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# Cultural Linguistics and the future agenda for research on language and culture

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## Introduction

The purpose of this chapter is to assess the future of Cultural Linguistics (Sharifian, this volume) as a tool for exploring a variety of linguistic phenomena along with their intra-group and inter-group cultural instantiations.[1] As a subfield of linguistics, Cultural Linguistics has the potential to bring forth a model that successfully melds together complementary approaches, e.g., viewing language as 'a complex adaptive system' and bringing to bear upon it concepts drawn from cognitive science such as 'distributed cognition' and 'multi-agent dynamic systems theory'. This will allow us to move away from essentialist models of the entity we call 'language' (Frank, 2008) and hence to adopt and build on theoretical approaches, e.g. 'enactive cognitivism', already being exploited by researchers working in related areas more characteristic of the cognitive sciences, that is, by those who no longer subscribe to the tenets of 'classic cognitivism'. The paradigm emerging from research in Cultural Linguistics draws on a highly nuanced multi-disciplinarily informed approach that allows for a greater appreciation for

[1] For discussion of the directions that future research may take with respect to the other research topics covered in this volume, the reader is referred to the sections in each chapter where these developments are treated.

individual choices and the motivations behind these choices as they coalesce into and around 'cultural conceptualizations' (Sharifian, 2003, 2009a, this volume).

The approach also allows for the role of synchronic and diachronic socio-cultural context to be foregrounded. As will be shown, it is a framework that is particularly sensitive not only to the role of culture in linguistic choices and perceptions, but also to the role of language in maintaining and transmitting the cultural conceptualizations that these linguistic choices have produced over time under the influence of preexisting cultural and linguistically entrenched schemas. In addition, it opens up an avenue for an in-depth exploration of the relationship between two conceptual entities, the term 'culture' on the one hand, and 'language' on the other, whose definitions, although often assumed in practice to be givens, have shifted radically over the past decades (Strauss & Quinn, 1997).[2] More significantly, even though until now a unified sub-discipline focusing on the relationship between language and culture has never been fully developed, the theoretical framework for such an enterprise is well underway, a topic that will be taken up in the first part of this chapter. In short, this is a framework that could create a flexible transdisciplinary umbrella for future work on language and culture.

In describing the purview of Cultural Linguistics, Sharifian (2011) refers to its transdisciplinary framework stating that it provides a disciplinary synthesis by drawing on analytical tools and theoretical notions that previously have often been explored and exploited in separation from each other. Moreover, a natural common ground exists between the various theoretical disciplines in terms of their concern with cultural conceptualization and the nexus between language and culture, e.g., applied linguistics, cognitive psychology, cognitive linguistics, sociolinguistics, cognitive anthropology and anthropological linguistics. When viewed broadly, the points of intersection between these disciplines and sub-disciplines are significant, that is, they tend to be concerned with the nature of group-level cognition while taking into account the role of both language and culture, albeit with different degrees of emphasis. Sharifian (2011) makes the case that one of the primary goals of Cultural Linguistics

[2] For a discussion of the myriad ways that the word 'culture' has been defined and dissected, cf. Clifford (2005). This is a topic that many of the contributors to this volume have commented upon. E.g., Eglin (this volume) states the following concerning the multifarious definitions and overall slippery nature of this concept: "The same argument may be made about culture. No sooner is an attempt made to establish a formal definition for it (thought of as a determinate thing) – for example, an 'integrated and distinct set of rules which give meaning to activities'(Sharrock & Anderson, 1982, p. 120) or, famously, 'whatever it is one has to know or believe to operate in a manner acceptable to [a society's members], and do so in any role that they accept for any one of themselves' (Goodenough, 1957, p. 167) –than it has to be admitted that in any actual case accommodation will have to be made for sub-cultures, local cultures, the cultures of particular groups of all sorts and the idea, say, that while some set of cultural practices may be 'shared' by neighbouring societies one of them 'owns' the cultural practices in question and the other has 'copied' them (Sharrock, 1974, pp. 49-51). For many of its uses 'culture' may be replaced with 'society,' 'values,' 'customs,' 'mores,' 'the way we do things round here' without it ever being possible to pin down once and for all what that 'way' is. Cultures as determinate objects are professional anthropologists' inventions, the product of 'ethnographic work' in the 'organization of fieldwork data' (Sharrock & Anderson, 1982)."

is to establish a framework for the study of language as it is grounded in cultural cognition and that this could provide the missing link in the interface between these disciplines.

From my perspective, the development, dissemination and acceptance of a theoretical framework that is more in consonance with the frameworks and developments taking place in the cognitive sciences could represent a major breakthrough in terms of the way that research being carried out under the transdisciplinary umbrella of Cultural Linguistics will be received and evaluated by the larger community of researchers across the disciplines. In the first sections of this chapter I will bring into clearer focus the way that the theoretical framework proposed for Cultural Linguistics dovetails with the overarching framework currently evolving across a number of disciplines which, in turn, are actively collaborating in the construction of the mega-discipline of cognitive science.

**Rethinking the language-culture nexus: The role of complex adaptive systems theory**

In this section we will examine an important aspect of the theoretical framework proposed for Cultural Linguistics and the way that it draws on conceptual tools from complexity science. Specifically, it will be argued, as Sharifian (2011, this volume) has done, that the construction, emergence, transmission and perpetuation of cultural conceptualizations (CC) are phenomena best understood as constituting 'a complex adaptive system' (CAS). "CCs may be instantiated and reflected in cultural artefacts such as painting, rituals, language, and even in silence. Aspects of these conceptualisations may also be instantiated through the use of paralinguistic devices such as gesture. In fact different cultural groups may devise certain unique 'devices' for instantiating their own CCs" (Sharifian, 2011, p. 12). In other words, when defining cultural conceptualizations, they are inextricably linked to a wide field of social and linguistic practices and cultural cognition, a form of cognition that, in turn, is not represented simply as some sort of disembodied, abstract disembodied 'between the ears' entity.

The utilization of a CAS theoretical framework allows us to understand 'language' and 'culture' from a different perspective, that of dynamic systems theory. From a CAS perspective, 'language' and 'culture' are not viewed as entities independent of one another but rather as constantly interacting systems that form networks of overlapping, mutual influence and whose overall functioning is best captured by modeling them as complex adaptive systems. However, keeping in mind the fact that CAS is a framework which may be relatively unfamiliar to many, a review of its basic characteristics is in order. In the following general discussion, the focus will be primarily on language viewed as a CAS. However, cultural conceptualizations –and more globally cultural processes—can be viewed as being instantiated in a similarly organized multi-agent system.

Complex adaptive systems are ubiquitous in nature. Typical examples include social insects, the ecosystem, the brain and the cell, the Internet, and also, in general, any human social group-based endeavor that takes place in a socio-cultural system. Broadly defined, a complex adaptive system is one that is self-organizing in which there are multiple interactions between many different components while the components themselves can consist of networks that in turn operate as complex (sub)systems. Since the global and local levels of the system are coupled, this coupling also drives the system to be dynamic at the global level (Hashimoto, 1998).

A complex adaptive system is self-organizing in that it is constantly constructed and reconstructed by its users while it is characterized by distributed control in that control is exercised throughout the system. Stated differently, the system operates with no centralized mechanism of control. CAS thinking is concerned with understanding the global behaviors arising from local interactions among a large number of agents. Often this global behavior or emergent dynamics is complex. However, it is neither specified by prior design nor subject to centralized mechanisms of control. And, consequently, it is often difficult or impossible to predict solely from knowledge of the system's constituent parts what the emergent global level properties of the system will be.

Complex systems are systems that constantly evolve over time. Thus, change is an integral element of their functioning. Complex *adaptive* systems are adaptive in that they have the capacity to evolve in response to a changing environment (also known as adaptability, cf. Conrad, 1983) Since complex adaptive systems arise in a wide range of contexts (from the individual cell to the biosphere and the Internet), this theoretical framework is rapidly gaining ground in a variety of disciplinary areas in cognitive science including as a means of modeling cultural processes, language evolution and change.

A CAS approach to language states that *global order* derives from *local* interactions. Language agents are carriers of individual linguistic knowledge which becomes overt behavior in local interactions between agents. Through these *local level* (microscopic) interactions agents construct and acquire individual ontologies, lexicons and grammars. When the latter are sufficiently entrenched within the system, they become part of the *global level* (macroscopic) properties of collective ontologies, lexicons and grammars of the speech community. Actually, the process is even non-linear in the sense that individual ontologies, lexicons and grammars continuously contribute to and, in turn, are influenced by the global level. This shift in perspective provides us with a different non-essentialist view of language: it is understood as a constantly evolving system that defies simplistic taxonomic, essentialist categorization. In short, language is understood as a multi-agent complex adaptive system in which emergent phenomena result from behaviors of embodied, socio-culturally situated agents.[3]

[3] These dialectics are also pointed out at the psychological level by Clark (1996, pp. 100-120) when he introduces his famous distinction between personal and communal common ground. And Tomasello's (2004, p. 4)

As stated, the phenomenon of language is best viewed as a complex adaptive system that is constantly constructed and reconstructed by its users. Therefore, language should be considered an emergent phenomenon, the result of *activity*, the collective, cumulative behavior of language agents over time. These emergent phenomena have a strong causal impact on the behavior and learning of each individual language agent. Hence, there is a type of recursiveness to the system in which feedback mechanisms operate as an intrinsic aspect of it. The functioning of these feedback loops is referred to as 'circular' or 'recursive causality'. At the local level the individual language agent's behaviors (utterances) determine language, that is, language understood at the global level. Similarly, at the local level the resulting emergent global level structures of language co-determine the range of behaviors of the agents, that is, the range of possible interactions at the local or microscopic level.

This top-down influence is established in several ways. First, we need to keep in mind that the global level systemic structures of language are already in existence prior to the entrance of the local agents. As such, they act as a strong constraint on the linguistic behavior of individual language agents. While the latter acquire their local level understandings of this already existing system as their idiolect, these are understandings that can be renewed, restructured over and over again in the course of the individual's lifetime. Then we can see that the bottom-up influence is established in the following manner. The local level systemic structure of language constantly acts to bring about emergent structure, that is, change, from the bottom-up, so to speak. While the speaker — the individual language agent — has to abide by the structures provided by the system at the risk of not being understood, there is always a degree of flexibility to expand the existing system.[4] Although the structures are to some extent in constant flux, in communicative practice, the speaker is capable of: 1) choosing to draw, consciously or unconsciously, from among them and 2) selecting from amongst those structures that are present in the 'feature bank' of her idiolect, her microstructural 'knowledge' of the global level macrostructures. From this perspective, in the case of bilingual or multilingual language agents they can draw on additional microstructural 'knowledge' that, in turn, can act to set in motion perturbations in the emergent global level structures.

Now if we apply a wide-angled field of vision to the objects under analysis, namely, cultural conceptualizations, we find that they, too, interact with social and linguistic practices and actions, influencing them and in turn being influenced by them. Hence, if the cultural conceptualizations are considered collectively, the result could be perceived as another way to

characterization of cumulative cultural evolution as a kind of ratchet effect can also be interpreted as an attempt to capture these dynamics.

[4] The close parallels holding between this CAS model and usage-based approaches to language are found in the following discussion of 'units of language' where the latter are defined as "not fixed but dynamic, subject to creative extension and reshaping with use. Usage events are crucial to the ongoing structuring and operation of the linguistic system. Language productions are not only products of the speaker's linguistic system, but they also provide input for other speakers' systems (as well as, reflexively, for the speaker's own), not just in initial acquisition but in language use throughout life" (Kemmer & Barlow, 2000, p. ix).

define of the 'culture' of a community of speakers. And as long as cultural cognition and the resulting cultural conceptualizations themselves are also framed from the point of view of complex adaptive systems theory, rather than in an essentialist fashion, we can see that both 'language' and 'culture' could be conceptualized in a similar way.

Rather than attempting to define the static 'content' of the two terms, that is, an approach that reflects a fundamentally essentialist position,[5] the CAS approach focuses on dynamic 'process' and applies the tools of analysis to real-world phenomena. For instance, in traditional frameworks 'culture' is often defined in terms of 'contents' as ''whatever it is one has to know or believe in order to operate in a manner acceptable to its members, and do so in any role that they accept for any one of themselves'' (Goodenough, 1957, p. 167). And this definition, although certainly useful, suggests that 'culture' should be viewed as something inside the heads of the individual members of a community rather than focusing on both 'culture' and 'language' as closely intertwined, complementary complex adaptive systems. From this perspective, they must be viewed as inextricably meshed together, systems that are continuously interacting, influencing each other and consequently restructuring themselves through multiple feedback loops. In summary, whereas traditionally culture was frequently viewed as a body of content on which the cognitive processes of individuals operated, from a CAS perspective, culture shapes the cognitive processes of systems that transcend the boundaries of individuals, while the cognitive processes taking place at the micro-level feed back into the overall macro-level of the system.

It should be noted that in recent years the need to bridge the conceptual divide between 'language' and 'culture' has attracted the attention of a number of scholars. For instance, in two recent publications Silverstein has argued that what he calls the "linguistic/cultural distinction" has already collapsed, as the titles chosen for two of his articles deftly suggest, "'Cultural' concepts and the language-culture nexus" (2004) and "Languages/cultures are dead! Long live the linguistic-cultural!" (2005). Similarly, discussions of language as a complex adaptive system are not entirely new (Beckner et al., 2009; Frank & Gontier, 2011; Holland, 2005; Steels, 1999) and in the past cognitive anthropologists have attempted to model—simulate—cultural processes by viewing them as emergent properties of systems of interacting agents (Hashimoto, 1998; Hutchins & Hazelhurst, 1991, 2002; Kronenfeld & Kaus, 1993). It should be kept in mind, however, that until now applications of CAS to cultural processes have regularly consisted of multi-agent computer simulations aided by algorithms, not research dealing with the interactions of speakers in complex real-world contexts such as those that are regularly encountered and analyzed by researchers working in Cultural Linguistics. In fact, the vast majority of CAS oriented research on language evolution and change has been based on similar multi-agent computer simulations (Steels, 2012; Steels & de Boer, 2007).

[5] Earlier definitions of culture were even more content-oriented. Indeed, one of the most influential of such definitions was Tylor's: ''Culture or Civilization, taken in its wide ethnographic sense, is that complex whole which includes knowledge, belief, art, morals, law, custom, and any other capabilities and habits acquired by man as a member of society'' (Tylor, 1871, p. 1).

Yet there are notable exceptions, for example, Ellis and Larsen-Freeman (2009) and Frank (2008) while Kronenfeld (2002, 2004) has put forward an agent-based approach to cultural (and linguistic) change. However, he approaches the notion of culture not explicitly as a CAS, but rather from a slightly different position, namely, describing it as "a decentralized system of distributed cognition" and conceiving culture's various sub-systems not as memorized behaviors or fixed knowledge but as productive representations (based on flexible and adaptively growing knowledge systems) that are capable of generating novel responses (Kronenfeld, 2002, p. 430):

> Either included within culture, or standing as a major parallel learned system is language. … Since culture (like language) is intrinsically social, and only exists as a social device, it cannot be what is in any single head, but has to consist of socially shared forms. But since culture has no existence outside of our individual representations of it, and since these representations are variable, there exists no single place where the whole of any culture is stored or represented. Thus culture is necessarily and intrinsically a distributed system.

In summary, the elaboration of an overarching framework capable of applying a CAS theoretical paradigm and its tools of analysis to both real-world languages and cultures should be seen as one of the goals of Cultural Linguistics and when achieved, a major advance. Moreover, as Beckner et al. (2009, p. 1) have underlined, the "CAS approach reveals commonalities in many areas of language research, including first and second language acquisition, historical linguistics, psycholinguistics, language evolution, and computational modeling." Finally, the adaption of a CAS approach as well as other analytical tools, such as 'distributed cognition', opens up the possibility of productive dialogue between scholars in the humanities and investigators operating in subfields of cognitive science, most particularly those engaged in research projects who have already embraced the assumptions inherent to the new cognitivism and the notion of 'enaction' that informs it.

## Cultural Linguistics meets Enactive Cognitive Science

Most researchers are familiar, at least in its general outlines, with what is referred to as classical, first-generation cognitivism, based on the Computational Theory of the Mind (CTM), a framework to which the generative linguistics of Chomsky and those who came after him belong (Stewart, Gapenne, & Di Paolo, 2011a; Stokhof & van Lambalgen, 2011). Today, however, that paradigm has been repeatedly criticized, particular by those working in the field of Artificial Intelligence and Robotics, making room for a different research paradigm, described by some as 'embodied cognitivism' and by others as 'enactive cognitive science' (Stewart, Gapenne, & Di Paolo, 2011b). It is also a paradigm that brings into play concepts such as 'distributed cognition' (Hutchins, 1995, 2001) and the 'extended mind' (Clark & Chalmers, 1998) and highlights the importance of micro-level and macro-level interactions within the system. It is an approach in which because of its focus on multi-agent and complex adaptive systems with their internalized notion of circular causality, emphasis is placed on micro-level actions and choices of individual agents that, in turn, bring about emergent structure at the macro-level of the system, guiding the choices open to the agents (Frank & Gontier, 2011; Steels, 1999, 2002).

The following comments by Tom Ziemke, one of the foremost authorities in the area of Artificial Intelligence, shed further light on the paradigmatic shift to which Cultural Linguistics is contributing. When speaking of cognitivism Ziemke is referring to the traditional model which he then contrasts with the enactivist paradigm.

> Cognitivism can be said to be "dominated by a 'between the ears', centralised and disembodied focus on the mind." In particular, cognitivism is based on the traditional notion of representationalism, characterised by the assumption of a stable relation between manipulable agent-internal representations ('knowledge') and agent-external entities in a pregiven external world. Hence, the cognitivist notion of cognition is that of computational, i.e. formal and implementation independent, processes manipulating the above representational knowledge internally. (Ziemke, 1999, p. 179).

In contrast, the enaction paradigm "emphasises the relevance of action, embodiment and agent environment mutuality. Thus, in the enactivist framework, cognition is not considered an abstract agent-internal process, but rather embodied action, being the outcome of the dynamical interaction between agent and environment …" (Ziemke, 1999, p. 179). In subsequent publications, Lindblom and Ziemke also bring into focus on the role of social-cultural situatedness and group-level interactions as defining characteristics of cognition, underlining the complex relationship between body, language and culture (Lindblom, 2007; Lindblom & Ziemke, 2003, 2007).

This major reorientation of the dominant paradigm in cognitive science provides on opening for researchers working in Cultural Linguistics and the sub-disciplines comprised by it. Conversely, the expertise and data of those already working within this framework will contribute in significant ways to the restructuring of the overall research paradigm. The opportunity for increased cross-disciplinary dialogue is enhanced by fact that Cultural Linguistics already incorporates conceptual frames and approaches currently being utilized in cognitive science, e.g., viewing cultural conceptualizations as the emergent product of a complex adaptive system (Sharifian, 2008) or recognizing that language itself can be understood by applying the same theoretical and methodological lens (Frank & Gontier, 2011).

The possibilities for initiating productive dialogues across the disciplines should not be underestimated, although at this stage they are just beginning to get under way. Stated differently, while many investigators whose work falls within the purview of Cultural Linguists might still view 'cognitive science' as a disciplinarily distant terrain or even an alien one, things are changing rapidly. Moreover, the far-reaching process of renewal that cognitive science is undergoing as a whole has gained the attention of researchers in a number of fields, among them anthropology.[6] Cultural Linguists needs to have a seat at the same table.

[6] In their review paper that recapitulates "the uneven history of the relationship between Anthropology and Cognitive Science over the past 30 years, from its promising beginnings, followed by a period of disaffection, on up to the current context," Bender, Hutchins and Medin (2010, p. 374) lay out the groundwork for reconsidering what anthropology and (the rest of) cognitive science might have to offer each other: "We think that this history has important lessons to teach and has implications for contemporary efforts to restore Anthropology to its proper place

## Methodological and theoretical considerations

Up until now, for the most part, work in the area of language and culture has been done with an open-ended range of methodologies, theories and objects of study, as the chapters in this volume clearly attest. Among the questions that arise is whether in the future this loose articulation of methodologies and theories has the potential to form a more coherent whole or whether such a development is even desirable given the commitments of researchers to particular disciplinary traditions and the pressures brought about by institutional structures within academia (budget shortfalls and administrative downsizing).

Although there is a diversity of approaches, as attested in this volume, there are also aspects of Cultural Linguistics that already suggest avenues that could open up in the future. For instance, as Sharifian (2008, 2009a, 2011) has emphasized in his writings concerning the relationship between cultural conceptualizations and language,

> [h]uman conceptualisation is as much a cultural as it is an individual phenomenon. Members of a cultural group constantly negotiate "templates" for their thought and behaviour in exchanging their conceptual experiences. Often complex cognitive systems emerge out of somehow concerted conceptualisations that develop among the members of a cultural group over time. Such conceptualisations give rise to the notion of *cultural cognition*. (Sharifian, 2011, p. 3)

In describing the nature of such cultural conceptualizations and their instantiations in language and culture, Sharifian adopts a model that draws on insights from complexity science and dynamic systems theory, specifically a research model that views the processes involved in the generation, evolution and transmission of cultural conceptualizations, intra- and inter-linguistically, as a complex adaptive system (CAS). This approach can be viewed as melding language and culture together into a single dynamic system in which the cultural level of cognition is best described as consisting of cultural conceptualizations that are 'distributed' heterogeneously across the minds of members of the group constituting the community in question. Understood as a CAS, both 'language' and 'culture' can be conceptualized as forming a nexus, a complex intertwined whole, as Silverstein (2004) has suggested.

At the same time, by applying this dynamics system approach to both of these entities, one bracketed off and called 'culture' and another referred to as 'language', allows us to appreciate the structural similarities between them and, hence, the advantages that accrue when this CAS approach is used to model both entities.[7] In this case it is important to recall that the theoretical framework under development in Cultural Linguistics equates cultural cognition with action and sees this as activity that is socially situated. Therefore, cultural conceptualizations can

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within Cognitive Science. The recent upsurge of interest in the ways that thought may shape and be shaped by action, gesture, cultural experience, and language sets the stage for, but so far has not fully accomplished, the inclusion of Anthropology as an equal partner."

[7] For a related discussion of the nexus between language and culture and the concept *linguaculture*, cf. Risager (this volume).

be viewed broadly for they encompass not merely a 'between the ears' kind of cognitive processing, but also the socially situated actions of the members of the group which give rise to such conceptualizations and, thus, cultural conceptualizations that are often expressed and hence exteriorized in non-verbal ways.

As Sharifian (2011, p. 20) has observed, for some, cognition is an aspect of culture in that culture influences various cognitive processes (e.g. Altarriba, 1993; Redding, 1980; Robinson & Altarriba, this volume). Sperber and Hirschfeld 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. (Sperber & Hirschfeld, 1999, p. cxv)[8]

This is a departure from the view on which 'cognition' has been associated primarily with mind and mental activity with its focus on the individual, although it is still not one that fully embraces the question of the intimate and inextricable connections between 'language' and 'culture'.

Moreover, those working on questions related to 'cognition' in various areas of cognitive science are often still operating with theoretical and methodological frames drawn from different incarnations of generative linguistics. This is an example of how the methodological and theoretical grounding of a discipline is influenced by its connections to other sciences through mechanisms that Silverstein (2005, pp. 104-106) has called "theoretical and methodological calques" and which consist of borrowing influences and conceptual shapes gained from familiarity with, if not real knowledge of other fields, which leads one group to begin conceptualizing their materials so as to draw interpretative conclusions from them. In the case of theoretical calques, a similarity in the conceptual frameworks utilized to give significance to the data can be detected whereas methodological calques can give rise to data being treated much like those of another field. When there is a convergence between the epistemological positions of the fields and their objects of interest are conceptualized in a similar way, synergistic effects can take place as they did in the case of the rapid acceptance and dissemination of the writings of Noam Chomsky in other branches of inquiry quite removed from linguistics itself.

Indeed, as Stokhok and van Lambalgen (2011) have noted, because the Chomskyan paradigm has functioned for more than four decades as a model for other disciplines in the humanities as well as fields within the purview of cognitive science, the relevance of the question of its appropriateness as a model extends far beyond linguistics. Furthermore, as we will see in the sections that follow, there are clear indications that this paradigm is losing its power to influence frameworks being developed in many disciplines today and, as a result, new theoretical approaches are emerging, among them the approach being put forward by Cultural Linguistics.

[8] Another insightful incursion into this topic is found in Sperber and Claidière (2005).

Yet because of the parallels holding between what happened back then in the emerging field of cognitive science—now known as 'classic cognitivism' as opposed to 'enactive cognitivism'—and what is happening now, we can turn to the recent and highly relevant analysis by Stokhof and van Lambalgen (2011)[9] entitled "Abstractions and idealisations: The construction of modern linguistics," where the term 'modern linguistics' is a catch-all expression for the generative grammar research paradigm which they define as "one of the most remarkable and successful scientific innovations of the twentieth century" and go on to state that

[t]he rise of generative grammar in the fifties and sixties produced an atmosphere of intellectual excitement that seemed to be reserved for fundamental developments in the natural sciences. And the excitement was not restricted to linguistics as such, it stretched out to other disciplines, such as philosophy, the emerging disciplines of computer science and cognitive psychology, anthropology and literary studies. And to the present day modern linguistics is held up as a model of scientific innovation to other disciplines in the humanities. (Stokhof & van Lambalgen, 2011, p. 1)

The two authors then lay out the factors that led to the rapid acceptance and diffusion of this theoretical generative framework at precisely the juncture in time when this process took place. They emphasize that one of the major factors was a convergence of concerns and interests in other disciplines that dovetailed with the characterization of language put forward by Chomsky which replaced earlier understandings by a "logical, mathematical (algebraic) concept of a language, viz., that of a potentially infinite set of well-formed expressions generated by a finite, or finitely characterisable, set of rules (i.e., a grammar). … Behind this is the fundamental assumption that in the end language and linguistic competence can be understood as phenomena that are anchored in human biology, and that it is only via the methodology of the natural sciences that we may acquire insight into their nature and function" (Stokhof & van Lambalgen, 2011, pp. 3, 5).

Nonetheless, this fundamental assumption that has persisted across many decades is now rapidly losing ground, as the questions posed by Stokhof and van Lambalgen suggest:

These observations give rise to a fundamental question with regard to linguistics as such: Could modern linguistics perhaps be an example of a 'failed discipline'? As was already noticed above, the adoption of the models and methodologies of the natural sciences and the formal sciences was one of the keys to the success of modern linguistics. Moreover, especially in Chomsky's views a clearly naturalistic goal can be discerned: according to him linguistics studies what in the end is an aspect of human biology. Is this naturalism perhaps one of the causes of the present, confusing situation? Is it that modern linguistics, knowingly or unknowingly, follows a naturalistic approach to phenomena, —language and linguistic competence—, that are of a fundamentally other nature? (Stokhof & van Lambalgen, 2011, p. 3).

In other words, upon reviewing the history of the construction of the central concepts and goals of the research paradigm associated with 'classic cognitivism' there is every reason to believe that it was decisively influenced by ideas and developments in other disciplines, notably the formal and the natural sciences, but also philosophy and of course Chomskyan linguistics. Consequently, it is not surprising that a similar convergence of interests is occurring today which

[9] Cf. also Haspelmath (2011).

augurs well for the future of research in Cultural Linguistics and the theoretical framework that it is formulating. Indeed, the adoption and application of terminology and concepts not only familiar to cognitive scientists, but which act as functionally equivalent expressions is important in that they can be read as analogues across these disciplines. This allows them to resonate and contributes to another degree of convergence within the cognitive sciences where the concept of 'distributed cognition', for example, is commonplace. As will be demonstrated in the following section, these theoretical and methodological calques, understood in their positive sense, are especially salient when a concept such as 'socially distributed cognition' is brought into the picture.

## Cultural Linguistics and Socially Distributed Cognition

Writing more than a decade ago, Waloszek (2003) offered this comment about 'socially distributed cognition' which coincides with the framework of Cultural Linguistics, stating "that the idea of socially distributed cognition, prefigured by Roberts (1964), is becoming increasingly popular. Recently, the idea has emerged that social organization is itself a form of cognitive architecture. Distributed cognition extends this notion by including interactions between people and their environment, in addition to phenomena that emerge in social interactions." In contrast to computer-inspired models of the information-processing paradigm, for distributed cognition minds are not representational engines, "whose primary function is to create internal models of the external world. Instead, the organization of the mind is an emergent property of interactions between internal and external resources" (Waloszek, 2003).

To obtain a better purchase on the way these theoretical paradigms are converging upon each other, concretely, that of Cultural Linguistics and the paradigm of the Enactive Cognitivism which is increasingly prevalent in the cognitive sciences, we can examine how complex systems theory allows language and cultural conceptualizations to be viewed as a form of 'distributed cognition'. Waloszek (2003) summarized the distributed cognition approach in the following manner, drawing on the recently published research of Hollan, Hutchins and Kirsh (2000):

The first principle concerns the boundaries of the unit of analysis for cognition:

- Distributed cognition looks for cognitive processes in the functional relationships between elements that participate together in a process –the traditional cognitive unit of analysis is the individual.

The second principle concerns the range of mechanisms that may be assumed to take part in cognitive processes:

- While traditional views look for cognitive events in the manipulation of symbols inside individual actors, distributed cognition looks for a broader class of cognitive events and does not expect all such events to be encompassed by the skin or skull of an individual.

When one applies these principles to the observation of human activity, various distributions of cognitive processes become apparent. The following three are of particular interest […]:

- Cognitive processes may be distributed across members of a social group
- Cognitive processes may involve coordination between internal and external (material, environment) structure

- Cognitive processes may be distributed through time, so that the products of earlier events can transform the nature of later events.

In Table 1, the tenets of the traditional view are contrasted with the distributed cognition framework. As can be seen, the acceptance of the distributed cognition model by those working in fields of cognitive science is another indication of the movement away from the older information-processing paradigm.[10]

Table 1. Adapted from Waloszek (2003) and Hollan, Hutchins and Kirsh (2000).

| | Traditional View | Distributed Cognition View |
|---|---|---|
| **Unit of Analysis** | individual person | all—the system is larger than individuals, all sizes of social-group networks; speech communities |
| **Mechanism** | manipulation of symbols and linguistic artifacts by individual actors; synchronic emphasis | functional systems, groups, emphasis on space/time, diachronic dimension |
| **Methodology** | controlled experiments, emphasis on cognitive properties of individuals | language viewed as a complex adaptive system, emphasis on cognitive properties of systems, dynamical systems approach, sociocultural situatedness, ethnography |

As can be appreciated from this discussion of the characteristics of 'distributed cognition', the framework is one that coincides closely with the tenets and theoretical approaches of those working in areas of Cultural Linguistics and other usage-based models of language. In short, the shared assumptions are substantial.

## Reflections on cognitive linguistics and its experiential hypothesis

To fully appreciate the significance of integrating innovative concepts such as CAS and 'distributed cognition' into the research paradigm of Cultural Linguistics, we need to keep in mind the role played by cognitive linguistics over the past thirty years. Although there certainly have been notable exceptions and dissenting voices were often heard, for the most part cognitive linguistics went off in directions that took it away from the study of role of culture in shaping language and its influence on all levels of language, not just the lexicon but also grammatical

[10] Perhaps one of the best known early attempts to appropriate a theoretical framework from cognitive science, is represented by the connectionist-inspired discussions of Strauss and Quinn (1997, pp. 48-84, esp. 60-61) where the architecture of prototypical connectionist models of cognition (also sometimes referred to as 'parallel distributed processing' or 'neural network modeling') is contrasted with that of the more typical traditional model of 'symbolic processing,' 'classical' or GOFAI (Good Old Fashioned Artificial Intelligence), also known collectively as 'computational' theories of mind.

elements that interact with cultural components.[11] This distancing of the field from culturally-oriented pursuits increased as the Lakoffian theory of conceptual metaphor gradually gained ground as well as, eventually, the associated framework called 'experiential realism' or 'embodied scientific realism' (Lakoff & Johnson, 1999) which briefly stated, argued that our metaphors, and therefore our reasoning, derive from our bodies: they are *embodied*. In 1999, Lakoff and Johnson asserted that "human concepts are not just reflections of an external reality, but ... they are crucially shaped by our bodies and brains, especially by our sensorimotor system" (Lakoff & Johnson, 1999). That stance was buttressed by their earlier work on metaphor and more importantly the notion of *image schemas* which again came to be viewed, ultimately, as bodily-based entities (Grady, 1997; Johnson, 1987; Lakoff & Johnson, 1980; Lakoff & Turner, 1989).[12]

At the same time, researchers began to question "the more theoretical question of the extent to which the metaphorical patterns to be found in the lexicon have their origins in (universal) bodily experiences, and the extent to which they are cultural and ideological constructs" (Goatly, 2007, p. 5). The Lakoffian view was anchored in a universalist position and spoke of the dominant or even exclusive role of bodily experience in shaping metaphor, leaving cultural influences and variations aside. However, as Goatly and others have argued, "a considerable number of metaphor themes lack a bodily experiential correlation as their basis, suggesting non-universality, and [one] concludes that the experiential hypothesis may be a form of reductionism, a hypothesis already challenged by the idea of the body as historical and cultural as well as biological" (Goatly, 2007, p. 7).

With respect to the factors that contributed to the acceptance and rapid assimilation of Lakoffian theory not only within cognitive linguistics but also in fields adjacent to it, e.g., inside cognitive science itself, Goatly (2007, p. 276) makes the following cogent observation:

> I would like to turn our ideological lenses upon what Lakoff calls "*The* contemporary theory of metaphor". This grew up in a particular context, among Chomskyan notions of language. Two aspects of Chomsky's theory seem to have been inherited. The emphasis on linguistic universals or universal grammar, and the notion that language is an innate genetically determined faculty, though for Chomsky's mental faculty Lakoff and his followers substitute the biological (Lakoff & Johnson, 1999, p. 476).[13]

[11] Here I refer to syntactic devices that can interact with cultural conceptualizations, e.g., the noun-class markers in an Australian Aboriginal language like Murrinth-Patha or the use of second-person plural pronoun in Persian (Sharifian, 2011; Walsh, 1993).

[12] In his critique of the experiential hypothesis, Harder (1999, pp. 195-196) phrases it this way: "Because the concern of cognitive linguistics has been to assert the embeddedness of language in a wider cognitive experiential context; no sharp distinctions [are made] between cognitive and biological phenomena, because language is grounded in the human body, and because all the skills can be seen as mediated by neurological processes (which can be modeled by increasingly sophisticated connectionist simulations)."

[13] Even though today in the field of cognitive linguistics conceptual categories are viewed as both embodied and culturally constructed—that such cognition is shaped by interactions of individuals with each other and their perception of the world including the cultural environment and their bodily experience—, there is no question that

In contrast, early in the history of the development of cognitive linguistics as a sub-discipline there was the perception that cognitive linguists could have much in common with cognitive anthropologists, "since both groups dealt with their main area of focus (namely, language and culture respectively) as cognitive systems. However, this perception soon faded, perhaps because many working in the field of cognitive linguistics did not fully recognize just how closely culture interacts with and shapes language and conceptualization" (Sharifian, 2011, p. xv). Rather than focusing on the language-culture nexus and consequently the sociocultural situatedness of language, cognitive linguistics moved off in other directions.[14]

However, in recent years, far greater attention has been placed on these ontological and epistemological issues and to reflecting on the sometimes deeply-seated assumptions that have guided a significant part of the research carried out under the banner of cognitive linguistics in the past thirty years (Frank, 2013; Harder, 1999; Sinha, 1999; Sinha & Bernárdez, this volume). In other words, when looking at the larger picture, we can see that this current reassessment of the scope of the cognitive linguistics enterprise as well as its ontological and epistemological foundations reflects major shifts in emphasis not only in that field, but also the new assumptions that have been feeding into the reorientation of the larger transdisciplinary research paradigm developing in the cognitive sciences.

## Looking to the future: Successes and challenges

Whereas only time will tell what influence Cultural Linguistics will have on the transdisciplinary paradigm emerging in the cognitive sciences, certainly, one of the major success stories of this new methodology for linguistics is the research that has been carried out in intercultural communication, multilingualism and World Englishes (Sharifian, 2009b; Sharifian & Jamarani, 2013; Sharifian & McKay, 2013; Sharifian & Palmer, 2007). While the contributions that have been made in these subfields are already substantial, given the increasing globalization brought about by the role of English as the de facto lingua franca of a myriad of technologically enabled communication acts, the interest and need for further studies in these areas will only increase, bringing into even clearer focus the importance of a methodology capable of addressing the

for many years the Lakoffian experiential model of neural embodiment held sway and set the tone for many research initiatives.

[14] Writing some twenty years ago, Geeraerts (1995: 111-112) provided this description of the major research interests of those working in the field of cognitive linguistics, themes that were prevalent at that time and that have not changed significantly since then: "Because cognitive linguistics sees language as embedded in the overall cognitive capacities of man, topics of special interest for cognitive linguistics include: the structural characteristics of natural language categorization (such as prototypicality, systematic polysemy, cognitive models, mental imagery and metaphor); the functional principles of linguistic organization (such as iconicity and naturalness); the conceptual interface between syntax and semantics (as explored by cognitive grammar and construction grammar); the experiential and pragmatic background of language-in-use; and the relationship between language and thought, including questions about relativism and conceptual universals."

issues raised by the 'glocalization' of these diverse cultural and linguistic communicative practices (Sharifian, 2013).

Similarly, the impact of the application of approaches informed by cultural conceptalizations on cross-cultural studies of metaphor and emotion has been significant, moving discussions away from reductionist positions to more historically nuanced and entrenched approaches and, hence, to investigations of the socio-culturally contingent properties of language use and, for example, away from more traditional Lakoffian accounts of conceptual metaphor. While this more culturally-oriented approach to deciphering the historical entrenchment of metaphors and emotion has been underway for some time (Dirven, Frank, & Ilie, 2000; Geeraerts & Grondelaers, 1995), in the past ten years this area of Cultural Linguistics has taken on a life of its own with the publication of a significant number of in-depth studies on the subject, yet another indication of the increased interest in historically informed research initiatives that weave together linguistic, anthropological and philosophical materials to provide an explanation for the particular patterns of usage (Frank et al., 2008; Kövecses, 2005; Sharifian et al., 2008; Yu, 2009).

At the same time, in recent years there has been significant cross-fertilization between cognitive linguistics and critical discourse theory which has led, in turn, to the interrogation of metaphorical patterns in terms of their role in reflecting, representing and shaping social practices and beliefs, e.g., Chilton (1996) and Van Dijk (1998) among others. Of late, these two traditions have begun to come together as the central focus of a significant number of researchers (Charteris-Black, 2005; Musolff, 2004; Musolff & Zinken, 2004). In a similar way, Cultural Linguistics takes up a position that builds on the belief that culture and language are inextricably intertwined, "that language is not some transparent medium, but that it shapes our thoughts and practices" (Goatly, 2007, p. 4).[15] And, keeping in mind that language is a complex adaptive system and hence characterized by circular causality, speakers do not merely passively reproduce the dominant patterns of their culture and language, rather through their micro-level speech acts and related sociocultural practices they shape, transmit and alter the overall system—the macro-level of the system—, albeit for the most part unreflectively (Frank & Gontier, 2011; Sharifian, 2009a; 2011, pp. 19-44).

Consequently, developing and solidifying a methodology and theoretical framework capable of tracing the way that cultural conceptualizations, entrenched in this language-culture nexus, are created, maintained and propagated—both vertically and horizontally—within particular linguistic communities as well as across diverse linguistic communities will continue to be one of the challenges facing those producing applied research in the sub-discipline of Cultural Linguistics. On the one hand, it is clear that these goals will not be accomplished overnight or by fiat, but rather they will come about slowly, through a negotiated process of gradual accretion, resulting in a coalescence of positions and guided by the methodological

[15] Cf. also Leavitt (this volume), Gladkova (this volume), Kecskes (this volume), Robinson and Altarriba (this volume), and Sterponi and Lai, (this volume).

approaches brought to bear by researchers working on specific topics in Cultural Linguistics and focused on concrete questions of linguistic and cultural practice.

**The multidisciplinary challenge**

When defining the scope of Cultural Linguistics, one of the characteristics that is often pointed out is its multidisciplinary focus: that the focus on work on language and culture brings together scholars from a variety of different disciplines, often academically isolated from each other. Until recently, disciplines by their own nature and the power structures implicit in the competition for scarce institutional resources created centripetal tendencies, where the discipline or sub-discipline in question regularly developed terminological and methodological characteristics that were usually or primarily understood only by members of the in-group, closing it off from other disciplines or sub-disciplines and giving it a unique identity.

At the same time the discipline or sub-discipline tended to develop a distinct paradigmatic tradition within the larger contested domain brought about by the need to secure funding, prestige and other resources. However, over the past twenty years, these disciplinary frontiers, although still prevalent on paper and characteristic of much of the institutional organization of the academy, are increasingly breaking down with more and more disciplinary border crossings and, in some cases, actual realignments of internal academic departments and units to accommodate research initiatives and to take advantage of funding sources that depend upon or explicitly require an interdisciplinary perspective.

In some instances, this has resulted in the creation of inter-disciplinary clusters where faculty from various departments are brought together to address problems whose very nature demand an interdisciplinary or multi-disciplinary approach. Whereas this tendency does contribute to inter- and multi-disciplinary initiatives, there is a down-side, as Clifford (2005) has noted in his reflections on these broader changes that are exerting pressures on current reconfigurations of disciplinary boundaries. There is definitely room for concern in terms of the reasons for the creation of such clusters, namely, the role placed by "the neoliberal corporate university, with its increased emphasis on marketable outcomes, flexible research teams, and audit-driven interdisciplinarity" (Clifford, 2005, p. 48).

Even though Cultural Linguistics is not a unified theory of language and culture, but rather a flexible and evolving theoretical framework, for this field of research to flourish inside and outside the academy there is the need for sense of coherence, common goals, and at least to some degree, a shared methodology and theoretical framework. These can be brought about by a variety of means, e.g., the organization conferences, publications and handbooks such as this one that show the depth and breadth of research being carried out, the development of collaborate research projects drawing team members from different disciplines and addressing questions that require a multidisciplinary approach. Yet there are challenges to the development of collaborative research projects, including the tendency for linguists as well as anthropologists to

conceptualize and carry out their investigations alone, rather than in teams. Moreover, if at some point Cultural Linguistics begins to fully interact with the evolving paradigm in cognitive science, this will involve reaching across the disciplines and engaging with problems and issues that call for collaborative effort and cross-disciplinary input (Bender, Hutchins & Medin, 2010, p. 377).

In recent years this sense of multidisciplinary coherence has increased in part because of the dissemination of research in areas related to Cultural Linguistics and the rise to prominence of subfield journals produced by various sectors of those working in the field of Cultural Linguistics, including the recently launched *International Journal of Language and Culture* (*IJoLC*). In addition, a number of substantial book-length studies have brought increased attention to Cultural Linguistics, beginning with the publication of Palmer's seminal work *Towards a Theory of Cultural Linguistics* (1999) and followed up by Sharifian's comprehensive study *Cultural Conceptualizations and Language: Theoretical Framework and Applications* (2011). And another important milestone has been the establishment in 2011 of the John Benjamins book series, *Cognitive Linguistic Studies in Cultural Contexts*, which provides a home for additional cutting-edge research in this area. Furthermore, of particular significance in this process of pedagogic accommodation to work on cultural conceptualizations and Cultural Linguistics in general has been the cross-disciplinary applicability of much of the research being carried out this area and hence its congruence with the evolving nature of these inter-departmental and institutional reconfigurations within academia.

There is every indication that in the future the sub-discipline of Cultural Linguistics will continue to draw on and take advantage of theoretical and methodological developments in other disciplines, for example, cognitive linguistics, cognitive anthropology, anthropological linguistics, cognitive psychology, cultural anthropology and areas of applied linguistics including World Englishes and intercultural communication, English as an International Language and cross-cultural pragmatics. At the same time, there is every reason to believe that it will continue to pursue flexible arrangements for knowledge production and transmission, arrangements that are fully open to dialogue with these other disciplines as well as to engaging in dialogues with other areas inside linguistics.

## Concluding thoughts

At this juncture it is clear that the subfield of Cultural Linguistics along with its new journal *IJoLC* will create a space for these multidisciplinary endeavors by investigators and allow them to expand their horizons, taking the full implications of the linguistic-cultural nexus into account, both methodologically and theoretically, when carrying out their work. There is little doubt that in the years to come cross-disciplinary exchanges already taking place will foster multidisciplinary collaboration and joint projects that in turn will result in research initiatives and new debates which have the capacity to impact the broader field of cognitive science itself as well as other related disciplines and sub-disciplines. In turn, since Cultural Linguistics is

characterized by an openness to these boundary crossings, we can expect that the resulting exchanges will contribute to further methodological and theoretical innovation within the field of Cultural Linguistics itself.

To what extent these processes of cross-fertilization will impact the larger evolving research paradigm of those working in the cognitive sciences is an open-ended question. It will depend on whether investigators with a commitment to Cultural Linguistics will also see the importance of gaining a better grounding in related areas, attending to the concerns and issues motivating researchers working, for example, from within the paradigm of Enactive Cognitive Science or those attempting to apply Bayesian approaches to modeling and comparing the content of large datasets composed of linguistic, genetic and cultural materials drawn from different populations and hence from a diversity of language-cultures (Dunn et al., 2005; Holman et al., 2014; Russell, Silva, & Steele, 2014).[16] While there are clearly areas of overlap where insights from Cultural Linguistics could shed new light on questions that are central to these other disciplinary endeavors, for Cultural Linguists to have a real impact on these areas of cognitive science will require developing, as mentioned, new investigative models. To do so, teamwork will be necessary and this, in turn, should lead to the development of innovative collaborative initiatives which are truly transdisciplinary in nature. In conclusion, as is well recognized, established canonical traditions that have tended to separate and compartmentalize disciplines often break down in practice through interdisciplinary collaboration, articulation and re-articulation (Clifford, 2005). In this sense, Cultural Linguistics promises to serve as a bridge that brings together researchers from a variety of fields, allowing them to focus on problems of mutual concern from a new perspective and in all likelihood discover new problems (and solutions) that until now have not been visible.

**Related topics:**

Culture and emotional language
Culture and Translation
Cultural Linguistics
Language and cultural history
Language and culture in cognitive anthropology.
Language, culture and identity
Linguistic Relativity: Precursors and transformations
World Englishes and Local Cultures
Writing across cultures

[16] Cf. Levinson and Evans (2010) for a remarkable and at times heated debate between those in the traditional cognitivist camp with their universalizing abstract frameworks and two linguists who propose an integrative, coevolutionary model to describe the complex interaction between mind and cultural linguistic traditions. In their article entitled "Time for a sea-change in linguistics", they argue "that the language sciences are on the brink of major changes in primary data, methods and theory" (Levinson & Evans, 2010, p. 2733), a position that coincides closely with the arguments made in this chapter. Cf. also Evans and Levinson (2009).

**Future readings:**

D'Andrade, R. (1995). *The Development of Cognitive Anthropology*. Cambridge: Cambridge University Press. (A comprehensive historical account of cognitive anthropology from its origins in the 1950s, tracing how early notions about semantics and taxonomies evolved into theories about prototypes, schemas and connectionist networks, and concluding with a review of recent scholarship on the social distribution of cultural knowledge and cultural models.)

Gentner, D., & Goldin-Meadow, S. (Eds.). (2003). *Language in Mind: Advances in the Study of Language and Thought*. Cambridge, Mass./London: The MIT Press. (An excellent collection of introductory essays covering a broad and representative range of topics on language and culture.)

Lucy, J. A. (1992). *Language Diversity and Thought: A Reformulation of the Linguistic Relativity Hypothesis*. Cambridge: Cambridge University Press. (One of the classic studies of the Sapir-Whorf linguistic relativity hypothesis, it surveys the various responses that the writings of Boas, Sapir and Whorf have elicited across time and puts forward a proposal emphasizing the need for further empirical research in the field so that these theories and methods can be brought to bear on empirical data, the kind of assessment that attends to both cognitive and cultural outcomes.)

Shore, B. (1966). *Culture in Mind: Cognition, Culture and the Problem of Meaning*. New York: Oxford University Press. (Covering a wide range of material, both theoretical and ethnographic, Shore delves into the more cognitive side of culture, highlighting the need to rethink culture in terms of models while placing emphasis on the interplay between 'personal' or 'mental' models and 'conventional,' or socially 'instituted' cultural models.)

**References**

Altarriba, J. (Ed.). (1993). *Cognition and Culture: A Cross-cultural Approach to Cognitive Psychology*. Amsterdam: Elsevier Science Publishers.

Beckner, C., Blythe, R., Bybee, J., Christiansen, M. H., Croft, W., Ellis, N. C., Holland, J., Ke, J., Larsen-Freeman, D., Schoenemann, T. (2009). Language as a complex adaptive system. In N. C. Ellis & D. Larsen-Freeman (Eds.), *Language as a Complex Adaptive System. Language Learning 59. Special Issue. Supplement 1*, 1-26.

Bender, A., Hutchins, E., & Medin, D. (2010). Anthropology in Cognitive Science. *Topics in Cognitive Science, 2*, 374-385.

Charteris-Black, J. (2005). *Politicians and Rhetoric: The Persuasive Power of Metaphor*. Basingstoke: Palgrave-McMillon.

Clark, A., & Chalmers, D. (1998). The extended mind. *Analysis, 58*(1), 7-19.

Clark, H. H. (1996). *Using Language*. Cambridge, Mass.: Cambridge University Press.

Clifford, J. (2005). Rearticulating anthropology. In D. A. Segal & S. J. Yanagisako (Eds.), *Unwrapping the Sacred Bundle: Reflections on the Disciplining of Anthropology* (pp. 24-48). Durham/London: Duke University Press.

Conrad, M. (1983). *Adaptability*. New York: Plenum.

Dirven, R., Frank, R. M., & Ilie, C. (2000). *Language and Ideology. Vol. 1. Cognitive Descriptive Approaches*. Amsterdam/Philadelphia: John Benjamins.

Dunn, M., Terrill, A., Reesink, G., Foley, R., & Levinson, S. C. (2005). Structural phylogenetics and the reconstruction of ancient language history. *Science, 309*, 2072-2075.

Eglin, P. (this volume). Language, culture and interaction.

Ellis, N. C., & Larsen-Freeman, D. (Eds.). (2009). Language as a Complex Adaptive System. *Language Learning 59. Special Issue. Supplement 1*.

Evans, N., & Levinson, S. C. (2009). The myth of language universals: Language diversity and its importance for cognitive science. *Behavioral and Brain Sciences, 32*(5), 429-492.

Frank, R. M. (2008). The language-organism-species analogy: A complex adaptive systems approach to shifting perspectives on "language". In R. M. Frank, R. Dirven, T. Ziemke & E. Bernárdez (Eds.), *Body, Language and Mind. Vol. 2. Sociocultural Situatedness* (pp. 215-262). Berlin: Mouton de Gruyter.

Frank, R. M. (2013). Body and mind in Euskara: Contrasting dialogic and monologic subjectivities. In R. Caballero-Rodríguez & J. E. Díaz Vera (Eds.), *Sensuous Cognition: Explorations into Human Sentience: Imagination, (E)motion and Perception* (pp. 19-51). Berlin: Mouton de Gruyter.

Frank, R. M., Dirven, R., Ziemke, T., & Bernárdez, E. (Eds.). (2008). *Body, Language and Mind. Vol. 2. Sociocultural Situatedness*. Berlin: Mouton de Gruyter.

Frank, R. M., & Gontier, N. (2011). On constructing a research model for historical cognitive linguistics (HCL): Some theoretical considerations. In H. Tissari, P. Koivisto-Alanko, K. I. Allan & M. Winter (Eds.), *Historical Cognitive Linguistics* (pp. 31-69). Berlin: Mouton de Gruyter.

Geeraerts, D., & Grondelaers, S. (1995). Looking back at anger: Cultural traditions and metaphorical patterns. In J. R. Taylor & R. E. MacLaury (Eds.), *Language and the Cognitive Construal of the World* (pp. 153-179). Berlin/New York: Mouton de Gruyter.

Gladkova, A. (this volume). Ethnosyntax.

Goatly, A. (2007). *Washing the Brain: Metaphor and Hidden Ideology*. Amsterdam/Philadelphia: John Benjamins.

Goodenough, W. H. (1957). Cultural anthropology and linguistics. In P. L. Garvin (Ed.), *Report on the Seventh Annual Round Table Meeting on Linguistics and Language Study* (pp. 167-173). Monograph Series on Language and Linguistics 9. Washington D. C.: Georgetown University Press.

Grady, J. E. (1997). *Foundations of Meaning: Primary Metaphors and Primary Scenes.* Unpublished Ph.D dissertation. University of California, Berkeley.

Harder, P. (1999). Partial autonomy: Ontology and methodology in cognitive linguistics. In T. Janssen & G. Redeker (Eds.), *Cognitive Linguistics: Foundations, Scope and Methodology* (pp. 195-222). Berlin/New York: Mouton de Gruyter.

Hashimoto, T. (1998). Dynamics of internal and global structure through linguistic interactions. In J. S. Sichman, R. Conte & N. Gilbert (Eds.), *Multi-agent Systems and Agent Based Simulation* (pp. 124-139). LNAI Series, Vol. 1534. Berlin: Springer-Verlag.

Haspelmath, M. (2011). The language system is abstract but cannot be understood without its social functions (Comments on Martin Stokhof and Michiel van Lambalgen, "Abstractions and idealisations: The construction of modern linguistics"). *Theoretical Linguistics, 37*(1-2), 45-50.

Hollan, J., Hutchins, E., & Kirsh, D. (2000). Distributed cognition: Toward a new foundation for human-computer interaction research. *ACM Transactions on Computer-Human Interaction, 7*(2), 176-196.

Holland, J. H. (2005). Language acquisition as a complex adaptive system: Essays in Evolutionary Linguistics. In J. W. Minett & W. S.-Y. Wang (Eds.), *Language Acquisition, Change and Emergence: Essays in Evolutionary Linguistics* (pp. 411-435). Hong Kong: Hong Kong University Press.

Holman, E. W., Wichmann, S., Brown, C. H., & Eff, E. A. (2014). Diffusion and inheritance of language and culture: A comparative perspective. *Social Evolution and History, 14*(2).

Hutchins, E. (1995). *Cognition in the Wild*. Cambridge, Mass.: MIT Press.

Hutchins, E. (2001). Distributed Cognition. In N. J. Smelser & P. B. Baltos (Eds.), *International Encyclopedia of the Social and Behavioral Sciences* (pp. 2068-2072). Amsterdam/New York: Elsevier.

Hutchins, E., & Hazelhurst, B. (1991). Learning in the cultural process. In C. Langton, C. Taylor, D. Farmer & S. Rasmussen (Eds.), *Artificial Life II: SFI Studies in the Sciences of Complexity, Vol. 10* (pp. 689-706). New York: Addison Wesley.

Hutchins, E., & Hazelhurst, B. (2002). Auto-organization and emergence of shared language structure. In A. Cangelosi & D. Parisi (Eds.), *Simulating the Evolution of Language* (pp. 279-305). London: Springer-Verlag.

Johnson, M. (1987). *The Body in the Mind: The Bodily Basis of Meaning, Reason and Imagination*. Chicago: University of Chicago Press.

Kecskes, I. (this volume). Language, culture and context.

Kemmer, S., & Barlow, M. (2000). Introduction: Usage-based conception of language. In M. Barlow & S. Kemmer (Eds.), *Usage-based Models of Language* (pp. vii-xxviii). Stanford, Calif.: CSLI Publications.

Kövecses, Z. (2005). *Metaphor in Culture: Universality and Variation*. Cambridge: University of Chicago Press.

Kronenfeld, D. B. (2002). Culture and society: The role of distributed cognition. In R. Trappl (Ed.), *Cybernetics and Systems, Vol. 1* (pp. 430-431). Austrian Society for Cybernetic Studies: Vienna.

Kronenfeld, D. B. (2004). An agent-based approach to cultural (and linguistic) change. *Cybernetics and Systems, 35(2/3)*, 211-228.

Kronenfeld, D. B., & Kaus, A. (1993). Starlings and other critters: Simulating society. *Journal of Quantitative Anthropology, 4*, 143-174.

Lakoff, G., & Johnson, M. (1980). *Metaphors We Live by*. Chicago; London: University of Chicago Press.

Lakoff, G., & Johnson, M. (1999). *Philosophy in the Flesh: The Embodied Mind and its Challenges to Western Thought*. Chicago: University of Chicago Press.

Lakoff, G., & Turner, M. (1989). *More than Cool Reason: A Field Guide to Poetic Metaphor*. Chicago: University of Chicago Press.

Leavitt, J. (this volume). History of linguistic relativity.

Levinson, S. C., & Evans, N. (2010). Time for a sea-change in linguistics: Responses to comments on "The myth of language universals." *Lingua, 120*(12), 2733-2759.

Lindblom, J. (2007). *Minding the Body: Interacting Socially through Embodied Action*. Linköping: Linköping University Institute of Technology.

Lindblom, J., & Ziemke, T. (2003). Social situatedness of natural and artificial intelligence: Vygotsky and beyond. *Adaptive Behavior, 11*(2), 79-96.

Lindblom, J., & Ziemke, T. (2007). Embodiment and social interaction: A cognitive science perspective. In T. Ziemke, J. Zlatev & R. M. Frank (Eds.), *Body, Language and Mind: Embodiment* (pp. 129-163). Berlin: Mouton de Gruyter.

Musolff, A. (2004). Metaphor and conceptual evolution. *metaphorik.de, 7*, 55-75.

Musolff, A., & Zinken, J. (2004). *Metaphor and Discourse*. London: Palgrave Macmillan.

Palmer, G. B. (1999). *Toward a Theory of Cultural Linguistics*. Austin: University of Texas Press.

Redding, S. G. (1980). Cognition as an aspect of culture and its relation to management processes. An exploratory review of the Chinese case. *Journal of Management Studies, 17*(2), 127-148.

Risager, K. (this volume). Linguaculture: The language-culture nexus in transnational perspective.

Roberts, J. M. (1964). The self-management of culture. In W. H. Goodenough (Ed.), *Explorations in Cultural Anthropology: Essays in Honor of George Peter Murdoc* (pp. 433-454). London: McGraw Hill.

Robinson, C. J., & Altarriba, J. (this volume). Culture and language processing.

Russell, T., Silva, F., & Steele, J. (2014). Modelling the spread of farming in the Bantu-speaking regions of Africa: An archaeology-based phylogeography. *PLoS ONE, 9*(1), e87854. Availabe at http://www.plosone.org/article/info%0087853Adoi%0087852F0087810.0081371%00878 52Fjournal.pone.0087854 [accessed 04.06.14].

Sharifian, F. (2003). On cultural conceptualizations. *Journal of Cognition and Culture, 3*(3), 187-207.

Sharifian, F. (2008). Distributed, emergent cultural cognition, conceptualisation and language. In R. M. Frank, R. Dirven, T. Ziemke & E. Bernárdez (Eds.), *Body, Language and Mind. Vol. II. Sociocultural Situatedness* (pp. 109-136). Berlin: Mouton de Gruyter.

Sharifian, F. (2009a). On collective cognition and language. In H. Pishwa (Ed.), *Social Cognition and Language: Expression of the Social Mind* (pp. 163-180). Berlin: Mouton de Gruyter.

Sharifian, F. (2011). *Cultural Conceptualizations and Language: Theoretical Framework and Applications*. Amsterdam/Philadelphia: John Benjamins.

Sharifian, F. (2013). Globalisation and developing metacultural competence in learning English as an International Language. *Multilingual Education, 3*(7), 1-12. Available at http://www.multilingual-education.com/content/pdf/2191-5059-2193-2197.pdf [accessed 04.11.14].

Sharifian, F. (this volume). Cultural Linguistics.

Sharifian, F. (Ed.). (2009b). *English as as an International Language: Perspectives and Pedagogical Issues*. Bristol, UK: Multilingual Matters.

Sharifian, F., Dirven, R., Yu, N., & Neiemier, S. (Eds.). (2008). *Culture, Body, and Language: Conceptualizations of Internal Body Organs across Cultures and Languages.* Berlin/New York: Mouton de Gruyter.

Sharifian, F., & Jamarani, M. (2013). *Language and Intercultural Communication in the New Era*. New York/London: Routledge.

Sharifian, F., & McKay, S. L. (Eds.). (2013). Globalization, Localization, and Language Use/Learning *Multilingual Education. Special Issue, 3*(3).

Sharifian, F., & Palmer, G. B. (Eds.). (2007). *Applied Cultural Linguistics: Implications for Second Language Learning and Intercultural Communication*. Amsterdam/Philadelphia: John Benjamins.

Sharrock, W. W. (1974). On owning knowledge. In R. Turner (Ed.), *Ethnomethodology: Selected Readings* (pp. 45-53). Harmondsworth, UK: Penguin Education.

Sharrock, W. W., & Anderson, R. J. (1982). On the demise of the native: Some observations on and a proposal for ethnography. *Human Studies, 5*(1), 119-135.

Silverstein, M. (2004). 'Cultural' concepts and the language-culture nexus. *Current Anthropologist, 45*(5), 621-652.

Silverstein, M. (2005). Languages/cultures are dead! Long live the linguistic-cultural! In D. A. Segal & S. J. Yanagisako (Eds.), *Unwrapping the Sacred Bundle: Reflections on the Disciplining of Anthropology* (pp. 99-125). Durham: Duke University Press.

Sinha, C. (1999). Grounding, mapping and acts of meaning. In T. Janssen & G. Redeker (Eds.), *Cognitive Linguistics: Foundations, Scope and Methodology* (pp. 223-255). Berlin/New York: Mouton de Gruyter.

Sinha, C., & Bernárdez, E. (this volume). Metaphors, maps and fusions: Space, time and space-time.

Sperber, D., & Claidière, N. (2005). Why modeling cultural evolution is still such a challenge. *Biological Theory, 1*(1), 20-22.

Sperber, D., & Hirschfeld, L. (1999). Culture, cognition and evolution. In R. Wilson & F. Keil (Eds.), *MIT Encyclopaedia of the Cognitive Sciences* (pp. cxi–cxxxii). Cambridge, Mass: MIT Press.

Steels, L. (1999). The puzzle of language evolution. *Kognitionswissenschaft, 8*(4), 143-150.

Steels, L. (2002). Language as a complex adaptive system. In F. Brisard & T. Mortelmans (Eds.), *Language and Evolution* (pp. 79-87). Wilrijk: UIA. Antwerp Papers in Linguistics 101.

Steels, L. (Ed.). (2012). *Experiments in Cultural Language Evolution*. Amsterdam/Philadelphia: John Benjamins.

Steels, L., & de Boer, B. (2007). Embodiment and self-organization of human categories: A case study of speech. In T. Ziemke, J. Zlatev & R. M. Frank (Eds.), *Body, Language and Mind. Volume 1: Embodiment* (pp. 411-430). Berlin/New York: Mouton de Gruyter.

Sterponi, L., & Lai, P. F. (this volume). Culture and language development.

Stewart, J., Gapenne, O., & Di Paolo, E. A. (2011a). Introduction. In J. Stewart, O. Gapenne & E. A. Di Paolo (Eds.), *Enactivism: Towards a New Paradigm in Cognitive Science* (pp. vii-xvii). Cambridge: MIT Press.

Stewart, J., Gapenne, O., & Di Paolo, E. A. (Eds.). (2011b). *Enactivism: Towards a New Paradigm in Cognitive Science*. Cambridge: MIT Press.

Stokhof, M., & van Lambalgen, M. (2011). Abstractions and idealisations: The construction of modern linguistics. *Theoretical Linguistics, 37*(1-2), 1-26.

Strauss, C., & Quinn, N. (1997). *A Cognitive Theory of Cultural Meaning*. Cambridge: Cambridge University Press.

Tomasello, M. (2004). The human adaptation for culture. In F. Wuketits & C. Antweiler (Eds.), *Handbook of Human Evolution, Vol.1: The Evolution of Human Societies and Cultures* (pp. 1-23). Weinheim, Germany: Wiley-VCH Verlag GmbH & Co.

Tylor, E. B. (1871). *Primitive Culture: Researches into the Development of Mythology, Philosophy, Religion, Language, Art and Customs, Vol. 1*. London: John Murray.

Van Dijk, T. A. (1998). *Ideology: A Multidisciplinary Approach*. London: Sage.

Waloszek, G. (2003). Dissolving boundaries with distributed cognition and xApps. Available at http://www.sapdesignguild.org/editions/edition7/print_distrib_cognition.asp [accessed 04.02.14].

Walsh, M. (1993). Classifying the world in an Aboriginal language. In M. Walsh & C. Yallop (Eds.), *Language and Culture in Aboriginal Australia* (pp. 107-122). Canberra: Aboriginal Studies Press.

Yu, N. (2009). *From Body to Meaning in Culture: Papers on Cognitive Semantic Studies of Chinese*. Amsterdam/Philadelphia: John Benjamins.

Ziemke, T. (1999). Rethinking grounding. In A. Riegler, M. Peschl & A. von Stein (Eds.), *Understanding Representation in the Cognitive Sciences* (pp. 177-190). New York: Kluwer Academic/Plenum Publishers.