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1. Synopsis

By intertwining their research lines, the editors of this volume successfully achieve the appropriate resurrection of the classic Whorfian debate: does language influence how one understands the world? Thanks to a balanced, complete set of scientific papers written by different scholars –and therefore from various perspectives– the overall content of the book enhances a revealing discussion and impels to further investigation.

The text is divided into five sections. The first one is an introductory chapter called *Whither Whorf*, which consists of a briefing paper by the editors. It effectively prepares the reader for an easier grasp of the book's intention by explaining the initial assumptions so that even the unprepared reader is supplied with the basic foundational notions which are needed to follow the discussion: the influence of language in thought. Furthermore, a specific and clarifying list of contents is provided through an accesible, pleasant style, so the positions of the contributors are briefly anticipated. Furthermore, the state of the debate is presented with clarifying instances and several references to previous authors such as Chomsky, Vygotsky or even more contemporary scholars, like Slobin, bringing the central issue of the compilation –whether thought is influenced by language– back to life. Moreover, the question is almost remodelled in terms of *cross-linguistically variability* –the fact that language realization changes from one language to another. A new question is posed: does *cross-linguistically variability* correspond to *cognitive variability*, so that thought varies from a certain-language-speaking person to another-language-speaking person in the same way as language does? However, in the argumentation one may miss the consideration of more specific language phenomena, such as the existence of dialects, although this may be a case for

further research. Besides, traces of self-criticism are carried out by the authors, who give their opinion about the different papers and their own work.

The second section, entitled *Position Statements*, includes three papers of intuitive, theoretical nature, which differ from one another in their perspectives. The first one, *Language and Representations*, written by Eve E. Clark, inquires into the correlation between conceptual and grammatical representations of events. The author claims that conceptual representations are more complex –and therefore, universal– than representations we resort to for speaking, due to the existence of *grammatical obligatory distinctions* when performing in a given language. Moreover, the author argues that non-linguistic tasks should not reflect linguistic bias.

The second paper, *Language in Mind: Let's Get the Issues Straight!* is the particular crusade of Stephen C. Levinson against what he calls *Simple Nativism*, imposed by Chomsky and Fodor and supported by Jackendoff, Pinker and Gleitman. His *Coevolutionary Alternative* is proclaimed on the basis of linguistic variation and culture-specificity via a humorous, aggressive style together with a well-organized, overwhelming argumentation full of references and empirical evidence.

The third paper of this section, *The Key is Social Cognition*, written by Michael Tomasello, is centered on the significance of cultural symbolic behaviours and human skills of social cognition. Tomasello states that these human abilities are the very mechanism by which the mind is able to conceptualize and thus they are to be considered central in the developmental process of children. Besides, the author concludes that “language does not affect cognition, it is one form that cognition can take”. (Tomasello 2003:56).

The third section of the volume, *Language as Lens: Does the Language we Acquire Influence How We See the World?*, consists of four papers by different scholars. Empirical testing is an important part of this section and the following ones, although this does not seem to bring researchers to converging conclusions, but rather to produce a fruitful controversy. Lera Boroditsky, Lauren A. Schmidt and Webb Phillips argue in *Sex, Syntax and Semantics* that the Whorfian hypothesis might be stronger than previously thought, since evidence shows that differences in languages' grammars may influence the way people think about objects. Moreover, their investigation includes a set of experiments carefully carried out which holds the view that mental private workings are dramatically affected by grammatical gender, even when performing in a second language.

Nevertheless, Barbara C. Malt, Steven A. Sloman and Silvia P. Gennari argue the opposite in *Speaking Versus Thinking About Objects and Actions*. After accomplishing a couple of experiments to test their initial hypotheses, the resulting evidence seems not to support neither of them: similarity groupings of artifacts do not reflect existing semantic categories, and later recognition of events is not influenced by the way actions are lexicalized. As a result, they maintain a skeptical position as for the core issue of the volume –the influence of language in thought–.

Edward Munnich and Barbara Landau are of the same opinion as Barbara C. Malt, Steven A. Sloman and Silvia P. Gennari: in their paper *The Effects of Spatial Language in Spatial Representation: Setting Some Boundaries*, they find no empirical proof for sustaining correlation between spatial semantic distinctions and mental representations. Moreover, their paper includes a consideration of their body of evidence in the light of several related issues such as *color*, *motion* and *object*, apart from *space*, and briefly deals with developmental discriminative phonetics. They conclude that language is a compelling tool for conceptualizing and therefore its effects on linguistic representations are permanent and undeniable. However, they state that nonlinguistic representations are not affected by language.

Dan I. Slobin closes the section with *Language and Thought Online: Cognitive Consequences of Linguistic Relativity*. In his paper, online cognitive processes are given priority, and the central phenomenon investigated is the encoding of motion events and the variation it experiences crosslinguistically. The author argues for particular effects of the semantics of motion verbs on how people conceptualize motion events.

In section four, *Language as a Tool Kit: Does the Language We Acquire Augment Our Capacity for Higher-Order Representation and Reasoning?*, scholars study whether cognitive abilities are positively influenced by language development or not. Surprisingly, all contributors to this section conclude that this seems to be the case, even when each paper corresponds to a different field of study.

Dedre Gentner, in her clear, brilliant paper *Why We're So Smart*, suggests the possibility that relational language –words or particles that express a syntactic relation between elements in a phrase or sentence, such as a conjunction or preposition– increases the ability to engage in relational thought. In her argumentation, the exceptional capacity of conceptual learning –not merely storage– of the human mind is due to the ability to learn by analogy, which is fostered by relational language. Convenient evidence is presented and special attention is paid to comparative, developmental and cultural factors. The extraordinary adaptability of human species is accounted for through an unbiased initial state, which makes possible our specific general learning, our symbolic relational language, and consequently our capacity for structural alignment, and mapping and higher-order representation.

The second paper, *Does Language Help Animals Think?*, by Stan A. Kuczaj and Jennifer L. Hendry, includes a brief chronology of the previous research on the field and sufficient references to empirical evidence. After an extensive discussion about animal cognition –compared to human cognition and in isolation–, the conclusion is straightforward: language certainly helps animals to think in both qualitative and quantitative ways, via language enculturation.

The third author of this section is Elizabeth S. Spelke. In her paper, *What Makes Us Smart? Core Knowledge and Natural Language*, regards human cognitive achievements as a result of central knowledge systems, which are early-developed and present some limitations, such as being domain specific, task specific, partially encapsulated and relatively isolated. Besides, diverse experimental data are presented. The author concludes that a natural

language is the key to combine the representations supplied by those core knowledge systems.

In the next paper, *Conceptual and Linguistic Factors in Inductive Projection: How Do Young Children Recognize Commonalities between Animals and Plants?*, Kayoko Inagaki and Giyoo Hatano discuss the influence of different factors on children's inductive projection and reasoning. They argue that, depending on the context provided, children are able to identify relational and causal analogies between humans and plants as well as between humans and animals. For this purpose, attention is directed to the biological function so that language barriers are removed.

Jill G. and Peter A. de Villiers study the *theory-of-mind development* in children in their paper *Language for Thought: Coming to Understand False Beliefs*. Their main objective is to describe how children achieve a representational theory of mind which enables them to understand the existence of *false beliefs* –i.e. beliefs that do not coincide with one's vision of reality–. Diverse theoretical approaches to this issue are presented, and different factors are considered –such as sociocultural accounts and cross-cultural variation– by means of a rich compendium of references and empirical results from normally developing children as well as from language-delayed deaf children. It is concluded that language is not only a means for expressing mental states, since the ability to use embedded complements –i.e. the recurrent addition of words after a verb to complete a predicate construction– provides the mind with the representational faculty of capturing false beliefs, which is a new form of reasoning.

In fifth and last section of the book, *Language as Category Maker: Does the Language We Acquire Influence Where We Make Our Category Distinctions?*, the developmental outlook prevails in the four papers, although a varied array of nuances is found in their conclusions.

In the first paper, *Space Under Construction: Language-Specific Spatial Categorization in First Language Acquisition*, Melissa Bowerman and Soonja Choi claim that infant's early categorization of spatial relations is influenced by the acquisition of spatial semantics in their first language. A comparative study between English and Korean is carried out in terms of different developments of spatial cognitive structuring, concluding that "linguistically relevant sensitivities achieve and maintain a high degree of standing readiness, while sensitivities that are not needed for the local language may diminish over time." (Bowerman & Choi 2003:417).

The next proposal, *Reevaluating Linguistic Relativity: Language-Specific Categories and the Role of Universal Ontological Knowledge in the Construal of Individuation* by Mutsumi Imai and Reiko Mazuka, deals with the influence of linguistic factors on early individuation, which are limited against the primordial universal ontological knowledge. The authors carry out a comparative study of English, Japanese and Yucatec, as well as non-linguistic task research, in order to account for cross-linguistic variation of linguistic marking of individuation. They conclude that specific grammatical categorization in a certain language impels speakers to attend to a particular set of relevant, useful perceptual attributes in

order to determine the grammatical class of a given item, although they also claim that the conceptual classes are distinguished according to principles that are prior to language learning.

John A. Lucy and Suzanne Gaskins, in their paper *Interaction of Language Type and Referent Type in the Development of Nonverbal Classification Preferences*, state that the development of nonverbal classification is strongly influenced by a classifier typology. By analyzing language structure and afterwards its operational characterization, they study cross-linguistic variation in number-marking semantics as well as in *shape versus material* preference, so that linguistic and cognitive contrasts are considered. Evidence leads authors to conclude that, according to language patterns in adults, it is possible to predict cognitive patterns, but not vice-versa.

Susan Goldin-Meadow brilliantly closes the volume with her innovative *Thought Before Language: Do We Think Ergative?*. Her research focuses on people who have not been exposed to any conventional language and thus, their thoughts cannot possibly be modified by linguistic influence. However, evidence shows those individuals –deaf children from USA and China– are able to communicate by means of linguistic patterns. Moreover, empirical experimentation is extended to hearing adult people producing stunningly similar results: there seems to exist a cognitive bias –prior to language acquisition– that impels the human mind to think ergative –i.e. to positionally emphasize the affectee instead of the actor of an event– as opposed to accusative. Additional, brief reflections about co-existence of this hypothesis and natural languages –accusative in many cases– in terms of processing costs are included.

2. Conclusion

This volume comprises a balanced set of papers which deal with the Sapir-Whorf hypothesis –or more specific and relevant versions of it– from a varied range of different perspectives and fields of study. The topics studied include space, number, motion, gender, theory of mind, thematic roles, and nature and function of objects versus substance. The book is astonishingly revealing as regards its subject-matter, and it maintains an adequate equilibrium between the outlooks of linguistics and psychology. As for the style employed, the general impression is of a fluid, straightforward discourse which facilitates the understanding of the argumentation, although some conclusions may not be as precise as expected. The central Whorfian hypothesis which binds the papers –whether thought is shaped by language– permits being approached via different disciplines, such as cognitive psychology, cognitive development, linguistics, anthropology and animal cognition. This enriches the discussion and makes the book enjoyable, but at the same time it produces a sense of lack of consistency: despite the fact that every paper roughly deals with the same main topic, the reader may feel disoriented when trying to attain a presumable general point in the book. However, the editors intelligently include a sort of disclaimer in their brilliant introduction so that the real motivation of the compilation is to provide a set of specific reformulations of the question and to foster investigation in this field, and this they have certainly achieved.

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