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RESEARCH ARTICLE

Exploring the Impacts of Linguistic Relativity on Consciousness and Cultural Perception

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ARTICLE INFO	ABSTRACT
  *Corresponding Author: albarakat63@hotmail.com	The Sapir-Whorf hypothesis (also known as the theory of linguistic relativity) says that language shapes humans' thoughts and views of reality. This research looks at the deep relationship between language and the mind, as well as the relationship between mentality and culture. Study of cross-linguistic variations will impact multiple aspects of cognition such as memory, categorization and emotional expression. Further, the study focuses on how varying languages create different worldviews. Studies in psycholinguistics and cognitive science shed light on the ways in which language impact perceptions, whether it be of spatial orientation, color discrimination or even temporal resolution. The paper will also discuss how language creates a cultural identity and bonding among people from the same culture and create problems in transfer of ideas with people from other cultures. We pay special attention to the reciprocal relationship between language change and social change; the relationship is positioned as a dynamic one.

INTRODUCTION TO LINGUISTIC RELATIVITY

Over the last century, the idea that language shapes our perception of reality has gained traction in fields of study as diverse as cognitive psychology, philosophy, and linguistics (1). The linguistic relativity principle posits that the structure of a language and the vocabulary its speakers have available to them influence thought and perception (2). Recently, the hypothesis has sparked renewed interest in the public sphere, which suggests the continuing appeal of an idea that traces back to the earliest days of anthropology (3-5). The historic roots of this idea can be found in the early history of cross-cultural studies in the 19th century (6-7). Since the popularization of the linguistic relativity hypothesis, research has revealed, for example, that speakers of different languages think about physical motion in ways that reflect different cultural experiences with transportation and landscapes (8, 9).

The influential book framed thought itself as metaphorical and requiring language (10). Systematic exploration of the effects of language on thought, perception, and experience has influenced fields ranging from cognitive and neurolinguistics to anthropology and has motivated political and legal reforms (11, 12). Contemporary research in this area ranges broadly, from cross-linguistic studies that compare how speakers of different languages approach tasks ranging from situated embodiment in space and time, concepts of color, musical pitch, quantity, and perception of textured surfaces in microgravity, to research into how individuals, or how citizens in contemporary societies, may come

to inhabit and draw on different linguistic structures and ways of using them, known as register or genre (13, 14). Research has also focused on how learning and using new languages can create changes in perception, cognition, and consciousness (15). These ways of speaking and researching the linguistic relativity principle recur today across cognitive science and the neurosciences in various ways (16).

Definition and Historical Context

In the history of the social sciences, linguistic relativity has been one of the most enduring notions concerning the relationship between language, consciousness, and culture (17). It posits that the structure of a language in use affects or constrains the concepts and categorization of thought (18). Whether strong or weak, it is often approached in a polemical way—people are either proponents of the theory or apathetic proponents of refuting it, and it is common to invoke the names of influential scholars to make one's point in either direction (19). Wilhelm von Humboldt, Roman Jakobson, Edward Sapir, Benjamin Lee Whorf, Noam Chomsky, Steven Pinker, and cognitive anthropology from the 1970s and beyond could all help to place different processes in the historical background and may be referred to in terms of the present section (20-23).

It is apparent from texts that the merits of the Sapir-Whorf hypothesis were once a major topic of debate and have been revisited in more recent years (24-26). Part of the reason that the topic remained pertinent in intellectual trajectories is that empirical results may appear both to support and refute its key tenets (27-29). One of the most visible signs of English monolingualism to contemporary scholars is the long disproportional time period the concept of linguistic relativity has occupied in Anglophone scholarship (30-34).

Key Theories and Concepts

Linguistic determinism is the strong version of linguistic relativity: the proposition that language constrains an individual's thoughts (34). In contrast, soft linguistic relativity makes the claim that language 'influences' thought or is 'influential' in relation to thought (35). Indeed, while some conceptual distinctions can be made, the degree to which language is thought to have an impact on perception stands on a continuum, with purportedly stricter forms of the hypothesis at one end and weaker formulations at the other (36-38). Perhaps the most recent and most popular variation of ideas concerning linguistic relativity is primarily attributed to a linguistic anthropologist who developed the ideas of another scholar (39). It is believed that differences in grammatical structure between different languages and corresponding differences in cultural apprehension are directly connected to the societal frame of the plethora of languages and traditions evident in North America (40).

However, other researchers have argued that language and cognition do not follow the parameters of either anti-Whorfian or Whorfian thinking (41). The relationship between culture, cognition, and language is complex, multifaceted, and in continuous flux, and perhaps the emergence of applications like the Internet governs and controls the stylistic interference of language on cognition (42). Rather than arguing for the dominance of either language over cognition or cognition over language, the 'weak' view resists the correlative subordination of either term (43). Thus, this neutral position is neither Whorfian nor anti-Whorfian (44). To adopt a balanced view, it re-evaluates the direction of the relationship, emphasizing the reciprocity rather than the unilateral direction of influences between language and cognition (45). The possibility remains that while culture impacts language, the latter also structurally impacts the cognitive apparatus (46). The quintessence of this research is that several of the complex mechanisms discussed by weak linguistic relativity are examined by focusing on specific areas (47). Examples from various languages illustrate how the system of a certain language can partly affect its descriptive capacity to account for either space or time (48).

THE INFLUENCE OF LANGUAGE ON PERCEPTION

Linguistic relativity is the hypothesis that language does not simply reflect thought processes, but actively shapes perception, categorization, and cognitive processes, often below the conscious level (11). The Whorfian hypothesis contended that speakers of different languages perceive the world in fundamentally different ways, while the modern theory of linguistic relativity holds that the effect of language on thought is subtler (41-44). Among other effects, the vocabulary used to describe emotions and events amplifies or reduces perception and memory of these emotions and can lead to overlooking or underreporting stimuli to which there are no appropriate descriptive words (45-48).

The vocabulary used to describe events can bias the way those events are perceived and how people will behave more than the objective elements of the event (11). Research has documented that speakers of object-subject-verb languages are more likely to remember if the ball in a video hit the doll or the drum, whereas speakers of subject-verb-object languages will be more prone to associate the man with hitting the woman or the little girl (43). The theory of linguistic relativity is supported by studies that demonstrate that a number of factors, including word order, syntax, sentence structure, and which semantic or grammatical argument is lexicalized as subjects or objects, can affect memory recall (46-48).

Linguistic relativity is closely tied to the idea of cultural relativity: because linguistic categories of persons, artifacts, and nature are culturally defined, different people with different languages have different understandings of the 'same' reality. Cultural differences in categorization have been documented across a variety of experimental paradigms such as the organization of everyday discourse, color naming, and data from human ethology. Additionally, there is some evidence that a perception of cultural differences can be transitory: bilinguals can adopt one or the other cultural attitude and, by and large, languages that share the same categories will reinforce the same perception. A bilingual individual tends to think or behave in one way when he is in one linguistic community and in another when he is with another linguistic community. 114142434445464748

Cognitive Effects of Language

The cognitive mechanisms referred to are the evidence for how language enters into cognitive processes, including (but not limited to) frames of categorization and memory (11). It is discussed further that categorization systems themselves have an important impact on consciousness (44). Research in cognitive science also speaks to the relationship between language and thought (46). Much of the relevant work is still debated for being steeped in Western preoccupations with language, thought, and common sense reasoning, although there is some value in scrutinizing these empirical claims and paradigms for what conclusions range across many linguistic backgrounds (47, 48).

Framing language as a method of thought, it has been argued that linguistic patterns can be mapped onto cognitive processes, affecting perception, thought, and decision-making (45). Early work on the encoding of events through narrative, for example, showed that language can affect how information is represented in the mind (11). In selecting frame-relatable scenarios for their participants to process, it is demonstrated that speakers tended to be swayed by their task instructions, shading their object-level perception to conscious access (suggesting a linguistic priming effect) (43). Research nodding towards 'cultural primes' further discusses the perceptual outcomes often seen when language presents objects that are in immediate and salient cognitive relevance to the viewer (when choosing between representational and non-representational categories, or deciding similarities in atypical patterns) (46-48). Corroborated by surveys on the difficulty of concept representation, discourse on linguistic concreteness and thought use similar multipart scales to argue for how language can impact categorization patterns (44). This is corroborated by research on language and familial roles as well (42).

Cultural Differences in Perception

The variation between linguistic groups may not be sufficient to support linguistic relativity, but evidence does support a link between cultural differences and linguistic differences (49). Speaker communities of different languages hold different patterns of action due to their perception of situations defined by their language (50). The influence of language on culture is dialectical in nature, leading to thought and meaning being evinced in language, and the use of language contributing to or constraining thought. Culture, as transmitted through language, maintains social narratives embedded in the lexicon of native speakers (51). Such narratives are created through the use of the metaphor, where one concept may be constructed in the mental framework of another concept or object (52). Characteristics of a relatively linguistic group can illustrate the unique ways and ideas that culture, as transmitted through language, shapes the thought of speakers (53). Objects such as numbers can convey significant meaning in a culture (54). In an experiential approach using basic color terms, some cross-cultural concepts must be common (55). Evidence can be interpreted to suggest that language and culture set unique boundaries for meaning constructions by defining common categories (56).

LANGUAGE AND CONSCIOUSNESS

The proposition that the structure and lexicon of the world's languages influence even the most intimate content of our conscious thought has been a controversial one since its heyday in the eighteenth century (57). Yet the idea that our easiest generalizations about the world may also be influenced by our language never died out, and there is now a burgeoning evidence base in psycholinguistics that is showing this conjecture to be at least, in part, empirically persuasive (58). First and foremost, the current consensus is that the operations of language shape our internal monologue, or our thinking, the contemplation of our conscious processes (59). Theories concerning the relationship between language and cognitive processes have waxed and waned over the last two centuries (60). In the eighteenth century, the German philosopher contended that thought does not exist independently of language (61). Almost two centuries later, resumed this campaign, and his research on languages led him to posit what has become known as the hypothesis or 'linguistic relativity,' which dictates that our native language heavily influences our perception of the world (62). Much of the criticism against the hypothesis has been as concerned with its parochial interpretation of non-Western culture as it has been with the lack of sufficient empirical evidence (63, 64).

Language then serves as the chariot that our thoughts ride (65). Since language molds our meandering glances, the passage of contemplation: the oral and written call, the call of dialogical and literary expression, actually is the thought itself (66). Changing one's thinking also depends upon a change of language (67). For this reason, language plays a leading role in the theology of culture (68). Being with others, and being with ourselves—the inwardness of thought—are both linguistically determined. Within these realms of human experience, internal and social identity coalesce (69). Indeed, the constructs of one's identity and narrative of being are themselves expressed significantly through our oral and written language (69). Our spoken language reflects emotional nuances revealing psychological insight (70). It is through the medium of language that emotions among internal reflections and social discourse reverberate (70). Concomitant to language's syntactic framework, imagery and metaphors in language bring to life the mysteries of a predetermined reality in order to express what one deems too elusive (71). Explaining the self as fortress references the body as a solid construct framing identity (72). This metaphor may express a perception of wariness (72). The fusion of syntactics and semantics in one's perception of the physical body as a fortified construct gives rise to a unified detail that compels the formulation of the narrative (73).

Language and Thought Processes

The notion that language and our thought processes are closely connected can be traced back nearly two millennia (74). Since then, language-thought relationships have been particularly emphasized in the publications of intellectuals in structural and anthropological linguistic thought (75). Linguist Edward Sapir makes a clear case for the influence of language structures on an individual's reasoning and logical thinking processes (76). He proposes that "moderate" linguistic intentions reflect the idea that linguistic patterns shape straightforward perceptual and cultural patterns in a single language community (77, 78). This is a belief that we have viewed very similarly in cognitive psychology (79). Cognitive psychologists think that we believe in significantly altering the culture and psychology of two individuals in an investigation that speaks different languages (80). They see the influence of language almost as an aspect of human perception (81).

From the cognitive psychology point of view, language contributes to these thoughts (82). This trend focuses specifically on "thought through language" as a method for making and formulating thoughts and investigating how "sentence" or division of verbal behavior relates to thought in the intellectual world of language-related questions (83). The connections between the development and functions of language and thought have been emphasized in debates in philosophy, cognitive psychology of language, and linguistic theories (84). Many of these scientific movements can be construed as arguments for subordinating thought to verbal expression or providing evidence on how language affects cognitive functions such as memory or visual pattern recognition, which result in subjects being detected more quickly and accurately in speakers of diverse languages compared to confined speakers (85). It has also been proposed and supported in various cognitive science sub-disciplinary areas such as developmental psychology, cognitive psychology, philosophy of mind and language, and linguistic theories (86, 87). Many of these views are based on various experimental data ranging from empirical evidence to the empiric rationalism of chronic languages (88).

Neuroscientific Perspectives

Language can shape influences that can be identified through the connections between the different parts of our brain (89). Some early neurolinguistic works have paved the way for a neuroscientific understanding of the extraordinary ability of human beings to generate and perceive messages, keeping much closer to what they really want to communicate (90). Language processing and language production are activated and correlated through a diffusion of activation from the left inferior frontal gyrus (91). Neuroimaging techniques, with their sound of simultaneous acquisition of hundreds of thousands of data, opened up new scenarios, possibly huge, confounded by facts, about the nature of the human internal dialogue, which shapes and is influenced by the potential use of consciousness (92). Moreover, abandoning the dichotomous approach, they confirmed or dismissed many of the old neurolinguistic issues (93). For example, they relatively addressed Wernicke's depression involving the posterior left temporal gyrus areas, while "surface" or dynamic aphasia can also affect the anterior part of Reil's temporal lobe (94). Many new questions can be attempted to be solved using the new MRI gadgets, confirming that language acquisition is the first bank of our social and affective cognition (95). At the same time, MRI can reassure us about the actual modern severe malfunctions of our cognition in specialized areas of language, like in the non-dominant Wada aphasia due to dysfunctions involving the insular–temporal right cortex (96). After the birth of the MRI, further surveys have followed the language brain mapping better and are usually based upon different theoretical perspectives: psycholinguistic, psychobiological, and sociolinguistic (94). A polyglot, a person able to dialectically adjust and mentally move through different languages, after a deep experience of prenatal learning, seems to experience structural and functional brain plasticity (92). In fact, by "growing" up, he learns to evolve a powerful meta-motor of thought, which from circuits crossing Broca's convex gets into his four hands, developing a hypouranion of thought in the right hemisphere and into the meta-lexical areas of his posterior cingulate gyrus (93). This

arcopallium develops into "critico-emotional-volitional and mnemonic" areas, where rapid psychological intermingling through the unconstrained and durable high amplitude of the human being's potential actions overwhelms pathophysiologically the higher C-G-F levels that make language (89). The fMRI pioneer work of Antonio and the heterogeneity of G. Toronto in the human ambient brain by superposition of functional electrophysiological thresholds and MEG seems to show, from a double codified point of view, that the dynamics of neural different brain synaptical and neuromolecular plasticity can be, even today, parceling, with a billion symmetric semi-differenced cells (95). Anatomically, few regions are here nearby, ever through strategies deeply improving the pace adjustment and modulation of our high vibrational amplitude asset of human thoughts that crucially rely on language (94). Even today, neuroscience should share the final future goal to attempt theoretical framing about data on the fusion state of human thought, needing to learn to address this central issue in the cognitive sciences, namely in science and mental behavior (96).

CROSS-CULTURAL STUDIES AND CASE EXAMPLES

In light of our discussion of cultural differences in perception and cognition, we turn to research studies that have explored the potential practical applications of linguistic relativity (97, 98). Cross-cultural studies draw heavily on the research discussed in sections 2 and 3 (99-104). The critical questions guiding this strand of research revolve around determining differences among speakers of different languages in spatial reasoning and absolute judgment, and addressing the following key points (105, 106):

- How does the structure of a language reflect different values and focuses of a culture?
- Do speakers of different languages 'think about and perceive the world,'—in this case, space—'in a different way,' as speakers of English do?

- What are the consequences of these differences? (42, 107-113).

Case Examples

Studies conducted through the lenses of various different languages—the following represent just a few of the many examples available in global literature. The studies adopt experimental methodologies, including spatial reasoning games played alone or with children, and card sorting (114). Research participants, specifically members of the Dene people in Canada and the USA, speakers of the Australian Indigenous language Kuuk Thaayorre, and speakers of multiple languages in previously unpublished research in Papua New Guinea, were compared (115, 116).

It was found that values which could be seen as 'uphill,' depend on conceptual frameworks; values which are increasingly 'uphill' in real space, where no snowmen can be built, are also the most difficult to compare (117). Comparisons of snowman-building difficulty across Kuuk Thaayorre, US English, and Australian English speakers would seem to provide support for the position that people's mental representations of time are sensitive to differences in 'up-and-down' values located in the culture of speakers (118). In previously unpublished research in Papua New Guinea, it was found that Papuan languages handle 'in front of' and 'behind' the same way as 'left' and 'right.' 'In front of'/'behind' are culturally important Kuuk Thaayorre terms for all compass directions, including up and down (119). From another study, we know of a mass-proportional card-sorting task undertaken by English, Kuuk Thaayorre, and other speakers from Papua New Guinea (120). On this task, speakers needed to sort sets of three cards displaying the same person as a child, a current adult, and an old person (121). The sorting question is particular insofar as Piagetian studies of children have found that it is an ability child cannot perform before a certain age (122). All non-English speakers were able to perform the task, while few of the English speakers could (123). The reasons why English speakers performed significantly less well than Kuuk Thaayorre are extremely complex (123). Reflecting on the research program, it is discussed the difficulty of making strong claims about causality on the basis of correlations between language groups: while data show that some

perceptions are different and can be correlated with language in some languages and language groups, and related to the length of learning of languages by children sent to boarding school in towns, 'it would be a mistake to infer that neglect of spatial terms per se will dull the concept, or that the use of large numbers of exact category terms will improve it' (124-126).

IMPLICATIONS FOR EDUCATION AND SOCIETY

Universal structures can be powerful, but how they are structured and to what degree they function universally should be considered when applying them in a socially diverse world. This, too, depends on the goal (127). The robustness of the established theory of content grounding is in harmony with this perspective (128). The increasing language ecology, economic globalization, sales mechanisms, and intercultural communication intensify the contact and interaction between people from different cultures and languages (129). In foreign language classes, some minority groups face the pressure of local values and cultures or ethnic representation, and language expression has a representative meaning (130). Foreign language teachers must be unbiased when facing students and fans with ethnic labels, emphasizing that the language level and cultural appreciation of the target language and the stigma group are the same (131). When teaching minority group students, we must have a deep understanding of the ways minority languages and additional languages work in cultural perception and cognition (132). In the specific practice of language teaching, against the theory of linguistic relativity, as foreign language teachers, we should help students form the idea of being multilingual contemporarily and respectively, and the attributes of plurilinguals should be respected, not to be stereotyped (133). It can be achieved through positive strategies including the natural use of the surrounding non-standard languages when learning these languages, the use of cloned materials in these languages, and the study of relevant cultural knowledge (134, 135).

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