritual experiences of Aboriginal people.

As an example of how cultural conceptualisations may be instantiated in discourse, the following excerpt reveals the way in which three Aboriginal English speakers locate themselves and their interlocutors in terms of their kin:

L: Armadale you know all the streets an you know where to go?
EH: I's It's not like down the xxxx xxx too many big mob go that way
M: I've got some um people live round Armadale
EH: In Armadale?
M: Ah no not Armadale at Perth
L: [Perth]
EH: In Perth, what's the names down there?
M: um Davises[2]
EH: Oh yeah
M: an Coles
EH: That's on my Mum's side, my Mum related to Coles
M: Um do you know, do you know um, Shane Cole?
EH: Yeah that's my cousin. Mum's cousin I think
M: We' ah yeah, thas my brother, cousin brother
EH: Well there's um there's an older one as well isn't there?
M: Um Donny... and but they're all sisters, um Marcia but we just call her Marce, Marcia Collins an um um Kate and um... um got some Davises um but only just um um from my niece,

[2] The names used in the texts are pseudonyms.

Jeanette Cole, she goes um horse riding every day um cos she lives with her Nan an Pop an her mother and father cos their mother an dad um lives with them, so she stays with them an, 'cross the road there are these people who that um takes her horse riding

EH: Oh yeah

M: Um like on a station, an she just goes with em to um – cos um they signed her in so she could go with em, bout every other– every day

EH: Yeah we – we were talking about Jim L__ (FAMOUS FOOTBALLER) and the boys said that's your uncle, unna?

L: mmm

EH: xxx cos Jim's my cousin xxx I got Elvis in there (laughs) they were saying that, someone was saying that Jim's real name was Elvis (laughs)

L: Well but e's my uncle but I don't know him,

EH: Alright

L: He's just know Dad an 'e might be a second cousin or something

EH: What's your Dad's last name?

L: Um Gordon

EH: Oh your Dad's Gordon too what was your Dad's first name

L: Gavin Gordon, he was- Dad is um Ronnie Gordon and is brother is Ronnie and Nathan

EH: I know that, I know that name

L: Do you know Cherie and Lindy, they Gordon, that's my Dad's sisters

EH: Alright. What cos my Dad's related to old oh yeah, nah well my Dad- Jim's Mum and my Dad are like brother and sister, an my Dad he got no sisters an they all first cousins

L: Well what's ya last name?

EH: Um Haines (Y70, Yarning about Family)

The above conversation, which is between Aboriginal speakers coming from some 400 kilometres apart, is a clear instantiation of the Aboriginal cultural model of Family. First, the text represents an Aboriginal schema that encourages the speakers to locate themselves and others with regard to their possible kinship links. This often seems to be necessary among many Aboriginal people in that it has implications regarding where they stand in relation to their interlocutor and what they should do or say.

The text also reveals cases of instantiating Aboriginal cultural categories. For instance, speaker M refers to someone as “brother, cousin brother”. The category “cousin-brother” includes people who are biologically cousin to the speaker but who have the same cultural status as a brother and may simply be referred to as “brother”. Speaker L also refers to someone as “uncle” and then proceeds to say that he “might be a second cousin or something”. As mentioned earlier in Aboriginal cultures the categories that are labelled as “uncle” or “aunt” may include people who may be considered as “distant relatives” from the Anglo Australian perspective.

As mentioned above, cultural conceptualisations may also be instantiated in the rhetorical organization of discourse. Carrell calls schemas that include knowledge relative to the rhetorical organisation of a text *formal schemas* (Carrell 1987: 461). She found that reading comprehension was easiest when the texts were familiar to the readers in terms of their cultural *formal* and *content* schemas. Some cultures draw on a formal schema that is tied to the linear conceptualisation of “time”. That is, people in such cultures largely narrativise their experience based on the chronological order of the happening of events. Not all cultures, however, follow such patterns of discourse organization (e.g., Kaplan 1966, 1987; Kintsch & Greene 1978). It has been noted, for example, that Kuna Indians of Panama do not construct their narrative structure based on temporal ordering (Sherzer 1987). In other words, the speakers do not seem to rely on temporal schemas in their narrativization of experience. Palmer (1996) attributes this to the salience and valuation of the imagery in the narrator’s worldview. Aboriginal English speakers also do not appear to rely very much on the chronological sequencing

of the events in their discourse production (Sharifian 2002). Rather, in Aboriginal English discourse, events may be ordered according to their salience and significance in the cultural conceptualisations that speaker is drawing on.

It is to be noted finally that as an integral aspect of cultural cognition, language itself is a complex adaptive system (see also Frank *this volume*; Steels 1996, 2000) in the sense that it is a distributed, emergent, adaptive system. The knowledge of a language is *heterogeneously distributed* across the minds in a speech community. In a study of mass/count in Persian, for example, Sharifian and Lotfi (2003) employed a Preference task that measured the acceptability of a number of sentences by a group of native speakers of Persian. The data showed a high degree of variability in the degree to which participants rated the sentences as "acceptable". For example, one of the sentences was rated as "fully acceptable" by 17.9%, "acceptable but not preferred" by 32.1% and "unacceptable" by 50%. This pattern of data shows how knowledge of language is heterogeneously distributed across the members of a speech community.

Also, language is an *emergent* system in the sense that it evolves and hence results from the communicative interactions between the individual members of a speech community across time and space. If we map human commutative interactions onto a network that extends across the dimensions of time and space, then language is the emergent property of the network as a whole. It is to be noted that the interactions that characterise the network are not mirror images of one another, which makes language a dynamic system with unpredictable properties. In the terminology of complex adaptive systems, language is rarely in any long run equilibrium.

Language is a dynamic adaptive system in the sense that it can be adapted to meet the communicative needs of its speakers. At one level, speakers often adapt their language in specific situations to express certain specific meanings. Also, studies in diachronic linguistics have shown that certain features of human languages may be adapted to express a wide range of new conceptualisations. It has been observed that a language implanted in new localities may be

adapted and appropriated by its new speakers to express their own native worldview and culture. This has, for example, been observed in the case of Aboriginal people adapting English to clothe their own worldview and cultural conceptualisations (e.g., Sharifian 2006, 2007).

5. Concluding remarks

In this chapter I have made an attempt to further expand the notion of cognition along the dimension of culture. From the perspective that is introduced in this chapter, cognition is viewed as a property of cultural groups, and not just the individual. In this sense, cognition is a heterogeneously distributed system with emergent properties that arise from the interactions between the members of a cultural group. An integral aspect of this view of cultural cognition is group-level conceptualisation. Conceptualisations such as models, schemas and categories have an individual basis as well as an emergent basis as the cultural level of cognition. These cultural conceptualisations are often instantiated in various cultural artefacts and activities. Language in this perspective is viewed as a distributed system as well as a repository for cultural conceptualisations. Various aspects of human languages may encode conceptualisations that reflect cultural experiences of their speakers. It is hoped that this chapter will contribute to the emerging integrative perspective that is reflected in the title of this volume, as well as in the other contributions.

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