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Book Review

**Sensory Perceptions in Language, Embodiment and
Epistemology, Annalisa Baicchi, Rémi Dignonnet, & Jodi L.
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1. Introduction

Senses, as the information channels which connect us to the physical and social environment, function as a connection between the world and our body (Dunn, 2000). Vision, audition, olfaction, gustation, and tacton are the five primary human senses. They are separate channels that provide the brain with different maps of the external world (Rouby, Fournel, & Bensafi, 2016). Senses give us a better picture of what is happening around us (Dunn, 2000) and manipulate the quality of life as well as our emotional well-being (Thomson, Crocker, & Marketo, 2010).

The objective of this very recent and rather long volume is to demonstrate how our linguistic representation of the world as restricted by our sensory perception can be explained by the human ability in adaptation to and interaction with the environment. Edited by Annalisa Baicchi, Rémi Dignonnet, and Jodi L. Sandford, this book aims to discuss issues about epistemology, embodiment, perception, and linguistics. It begins with the theory of evolution, and then moves on to a rather scientific description of the role of the vision, hearing, taste, and smell in epistemology, embodiment, and language.

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The book consists of eleven chapters, written by different authors. Chapters one to four make up the theoretical part, whereas the rest forms the applied section. The discussion below will proceed in the same order as found in the book.

2. Chapter 1: Our Biological Mind in the Modern Verbal World

The chapter starts out by focusing on the way our minds have been molded by how our remote ancestors responded to challenges they faced by the physical and biological environment they lived in. According to Darwin's theory of evolution, the present form of humans is derived from their ape ancestors during several million years. Our ancestors' bodies and minds were molded by natural selection during their long residence on African savannas when their brains tripled in size. A good understanding of evolutionary theory is essential in order to understand the reason humans behave as they do now. One of the most important abilities that originate from our ancestors is the ability to comprehend and deal effectively with short-term changes in local conditions. On the other hand, having difficulty comprehending interactions among events at great distances and over long time spans is an offspring of the advent of technology into our lives.

One of the most important features inherited from our ancestors' challenge with the environment is our sensory perception systems. There are many clues which indicate the sensory systems we have inherited from our ancestors. For example, regarding vision, the strong preferences for blue (sky and water) and green (plants) make sense because our ancestors would have benefitted from paying attention to those objects; or in relation to the sense of taste, by sampling animals killed by savanna fires, our ancestors discovered that cooked meat was tasty. As human societies enlarged and became more complicated, language developed. As language developed, its structure, in terms of nouns, verbs, and syntax, reflected the importance of the sights, sounds, and odors of nature. Overall, this chapter offers an exceptionally interesting account of the theory of evolution, and its effect on our lives in general, and our senses in particular.

3. Chapter 2: Embodied Semantics and the Mirror Neurons: Past Research and some Proposals for the Future

The second chapter discusses embodied approaches to language. The theory of "embodied cognition" refuses the Cartesian mind-body dualism and believes that the activity of our mind is founded in our bodily experience. Embodied approaches to cognition claim that the representation of concepts is strongly dependent on our bodily experiences and not just dependent upon an inner mental entity. According to the Embodied Semantics paradigm, linguistic concepts are represented in the brain to enact and experience the action a word refers to. Mirror neurons, on the other hand, are a class of cells capable of discharging similarly when a person executes an action and when s/he perceives the same action performed by another individual. For example, perceiving the word "grasp" activates the same brain motor areas triggered as if we were doing the same action.

In this chapter, the author also critically overviews the involvement of mirror neurons in concrete and abstract motion meaning construction. In the end, proposals for further research are offered on motion verbs in different languages and their relationship with linguistic relativity, along with the relationship between linguistic relativity and second language learning.

4. Chapter 3: What is not Said: Metaphor and the Deflationary Account

Much related to embodiment, is the concept of metaphor. The original theories about metaphor rest on the assumption that there is an intention behind its usage. However, the deflationary account insists that metaphor does not represent a unique and special class of language use. In fact, metaphors serve to communicate a wide range of propositions. The chapter is replete with examples in order to demonstrate two competing theories of metaphors: the original contextualist theory and the new deflationary account. After a long and rather complicating discussion about the different account of metaphors, the author takes a middle stance between the two theories. He argues that metaphors rest on a gap between what the speaker says and what

s/he intends to communicate, and that they have an imagistic nature, making them different from ordinary language.

5. Chapter 4: Do Metaphors Mean or Point? Davidson's Hypothesis Revisited

Continuing with metaphors, the final chapter of the theoretical part of the book seeks to reexamine Davidson's (1978) hypothesis about metaphors. Davidson's proposal was against Lakoff and Johnson's cognitive approach. Davidson claimed that metaphors do not establish correspondences between domains at the conceptual level. Instead, they make readers return to the primary experiential domains to re-conceptualize the message. Davidson never denied that a metaphor is used to express ideas, but he refused the assumption that a metaphor is likened to a vehicle, containing the idea it is aimed to express. The author chooses a middle ground, stating that "metaphors restore palpable perceptuality to the cognitive experience" (Qu, 2018, p. 73).

6. Chapter 5: A Neuroimaging Investigation into Figurative Language and Aesthetic Perception

Chapter five is a good opening for the applied section of the volume, for it presents a research study that has used neuroimaging to investigate emotional engagement. In recent years, neuroscientific research on the comprehension of figurative language has shown that figurative language arouses stronger emotional responses at the neural level than nearly identical literal expressions with an equal amount of emotional information. Basically, figurative language activates a region of the brain called amygdala.

The chapter delineates a study done to test the hypothesis that highly conventional metaphors are perceived as more beautiful than their literal counterparts, and to explore the neural correlates of beauty perception during reading of highly common sentences used in everyday life related to taste, both metaphorical and literal. The study built on previous work by Citron and Goldberg (2014), in which silent reading of taste metaphors evoked stronger emotional neural responses than their literal counterparts. The results revealed no significant difference in beauty ratings

between metaphorical and literal sentences; however, in the case of familiar metaphors, metaphors were perceived as more beautiful than literal sentences. Furthermore, increasing beauty ratings did not correlate with enhanced activation of amygdala. It seems that the degree of perceived beauty does not engage emotion-related areas of the brain. The chapter ends by calling for further research on what makes conventional figurative expressions more emotionally engaging.

7. Chapter 6: *Ception* and the Discrepancy between Vision and Language

Chapter six deals with the sensory perception of vision and investigates the correlation between body, mind, and language in a corpus of English written descriptions of pictorial material. *Ception* is a framework which accommodates visual representations with linguistic ones, and overcomes the difficulty of dealing with perception. Motion verbs have often been interesting in the psychology of perception. There are three types of motion verbs: factive, fictive, and abstract. This chapter sets out to discuss how the sense of vision helps conceptualize fictive motion events in descriptive texts.

8. Chapter 7: Methodological Approaches and Semantic Construal of the SEEING Domain in English

This chapter proposes a re-analysis of two different experimental protocols used to verify the linguistic construal of seeing/color in English. In contemporary linguistic research on color there are two contrasting points of view, the relativistic and the universalistic. The former states that there is no natural division for colors, and each culture has arbitrarily divided the color spectrum. The latter view, on the other hand, believes that basic colors are universal among languages. In the study presented in this chapter, a total of eight different implicit association tests were elaborated to understand the color categories: black white, yellow, blue, red, green, brown and grey; dark and light. The chapter ends with a thought-provoking sentence: "SEEING IS COLOR, COLOR means SEEING and SEEING means that we have the information necessary to act and to survive" (Sandford, 2018, p. 130).

9. Chapter 8: Metaphors for Musical Motion—Beyond TIME IS MOTION

This chapter sets out to explore an aspect of the auditory sense and its reflection in language. It specifically investigates the use of metaphorical language for music. The assumption is that our understanding of music is largely based on our understanding of time. Therefore, just as time can be understood in terms of motion, music can be considered likewise. According to Conceptual Metaphor Theory, metaphor is first of all no longer seen as unconventional but as common and pervasive in everyday language. Secondly, metaphor is viewed as a conceptual phenomenon. Johnson and Larson (2003) argue that conceptualizing music in terms of motion is based on our understanding of the concept of time. Time is conceptualized in terms of motion through space creating the time is motion metaphor (Lakoff and Johnson, 1999). In the study reported in this chapter, a domain-specific corpus of 10,000 words from the genre of music criticism was compiled to study metaphors for musical motion empirically. The findings revealed that 21% of the lexical units were used metaphorically. The analysis of the source domains demonstrated that almost one third of these expressions come from the source domains motion and space, hence domains are essential to how we understand musical structure.

10. Chapter 9: Defining Taste in English Informant Categorization

Chapter nine revolves around the sense of taste. From long ago, the sense of taste has been classified in the lower ranks of perception. Moreover, the vocabulary of taste is not as rich as that of the other senses. English recognizes at least five taste terms: *sweet*, *sour*, *bitter*, *salty*, and *spicy*. Recently, another term has been added to taste terms by Running, Craig, and Mattes (2015): *oleogustus*. It describes a rancid flavor typical of fatty acids, which is an unpleasant flavor. How taste is reflected in philosophy is elaborated on in this chapter. A few highlights in this respect are that according to Plato's hierarchy of senses, taste belongs to the lower order; and Aristotle distinguished seven varieties of tastes: *sweet* and *bitter* (the extremes), *saline* (similar to bitter), *harsh*, *pungent*, *astringent*

and *acid*. Next, an account of the physiology of taste is offered to the readers, describing how the tongue works to perceive various tastes.

In the research presented here, the author adds the terms *umami*, *yummy* and *yucky* to the basic taste terms. This was done in three steps: First, lexical items were retrieved; then the items were pretested with 10 native speakers. Finally, a free-sorting task with a pool of 23 informants on a corpus of 25 items was selected.

11. Chapter 10: The Linguistic Expression of Smells: From Lack to Abundance?

Chapter ten covers the olfactory sense, particularly aiming to explore the linguistic expression of the olfactory domain. Among the senses, smell is the most neglected. The chapter considers the lack of lexicon within the olfactory domain, with respect to both semantics and syntax. The author proposes the use of metaphors and metonymy to compensate these shortages. In fact, the olfactory domain often displays the combination of metaphor and metonymy. The important metaphorical representations of smell are space occupation and fighting. These are reflected in expressions such as 'the smell enveloped me like a blanket' or 'the smell exploded into the air'. Overall, this rather brief chapter offers a unique and interesting account of the olfactory sense in language.

12. Chapter 11: Synaesthesia and Other Figures. What the Senses Tell Us About Figurative

Linguistic synaesthesia is a type of metaphor in which linguistic expressions refer to different sensory modalities, making a combination. It is usually formed by a noun of one sensory modality modified by an adjective of another sensory modality. 'Sweet voice' is an example of synaesthesia, in which the noun and adjective belong to the auditory and taste domains, respectively. In some languages some tendencies and restrictions exist about which senses could be associated with each other. The most common pattern is that a lower sense (touch, taste, and smell) is used to modify a higher one (hearing and sight).

Synaesthesia is not the only figure of speech that plays with the senses. Other figures of speech, i.e. metonymy, hypallage, and simile which employ sensory words are presented in the chapter as well. It is suggested that close attention be paid to other figures of speech to understand more about how sensory words can be used in figurative language.

13. Concluding Remarks

The discussion above gave a brief recapitulation of the huge amount of information presented in the book. In fact, the volume is replete with up-to-date and research-based material, of which only some of its major points were reported here.

A special feature of this book which merits attention is its great organization. Each chapter has the format of a research article; either with an abstract, introduction, main section, and concluding remarks, or with an abstract, introduction, theoretical framework, methodology, results, discussion, and conclusion. Another strong point regarding the volume is its attention to both the theoretical and applied aspects of the topic, which makes it a comprehensive collection. A sophisticated level of vocabulary, terms, notions, and grammatical structures is used throughout the book, and all propositions are supported by examples, data, and research, making the text scientific, objective, and credible. What is more, is that the research which makes up the foundation of the book is quite recent and deals with highly new issues. This of course, is an important factor in the current rapidly changing world of science. Researchers will be inspired by the theoretical and methodological approaches raised and more specifically by the suggestions offered for further research.

The volume, however, is quite specialized and may not appeal to all readers. It requires good knowledge in the field, and a strong sense of interest towards it. Comprehending its content is a demanding task and careful attention is essential to follow the text, especially its theoretical parts. When explaining some concepts, it is taken for granted that the reader has adequate background information. Needless to say, the subject matter covered is of high complexity, and cannot be easily simplified. It is certainly not suitable for those

who have just begun reading material on the subject area. Therefore, reading a few books on epistemology, embodied cognition, human senses, and even pragmatics beforehand is recommended. Another drawback of the book is the lack of connection among the chapters. Perhaps it may somewhat natural since each chapter is written by a different author; however, a smoother flow could have been made among the sections.

All in all, the book helps the reader build a sound concept of sensory perceptions. Although it may not enjoy a wide audience, it is an invaluable resource for those interested in the role of senses in language and epistemology.

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