ISSN 2594-9063

https://doi.org/10.30681/traos.v10i1.14214

45 years of Metaphors We Live By: Remarks on George Lakoff and Mark Johnson's theory of conceptual metaphors

45 anos de 'Metaphors We Live By': apontamentos sobre a teoria das metáforas conceituais de George Lakoff e Mark Johnson

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Como citar este trabalho:
SILVA, G. A. F. 45 years of *Metaphors We Live By*: Remarks on George Lakoff and Mark Johnson's theory of conceptual metaphors. **Traços de Linguagem**, v. 10, n. 1, p. 91-127, 2026.

ABSTRACT: In the essay "Cognitive Linguistics and Autonomous Linguistics," published in 2007 in the Oxford Handbook of Cognitive Linguistics, John R. Taylor suggests the dialogue and even the integration of cognitive linguistics with other strands of language studies. Following this line of argument, I reanalyze George Lakoff and Mark Johnson's theory of conceptual metaphors in this paper. I aim to make explicit the empirical and rhetorical excesses of these authors since the publication of the book Metaphors We Live By, 45 years ago, as a consequence to a large extent of their attack on Noam Chomsky's generative grammar. With this, I hope to facilitate the approximation between generativism and cognitivism in biolinguistics.
KEYWORDS: Cognitive linguistics; conceptual metaphors; George Lakoff; Mark Johnson; Metaphors We Live By.

RESUMO: No ensaio "Cognitive Linguistics and Autonomous Linguistics", publicado em 2007 no Oxford Handbook of Cognitive Linguistics, John R. Taylor sugere o diálogo e até mesmo a integração da linguística cognitiva com outras vertentes dos estudos da linguagem. Seguindo essa linha de argumentação, reanaliso nesta resenha a teoria das metáforas conceituais de George Lakoff e Mark Johnson. Meu objetivo é explicitar os excessos empíricos e retóricos desses autores desde a publicação do livro Metaphors We Live By, há 45 anos, em grande parte como consequência de seu ataque à gramática gerativa de Noam Chomsky. Com isso, espero facilitar a aproximação entre o gerativismo e o cognitivismo na biolinguística.
PALAVRAS-CHAVE: Linguística Cognitiva; metáforas conceituais; George Lakoff; Mark Johnson; Metaphors We Live By

> "Langacker's cognitive grammar proposals for the theory and description of language have elicited almost no negative responses from other researchers working in the field of cognitive linguistics, neither from those outside it. In comparison with this relative stability, it is striking that Lakoff's proposals have met with far more internal and external critiques concerning a number of his basic insights, tenets, and tools, with the result that certain changes of orientation and alliances have followed." (Dirven 2005: 50–51)

Introduction

In 1980, linguist George Lakoff and philosopher Mark Johnson published a book that would become a landmark in cognitive linguistics. In *Metaphors We Live By*, the authors claim that metaphors structure our language, our understanding of reality, our thoughts, and even our attitudes (Lakoff and Johnson 2003b [1980]: 3–4). 'We live our lives on the basis of inferences we derive via metaphor,' stated Lakoff and Johnson (2003a: 273). Without the risk of exaggerating, it can be said that with the defense of this idea, Lakoff and Johnson not only established one of the inaugural milestones of cognitive

linguistics but also boosted an important field of research on semantic and pragmatic aspects of language that continues to grow today. Given this scenario, this paper proposes to rediscuss the work of Lakoff and Johnson. The main objective in doing so is to deconstruct the conception of these two authors that metaphors are something like the building blocks of cognition. To this end, I initially analyze the historical context in which *Metaphors We Live By* was published, highlighting that cognitive linguistics emerged precisely between the end of the 1970s and the beginning of the 1980s in the rubble of generative semantics – the alternative theoretical current to the standard generativist theory that ended up defeated in the so-called "linguistics wars." Then I examine the positions taken by Lakoff and Johnson over the past few decades in defense of the supposed metaphorical nature of human thought. I aim to show how Lakoff and Johnson came to adopt empirically fragile notions about the mind/brain as a consequence of their relentless (and often hasty) attack on Chomsky's generativism. As a result of doing this, I do not intend to reaffirm the research program launched by Chomsky against cognitive linguistics. In fact, as a consequence of the criticisms that I present here to Lakoff and Johnson, I hope to facilitate the approximation of cognitivism to other theoretical frameworks, including the generativist, as some cognitivists have already argued, such as John R. Taylor (2007).

1 From generative semantics to cognitive linguistics: t*he generative origins of cognitivism*

In the late 1960s, an iron curtain descended across generative grammar. On one side, Chomsky and his followers were developing the Standard Theory. On the other side, a group of dissidents led by Paul Postal, James McCawley, John "Háj" Ross, and George Lakoff was proposing an alternative theoretical framework, the so-called generative semantics. Within this framework, some of the central pillars of generativism were challenged, including the autonomy of syntax hypothesis – *i.e., the understanding that syntax is an autonomous component of language that operates independently of meaning (semantics)*. In retaliation, Chomsky and his supporters attacked generative semantics' cornerstone: the hypothesis that deep structure is the sole input to the semantic rules. The discussions were so intense that they were later called 'the linguistics wars' (Harris 1993; Newmeyer 1996).

Notwithstanding the severity of those who took part in that debate, it was a relatively short conflict. By the late 1970s, it was clear that Chomsky and his followers had demolished the main ideas of the generative semanticists – in particular, their conception of the semantic component of language – and, therefore, had won the dispute. Nonetheless, the consequences of that harsh period would last for decades. Actually, even today the adverse effects of those battles can be detected in generative grammar as well as in cognitive linguistics – which, as a ramification of generative semantics, is fundamentally against generativism. In fact, as observed by Peter Harder (2007: 1248), from the start 'cognitive linguistics was [...] very much aware of being everything that generative grammar was not: nonformal, nonmodular, non-truth-conditional, and so on.' Taking into account this situation, it is important to disclose the generative roots of cognitive linguistics to better understand its foundations and limitations.

In the first place, it is necessary to stress that generative semantics was essentially against Chomky's hypothesis of the autonomy of syntax concerning meaning and related deep structure to semantic representation. 'The kernel of generative semantics was an obliteration of the syntax-semantics boundary at the deepest level of grammar – the axiom that the true deep structure *was* the semantic representation, not a syntactic input to the

semantic component,' stated Randy A. Harris (1993: 105). Paul Postal's (1972) theoretical model, entitled *Homogeneous I*, is perhaps the best synthesis of that idea. In a simplified way, one can say that, to Postal, instead of deep structure (in Chomsky's (2015 [1965]) sense), there is the semantic content of the sentence (its meaning), which is associated with non-linguistic thought. The result after the application of transformations (approximately in Chomsky's (2015 [1965]) sense) to meaning would be the sentence itself.

Thus, on the one hand, Chomsky insisted that syntax is independent of semantics, declaring for example that 'the relation between semantics and syntax [...] can only be studied after the syntactic structure has been determined on independent grounds' (Chomsky 2002 [1957]: 17). On the other hand, the generative semanticists argued that syntax can only be investigated considering its relation to semantics. Moreover, unlike Chomsky, who conceived semantics as a purely interpretive component of the grammar that relates a structure generated by the syntactic component to a certain semantic representation (Chomsky 2015 [1965]: 15), the generative semanticists defended the conception that, just like syntax, semantics is a generative component, not only an interpretive one. What led the generative semanticists to this position was a radicalization of a hypothesis assumed by Chomsky in the *Aspects of the Theory of Syntax*: the Katz–Postal hypothesis, according to which all semantic interpretation applies to deep structure, before the application of transformations (Katz and Postal 1964). Pushed to the ultimate consequences by Postal, Lakoff, Ross, and McCawley, this hypothesis led to the idea that the true deep structure *is* the semantic representation.

In his interview with Mitsou Ronat in 1976, in which Ronat stated with good reason that generative semantics was 'virtually abandoned' at that time (Chomsky 2007c [1979]: 148), Chomsky summarized his disagreements with this framework and responded to the critiques launched by his rivals, especially regarding the semantic component of language. On that occasion, Chomsky stressed that since the 1950s his linguistics work accorded a central place to semantics, notwithstanding his skepticism about the general belief that syntax was based on semantic considerations (Chomsky 2007c [1979]: 138). 'I have always explicitly denied and rejected a totally different position which has often been attributed to me: namely, that the study of meaning and reference and of the use of language should be excluded from the field of linguistics,' said Chomsky (2007c [1979]: 139). 'It would be absurd to suppose that this innate linguistic theory [i.e., Universal Grammar], which determines the general form and structure of language, should not be connected in the most intimate manner to the fundamental properties of meaning and language use' (Chomsky 2007c [1979]: 140). Considering the idea defended by generative semantics that the true deep structure *is* the semantic representation, Chomsky observed:

> In fact, the Standard Theory, as presented in *Aspects*, for example, was questioned from the very beginning. On the one hand, it was noted in the book itself (which went to press in 1964), that at least some aspects of semantic representation, for example those related to topic and comment, seem to involve surface structure rather than deep structure.[1] Subsequent research on the role of surface structure in determining the meaning of a sentence led to what has been called the Extended Standard Theory. (Chomsky 2007c [1979]: 150–151)

[1] For a discussion on how the order of quantifiers in surface structures sometimes plays a role in semantic interpretation, see Chomsky (2015 [1965]: 239–240). The sentences "everyone in the room knows at least two languages" and "at least two languages are known by everyone in the room" are not synonymous, Chomsky observed.

Actually, within the Standard Theory, Chomsky had already stated that surface structure possibly has a role in determining the meaning of a sentence (e.g., Chomsky and Halle 1968: 6–7). In any case, according to Chomsky (2007c [1979]: 151), the best critique of the Standard Theory was given by Ray Jackendoff in 1964 or 1965, not by the generative semanticists.[2] 'He showed that surface structure played a much more important role in semantics interpretation than had been supposed,' said Chomsky (2007c [1979]: 151). 'Then the Standard hypothesis, according to which it was the deep structure that completely determined this interpretation, is false.'

The evidence presented by Jackendoff to support this conclusion, which of course represented a serious problem for generative semantics, was based on the analysis of sentences with focus and presupposition and negative sentences with quantifiers. In the first case, Jackendoff observed that phonological phenomena – therefore, in surface structure – such as intonation, stress, and pitch, are related to the semantic component. See the sentences below, which were originally presented by Chomsky (1970) and taken up by Jackendoff (1972):

(1a) Is it JOHN who writes poetry?
(1b) No, it is BILL who writes poetry.
(1c) No, it is JOHN who writes short stories.

Sentence (1b), stated Jackendoff (1972: 229), is a "natural" response to sentence (1a), but sentence (1c) is not. Jackendoff (1972: 230) argued that this is the case because in sentence (1a) the presupposition is that someone writes poetry – that is, the speaker assumes that this information is shared by him and the hearer. "John" is the focus of the sentence – i.e., the speaker assumes that this information is not shared by him and the hearer. However, the presupposed information as well as the focus of the sentence are phonologically marked. So, these semantic contents are not assigned in deep structure. Consequently, the Katz–Postal hypothesis is disproved.[3]

In the second case, Jackendoff detailed how the semantic content of negative sentences with quantifiers can change due to transformational operations, disproving once again the Katz–Postal hypothesis. For example:

(2a) Not many of the arrows hit the target.
(2b) Many of the arrows didn't hit the target.
(2c) The target wasn't hit by many of the arrows.

Based on the Katz–Postal hypothesis, asserted Jackendoff (1972: 326), passive sentence (2c) should be ambiguous but its only reading is synonymous with (2a) – except with an accent on "many." Thus, sentences (2a), (2b), and (2c) prove that the Katz–Postal hypothesis is wrong – and so is the generative semantics' axiom that the true deep structure *is* the semantic representation.

Reinforcing his position against generative semantics, Chomsky called Ronat's attention to the then-new trace theory, declaring that '*all* of semantic representation, including thematic relations, can in a sense be derived from surface structure' (Chomsky 2007c [1979]: 164) and that 'under trace theory one can say that surface structure is associated directly with semantic representation' (Chomsky 2007c [1979]: 171). It is worth mentioning that in Standard Theory it was assumed that thematic relations (agent,

[2] According to Jackendoff (p.c.), he didn't start critiquing the Standard Theory until 1968.
[3] Jackendoff (p.c.) observed that the argument concerning the relation of focus to stress was due not to him but to the Dutch linguist A. Kraak, who was visiting MIT around 1967–68.

patient, instrument, etc.) were attributed to nouns, pronouns, and so on in deep structure. However, given trace theory, a thematic relation is attached to an element that has been displaced by a transformation. For example:

(3) *To whom* does Pierre teach Latin *t*?

In sentence (3), observed Chomsky (2007c [1979]: 164), "to whom" receives its thematic relation (goal) by the intervention of its trace. 'The trace is a sort of memory of deep structure recorded in the surface structure,' synthesized Ronat (Chomsky 2007c [1979]: 164).

To the generative semantics' discredit, none of these arguments against its hypothesis that deep structure is the sole input to the semantic rules were properly responded to. So, even though Lakoff had declared in the mid-seventies that generative semantics had won the war (Harris 1993: 197), Givón was confident to say a few years later that the movement at that time was already 'ancient history' (Givón 1979: 19). In line with Givón, Harris (1993: 215) stated that it was Chomsky's positive proposals far more than his negative attacks on generative semantics that determined the winner of the debate. Nonetheless, it is important to highlight that under Lakoff's leadership, generative semantics was already compromised in the 1970s due to its excesses. 'With Lakoff at the helm, promoting his very wide conception of linguistic theory,' said Harris (1993: 227–8), 'the general perception came to be that generative semantics was theoretically promiscuous, incapable of saying no.' In fact, with Lakoff at the helm, generative semantics, according to Lakoff himself, was going to accommodate

> not just syntax-semantics, phonetics-phonology, historical linguistics, anthropological linguistics, etc., which form the core of most academic programs in this country, but also the role of language in social interaction, in literature, in ritual, and in propaganda, and as well the study of the relationship between language and thought, speech production and perception, linguistic disorders, etc. (Parret 1974: 151 *apud* Harris 1993: 228)

As observed by Harris (1993: 228), 'one gets the impression that Lakoff stopped the list more because he ran out of breath than because he ran out of vision, carefully remembering to throw in that *etc*. before gulping some air.' Thus, 'generative semantics under Lakoff tried to do too much, this reasoning goes, and it burst at the seams' (Harris 1993: 228).

To Harris (1993: 230), two traits were perhaps the principal reasons the movement fell apart: 'Its embrace of a wide range of interests and its self-definition primarily in the rhetoric of dissent, in saying no to Chomsky.' In both cases, Lakoff's voice was certainly the most strident of any of the generative semanticists. Besides, as stressed by Frederick Newmeyer (1996: 126), in that period Lakoff presented many theories that were soon abandoned and forgotten such as "fuzzy grammar" (1973), "global transderivational well-formedness grammar" (1974), "cognitive grammar" (1975), "dual-hierarchy grammar" (1975), "linguistic gestalt theory" (1977) and "experimental linguistics" (1977). Even though all these theories were proposed to demolish generative grammar, they have never become popular even among Chomsky's detractors – *m*aybe because they were seen more as a compendium of observations than as a solid theoretical framework. However, this situation would change in 1980, when Lakoff and Mark Johnson's *Metaphors We Live By* was published.

2 The theory of conceptual metaphors and the theory of embodied mind

According to Lakoff,[4] his work regarding conceptual metaphors started in 1978, during an undergraduate seminar he was teaching at the University of California, Berkeley. On a day that the class would discuss a paper concerning metaphors, one woman who was crying came a little bit late. While the students were analyzing the text, she said that she could not do that since she had a metaphor problem with her boyfriend. The woman told her colleagues that on the way to class, her boyfriend said to her: 'Our relationship has hit a dead-end street.' Then she asked if the class could help her understand what he meant. So they said to her that, if the relationship had hit a dead-end street, she could not keep going the way she was going and she might have to turn back.

At this point, observed Lakoff, the class realized that English has a lot of expressions in which love is seen as a kind of journey, such as "We are going in different directions," "We have a crossroads in the relationship," "The marriage is off the track," "We are spinning our wheels," and so on. Considering these examples, the class started asking if there was a generalization about them. They realized that in every case, love is seen as a journey, the lovers are the travelers, the love relationship is the vehicle (for instance a car, a boat, a train, etc.), the common life goals are the destinations that you are trying to reach in this journey, and difficulties in the relationship are difficulties in the journey (e.g., spinning our wheels).

Indifferent to the whole discussion, the woman said to the class: 'I don't care about your generalization. My boyfriend is breaking up with me. He is thinking in terms of this metaphor.' At this moment, Lakoff realized that classical theories of metaphors do not talk about thinking in terms of a metaphor. So, when one says, for example, "We are spinning our wheels in this relationship," he argued, the expression "spinning the wheels" represents the image of a car, its wheels are turning, but it does not move – that is, it is stuck in ice, or sand, or snow, etc. Furthermore, in this situation, you put a lot of energy into making the car move and you feel frustrated. In a love relationship, Lakoff suggested, when you say "We are spinning our wheels in this relationship," it means the relationship is not going anywhere, there is no progress toward common life goals, and you are putting a lot of energy into it and you feel frustrated. Therefore, concluded Lakoff, the reasoning that you do about travel is being mapped onto the reasoning that you do about love.

Taking these reflections forward, Lakoff would eventually develop with Johnson their theory of conceptual metaphors, assuming that metaphors structure our language, our understanding of reality, our thoughts, and even our attitudes. A conceptual metaphor, according to Lakoff and Johnson (1999: 45), is the cognitive mechanism that allows us to use the physical logic of grasping to reason about understanding. In fact, asserted the authors (1999: 45), a metaphor allows conventional mental imagery from sensorimotor domains to be used for domains of subjective experience. For example, we may form an image of something going by us or over our heads (sensorimotor experience) when we fail to understand (subjective experience). Moreover, a conceptual metaphor is a tacit, underlying metaphor from which metaphorical expressions derive. For instance, from the conceptual metaphor LOVE IS A JOURNEY derive metaphorical expressions like "We are going in different directions," "We have a crossroads in the relationship," and "The marriage is off the track." Likewise, from the conceptual metaphor ARGUMENT IS WAR derive metaphorical expressions like "Your claims are *indefensible*," "He attacked *every weak point* in my argument," and "His criticisms were *right on target*" (Lakoff and Johnson 2003b [1980]: 4). In all these examples, according to Lakoff and Johnson's

[4] Available in: <https://www.youtube.com/watch?v=Eu-9rpJITY8>. Access: 22 Mai 2023.

theory, we conceptualize our subjective experiences, reason about them, and visualize them based on other domains of experience – in particular, sensorimotor domains (Lakoff and Johnson 1999: 45).

Taking into account their theory of conceptual metaphors, Lakoff and Johnson would later develop their theory of embodied mind, which is explained in their 1999 book *Philosophy in the Flesh: The Embodied Mind and its Challenge to Western Thought*. Concepts and reason are embodied, suggested Lakoff and Johnson (1999: 16–17), and the body and brain shape reason. That is, reason uses and grows out of bodily capacities such as perception and movement. In other terms, 'reason is fundamentally embodied' (Lakoff and Johnson 1999: 17). The spatial-relations concepts, for example, are allegedly embodied (1999: 30). To Lakoff and Johnson (1999: 30), these concepts not only are 'at the heart of our conceptual system' but they also are what make sense of space for us, since they characterize what spatial form is and define spatial inference. In fact, they argued (1999: 30–31), we do not see nearness and farness but we see objects where they are and we attribute to them nearness and farness from some landmark. For instance, the relations *in front of* and *in back of* are imposed by us on space in a complex way. When you go *in the front of* a church, you find yourself *in the back of* it (1999: 30).

Lakoff and Johnson (1999: 30–31) also asserted that we use spatial-relations concepts unconsciously, and we impose them via our perceptual and conceptual systems. So, we just automatically and unconsciously "perceive" one entity as *in*, *on*, or *across from* another entity. Besides, according to the authors (1999: 31), most spatial relations are complexes made up of elementary spatial relations. English *into*, they say by way of example, is a composite of the English elementary spatial relations *in* and *to*, and English *on* in its central sense is a composite of *above*, *in contact with*, and *supported by*. Each of these is an elementary spatial relation (1999: 31). Furthermore, according to Lakoff and Johnson (1999: 36), spatial-relations concepts are embodied in various ways. Thus, bodily projections are based on the human body, and concepts like *front* and *back* arise from the body, depending on the body, and would not exist if we did not have the kinds of bodies we have. The same is true of fundamental force-dynamic schemas, such as pushing, pulling, propelling, supporting, and balance, they say. 'We comprehend these through the use of our body parts and our ability to move them, especially our arms, hands, and legs' (1999: 36).

Likewise, other concepts are shaped by our perceptual and motor systems, such as our color concepts (1999: 16). More specifically, according to Lakoff and Johnson (1999: 54), there is a "neural embodiment," like in the case of colors. Neural embodiment, they clarify, characterizes the neural mechanisms that give rise to concepts. So, for example, the neural circuitry connected to the color cones brings color into existence and characterizes the structure of color categories. These neural mechanisms explain why color categories have many of the phenomenological properties they have (1999: 54). By generalizing this argument, Lakoff and Johnson concluded that concepts and reason are embodied and that the body and brain shape reason.

3 Some objections to the theory of conceptual metaphors

In the "Afterword" of the 2003 edition of *Metaphors We Live By*, Lakoff and Johnson discuss how their ideas have been received through the years and identify four fallacies that allegedly impede 'understanding the nature of metaphorical thought and its profundity' (Lakoff and Johnson 2003a: 244): (1) the fallacy that metaphor is a matter of words, not concepts; (2) the fallacy that metaphor is based on similarity; (3) the fallacy that all concepts are literal and that none can be metaphorical; (4) the fallacy that rational

thought is in no way shaped by the nature of our brains and bodies (Lakoff and Johnson 2003a: 244). These alleged fallacies, according to Lakoff and Johnson (2003a: 244), go back at least as far as Aristotle. If that were the case, Lakoff and Johnson's theory concerning metaphors would demolish most of the history of Western thought – as they in fact claim in *Philosophy in the Flesh*:

> The mind is inherently embodied.
> Thought is mostly unconscious.
> Abstract concepts are largely metaphorical.
> These are three major findings of cognitive science. More than two millennia of *a priori* philosophical speculation about these aspects of reason are over. Because of these discoveries, philosophy can never be the same again.
> When taken together and considered in detail, these three findings from the science of the mind are inconsistent with central parts of Western philosophy. (Lakoff and Johnson 1999: 3)

Notwithstanding Lakoff and Johnson's evaluation of their theory of conceptual metaphors as well as their theory of embodied mind, it is important to highlight the fact that countless authors were precursors of many aspects of the ideas presented in *Metaphors We Live By* – including Aristotle (e.g., Jäkel 1999; Leezenberg 2001; Nerlich and Clarke 2000, 2001, 2007; Sinha 2007). But more important than observing that Lakoff and Johnson have many precursors is to refute the assumption that metaphors structure our language, our understanding of reality, our thoughts, and even our attitudes – i.e., the assumption that we live our lives on the basis of inferences we derive via metaphor.

In the same "Afterword," Lakoff and Johnson (2003a: 243–244) claim that our metaphorical thought can determine questions of war and peace, economic policy, and legal decisions, as well as the mundane choices of everyday life. "Is a military attack a 'rape,' 'a threat to our security,' or 'the defense of a population against terrorism'?," question the authors (Lakoff and Johnson 2003a: 243). According to them, the same attack can be conceptualized in any of these ways with very different military consequences. "Is your marriage a partnership, a journey through life together, a haven from the outside world, a means for growth, or a union of two people into a third entity?," also question Lakoff and Johnson (2003a: 243). The choice among such common ways of conceptualizing marriage, they state, can determine what your marriage becomes, since drastic metaphorical differences can result in marital conflict. To substantiate this conclusion, Lakoff and Johnson (2003a: 243–244) invite the reader to analyze a case where one spouse views marriage as a partnership, and the other spouse views it as a haven. According to the authors (2003a: 244), the responsibilities of a partnership may well be at odds with the relief from responsibilities characteristic of a haven.

In reality, the fact that spouses have different views on what a relationship means can result in conflicts between them. However, it does not seem plausible that simply choosing ways of conceptualizing marriage can determine what marriage becomes. After all, as Lakoff's student's ex-boyfriend would surely endorse, it's not a metaphor that can determine what your relationship becomes, but what your relationship becomes that determines the metaphor with which you conceptualize it. Proof of this is that even a marital metaphor usually used in a positive sense can derive a negative metaphor to express a criticism of the relationship or even of the spouse. An amusing example of this fact is given in Woody Allen's movie *Whatever Works*. After years of falling out with his elitist and ambitious wife, the protagonist of the story, the misanthropic and detached

Boris Yelnikoff, tells her just before throwing himself out the window: 'Our marriage hasn't been a garden of roses. Botanically speaking, you're more of a Venus flytrap.'[5]

Equally skeptical of Lakoff and Johnson's claims about the role of metaphors in the perception of marriage, anthropologist Naomi Quinn (1987, 1991, 1996, 1997) draws on her research with 11 American couples to affirm that one's understanding of marriage is based on a cultural model, not metaphors (1987: 174), and that a person's view of his or her own marriage and spouse is what structures the metaphors with which he or she speaks of the relationship and/or of the partner, and not the other way around (1987: 174–175). In fact, based on the analysis of dozens of hours of speeches by the 22 people she spoke with in her studies of the American perception of marriage, Quinn demonstrates that the metaphors her interviewees used provide clues about the prevailing cultural model of marriage in her country (1987: 174).

More precisely, according to Quinn (1987: 179), the North American notion of marriage can be summarized in eight conceptual metaphors – which she calls "proposition–schemas": MARRIAGE IS ENDURING, MARRIAGE IS MUTUALLY BENEFICIAL, MARRIAGE IS UNKNOWN AT THE OUTSET, MARRIAGE IS DIFFICULT, MARRIAGE IS EFFORTFUL, MARRIAGE IS JOINT, MARRIAGE MAY SUCCEED OR FAIL and MARRIAGE IS RISKY. To reach this conclusion, Quinn mapped the metaphors used by her interviewees to refer to marriage, in line with Lakoff and Johnson's work on conceptual metaphors. Thus, from metaphorical descriptions of marriage as a "unit" or a "pair," as being "together in this" or presenting it as a "united front," for example, Quinn arrived at the proposition-schema MARRIAGE IS JOINT (1987: 179–180). However, unlike Lakoff and Johnson, Quinn (1987: 189–191) does not believe that conceptual metaphors such as those eight above can structure a cultural model of marriage. Quite the contrary, according to Quinn (1987: 189–191), a cultural model of marriage – or whatever it is – is what structures the metaphors with which people express themselves. 'This striking finding, that the superficially varied metaphors people use to talk about marriage are reducible to a very small number of classes, suggests that metaphor, far from being productive of understanding, is actually highly constrained by understanding,' stated Quinn in the essay "The Cultural Basis of Metaphor" (1991: 66), which was published in the 1991 book *Beyond Metaphor: The Theory of Tropes in Anthropology*. 'I have postulated that the metaphors for marriage make sense in terms of an underlying model shared by my interviewees, the eight classes of metaphor reflecting the conceptual elements that together, and in interaction, define this model,' concluded Quinn, referring to her 1987 work.

In "The Cultural Basis of Metaphor," Quinn takes an even more combative stance toward Lakoff and Johnson's theory of conceptual metaphors than in her previous writings. In this essay, Quinn not only argues that 'cultural understanding underlies metaphor use' (1991: 56–57) but also – somewhat exaggeratedly (e.g., Lakoff and Johnson 2003b [1980]: ch. 5; Lakoff 1987: ch. 18 – criticizes linguists and other cognitive scientists who 'neglect altogether' the organizational role of culture in human thought (1991: 57). In any case, Quinn criticizes the authors of *Metaphors We Live By* for inflating the cognitive role of metaphors and minimizing the role of culture (1991: 56–57, 65).

Contrary to this attitude and drawing on her anthropological research on the North American view of marriage, Quinn insists that metaphors, rather than constituting understanding, are selected to fit a pre-existing, culturally shared model (1991: 60). Thus, Quinn concluded (1991: 91), supported by her empirical work, that a greater role in the constitution of our understanding of the world is played by our cultural models compared

[5] The Venus flytrap is a carnivorous plant.

to our metaphors. As a reflection of this, Quinn suggested in her 1997 essay "Research on Shared Task Solutions" that the metaphors that people use to talk about the expected characteristics of a marriage reflect those characteristics, rather than substantiate them, as Lakoff and Johnson believe. 'Manufactured products, durable things, possessions and journeys are drawn upon over and over again as sources of metaphors for lasting marriages, not because they constitute our understanding of marriage, but simply because they are the major cultural exemplars, in our world, of things that typically last,' stressed Quinn (1997: 146).

Taking as a reference the anthropological studies conducted by Quinn, as well as the conclusions she reached after years of research, it seems safe to say that it is not metaphors that structure human language, thought, perception, and actions, but human thought, perception, and actions that structure metaphors. That is, metaphors do not structure any human cognitive aspect but are a way of expressing human thought, perception, and actions, among many other ways – linguistic and non-linguistic. Based on this finding, it can be said that Lakoff and Johnson, without relying on any empirical evidence, reversed the order between thought and the expression of thought with their theory of conceptual metaphors. Moreover, considering the high productivity of metaphors in human language, they deduced without any scientific support that 'we reason in terms of metaphor' (Lakoff and Johnson 2003a: 244); 'we think metaphorically' (Lakoff and Johnson 2003a: 245); 'metaphor structures thought' (Lakoff and Johnson 2003a: 249). Moreover, based on these premises, Lakoff and Johnson concluded that 'the metaphors we use determine a great deal about how we live our lives' (Lakoff and Johnson 2003a: 244).

In fact, taking the concept ARGUMENT IS WAR as a reference, for example, Lakoff and Johnson (2003b [1980]: 4) maintain that much of what is done in a discussion is partially structured by the concept of war, with a verbal battle consisting of attack, defense, counterattack, etc. Thus, the authors concluded, the metaphorical concept ARGUMENT IS WAR structures our actions in a discussion and is therefore a metaphor we live by in our culture. To reinforce this conclusion, Lakoff and Johnson invite the reader to try to imagine a culture in which discussions are not seen in warlike terms, with no winners and losers, no sense of attack and defense. Going further, Lakoff and Johnson (2003b [1980]: 5) invite the reader to imagine a culture in which a discussion is seen as a dance, the participants as performers, and the goal is to perform the activity in a balanced and aesthetically pleasing manner. According to Lakoff and Johnson, in this culture, people would see and experience discussions differently than we do, and we probably wouldn't interpret their activity as an argument.

Aside from the fact that Lakoff and Johnson don't present any empirical evidence that in different cultures people would see the act of arguing in different ways because they would conceptualize it in different ways, it doesn't seem risky to say that it's just the opposite that happens: people in a certain culture see and experience discussions in a specific way, and consequently, his language expresses this way of seeing and experiencing discussions – or at least some of its aspects. In this way, it would not be the metaphorical concept that would structure how these people would perceive a discussion, how they would think about it, and what they would do in one, but the way they perceive a discussion, how they think about it and what they do in one that would structure their expressions about this activity. In other words, it would not be the metaphorical concept that would structure how these people would perceive a discussion, how they would think about it, and what they would do in one, but the way they perceive a discussion, how they think about it and what they do in one that would structure their expressions about this activity, including metaphorical ones.

In “Argument is Argument: An Essay on Conceptual Metaphor and Verbal Dispute,” anthropologist James Howe holds exactly this position. Following Quinn’s line of argument and also basing his assertions on a broad discursive analysis, Howe (2007: 2) argues that the use of the term “argument” by native English speakers does not depend on metaphor and that the understanding of this category is, at best, only partially conditioned by metaphor. When it comes to the metaphor ARGUMENT IS WAR, Howe (2007: 2) stressed that the claim made by Lakoff and Johnson that the understanding of what verbal conflicts are is based on previous experience of war and physical violence is not proven. More than that: in opposition to the idea that the understanding of what a discussion is is dependent on the knowledge of what a war is, Howe (2007: 6) endorsed the arguments presented by David Ritchie against this reasoning.

As a matter of fact, in the 2003 paper “ARGUMENT IS WAR – or Is It a Game of Chess? Multiple meanings in the Analysis of Implicit Metaphors,” Ritchie challenges Lakoff and Johnson’s conception that the “metaphors we live by” originate from our physical and social experiences, pondering, for example:

> Given the small number of people in the United States who have directly experienced war, it is not easy to see how “ARGUMENT IS WAR” can be grounded in direct physical or social experience […]. On the other hand, several of the other activities within this group of interrelated concepts are grounded in direct physical and social experience and thus are directly available for metaphorical understanding of argument – and of war. From a very early age, children engage in heated disputes that lead to verbal, and occasionally to physical, violence. They engage in competitive contests and games, and in contests of will with siblings, peers, parents, and other adults. Although it is dubious that children have any realistic concept of ‘war’ before they reach adolescence (if then), they certainly have well-developed schemas for physical and verbal fighting, contests, and games. (Ritchie 2003: 132)

Without mentioning Ritchie, Lakoff and Johnson admit in the “Afterword” of the 2003 edition of *Metaphors We Live By* that ‘most people learn about argument before they learn about war’ (Lakoff and Johnson 2003a: 265). Therefore, Lakoff and Johnson (2003a: 265) substitute the conceptual metaphor ARGUMENT IS WAR with the conceptual metaphor ARGUMENT IS STRUGGLE. But unconvinced of the validity of this mere alteration, Howe remained skeptical of the supposed structuring power of metaphors in human cognition. ‘Are there strong reasons to believe either that we cannot understand or identify the concept in its own terms without resort to metaphorical transfers, or that physical combat is experientially prior to or more basic than verbal disagreement?,’ Howe asked (2007: 7). ‘The evidence suggests not,’ he promptly says.

Indeed, as Howe (2007: 7) argued following Ritchie, English speakers have from childhood many experiences of disagreement, contestation, and verbal conflict with parents, friends, schoolmates, etc., and all of them are as important as experiences of violence or physical coercion. It is no coincidence, Howe argued (2007: 7), that English speakers can immediately decide if an interaction qualifies as an argument or if a friendly exchange of words turns into an argument by relying solely on criteria specific to a verbal interaction. Therefore, Howe concluded (2007: 9), following Quinn and Ritchie, ‘Americans undoubtedly call on metaphors of war, among others, to characterize or discuss arguments [...], but they don’t need metaphor to know one when they hear one.’

Regarding Lakoff and Johnson’s ‘fantasy’ (Howe 2007: 10) that in a culture where an argument was seen as a dance, people would see and experience discussions in a different way than we do, Howe is outspoken: ‘The notion that another culture might metaphorize argument as dance is fallacious, and indeed, oxymoronic’ (Howe 2007: 2).

To back up this claim, Howe draws on his extensive work with the Kunas in Panama. According to Howe (2007: 13), although the Kuna people do not have an English equivalent word "argument," their language is full of terms designating forms of public discourse that English speakers would recognize as argumentative and/or argumentation-based. The Kunas, Howe explained, have a place for debate that they call *onmakennega* – which he translates as "gathering house." There, they discuss community issues many nights a week. According to Howe, most of the terms that the Kunas use for the discourses that take place in this environment are based on the polysemic word *igar*, *igal*, *igala*, whose root means "path" or "way." In various expressions, Howe explained, *igar* has the meaning of "case, issue, matter, point of discussion," as in *igar dummad*/*igar bibigwa* ("major/minor issue"), *igar dargwen* ("problem") and *igal abalusad* ("messed up, bad case"). In another semantic group, however, Howe added, *igar* has the meaning of "way, law, norm, precedent, decision, correct thinking," as in *igal amie* ("find a way, decide or resolve something"), *igar maye* ("clear a trail, initiate understanding, set a precedent or norm") and *igar mai* ("the way lies, a norm, law, or precedent exists"). All of these *igar*-based expressions characterize the Kuna's discursive activities in broadly positive and benign, or at least neutral, terms, Howe pointed out.

Thus, if Lakoff and Johnson were right, Howe warns, the discussions between the Kunas would be light and delicate, which is not always the case. Having attended the Kunas' meetings hundreds of times, Howe assured that the tone of the discussion between them varies greatly, ranging from friendly and routine conversation to fierce and intransigent clashes – just as it happens between Americans. With this in mind, Howe concludes bluntly:

> […] their [Lakoff and Johnson's] notion of a truly nice culture in which people argue like dancers follows a long tradition of utopian romanticization of *The Other* – meaning that wonderfully egalitarian, unexploitative, unspoiled, and unsoiled Alter whose virtues expose the limits and vices of our own thought and conduct. (Howe 2007: 15–16)

Notwithstanding the assertiveness of Howe's critiques of their ideas, Lakoff and Johnson have never responded to them, just like they have never responded to Quinn's objections to their theory of conceptual metaphors – something that one or other of their followers would eventually do (e.g., Gibbs Jr. 1994, 1999; Kövecses 1999, 2005, 2017). Be that as it way, the point is that anthropological research such as Quinn's and Howe's present serious problems to Lakoff and Johnson's assumption that metaphors structure our language, our understanding of reality, our thoughts, and even our attitudes. Therefore, it seems fair to say that Lakoff and Johnson have overestimated the role metaphors play in our lives.

4 A non-scientifically warranted proposal

Reaffirming the idea that we think metaphorically and that the metaphors we use determine a great deal about how we live our lives, Lakoff and Johnson (2003b [1980]: 51) also state that, by using what is called "speech formulas," or "fixed-form expressions," or "phrasal lexical items," such as "I'm *drained*," "Live your life *to the fullest*," "The *odds are against me*," and "I'll *take my chances*," our way of talking about, conceiving, and even experiencing our situation would be metaphorically structured. Besides, Lakoff and Johnson (2003b [1980]: 55) argue that expressions like "wasting time," "attacking positions," and "going our separate ways" are reflections of systematic

metaphorical concepts that structure our actions and thoughts. Summing up these ideas, the authors declare:

> Many of our activities (arguing, solving problems, budgeting time, etc.) are metaphorical in nature. The metaphorical concepts that characterize those activities structure our present reality. New metaphors have the power to create a new reality. (Lakoff and Johnson 2003b [1980]: 145)

By believing that metaphors may create realities for us, especially social realities (Lakoff and Johnson 2003b [1980]: 156), Lakoff and Johnson claim that a metaphor may be a guide for future action, which will fit the metaphor. In turn, according to them, this will reinforce the power of the metaphor to make experience coherent. 'In this sense metaphors can be self-fulfilling prophecies,' stated Lakoff and Johnson (2003b [1980]: 156).

Based on this understanding, Lakoff would affirm years after publishing *Metaphors We Live By* that metaphors can change our society. In his 1996 book *Moral Politics: What Conservatives Know that Liberals Don't*, for example, Lakoff claims that what he calls 'Strict Father Morality' informs the conservative world-view, whereas 'Nurturant Parent Morality' underlies the liberal world-view. 'These two models of the family give rise to different moral systems and different discourse forms, that is, different choices of words and different modes of reasoning,' Lakoff argued (1996: 12). Because of this, these two family models allegedly determine the way conservatives (the base of the Republican electorate) and liberals (the base of the Democratic electorate) view issues such as social programs, taxes, gun control, and the environment. The idea is that, due to their respective conceptual metaphors of a strict parent and a provider parent, conservatives and liberals would have different perceptions of reality. Conservatives dismiss social safety nets as immoral because they run counter to self-discipline and responsibility, while liberals consider it immoral to cut health care taxes because it helps people who don't need help and hurts people who need help.

Once again, however, it seems that Lakoff reversed the order of cause and effect. After all, as Quinn, Howe, and Ritchie would certainly endorse, it is not that the strict parent model determines the way conservatives view issues of morality and public policy, or that the nurturant parent model determines the positions taken by liberals, but it is the moral and ideological convictions of conservatives and liberals that lead them to identify with the first and second family models respectively. Thus, it is not that these metaphors constitute or structure the political and moral thinking and perceptions of the American electorate, these metaphors are a form of expression of the political and moral thinking and perceptions of this electorate, among many other forms – linguistic and non-linguistic.

Following this interpretation, American writer William Saletan stated in his review of Lakoff's 2008 book *The Political Mind* that Lakoff's strategy for the Democrats to beat the Republicans based on his analysis that the right wins and keeps power by framing issues and controlling minds is simply 'neuroliberalism' in place of neoliberalism. In fact, according to Lakoff (2008b: 11), by declaring "war on terror," for example, President Bush has gained ample military and political leeway by naming an elusive and amorphous enemy. Besides, Lakoff pointed out (2008b: 3–9), by hijacking the use of the word "freedom" to justify his political acts, Bush has put himself in a difficult position to attack, since to attack him would be like attacking the very supreme value of the American nation. 'It's hard to take all this seriously if you know any conservatives,' asserted Saletan, 'just as it's hard to take Lakoff's neurodeterminism seriously if you know any science.' To Saletan, Lakoff's proposal to re-engineer our

heads is neither democratic nor scientifically warranted. Of course, Saletan was not the first one to question the empirical accuracy of Lakoff's theories. Nonetheless, Lakoff has never responded to his critics. Even worse, he insists on his unfounded political and neurological assumptions (e.g., Lakoff 2008a, 2012, 2016; Lakoff and Wehling 2012).

5 A perceived lack of empirical rigor

In the 2007 essay "The Cognitive Linguistics Enterprise: An Overview," Vyvyan Evans, Benjamin K. Bergen, and Jörg Zinken recognize that cognitive linguistics has been criticized due to a perceived lack of empirical rigor (Evans et al. 2007: 28). Reinforcing this perception, many of the most influent cognitivists not only admit this situation but also demand greater empirical rigor of their colleagues (e.g., Bergen 2007; Gibbs Jr. 2007). In a sense anticipating this discussion, Lakoff had already declared in the 1990 paper "The Invariance Hypothesis: Is Abstract Reason Based on Image-Schemas?" that cognitive linguistics should be faithful to empirical discoveries about the nature of the mind/brain (Lakoff 1990: 39) and that it is committed to studying human language following what is generally known about the mind and the brain, from other disciplines as well as linguistics itself (Lakoff 1990: 40).

In line with this position, Lakoff and Johnson state in *Philosophy in the Flesh* that the book 'claims that empirical scientific results, especially converging results about the mind and language that have been arrived at using multiple methods, take precedence over a priori philosophical theories' (Lakoff and Johnson 1999: 495). In the "Afterword" of the 2003 edition of *Metaphors We Live By*, Lakoff and Johnson reaffirm this point of view and observe with good reason that questions about the nature of meaning, conceptualization, reasoning, and language are questions requiring empirical study – that is, they cannot be answered adequately by mere a priori philosophizing (Lakoff and Johnson 2003a: 246).

In the same text, Lakoff and Johnson (2003a: 244, 272) also assert that their key ideas regarding metaphors have been either sustained or developed further by recent empirical research in cognitive linguistics and cognitive science generally. These key ideas are the following:

> - Metaphors are fundamentally conceptual in nature; metaphorical language is secondary.
> - Conceptual metaphors are grounded in everyday experience.
> - Abstract thought is unavoidable, ubiquitous, and mostly unconscious.
> - Abstract concepts have a literal core but are extended by metaphors, often by many mutually inconsistent metaphors.
> - Abstract concepts are not complete without metaphors. For example, love is not love without metaphors of magic, attraction, madness, union, nurturance, and so on.
> - Our conceptual systems are not consistent overall, since the metaphors used to reason about concepts may be inconsistent.
> - We live our lives on the basis of inferences we derive via metaphor. (Lakoff and Johnson 2003a: 272–273)

However, the scientific community, in general, does not support the "empirical research" that Lakoff and Johnson claim to sustain their theory of conceptual metaphors. Physicist and statistician Cosma Shalizi, for example, stated in the 2003 essay "Analogy and Metaphor" that Lakoff's work is 'deeply, purely speculative, […] and his manner of writing is […] so dogmatic (e.g., he often writes "cognitive science has shown that" when what he means is "as I have often claimed, and many others vehemently denied")).'

Another critic of Lakoff's thought, Steven Pinker (2006) highlights in his review of *Whose Freedom?*, entitled "Block that Metaphor!," that Lakoff's use of cognitive neuroscience goes way beyond any consensus within that field and that the theory he presents in that book is not justified by current cognitive science or brain science. Besides, repeating Jackendoff and David Aaron's (1991: 321-322) critique, as well as Michiel Leezenberg's (2001: 136-137), that Lakoff and co-authors often resort to straw man argumentation, and rarely explicitly ascribe specific doctrines to specific authors, Pinker observes that Lakoff's book has no footnotes or references (just a generic reading list), and cites no studies from political science or economics, and barely mentions linguistics.

As a matter of fact, the 'three major findings of cognitive science' pointed out by Lakoff and Johnson in *Philosophy in the Flesh* (i.e., the mind is inherently embodied, thought is mostly unconscious, and abstract concepts are largely metaphorical) are simply dogmatic statements. Leezenberg (2001: 140-141, 145), for instance, questioned Lakoff and Johnson's assertion that conceptual metaphor is logically prior to linguistic metaphor, a thesis for which they have never presented any empirical evidence. In agreement with Leezenberg, Pinker (2007: 248–249) pointed out that studies conducted by psychologists Boaz Keysar, Yeshayahu Shen, Sam Glucksberg, and William S Horton (2000) have shown that people understand conventional metaphors ("We are going in different directions," "We have a crossroads in the relationship," "The marriage is off the track," etc.) regardless of a supposed conceptual metaphor (LOVE IS A JOURNEY) underlying them.

Based on this empirical finding, Pinker criticized the claim that abstract concepts are largely metaphorical. This is because, Pinker observed (2007: 249), people can ignore and question metaphors, as well as perceive which aspects of them apply and which are disposable to certain situations. '[...] people could not analyze their metaphors if they didn't command an underlying medium of thought that is more abstract than the metaphors themselves,' Pinker stated (2007: 249). 'When reasoning about a relationship, it's fine to mull over the metaphorical counterpart to a common destination, the rate at which one reaches it, and the bumps along the way. But someone would be seriously deranged if he started to wonder whether he had time to pack or where the next gas station was' (2007: 250).

The double-filter theory of the German linguist and psychologist Karl Bühler may help to clarify Pinker's position. Starting from the observation that an analogy, a metaphor, is nothing more than the superimposition of real and/or imaginary characteristics between concepts or ideas, Bühler (2011 [1934]: 397 ff) emphasized that by analogy, by metaphor, some relationship of similarity is established between the real plane and/or the imaginary plane of a concept or idea and the real plane and/or the imaginary plane of another concept or another idea. In this process, Bühler said, the characteristics of the overlapping concepts or ideas are filtered, that is, not all the characteristics of the respective overlapping concepts or ideas are considered. By superimposing the concept of man on the concept of lion, for example, in the old metaphor of saying that some man is a lion, the characteristic of man being bipedal and the characteristic of the lion of having a mane, among many others, are disregarded, since the "leonine" characteristics of man highlighted in this analogy are strength, courage, virility, etc. Given that there is a filter for each of the overlapping concepts or ideas, Bühler referred to them as double filters. Something like these double filters corresponds to what Pinker calls 'an underlying medium of thought that is more abstract than the metaphors themselves.' Without this means of thinking, Bühler and Pinker note, people would not be able to analyze metaphors by getting rid of the irrelevant parts – that is, by filtering out the features of overlapping concepts or ideas.

So, considering that people can analyze metaphors, it is plausible that they have a cognitive capacity prior to the metaphors themselves. Given the anteriority of this cognitive capacity, of this means of thought, concerning metaphors, Lakoff and Johnson's assertion that abstract concepts are largely metaphorical, as well as the conception that metaphors structure human thought, is compromised. This conclusion is supported by the discovery of neuroscientist David Kemmerer (2005), cited by Pinker (2007: 250), that certain patients with brain injuries may lose the ability to understand prepositions that express spatial notions, as in 'She's at the corner' and 'She ran through the forest,' while retaining their ability to understand the same prepositions for time, as in 'She arrived at 1:30' and 'She worked through the evening.' And the reverse is also true, according to Kemmerer – that is, some patients have lost the ability to understand prepositions that express temporal notions, but not the ability to understand prepositions that express spatial notions. As a result, Pinker argued, the hypothesis that the conceptual metaphor TIME IS SPACE presupposes the idea that the notion of time is installed in the neural territory used by the notion of space is weakened, which also weakens Lakoff and Johnson's assertions about the role of metaphors in human cognition.

Despite the force of Leezenberg's and Pinker's critique of their theory of conceptual metaphors and the compelling empirical evidence presented by Keysar *et al*. (2000) and Kemmerer (2005) against their statements regarding language and the human mind/brain, Lakoff and Johnson maintain their claims without even responding to their detractors. Actually, Lakoff and Johnson simply discard objections saying, for example, that the single biggest obstacle to understanding their findings has been the refusal to recognize the conceptual nature of metaphor (Lakoff and Johnson 2003a: 245–246). Furthermore, Lakoff and Johnson 'seriously distort the views they criticize by numerous errors of a rather elementary nature' (Leezenberg 2001: 137). For example, the "objectivist tradition" Lakoff and Johnson fulminate against, stressed Leezenberg (2001: 137), is 'simply nonexistent.' As a matter of fact, in order to legitimate their theory of embodied mind against what they call the 'Objectivist tradition,' Lakoff and Johnson disregarded or misrepresented whole periods and many authors of the history of Western thought.

6 The myth of the myth of objectivism

According to Lakoff and Johnson (2003b [1980]: 195), 'the myth of objectivism in Western philosophy and linguistics' has dominated Western culture, and in particular Western philosophy, from the Presocratics to the present day. 'The view that we have access to absolute and unconditional truths about the world is the cornerstone of the Western philosophical tradition,' said Lakoff and Johnson (2003b [1980]: 195). The so-called Objectivist tradition assumes that 'the relationships among categories in the world are characterized by a transcendent or universal reason, which is independent of any peculiarities of human minds, brains, and bodies' (Lakoff and Johnson 1999: 21). Moreover, asserted Lakoff and Johnson (2003b [1980]: 195), the myth of objectivity has flourished in both the rationalist and empiricist traditions and it is preserved to this day in the Kantian tradition, the descendants of the logical positivists, the Fregean tradition, the tradition of Husserl, and, in linguistics, in the neo-rationalism that came out of the Chomsky tradition.

However, it is not hard to find statements from these authors denying what Lakoff and Johnson have denominated 'objectivism.' For instance, René Descartes, the father of modern rationalism, highlighted in his *The Treatise on Light* the possible difference

between the sensation that we have of light and what it is in the objects that produces the sensation in us:

> In putting forward an account of light, the first thing that I want to draw to your attention is that it is possible for there to be a difference between the sensation that we have of it, that is, the idea that we form of it in our imagination through the intermediary of our eyes, and what it is in the objects that produces the sensation in us, that is, what it is in the flame or in the Sun that we term 'light.' For although everyone is commonly convinced that the ideas that we have in our thought are completely like the objects from which they proceed, I know of no compelling argument for this. Quite the contrary, I know of many observations which cast doubt upon it. (Descartes 2004 [1690]: 3)

In line with Descartes, English empiricist John Locke asserted in *An Essay Concerning Human Understanding* that colors look very different under a microscope, so they cannot be in the object itself (Locke 1999 [1689]: 284–285). '[…] color is an interactional property of objects, what Locke called a "secondary quality" that does not exist in the object itself,' observed Lakoff and Johnson (1999: 25), contradicting their own characterization of "the myth of objectivism." 'Our faculties for discovery of the qualities and powers of substances suited to our state,' stated Locke (1999 [1689]: 284). 'The infinite wise Contriver of us, and all things about us, hath fitted our senses, faculties, and organs, to the conveniences of life, and the business we have to do here.' Therefore, concluded Locke:

> We are furnished with faculties (dull and weak as they are) to discover enough in the creatures to lead us to the knowledge of the Creator, and the knowledge of our duty; and we are fitted well enough with abilities to provide for the conveniences of living: these are our business in this world. But were our senses altered, and made much quicker and acuter, the appearance and outward scheme of things would have quite another face to us; and, I am apt to think, would be inconsistent with our being, or at least well-being, in this part of the universe which we inhabit. (Locke 1999 [1689]: 284–285)

Taking up points of argument from both rationalists such as Descartes and empiricists such as Locke, Immanuel Kant clearly exposed in his *Critique of Pure Reason* his position that human knowledge derives from human sensibility – that is, from human perception of the world – and, because of this, man will never have access to absolute and unconditional truths:

> We have therefore wanted to say that all our intuition is nothing but the representation of appearance; that the things that we intuit are not in themselves what we intuit them to be, nor are their relations so constituted in themselves as they appear to us; and that if we remove our own subject or even only the subjective constitution of the senses in general, then all constitution, all relations of objects in space and time, indeed space and time themselves would disappear, and as appearances they cannot exist in themselves, but only in us. What may be the case with objects in themselves and abstracted from all this receptivity of our sensibility remains entirely unknown to us. We are acquainted with nothing except our way of perceiving them, which is peculiar to us, and which therefore does not necessarily pertain to every being, though to be sure it pertains to every human being. (Kant 1999 [1781/1787]: B 59–60)

Far from being an adherent of "objectivism," Kant is, in fact, one of its greatest critics. Aware of this, and familiar with Kant's role as one of the forerunners of what Lakoff and Johnson (1999: 97) came to call 'embodied realism,' Tim Rohrer (2007: 26)

stated that 'one of the most central questions cognitive linguistics asks [...] has a somewhat Kantian ring to it: how does the bodily apparatus itself shape our linguistic categorization and conceptualization?' Equally endowed with a somewhat Kantian ring to it, Edmund Husserl's work is not "objectivist" either. In *The Crisis of European Sciences and Transcendental Phenomenology: An Introduction to Phenomenological Philosophy*, for example, Husserl observed:

> Kant is certain that his philosophy will bring the dominant rationalism to its downfall by exhibiting the inadequacy of its foundations. He rightly reproaches rationalism for neglecting questions which should have been its fundamental questions; that is, it had never penetrated to the subjective structure of our world-consciousness prior to and within scientific knowledge and thus had never asked how the world, which appears straightforwardly to us men, and to us as scientists, comes to be knowable a priori –how, that is, the exact science of nature is possible, the science for which, after all, pure mathematics, together with a further pure a priori, is the instrument of all knowledge which is objective, [i.e.,] unconditionally valid for everyone who is rational (who thinks logically). (Husserl 1978 [1936]: 103)

Notwithstanding all these statements made by Descartes, Locke, Kant, and Husserl, which could be easily multiplied, Johnson reinforced his attacks on "objectivism" by arguing that, according to this epistemological conception, 'the world consists of objects that have properties and stand in various relationships independent of human understanding' (Johnson 1987: x). In the objectivist view, asserted Johnson (1987: x), 'the world is as it is, no matter what any person happens to believe about it, and there is one correct "God's-Eye-View" about what the world really is like.' Moreover, claimed Johnson (1987: x) in agreement with Lakoff (1987: xii–xiii), to objectivists, reason is a purely formal capacity to connect up, and to draw inferences from, literal concepts according to rules of logic; words are arbitrary symbols which, though meaningless in themselves, get their meaning by virtue of their capacity to correspond directly to things in the world; and rational thought can be viewed as an algorithmic manipulation of such symbols.

To summarize his conception of "objectivism" as well as his analysis of 'Objectivist semantics' (Johnson 1987: xi), Johnson identified Frege's philosophy of language as 'the Objectivist view of meaning in its purest form' (1987: xxxi). Nevertheless, to corroborate his assessment of Frege's highly complex ideas, Johnson (1987: xxx–xxxi) simply presented a brief analysis of the 1892 paper "Über Sinn und Bedeutung" ("On Sense and Reference"), in which Frege proposed that the reference of a proper name is the object it means or indicates, whereas its sense is what the name expresses. However, a more careful reading of Frege's texts allows us to conclude that he has never supported an objectivist view of meaning. In the preface to the 1879 book *Begriffsschrift*, for example, Frege observed:

> I believe that I can best make the relation of my ideography to ordinary language clear if I compare it to that which the microscope has to the eye. Because of the range of its possible uses and the versatility with which it can adapt to the most diverse circumstances, the eye is far superior to the microscope. Considered as an optical instrument, to be sure, it exhibits many imperfections, which ordinarily remain unnoticed only on account of its intimate connection with our mental life. But, as soon as scientific goals demand great sharpness of resolution, the eye proves to be insufficient. The microscope, on the other hand, is perfectly suited to precisely such goals, but that is just why it is useless for all others.

> This ideography, likewise, is a device invented for certain scientific purposes, and one must not condemn it because it is not suited to others.

So, by being convinced that 'languages are unreliable on logical questions' and that 'it is indeed not the least of the logician's tasks to indicate the pitfalls laid by language in the way of the thinker' (Frege 1960 [1919]: 126), Frege has investigated the ordinary language to develop his ideography, 'a formula language, modeled upon that of arithmetic, for pure thought' (Frege 1967 [1879]), with which he intended to define basic concepts of mathematics and to derive mathematical laws from the laws of logic. Nonetheless, Frege has never stated that words are arbitrary symbols that get their meaning by virtue of their capacity to correspond directly to things in the world and rational thought can be viewed as an algorithmic manipulation of such symbols.

In fact, it is hard to find a single logician that has supported so-called "objectivist semantics." In relation specifically to logical language, Bertrand Russell, for example, who along with Frege was one of the founders of logicism – that is, the project of reducing mathematics, or parts of it, to logic – highlighted: "If you are engaged in the work of logical dissection, you need a language differing considerably from that of daily life, but you need it for this purpose only" (Russell 1959: 224). In the introduction to *Principia Mathematica*, a three-volume work written by Russell and Alfred North Whitehead and published between 1910 and 1913, this point is made explicit in detail:

> The grammatical structure of language is adapted to a wide variety of usages. Thus it possesses no unique simplicity in representing the few simple, though highly abstract, processes and ideas arising in the deductive trains of reasoning employed here. In fact the very abstract simplicity of the ideas of this work defeats language. Language can represent complex ideas more easily. The proposition "a whale is big" represents language at its best, giving terse expression to a complicated fact; while the true analysis of "one is a number" leads, in language, to an intolerable prolixity. Accordingly terseness is gained by using a symbolism especially designed to represent the ideas and processes of deduction which occur in this work. (Russell and Whitehead 1950: I, 2)

Decades after publishing *Principia Mathematica*, Russell would reinforce: 'I thought that the construction of such a language would be a great help to clear thinking, though I never thought that such a language would be suitable for the purposes of daily life' (Russell 1959: 165).

The logicians who continued the work of Frege and Russell throughout the 20th century could not agree more with this statement. A disciple of Frege, with whom he was a student at the University of Jena, and a profound connoisseur of Russell's work, the logical positivist Rudolf Carnap, for example, never professed anything similar to Johnson's "objectivist semantics." This is attested by the fact that, in the very first chapter of the 1947 book *Meaning and Necessity*, Carnap explained the differences between a formal system and ordinary language, emphasizing that the technical meaning (logical or scientific) of a term does not coincide, nor could it coincide, with its common meaning, proper to ordinary language. Moreover, being aware – as were Frege, Russell and so many other language researchers – that formal semantics does not encompass the semantic richness of natural language, Carnap observed in the 1955 paper "Meaning and Synonymy in Natural Languages" that the analysis of the meaning of expressions takes place fundamentally in two ways: a pragmatic one, concerning natural languages, and a semantic one, concerning symbolic logic.

Always considering, like his mentor Carnap, the differences between natural languages and symbolic logic, American philosopher W. O. Quine contrasted in his 1951

paper “Two Dogmas of Empiricism” the artificial languages devised by logicians with the language that people employ in everyday life. More than that: in line with his logical predecessors, Quine recognized that logic is not only an artificial language, but is more restricted than ordinary language:

> Simplification of theory is a central motive likewise of the sweeping artificialities of notation in modern logic. Clearly it would be folly to burden a logical theory with quirks of usage that we can straighten. It is the part of strategy to keep theory simple where we can, and then, when we want to apply the theory to particular sentences of ordinary language, to transform those sentences into a “canonical form” adapted to the theory. If we were to devise a logic of ordinary language for direct use on sentences as they come, we would have to complicate our rules of inference in sundry unilluminating ways. (Quine 2013 [1960]: 144)

Like Quine, Chomsky always considered the differences between natural languages and symbolic logic – especially in his use of technical tools of mathematical logic to describe grammars of natural languages. It is no coincidence that Chomsky vehemently declined in his 1955 paper “Logical Syntax and Semantics: Their Linguistic Relevance” the suggestion made by mathematician and linguist Yehoshua Bar-Hillel (1954) that the results obtained in logical syntax and semantics should be incorporated into theoretical linguistics. In fact, based on Carnap’s observation that he was dealing in his logical work with an artificial language, not with natural languages, and that these are entirely different from that (1955: 38), Chomsky argued in his paper that the construction of artificial language systems is as useful to linguistics as the construction of an artificial world is to physics (1955: 42): ‘[…] in the case of the artificial “languages” investigated by Carnap in his logical laboratory, there is little if any antecedent reason for regarding these as in any way comparable to the actual languages of the outside world,’ Chomsky stated (1955: 43). ‘The ball rolls down the inclined plane exactly as it does, the rats behave exactly as they do; but an artificial language has whatever properties its maker determines it to have.’ Moreover, at the end of the paper, Chomsky carefully pointed out that the application of logic in constructing a clear and rigorous linguistic theory, as is intended in generative grammar, is something different from expecting that logic or any other formal system will be a model for linguistic behavior (1955: 45).

Consistent with this position, Chomsky would reaffirm in his lectures in Nicaragua in the 1980s the differences between human language and the formal languages of logician-mathematicians, emphasizing, for example, that in the latter it is assumed that a transitive verb simply relates two terms – its subject and its object – without any structural asymmetry, unlike what happens in human language (Chomsky 1988: 54). ‘Formal languages are constructed in this way for reasons of simplicity and ease in computational operations such as inference,’ Chomsky observed (1988: 54) in line with Quine. ‘But the evidence indicates that human languages do not adopt the principles familiar in modern logic. Rather, they adhere to the classical Aristotelian conception that a sentence has a subject and a predicate, where the predicate may be complex: It may consist of a verb and its object […] or a verb and a clausal complement […].’ More recently, in his interview with Adriana Belletti and Luigi Rizzi concerning the Minimalist Program, Chomsky reinforced the differences between formal languages and natural languages (Chomsky 2006: 134 ff), making it impossible to say that he supports “objectivist semantics.”

Considering all the discussion above, it seems precise Leezenberg’s (2001: 137) observation that Lakoff and Johnson’s attacks against “objectivist semantics” are ‘little

more than heroic fights against windmills.' Not at all heroic, however, is Lakoff's attitude of attributing to generativism not only an objectivist approach to semantics (Lakoff 1987: 466) but also an objectivist approach to cognition as a whole (Lakoff 1987: 463, 466). In fact, completely misrepresenting the work of mathematical logicians, Lakoff (1987: 219) goes so far as to state that mathematical logic has been used to justify an objectivist approach to the cognitive sciences in general and to linguistics and the philosophy of language in particular. Based on this assumption, Lakoff (1987: 225) distorted Chomsky's generativism by stating that 'the idea that natural language syntax is independent of semantics derives from the attempt to impose the structure of mathematical logic on the study of human language and human thought in general.' However, as exposed above, Chomsky – who is considered by Lakoff and Johnson (2003b [1980]: 195, 205) to be an exponent of "objectivism" – has been rejecting for decades the idea of imposing the structure of mathematical logic on the study of human language and human thought in general. Moreover, Chomsky has also been rejecting for decades what Lakoff and Johnson have denominated "objectivism." In his interview with Ronat, for example, Chomsky observed:

> [...] we can ask: What is the *intersection* of the class of accessible theories and the class of true theories, that is to say, which theories belong at the same time to the class of accessible theories and to the class of true theories? (Or we can raise more complex questions about degree of accessibility and relative accessibility. Where such an intersection exists, a human being can attain real knowledge. And conversely, he cannot attain real knowledge beyond that intersection. (Chomsky 2007 [1979]: 65–66)

Besides, asserted Chomsky, making it clear that he has never been an "objectivist": '[...] we are subject to biological limitations with respect to the theories we can devise and comprehend, and we are fortunate to have these limitations, for otherwise we could not construct rich systems of knowledge and understanding at all' (Chomsky 2007 [1979]: 67).

The conclusion reached from all these considerations is that Lakoff and Johnson deformed not only Chomsky's ideas, but the very history of Western thought, to ultimately attack generativism – in particular, the autonomy of syntax hypothesis and the modular theory of the human mind (e.g., Lakoff 1987: 582–585). In *Philosophy in the Flesh*, for example, as stressed by John Sowa in his review of the book, Lakoff and Johnson devote 44 pages to Chomsky, but they cover all of analytic philosophy in just 29 pages, disregarding the profound differences between thinkers as diverse as Frege, Russell, Carnap and the Vienna Circle, Quine, Goodman, Davidson, Putnam, Kripke, Montague, Lewis, Strawson, Austin, and Wittgenstein. 'Instead of challenging all of Western philosophy,' observed Sowa (1999: 631) concerning the superficial reading that Lakoff and Johnson present in the work not only of analytic philosophers but also of classical authors such as Plato and Aristotle, 'they should have concentrated on their major opponent, Noam Chomsky and his philosophy of language.' In fact, rather than trying to cover a tradition as rich and complex as that of Western philosophy in a few dozen pages, Lakoff and Johnson would have done better to restrict themselves to Chomsky, discussing his writings in depth. By doing this, they would have at least avoided the embarrassment of opening the first chapter of *Philosophy in the Flesh* stating that 'more than two millennia of *a priori* philosophical speculation' were over due to their 'findings.'

7 From linguistic determinism to metaphorical determinism

In the Acknowledgments section of *Metaphors We Live By*, Lakoff and Johnson state that their observations about how a language can reflect the conceptual system of its speakers derive in great part from the work of Edward Sapir, Benjamin Lee Whorf, and others who have worked 'in that tradition' (Lakoff and Johnson 2003b [1980]: xi). The tradition to which Lakoff and Johnson refer is that of the studies of linguistic anthropology inaugurated in the United States by Franz Boas between the end of the 19th century and the beginning of the 20th century and carried forward by his followers, including Sapir (Leavitt 2015; Lucy 1992b: ch. 1–2; Palmer 1996: ch. 2). More precisely in this case, Lakoff and Johnson refer to the theoretical current of North American linguistic anthropology that culminated in what is called Sapir–Whorf hypothesis.

This hypothesis is divided into two versions: a "strong" one – linguistic determinism – which says that people's thoughts and perceptions are *determined* by the language they speak; and a "weak" one – linguistic relativism – which says that people's thoughts and perceptions are *influenced* by the language they speak (Au 1983: 155–156; Carroll 1987 [1955]: 23; Dedrick 2015: 273–274; Harley 1995: 339–340; Pinker 1995: 57). 'Human beings do not live in the objective world alone, nor alone in the world of social activity as ordinarily understood, but are very much at the mercy of the particular language which has become the medium of expression of their society,' stated Sapir in the opening text of the article "The Relation of Habitual Thought and Behavior to Language," written by Whorf in 1939 and published in the 1956 book *Language, Thought and Reality*. '[…] The fact of the matter is that the "real world" is to a large extent unconsciously built up on the language habits of the group. […] We see and hear and otherwise experience very largely as we do because the language habits of our community predispose certain choices of the interpretation,' concluded Sapir (Whorf 1987 [1956]: 134).

As is well known, Whorf carried forward these ideas from Sapir, who was one of the leading linguistic anthropologists of his time, investigating Amerindian languages such as Hopi and Apache. Based on this research, Whorf eventually developed the idea that the language spoken by a person shapes their thinking and their perception of reality (Chase 1987 [1955]: v–vi). A Hopi speaker, for example, argued Whorf in the controversial paper "An American Indian Model of the Universe," 'has no general notion or intuition of TIME as a smooth flowing continuum in which everything in the universe proceeds at an equal rate, out of a future, through a present, into a past […]' (Whorf 1987 [1956]: 57). What led Whorf to this conclusion was his opinion that the Hopi language '[…] is seen to contain no words, grammatical forms, constructions or expressions that refer directly to what we call "time," or to past, present, or future, or to enduring or lasting […]' (Whorf 1987 [1956]: 57).

However, confronting Whorf, linguist Ekkehart Malotki detailed in his 1983 book *Hopi Time: A Linguistic Analysis of the Temporal Concepts in the Hopi Language* how Whorf's assessment of the Hopi language is mistaken since it has various ways of expressing time and related notions ignored by Whorf including the ideas of past, present, and future. Thus, it seems incorrect to claim, as Whorf did in his study of Hopi, that a speaker of this language has no general notion or intuition of the flow of time because it

contains no expressions of time.[6] This was a severe blow to the Sapir–Whorf hypothesis. But not the only one.

In fact, long before the release of Malotki's book on the Hopi language, this hypothesis had already come under scathing criticism. Perhaps the greatest of these came with the publication in 1969 of the book *Basic Color Terms: Their Universality and Evolution*, by anthropologist Brent Berlin and linguist Paul Kay. In this work, Berlin and Kay challenge the Sapir–Whorf hypothesis by arguing that there are universal constraints (thus regardless of linguistic differences) on the number of basic color terms a language can present (Berlin and Kay 1969: 1–2). By a 'basic color term' Berlin and Kay (1969: 6) mean a term that is characterized by (1) being monolexemic – that is, its meaning is not predictable from the meaning of its parts, such as green and blue rather than lemon-colored and salmon-colored, for example; (2) its signification is not included in that of any other color term – this criterion eliminates terms such as crimson and scarlet, which are both kinds of red for most speakers of English; (3) its application must not be restricted to a narrow class of objects – this criterion eliminates color terms such as blond, which may be predicated only of hair, complexion, and furniture; (4) be psychologically salient – that is, the color term is easily recognizable and accepted by speakers.

Based on this definition of basic color terms and based on the evaluation of informants from 20 languages of different language families, as well as written data from dozens of other languages, Berlin and Kay identified 11 basic color possibilities: white, black, red, green, yellow, blue, brown, purple, pink, orange, and gray (1969: 1–2). Moreover, having presented similar but not identical samples of the basic colors to the informants, Berlin and Kay pointed out what they called "focal points," which would be the best examples of each of the basic colors. These examples were more easily recognized by the informants (1969: 5 ff). Moreover, considering all these data, Berlin and Kay concluded that languages fall into one of seven possible evolutionary stages as they acquire basic color terms in the order illustrated by this hierarchy: stage 1: black and white; stage 2: red; stage 3: either green or yellow; stage 4: both green and yellow; stage 5: blue; stage 6: brown; stage 7: purple, pink, orange, and gray (1969: 2–4). Thus, according to Brelin and Kay, a language could not, for example, have the category "brown" without presenting the category "red," or have the category "pink" without presenting the category yellow.

As one might anticipate, *Basic Color Terms* immediately received all sorts of criticism. It was pointed out, for example, that there was no empirical evidence in the book about the relationship between language and thought but only the report of some results about the standardization of colors in different cultures (Dedrick 2015: 271). Soon, however, this gap would be filled with new research conducted by Eleanor Rosch. In fact, complementing Berlin and Kay's attack on the Sapir–Whorf hypothesis, Rosch published a series of studies in the 1970s on categorization and color perception showing the independence of both concerning language (e.g., Heider[7] 1971; Heider 1972; Heider and Olivier 1972).

To reach this conclusion, Rosch [Heider] (1972) and Rosch [Heider] and Donald Olivier (1972), for example, conducted a series of surveys both with speakers of the English language, which presents the 11 basic color terms, and with speakers of the Dani language, from New Guinea, which presents only two basic color terms: *mola* for light and "warm" colors and *mili* for dark and "cold" colors. Conforming with the Sapir–Whorf hypothesis, the Danis should perceive only the colors according to these two terms, not

[6] For neo-Whorfian critiques of Malotki's work on the Hopi language, see, for example, Dinwoodie (2006), Leavitt (2010), and Lee (1996).
[7] This is the same Eleanor Rosch, who signed Heider in his works until 1972.

being able to differentiate a dark color such as red from another dark color, such as brown; or a light color such as light blue from another light color, such as light green. However, this is not what Rosch and Olivier found in their investigations. On the contrary, the Dani speakers were not only able to make these differentiations but they learned the terms for focal colors created by Rosch and Olivier's team better than the terms for nonfocal colors they also created. That is, just like the speakers of English and the other languages analyzed by Berlin and Kay and by Rosch and Olivier, the speakers of Dani identified more easily the best (prototypical) examples of each of the basic colors than the peripheral (non-prototypical) examples. Armed with these results, Rosch deduced that the identification of prototypical specimens of basic colors derives from the physiology of human vision and is independent of the language spoken by people (Heider 1972: 20). Thus, Rosch (Heider 1972: 20) argued, '[…] far from being a domain well suited to the study of the effects of language on thought, the color space would seem to be a prime example of the influence of underlying cognitive factors on the formation and reference of linguistic categories.' In other words, for Rosch, it is not language that determines, or at least influences, the human perception of colors but rather the human perception of colors that determines, or at least influences, language – that is, the linguistic categorization of colors.

Given the importance and repercussion of these works by Malotki, Berlin and Kay and Rosch and Olivier against the Sapir–Whorf hypothesis, it would be expected that Lakoff and Johnson would discuss them in detail, positioning themselves against them, when elaborating their theory of conceptual metaphors. Instead, however, Lakoff and Johnson virtually ignore them in their texts, restricting references to Berlin and Kay and to Rosch to discussion of categorization and prototypicality (e.g., Lakoff 1987: ch. 2). Thus, between 'empirical responsibility' (Lakoff and Johnson 1999: 551) and the Sapir-Whorfian claim that metaphors structure language, perception of reality, thought, and human actions, Lakoff and Johnson preferred the latter option without even bothering to justify why they did not accept the results obtained by Berlin and Kay and by Rosch and Olivier against the Sapir–Whorf hypothesis.

Reaffirming this choice, Lakoff and Johnson wrote in the "Afterword" of the 2003 edition of *Metaphors We Live By*: 'Because we reason in terms of metaphor, the metaphors we use determine a great deal about how we live our lives' (Lakoff and Johnson 2003a: 244). And, given that Lakoff and Johnson use the work of Berlin and Kay and Rosch on categorization and prototypicality to attack "objectivism," to which they link classical categorization theory (e.g., Johnson 1987: xi; Lakoff 1987: xiv), their theory of conceptual metaphors turns out to be based on a mixture of the explicitly anti-Whorfian ideas of Berlin and Kay and of Rosch with ideas of Whorf himself.

In the 1987 book *Women, Fire, and Dangerous Things*, we find what is perhaps the best example of the consequences of this unusual combination. In the sixth chapter of the book, Lakoff presented an explanation of the supposed classificatory system of the Dyirbal language based on the work of Robert M. W. Dixon (1982) on this aboriginal language in danger of extinction. According to Dixon, Lakoff stated (1987: 92–93), every noun in Dyirbal must be preceded by one of these four words: *bayi*, *balan*, *balam,* and *bala*. Thus, according to Dixon, Dyirbal speakers categorize objects into four groups, exemplified as follows:

Bayi: men, kangaroos, possums, bats, most snakes, most fishes, some birds, most insects, the moon, storms, rainbows, boomerangs, some spears, etc.

Balan: women, bandicoots, dogs, platypuses, echidnas, some snakes, some fishes, most birds, fireflies, scorpions, crickets, the hairy mary grub, anything connected with water or fire, sun and stars, shields, some spears, some trees, etc.
Balam: all edible fruits and the plants that bear them, tubers, ferns, honey, cigarettes, wine, cake.
Bala: parts of the body, meat, bees, wind, yam sticks, some spears, most trees, grass, mud, stones, noise, language, etc.

Based on these data, Lakoff (1987: 93) explained, Dixon stated that the first group refers to (human) males and animals; the second to (human) females, water, fire, fighting; the third to nonflesh food; and the fourth to everything not in the other classes. Complementing Dixon's analysis, Lakoff (1987: 93) proposed that a general principle underpins the "classification system" (Lakoff 1987: 97) in Dyirbal: the "domain-of-experience principle," according to which "if there is a basic domain of experience associated with A, then it is natural for entities in that domain to be in the same category as A." If fish are in the first group, Lakoff exemplified based on this principle, fishing implements (fishing spears, fishing line, etc.) are also in the first group, even if their expected classification was in the fourth group.

Further, Lakoff (1987: 94) stated that perhaps the most striking of Dixon's discoveries, with which he sought to explain the most aberrant cases of classification in Dyirbal, was his observation that if some noun has characteristic X (based on which its class membership is expected to be decided) but is, through belief or myth, connected with characteristic Y, then generally it will belong to the class corresponding to Y and not that corresponding to X. Birds, Lakoff illustrated, are animate beings, but they belong to the second group, not the first, because it is believed in the Dyirbal community that they are the spirits of dead human females. It is well to say, however, that even by these and other principles laid down by either Dixon or Lakoff, there are exceptions in Dyirbal, as both acknowledge. Money, for example, is in the first group, while dogs and platypuses are in the second group.

However, despite these counterexamples to the supposed classificatory system in Dyirbal, Lakoff (1987: 95–96) does not shy away from suggesting that classifications in this language follow the logic of categorization revealed by the research of Berlin and Kay and Rosch, with each of the four groups having prototypical and non-prototypical members. Moreover, despite the counterexamples of the supposed classification system in Dyirbal, Lakoff (1987: 95) does not hold back in saying that Dixon's achievement is remarkable. 'He has shown that what might look superficially, to the Western eye, as a fantastic classification […] is from the perspective of the people doing the classifying a relatively regular and principled way to classify things.'

Other researchers, however, had a very different assessment of Dixon's work. Umberto Eco, for example, draws attention in the book *Kant and the Platypus: Essays on Language and Cognition* to the fact that, in a classification experiment, the experimenter proposes a subdivision into classes based on a cultural model, tending to eliminate the forms of classification of the people studied and to presuppose a classification in which there are probably only "morphological accidents devoided of a semantic counterpart" (Eco 2000: 199). To support his opinion, Eco cited precisely the explanation of the supposed classificatory system of the Dyirbal language made by Dixon and Lakoff – who, it should be noted, like Whorf concerning the Hopi speakers, attribute to the Dyirbal speakers cultural and psychological characteristics not confirmed by people in the community itself.

As Eco (2000: 200) emphasized, Lakoff is not only surprised that the four "categorizations" in Dyirbal are used automatically and (almost) unconsciously by speakers of the language but also looks for the most diverse semantic and symbolic reasons to justify them. Not convinced, however, of the relevance of this undertaking, Eco (2000: 200) invited the reader to suppose that in a Mediterranean peninsula, there lives a singular population whose natives have the curious habit of putting one of two words before every noun: *il* (with the variant *lo*) or *la*, with the following "categorial" effects:

> **Il** is applied to men, kangaroos, bats, many snakes (boa, python, cobra), many fish (bass, pike, swordfish, shark), many insects (hornet, ladybird), sun, guardian, storm, rainbow, boomerang, wagon, rifle, machine, pistol, platypus, rhinoceros.
> **La** is applied to women, sentinel, the tiger, locomotive, some snakes (viper, grass snake), some fish (trout, gilthead), many birds (swallow, great tit), insects (wasp, fly), water, moon, star, armor, pistol, spear, some trees (oak, palm), giraffe, skunk. (Eco 2000: 200)

Besides, Eco (2000: 201) invited the reader to suppose that to the north of that peninsula, on the other side of a mountain range, there lives another population that, like the young Dyirbal, puts one of three words before every term: *der*, *die*, and *das*, but that in this case the fact that the sun is *die* like woman, the moon *der* like the leopard and the tiger, and that the platypus, the ear, and gold are all *das* is of no categorial importance. Taking into account these traits of Italian and German, Eco stated:

> I am not suggesting in the slightest that something occurs in the Dyirbal language that is similar to what occurs in Italian, German, French, and many other languages. I am merely expressing the suspicion that grammatical phenomena are often discussed as phenomena of classification – which casts a shadow over many investigations in which classifications familiar to the experimenter but not shared by the subjects are presumed, or in which the experimenter vainly struggles to deduce classifications where the subjects do not classify at all and merely follow grammatical automatisms. (Eco 2000: 201)

In fact, there is a serious risk that research on grammatical phenomena as classification phenomena, in the wake of the work of Whorf, Dixon, and Lakoff (e.g., Boroditsky 2012; Levinson 1996, 2003a, 2003b; Lucy 1992a), concern researchers much more than speakers of the languages under investigation. Warning of this risk, Eric Pederson (2007: 1031) stressed that nowadays the burden of proof on researchers who want to demonstrate 'any potential absence (or "deficiency")' of a community for linguistic reasons is very heavy, and they have the arduous task of isolating the language from other factors (environmental, age, educational, etc.) to support their theses *(Pederson 2007: 1024 ff). Given the difficulty of following this precept, it is not surprising that Pederson (2007: 1013, 1036) observed that the question of whether language determines or influences thought is being replaced by questions about whether or not certain traits of specific languages influence particular cognitive operations.*

For the same reason, it is also not surprising that for decades now, neo-Whorfians – that is, more recent adherents of the Sapir–Whorf hypothesis – have argued that Sapir and Whorf actually had a position much closer to linguistic relativism than to linguistic determinism (e.g., Lee 1996; Lucy 1992b; Smith 1996). Without going into the merits of this exegetical debate, the fact is that linguistic determinism was practically abandoned long ago by the neo-Whorfians in favor of linguistic relativism, as pointed out by

Pederson (2007: 1012–1013), Don Dedrick (2015: 274) and Trevor A. Harley (1995: 346–347). Aware of this tendency, which Lakoff and Johnson ignored with their "metaphorical determinism," Richard Hudson (2010: 861) already envisioned new research possibilities that this change may entail:

> *[...]* the intimate connection between grammar and the rest of cognition allows grammar to influence non-linguistic cognitive development as predicted by the Sapir–Whorf hypothesis [...]. One possible consequence of this influence is a special area of cognition outside language which is only used when we process language – Slobin's "thinking for speaking" (Slobin 1996). More generally, a network model predicts that some parts of cognition are "nearer" to language (i.e., more directly related to it) than others, and that the nearer language is, the more influence it has.

Of course, when it comes to these claims, the burden of proof must also be heavy, and their proponents have the equally arduous task of isolating language from other cognitive and non-cognitive factors. By not having made this isolation, the adherents of both linguistic determinism and linguistic relativism ended up getting stuck in a circular argument.

*One of the greatest critics of the Sapir–Whorf hypothesis today, Pinker (1995: 60–*61*) attacked precisely the circularity of Whorf's arguments. In investigating the Apache language, for example, Pinker said, Whorf pointed out that the Apache equivalent of "The boat is grounded on the beach" is "It is on the beach pointwise as an event of canoe motion," "He invites people to a feast" becomes "He, or somebody, goes for eaters of cooked food," "He cleans a gun with a ramrod" is translated as "He directs a hollow moving dry spot by movement of tool." 'All this, to be sure, is utterly unlike our way of talking,' Pinker stressed (1995: 60). 'But do we know that it is utterly unlike our way of thinking?' To answer this question, Pinker (1995: 60–*61*) recalled that psycholinguists Eric Lenneberg (1953; 1967: 363–365) and Roger Brown (1957, 1958), early critics of linguistic determinism, well observed that Whorf did not actually study any Apaches and his assertions about the psychology of the Apaches were based entirely on Apache grammar, which ended up making his argument circular. Thus, according to Whorf, Pinker concluded (1995: 61), 'Apaches speak differently, so they must think differently. How do we know that they think differently? Just listen to the way they speak!'*

In the paper "On Metaphoric Representation," Gregory L. Murphy also highlighted the circularity of the evidence presented in favor of the Sapir–Whorf hypothesis, following other researchers such as Terry K. Au (1988). To illustrate his exposition, Murphy (1996: 183) took up the myth that the Eskimos' perception of snow is not only determined by the multiple words they have to represent different types of snow but is also different from the perception of peoples whose languages have only one word for snow, such as the North American (for a critique of this interpretation of the Eskimos' cognition, see Pinker 1995: 64–65; 2007: 125–127). To a skeptic's questioning of this assessment, Murphy suggested (1996: 183), an advocate would say that one piece of evidence in his favor is the fact that the Eskimos have multiple words for snow. Thus, Murphy concluded, the argument is circular and restricted to language, without the support of psychological or neurological evidence, for example. Moreover, Murphy (1996: 182–184) insightfully pointed out that Lakoff and Johnson also engaged in a circular and essentially language-restricted argumentation when defending their theory of conceptual metaphors. In fact, as previously discussed, starting from the age-old observation that metaphors are highly productive in human language, Lakoff and Johnson deduced without any empirical support that metaphors structure language,

perception of reality, human thought, and actions. And how do we know that metaphors play this role in people's cognition and lives? Just notice how they permeate human language, essentially said Lakoff and Johnson.

Indeed, the neo-Whorfians realized decades ago the need to break the circular, language-restricted argumentation that marks the work of their precursors (Pederson 2007: 1022 ff). Thus, to refute Rosch's assertion that the identification of prototypical specimens of basic colors derives from the physiology of human vision and is independent of the language spoken by people, Debi Roberson, Ian Davies, and Jules Davidoff (2000) and Roberson, Davidoff, Davies, and Laura Shapiro (2005), for example, replicated with speakers of languages that have only five basic color terms – Berinmo language (Papua New Guinea) and Himba language (Namibia) respectively – the experiments Rosch had done with the Danis. Similarly, to support the Sapir-Whorfian hypothesis that the language spoken by people influences their spatial perception, researchers such as Penelope Brown and Stephen C. Levinson (1993a, 1993b) and Jürg Waissmann and Pierre R. Dasen (1998) conducted experiments with speakers of languages that categorize space in different ways – whether or not they have the Earth as a reference for instance. But, of course, all these experiments favorable to the Sapir–Whorf hypothesis were equally countered by experiments unfavorable to this hypothesis, both in terms of color perception (e.g., Regier et al., 2005) and in terms of space perception (e.g., Li et al., 2011). The dispute remains open, with the multiplication of experiments against, in favor of, and even partially in favor of linguistic relativism (e.g., Brown 2015; Dedrick 2015; Levinson and Wilkins 2006; Regier and Kay 2009). However, it seems that this discussion has in no way affected the claims made by Lakoff and Johnson about the supposed role played by metaphors in our lives.

8 Conclusion

In the introduction of this paper, I observed that, by criticizing Lakoff and Johnson's theory of conceptual metaphors, I hope to facilitate the dialogue – and even the integration – of cognitive linguistics with other approaches, including the generativist, as suggested by cognitive linguists *such as John R. Taylor. In fact, in the essay "*Cognitive Linguistics and Autonomous Linguistics," Taylor does not frame cognitive linguistics in terms of opposition to other approaches – in particular, the generativist approach. Q*uite the contrary, Taylor is explicitly against* Lakoff's position that there is a profound gulf separating cognitive linguistics and generative linguistics that relates to the "primary commitments" that practitioners of the two approaches subscribe to (*Taylor 2007:* 568). Moreover, stated *Taylor:*

> […] many of the old polemics which defined the cognitive linguistics enterprise in its earlier days are losing their actuality. As cognitive linguistics enters the mainstream […] it will become increasingly anachronistic for cognitive linguistics to frame itself in terms of opposition to other approaches. Dialogue – and dare I suggest, integration – with other approaches may well become the order of the day. (*Taylor* 2007: 583)

Following Taylor's suggestion, it is time to definitely leave behind the old polemics that defined the cognitive linguistics enterprise in its earlier days and at least try to increase the dialogues between cognitivists and generativists. To do so, a good starting point may be recognizing that many cognitivists do not share Lakoff's rhetoric of dissent, always saying no to Chomsky.

In his cognitive semantics, for example, Leonard Talmy – the third of the founding fathers of cognitive linguistics alongside Lakoff and Ronald Langacker (Geeraerts and Cuyckens 2007: 8) – assumes a modular model of language. Besides, in his 2000 book *Toward a Cognitive Semantics,* Talmy *not only stated that* the semantic system is one of the cognitive systems *(2000,* I: 4*) but also proposed an* 'overlapping systems model' of the cognitive organization *(2000,* I: *15). According to this model,* human cognition comprehends certain relatively distinct major cognitive systems, including language, perception, reasoning, affect, attention, memory, cultural structure, and motor control. Moreover, asserted Talmy *(2000,* I: *15),* each cognitive system has some structural properties that may be uniquely its own, some further structural properties that it shares with only one or a few other cognitive systems, and some fundamental structural properties that it has in common with all other cognitive systems. Taking into account his overlapping systems model of the cognitive organization, *Talmy (2000,* I: *1) informed that t*he linguistic representation of conceptual structure (i.e., semantic structure) is the central concern of his book. In particular, *Talmy investigated* the fundamental systems by which language shapes concepts *(2000,* I: *1).*

As stressed by Talmy (2000, I: 1*) in an indirect criticism of generative grammar, w*hile *the* conceptual structure of language had once been insufficiently addressed, attention to it has been increasing since the 1970s and 1980s within cognitive linguistics. To Talmy *(2000,* I: 1*),* cognitive linguistics has developed into an alternative approach to the study of language that now complements other approaches. *Actually, Talmy (2000,* I: 1*) considered* cognitive linguistics within a larger framework of three approaches to the analysis of language, setting phonology aside: *(1) t*he formal approach*, (2)* the psychological approach, and *(3)* the conceptual approach*.*

*T*he formal approach basically addresses the structural patterns exhibited by the overt aspect of linguistic forms, largely abstracted away from or regarded as autonomous from any associated meaning. The tradition of generative grammar has centered itself within this formal approach *(2000,* I: *2)*. In turn, the psychological approach looks at language from the perspective of relatively general cognitive systems, considering human perception, memory, attention, and reasoning. Thus, its investigation has included analyses of semantic memory, the associativity of concepts, the structure of categories, inference generation, and contextual knowledge *(2000,* I: *2)*. The conceptual approach is concerned with the patterns in which and the processes by which conceptual content is organized in language. To Talmy, cognitive linguistics has centered itself within this approach, addressing for example the structuring within language of such basic conceptual categories as those of space and time, scenes and events, entities and processes, motion and location, and force and causation *(2000,* I: *2–3)*. Furthermore, said Talmy, cognitive linguistics has addressed the linguistic structuring of basic ideational and affective categories attributed to cognitive agents, such as attention and perspective, volition and intention, and expectation and affect. It has also addressed, among other topics, the semantic structure of morphological and lexical forms, as well as of syntactic patterns, and the interrelationships of conceptual structures, such as those in metaphoric mapping, those within a semantic frame, those between text and context, and those in the grouping of conceptual categories into large structuring systems.

Considering this sketch, *Talmy (2000,* I: *4) highlighted* that cognitive linguistics can be seen as complementary to other linguistic approaches. 'Because it has directly engaged a domain of linguistic phenomena that the other approaches had addressed either insufficiently or indirectly, its growth can be regarded as a necessary development for our understanding of language' *(Talmy (2000,* I: *4). In fact, as shown by Charles Fillmore in his 1979 essay "Innocence: A Second Idealization for Linguistics," the*

underrepresentation of a linguistic component within a theoretical framework implies the characterization of a speaker/hearer *that does not do justice to a real* language user.

In a critique of Chomsky and his followers*, who had recently* won the linguistics wars against the generative semanticists*, Fillmore detailed in his essay how the underrepresentation of semantics in generative grammar resulted in a second idealization alongside* Chomsky's (2015 [1965]: 1) ideal speaker/hearer in a homogeneous speech community: the innocent speaker/hearer. *T*he innocent language user, asserted *Fillmore (1979: 63–64),* knows the morphemes of his/her language and their meanings, he/she recognizes the grammatical structures and processes in which these morphemes take part, and he/she knows the semantic import of each of these. Besides, as a decoder, or hearer, the innocent language user calculates the meaning of each sentence from what he/she knows about the sentence's parts and their organization. Moreover, said Fillmore *(1979: 65)*, the model of semantic competence that fits the innocent language user contains a lexicon, a way of characterizing grammatical structures, and a set of semantic integration rules – i.e., the ideal of a pure compositional semantics. Therefore, stated *Fillmore (1979: 65),* an innocent speaker/hearer has several important limitations, such as (1) he/she does not know lexical idioms or phrasal idioms, (2) he/she possesses no construal principles for metaphorical language use, and (3) he/she lacks any interpretive mechanisms for indirect communication, that is, for meaning one thing while saying another, or principles of text coherence that would allow it to 'read between the lines' in a text.

As observed by Renata Mousinho (2003, 2010), with his innocent speaker/hearer*, Fillmore basically characterizes a person* with *Asperger Syndrome or* high-functioning autism – an unofficial term used for people whose autism symptoms appear mild (e.g., *Williams and Wright 2004: 30–31). So, to avoid the characterization of an* innocent speaker/hearer, *it is necessary to develop rich theories regarding each of the components of language. Furthermore, these theories must be complementary to each other.* D*eveloping this understanding, which is supported by cognitivists like Talmy (2000) and by generativists like Jackendoff (1997, 2003), is perhaps the most important endeavor of theoretical linguistics in the 21st century.*

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