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LINGUISTIC RELATIVITY: DOES LANGUAGE INFLUENCE THE PERCEPTION OF THE WORLD AND THE WAY WE THINK?

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Annotation. Language and perception have always been two controversial dilemmas in the cognitive system. The interaction between them has been studying not completely but partially throughout the years by linguists. From what we were able to discover, the linguistic and perceptual interactions in human being can explain a whole lot when it comes to comprehension of typical and atypical human behaviors. In this editorial, we thoroughly examine the language perception relationship. In conclusion, while there is compelling evidence to support an ultimate relationship between the linguistic and perceptual systems, the exact levels at which the two systems interact, the timing of the interaction, and what drives the interaction remain largely open remain another dark spot for future to lighten up.

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Keywords: language,linguistic relativity, mind, perception, thinking, language processing, cognition, visual world, visual context, language comprehension.

Аннотация. Язык и восприятие всегда были двумя противоречивыми дилеммами в когнитивной системе. Взаимодействие между ними изучается лингвистами не полностью, а частично на протяжении многих лет. Из того, что нам удалось обнаружить, языковые и перцептивные взаимодействия в человеческом существе могут многое объяснить, когда дело доходит до понимания типичного и нетипичного человеческого поведения. В этой редакционной статье мы тщательно исследуем отношения языкового восприятия. В заключение, хотя есть убедительные доказательства в поддержку окончательной взаимосвязи между лингвистической и перцептивной системами, точные уровни, на которых эти две системы взаимодействуют, время взаимодействия и то, что движет взаимодействием, остаются в значительной степени открытыми, и это еще одна темная точка на будущее.

Ключевые слова: язык, лингвистическая относительность, разум, восприятие, мышление, языковая обработка, познание, визуальный мир, визуальный контекст, понимание языка.

Recent findings in the cognition science and cognitive linguistics have found that language processing involves the construction of situation models and early activation of perceptual representations. Language and perception have a complex bidirectional interface. Language and the mental framework are influenced by visual perceptual experience, which can shape language processing. The visual cues of speech can improve or even distort speech perceptions at the level of sound, as shown by the well-known McGurk effect [McGurk and McDonald 1976]. Early in development, visual input has been shown to unlock (prime) language-related

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information [Mani and Plunkett 2010]. It's also likely that children with atypical development have difficulty matching object representations to linguistic labels [von Koss Torkildsen et al. 2007]. Language, in turn, has a variety of effects on perception. As seen in experiments using the visual-world model (VWP) [Cooper 1974; Tanenhaus et al. 1995; Spivey et al. 2002; Allopenna et al. 1998; Altmann and Kamide 1999], language mediates eye movements to images present immediately in the visual sense, and language often mediates motion recognition of visual stimuli. Although current studies show that speakers depend heavily on linguistic cues in determining what to expect as the speech signal unfolds, they don't show the exact nature of the prediction or the extent at which linguistic and visual knowledge converge [Magnuson 2019].

The fact that we can speak about what we understand is the clearest reason for why language and interpretation are inextricably linked. Furthermore, perceptual concepts based on spatial relationships in the universe, such as motion, are often used to form analogies for the expression of more abstract terms, such as time, across languages. The key explanation for the intrinsic relationship between language and perception, according to Pylyshyn, is that "the perceptual mechanism is the primary means by which language acquires a semantics." Pylyshyn [Pylyshyn, 1978]. He observes in an early vision of artificial intelligence systems that a system with an information database and a language processor may be able to carry on a coherent conversation, but that without a perceptual component, it would "not know what it was talking about." This observation emphasizes a key feature of the two systems and their interrelationship, such as the presence of both intra-systemic and intersystemic relationships. Thus, in language, there are relationships between words based on linguistic features such as phonological similarity, where a preceding word can prime a following word solely on the basis of phonological overlap.

The infant's acquisition of object names is often characterized as a unique challenge. Linda Smith has researched the fundamental cognitive processes that not

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only follow, but also assess, word learning in infants and toddlers in pioneering work over the last couple of decades. The so-called form bias in the acquisition of common nouns, which often refer to object categories, is a well-documented developmental phenomenon. The shape bias is most commonly recorded in studies in which infants are exposed to novel objects and their novel names, with the objects in the stimulus design being grouped by color, shape, or texture. These findings support the theory that, early in development, infants pay more attention to and rely on shape similarity than other object characteristics like color or texture when assigning the novel mark (Landau et al. 1988). They also use form to generalize a newly acquired name to new instances. It's also been discovered that paying attention to object shape is a good predictor of noun vocabulary development [Smith et al. 2002; Poulin-Dubois 1999; Gershkoff-Stowe and Smith 2004].

Form, on the other hand, has been shown to play an important role in early object recognition. Findings of deficient categorisation abilities and impaired shape bias in children with autism, possibly contributing to atypical categorisation and difficulties with word learning and semantics, add to the significance of shape as a key perceptual property of items [Hartley and Allen 2014a; Field et al. 2016; Abdelaziz et al. 2018]. There's also evidence that children with autism have a harder time categorizing items based on black and white contour drawings than they do with more realistic color pictures [Hartley and Allen 2014b]. Furthermore, iconicity, especially color, aided symbolic understanding of pictures in children with autism in Hartley and Allen's (2014b) research, but not language. Surprisingly, these findings contradict the well-documented extraordinary capacity in high-functioning and highly-verbal individuals with autism to recognize abstract patterns, as shown by superior results on tasks like the Wechsler scales' Block Design or matrices [Raven 1998; Dawson et al. 2007; Vulchanova et al. 2012].

The Visual World Paradigm has been a useful method for studying the bidirectional interface between visual perception and language processing (VWP).

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Cooper observed that when participants were shown visual displays while playing short excerpts, they were more likely to look at items in the display that were also mentioned in the text. The eye movements of the participants were also closely-timed to the text they read. Cooper's study's basic structure is still used in VWP studies today, despite the fact that it was not widely known until much later [Tanenhaus, 1995]. The VWP's main benefit is the consistent, systematic interaction between auditory linguistic stimuli and eye movements across the visual display. Importantly, eye movements in the VWP represent complex, systemic interactions between linguistic and visual contexts, and deciphering the factors involved in these interactions, as well as the ways in which these interactions motivate eye movements, has proven difficult. The questions posed in these reviews, taken together, suggest that more comprehensive models of the bidirectional interface between vision and language are required. Given how visual context influences language processing—and thus eye movements—in complex ways, a more complete understanding of how specific language-world relationships elicit specific context effects may help researchers establish a simple linking hypothesis between eye movements and language processing. This research has the potential to improve our understanding of linguistic and perceptual experiences in general.

The perceptual affordances of objects, especially object form, play an important role in the acquisition of object labels and the growth of vocabulary in early cognitive and language development. According to research using the Visual World Model, visual meaning constrains how listeners perceive spoken language, while speech helps to direct listeners' attention to visually present entities (VWP). Although research has shown that these two systems interact, the exact levels at which they interact, the time course of the interaction, and, most importantly, what is driving the interaction, are all unanswered questions that will require further investigation.

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