

On Ronald Langacker's Semanticocentrism

Sobre o semanticocentrismo de Ronald Langacker

Gustavo Augusto Fonseca Silva
Universidade Federal de Minas Gerais
(UFMG) | Belo Horizonte | MG | BR
fonsecaugusto@hotmail.com
<http://orcid.org/0000-0001-7427-4504>

Abstract: Ray Jackendoff understands that Noam Chomsky's linguistic models distort the nature of language due to its 'syntactocentrism.' Coined by Jackendoff, this term means Chomsky's assumption that the syntactic component of language is central while the phonological and semantic components are merely interpretive. Jackendoff also states that since the 1970s many researchers have made a mistake opposite to Chomsky's, by denying that syntax has a relevant role in grammar. Considering such a scenario, this paper analyzes Ronald Langacker's cognitive grammar, in which syntax is replaced by semantics as the central linguistic component. The goal is to show how Langacker misrepresented language structure by doing so.

Keywords: Ronald Langacker's semanticocentrism; Noam Chomsky's syntactocentrism; Ray Jackendoff's parallel architecture; Bilingualism.

Resumo: Ray Jackendoff entende que os modelos linguísticos de Noam Chomsky distorcem a natureza da linguagem devido ao seu "sintactocentrismo". Cunhado por Jackendoff, este termo significa a suposição de Chomsky de que o componente sintático da linguagem é central, enquanto os componentes fonológicos e semânticos são meramente interpretativos. Jackendoff também afirma que, desde a década de 1970, muitos pesquisadores cometeram um erro oposto ao de Chomsky, negando que a sintaxe tenha um papel relevante na gramática. Considerando tal cenário, este artigo analisa a gramática cognitiva de Ronald Langacker, na qual a sintaxe é substituída pela semântica como componente linguístico central. O objetivo é mostrar como Langacker deturpou a estrutura da linguagem ao fazê-lo.



Palavras-chave: Semanticocentrismo de Ronald Langacker; Sintaticocentrismo de Noam Chomsky; Arquitetura Paralela de Ray Jackendoff; Biolinguística.

Introduction

[...] 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.”

(John R. Taylor, 2007, p. 583)

In the 2014 paper “Some problems for biolinguistics,” Derek Bickerton revealed his skepticism with the so-called “biolinguistics” – that is, ‘the study of the biology of language’ (Jenkins, 2013, p. 4). To Bickerton, its relationship to Noam Chomsky’s (1995) Minimalist Program is ambiguous, creating doubts as to whether it is a genuine subdiscipline or merely another name for a particular linguistic theory – *i.e.*, Chomskyan minimalism. In fact, such questioning is appropriate, since Chomsky, who is the founding father of generative grammar and the main author of the theories that led to biolinguistics, declared that the Minimalist Program is ‘the natural next stage of biolinguistic inquiry’ (2007a, p. 2; 2007b, p. 14). However, this statement and its consequences are debatable. For instance, Pieter Seuren (2004), Talmy Givón (2002), and Ray Jackendoff (1997, 2003), among many other researchers, are severe opponents of Chomsky’s conception of biolinguistics as well as of the Minimalist Program. Jackendoff’s “parallel architecture,” in particular, seems to be a promising biolinguistic research program alternative to Chomsky’s Minimalism.

A former student of Chomsky, Jackendoff became a rigorous critic of mainstream generative grammar, first of all, due to its “syntactocentrism.” By this term, Jackendoff understands the premise adopted since the beginnings of generativism and maintained until the Minimalist Program that the syntactic component is prominent in relation to the phonological and semantic components, which would be only interpretative. Contrary to Chomsky’s syntactocentric architecture *of* language, in which the phonological and semantic formation rules are null, so everything in phonological and semantic structures is determined by their interfaces with syntax, Jackendoff elaborated his parallel architecture model of language. In this theoretical model, language is seen as a structure organized in semi-independent combinatorial systems – syntax, phonology, and semantics – each with its own organizational principles, which generate interfaces with each other, but without any syntactic, phonological, or semantic protagonism (Jackendoff, 2007, p. 64). ‘A syntactocentric architecture [...] shows

no resemblance to the rest of the mind/brain,' observed Jackendoff (2007, p. 66). 'There is no known parallel to a master "computational system" that generates syntactic structures, which in turn determines phonological structures and meanings.' Vision, Jackendoff exemplified, is a typical cognitive system: it is made up of many independent brain areas, each of which specialized in some visual aspect, such as shape, movement, color, and spatial relationships. All of these areas have interfaces with each other, without there being one area where everything is centered to form a complete representation of the visual field. 'This has precisely the flavor of the parallel architecture in linguistics, where the notion of a "sentence" or "phrase" is distributed among several structures, communicating with each via dedicated interfaces,' argued Jackendoff (2007, p. 65).

As a matter of fact, a parallel architecture model of language contradicts not just Chomsky's syntactocentric architecture of language but also "semanticocentric" models, in which syntax is replaced by semantics as the central component of language. Considering this, I aim in this paper to rediscuss Ronald Langacker's (1987, 1991a, 1991b, 2008, 2013, 2023) cognitive grammar in order to reaffirm the greater empirical adequacy of a parallel architecture model of language in comparison to a semanticocentric model such as Langacker's, which stands out due to its pioneering and its influence in linguistics and related disciplines for the last four decades.

1 The generative origins of cognitive grammar

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, p. 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 Chomsky'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], p. 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], p. 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], p. 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], p. 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], p. 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], p. 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], p. 150-151)

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, p. 6-7). In any case, according to Chomsky (2007c [1979], p. 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], p. 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):

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

Sentence (1b), stated Jackendoff (1972, p. 229), is a “natural” response to sentence (1a), but sentence (1c) is not. Jackendoff (1972, p. 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:

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

¹ For a discussion on how the order of quantifiers in surface structures sometimes plays a role in semantic interpretation, see Chomsky (2015 [1965], p. 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.

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.

Based on the Katz–Postal hypothesis, asserted Jackendoff (1972, p. 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], p. 164) and that ‘under trace theory one can say that surface structure is associated directly with semantic representation’ (Chomsky, 2007c [1979], p. 171). It is worth mentioning that in Standard Theory it was assumed that thematic relations (agent, 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], p. 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], p. 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, p. 197), Givón was confident to say a few years later that the movement at that time was already ‘ancient history’ (Givón, 1979, p. 19). In line with Givón, Harris (1993, p. 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, p. 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, p. 151 *apud* Harris, 1993, p. 228)

As observed by Harris (1993, p. 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, p. 228).

To Harris (1993, p. 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 rhet-

oric 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, p. 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 – maybe 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.

In this book, which became a landmark in cognitive linguistics, Lakoff and Johnson claimed that metaphors structure our language, our understanding of reality, our thoughts, and even our attitudes – in other words, according to Lakoff and Johnson (2003a, p. 273), ‘we live our lives on the basis of inferences we derive via metaphor.’ By defending such a position, Lakoff and Johnson gave new life to the generative semanticists’ critique of the autonomy of syntax hypothesis. Moreover, like cognitive linguists as a whole, Lakoff and Johnson revitalized the constructivist view of learning, supporting the Piagetian conception that language is a product of general intelligence rather than a product of a linguistic mental module (a “language faculty”), as proposed by Chomsky. In line with Lakoff and Johnson, Langacker, who was ‘a fairly peripheral’ generative semanticist (Harris, 1993, p. 251), would become a leading figure in cognitive linguistics by proposing in his 1987 book *Foundations of cognitive grammar* a linguistic theory that likewise rejects the autonomy of syntax hypothesis as well as the existence in the human mind/brain of a language faculty.

2 From Chomsky’s syntactocentrism to Langacker’s semanticocentrism

As a matter of fact, with Lakoff and Langacker at the helm, cognitive linguistics, whose ‘foundational point is simply that language is all about meaning’ (Geeraerts, 2006, p. 3), was presented from the start as an antithesis to generative grammar. Actually, maintaining generative semantics’ rejection of Chomsky’s syntactocentrism, cognitive linguistics readily established itself as ‘an outspoken attempt to give meaning a central position in the architecture of the grammar’ (Geeraerts, 2006, p. 27). As a consequence of this antagonistic stance to generativism, however, cognitive linguistics ended up adopting theoretical assumptions that do not match the empirical evidence coming from linguistics itself and related sciences, such as psychology, biology and neurosciences. Its nonmodular view of language, in particular, seems indefensible in light of the scientific advances of the last decades. For instance, with a modular view of language – in generative terms, the hypothesis of the existence in the human mind/brain of a ‘Universal Grammar,’ understood as ‘a characterization of [the] innate, biologically determined principles, which constitute [...] the language faculty’ (Chomsky, 1986, p. 24) – it is possible to explain why young children develop complex language skills in a relatively short time, without effort or formal teaching (e.g., Crain, 1991, 2012; Crain and Nakayama, 1987; Crain and Pietroski, 2001; Crain and Thornton, 2012; Millotte et al., 2013;

Pinker, 1984, 1989), but not other cognitive abilities, such as those needed to infer other people's intentions, beliefs, and desires, which take much longer to reach an advanced stage, as shown by classical Theory of Mind tests (e.g., Baron-Cohen et al., 1985; Baron-Cohen, 1995). A modular view of language also makes it possible to explain more satisfactorily cases of neurological pathologies or disorders, such as aphasia, autism, Turner syndrome, and Williams syndrome, in which there are significant differences between damage to language and damage to other cognitive abilities – for example, individuals with acquired agrammatical aphasia have intact intelligence, people with Asperger Syndrome develop and maintain normal grammars, despite their poor pragmatic language skills, individuals with Turner syndrome have normal grammatical development and function, but impaired number reasoning and severely impaired visual and spatial cognition, and people with Williams syndrome have relatively strong language abilities despite mild to moderate intellectual disability – formerly known as mental retardation (e.g., Curtiss, 2013; Marshall, 1990; Marcus et al., 2013; Piattelli-Palmarini, 2013). A modular view of language is also more adequate to clarify cases of brain damage such as strokes, in which the effects may be very different depending on which of the regions of the brain the stroke occurs, resulting for instance in speech and language impairments, vision loss, lack of bowel and bladder control, and so on (e.g., Curtiss, 2013; De Aguiar *et al.*, 2015; Sinanović et al., 2011). Moreover, a modular view of language elucidates cases of children with Specific Language Impairment (SLI) who had only a phonological deficit, only a syntactic deficit, a selective lexical impairment, or a selective pragmatic deficit, which confirms that language, like other cognitive systems, is not all of a piece, and that different subsystems within language – lexicon, pragmatics, and the computational system (the grammar) – can be selectively impaired in development and breakdown (e.g., Bishop, 1992; Curtiss, 2013; Leonard, 2014).

Another negative consequence of the antagonistic stance of cognitivists towards generativists is the scarcity of dialogue between proponents of the two fields of research. An exception to this rule, Jackendoff makes critical use of the theoretical proposals of both sides, rejecting both the excesses of Chomsky's syntactocentrism and the excesses of cognitivist semanticocentrism. In fact, being aware of the harms arising from the polarization between generative grammar and cognitive linguistics, Jackendoff (2003, p. 269) pointed out that this situation has its roots precisely in the linguistics wars of the 1960s and 1970s. Revisiting that period, Jackendoff (2003, p. 269) stated that, in the wake of the generative semantics dispute, most mainstream generative grammarians turned away from the systematic study of meaning, leaving the field largely to practitioners of the newly emerging disciplines of formal semantics, computational linguistics, cognitive psychology/neuroscience, and, somewhat later, cognitive grammar. It is a well-known fact that many of the representatives of these fields of study have always vehemently rejected generative grammar because of its lack of attention to semantics. By rejecting it, Jackendoff lamented (2003, p. 269), several of these researchers ended up falling into the opposite error to that of generativism, denying syntax any relevant role in grammar. Thus, the theoretical approach of these authors, especially the cognitivists, 'minimizes or even eliminates the syntactic formation rules, so that syntax is determined entirely by meaning' (Jackendoff, 2007, p. 50). Put another way, in combating Chomsky's syntactocentrism, many of the cognitive linguists 'went to the other extreme and denied syntax *any* independent role' (Jackendoff, 2007, p. 43). So it is not surprising that generativists ignore cognitive linguists' works. In response, cognitive linguists disregard genera-

tivists' discussions. To complicate matters, cognitive linguistics, unlike generative grammar, is not 'very concerned to integrate its results with the rest of psychology,' being 'moreover skeptical about the need for an independent notion of syntax in the language capacity,' asserted Jackendoff (2007, p. 194). Contrary to this position, Jackendoff (2007, p. 52) emphasized that syntax has its place in the parallel architecture of language since it is this component that has to say where the verb goes, whether the verb agrees with the subject, how to form relative clauses and questions, and so on. The differences among languages in these syntactic respects, concluded Jackendoff (2007, p. 52) declining semanticocentric conceptions of language, are not predictable from semantics, and children have to learn all of them.

In agreement with Jackendoff, and contrary to Lakoff and Langacker, the third of the 'founding fathers' (Geeraerts and Cuyckens, 2007, p. 8) of cognitive linguistics, Leonard Talmy, not just stated that the semantic system is one of the cognitive systems (2000, I, p. 4) but also assumed an 'overlapping systems model' (2000, I, p. 15) of human cognition. 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. Each cognitive system, asserted Talmy, 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. Considering scientific evidence such as those presented above, it is possible to affirm that Talmy's modular model is empirically more accurate than Lakoff and Johnson's nonmodular model as well as Langacker's.

3 Semantic opacity

According to Langacker (2007, p. 422; 2008, p. 7; 2010, p. 89), cognitive grammar belongs to cognitive linguistics, which in turn is part of functionalism – i.e., the tradition according to which the meaning and use of linguistic forms should be studied in communicative acts, thus opposing the abstract study of linguistic forms that is done in formalist theoretical approaches such as generative grammar. Among the central assumptions of cognitive grammar are the understanding that language is an integral facet of cognition rather than a separate module (2007, p. 422), the conception that grammatical and semantic analysis are inseparable (2007, p. 423), and the notion that there are no definite boundaries between "linguistic" and "extra-linguistic" structures (2007, p. 425; 1987, § 2.1.2). By recognizing the resemblances between cognitive grammar and other theoretical frameworks, Langacker (2007, p. 421) observed that cognitive grammar shares with generative semantics the general vision of treating semantics, lexicon, and grammar in a unified way, and that it shares with construction grammar (e.g., Fillmore, 1988; Goldberg, 1995, 1998, 2006; Croft, 1998, 2001) the ideas that constructions (not "rules") are the primary objects of description, that lexicon and grammar are not distinct, but a continuum of constructions (form-meaning pairings), and that constructions are linked in networks of inheritance (or categorization). Besides, expressing his semanticocentrism, Langacker (1987, p. 12) developed his cognitive grammar based on the assumptions that 'meaning is what language is all about' and 'grammar is simply the structuring and symbolization of semantic content.'

This semanticocentric view of language, however, faces obstacles apparently insuperable. First of all, treating semantics, lexicon, and grammar in a unified way leads to serious difficulties concerning the most basic aspects of language – for example, the long-observed differences between natural (or semantic) gender and grammatical gender (e.g., Arnaud and Lancelot, 1975 [1660], II, V; Paul 1888 [1880], p. 289-295). Indeed, if grammar were simply the structuring and symbolization of semantic content – that is, if grammar were determined entirely by meaning –, there would not be differences of grammatical gender among languages. Thus, under no circumstances could masculine nouns in one language be feminine nouns in another language. It is not difficult, however, to find occurrences of this discrepancy. For instance, in Portuguese, the nouns “number”, “newspaper”, and “rat” are masculine (“o número”, “o jornal”, and “o rato”), while the same nouns are feminine in German (“die Zahl”, “die Zeitung”, and “die Maus”). Another problem regarding the distinction between semantic gender and grammatical gender that imposes itself on cognitive grammar stems from the existence of the neuter gender in some languages, such as German, but not in others, such as Portuguese. So, if the nouns “the car”, “the book”, and “the flour” are neuter in German (“das Auto”, “das Buch”, and “das Mehl”), in Portuguese they necessarily need to be classified as masculine or feminine, even though they do not have, of course, a natural gender: the first ones are masculine (“o carro”, “o livro”) and the last one is feminine (“a farinha”). To complicate the picture, as is well known, the neuter gender is not employed only with inanimate nouns in the languages in which it exists, and not every inanimate noun is of the neuter gender in these languages. In German, the nouns “das Mädchen” (“the girl”), “das Kätzchen” (“the kitten”), “das Kamel” (“the camel”) and “das Pferd” (“the horse”), for example, are given the neuter gender, although they refer to living beings. In turn, the nouns “die Wahrheit” (“the truth”), “die Frage” (“the question”), “die Philosophie” (“the philosophy”), “der Sommer” (“the summer”), and “der Wein” (“the wine”), among many others, belong in this language either to the feminine or masculine gender, even if they are abstract or inanimate. All these examples, which of course could be multiplied (e.g., Corbett, 1991; Greenberg, 1978; Unterbeck et al., 2000), disprove Langacker’s conception that grammatical and semantic analysis are inseparable as well as his intention of treating semantics, lexicon, and grammar in a unified way. But the fact admitted by Langacker himself that ‘over a large portion of the lexicon is semantically opaque and must simply be learned as a matter of grammatical convention’ (Langacker, 1991b, p. 181) was not enough to convince him that his cognitive grammar is fundamentally wrong. Consequently, even though Langacker conceded that ‘it is easily demonstrated that the semantic characterizations are non-predictive, and that in actuality the classes are established on grounds of common grammatical behavior’ (Langacker, 1991b, p. 180), he tried to show how – ‘at least in principle’ (Langacker, 1991b, p. 180) – his approach can handle grammatical phenomena such as gender, number, and case marking.

To do so, Langacker proposed that lexical items that are semantically opaque and must simply be learned as a matter of grammatical convention are ‘conventional units’ (Langacker, 1991b, 183). First, Langacker (1991b, p. 181) observed that a typical noun-class system shows a kind of prototype organization and that each class has central members that instantiate a prototypical semantic value. In Spanish, said Langacker (1991b, p. 182) by way of example, the masculine nouns “el hombre” (“the man”), “el hijo” (“the son”), and “el perro” (“the dog”), as well as the feminine nouns “la mujer” (“the woman”), “la hija” (“the daughter”), and “la perra” (“the bitch”), represent a fragment of the vocabulary for which gender is semantically transparent.

So, to Langacker, they are central members of the classes of masculine nouns and feminine nouns, respectively. In turn, stated Langacker, the masculine nouns “el palo” (“the stick”), “el sudor” (“the sweat”), and “el cerro” (“the hill”), as well as the feminine nouns “la mesa” (“the table”), “la puerta” (“the door”), and “la mano” (“the hand”), ‘have no semantic rationale whatever’ and, therefore, must be learned as a matter of grammatical convention – that is, they are conventional units. ‘By assumption, these classes are grammatically rather than semantically defined,’ asserted Langacker (1991b, p. 183). ‘The behavior of a noun cannot be predicted from its meaning – speakers must learn specifically, for each individual noun, which article it occurs with.’ Because of this, it makes no sense to say that meaning is what language is all about and grammar is simply the structuring and symbolization of semantic content.

In the 2008 book *Cognitive grammar: a basic introduction*, Langacker revisited the question concerning lexical items that are semantically opaque arguing that ‘grammatical classes have varying degrees of semantic motivation’ (Langacker, 2008, p. 334). According to Langacker, at one extreme, there are fundamental and universal categories, such as nouns and verbs, which he claimed to have a fully consistent (albeit schematic) conceptual basis. At the opposite extreme, there are classes defined solely by occurrence in a particular grammatical construction with no possibility of semantic characterization – the ‘distributional classes’ (Langacker, 2008, p. 335) –, including elements that exhibit some morphological peculiarity, such as nouns where final *f* changes to *v* in the plural: wife/wives, leaf/leaves, etc. Most classes, stated Langacker (2008, p. 334), lie somewhere in between – i.e., they are ‘classes that are partially but not exclusively semantic,’ like gender classes (Langacker, 2008, p. 337). By trying to justify his position, Langacker (2008, p. 337-338) reaffirmed his idea that a typical noun-class system shows a kind of prototype organization and that each class has central members that instantiate a prototypical semantic value. So, first Langacker recognized that gender classes in German, for example, are posited not because their members exhibit any consistent meaning, but rather because they pattern alike grammatically, in terms of their inflectional endings and the forms of cooccurring elements (like articles, demonstratives, and adjectives). However, argued Langacker, the traditional labels were not chosen arbitrarily, since they are semantically appropriate for a substantial range of vocabulary, where they do reflect natural gender. “Mann” (“man”), observed Langacker, functions grammatically as a masculine noun, “Frau” (“woman”) is feminine, and “Kind” (“child”) is neuter since a child can be either male or female. In Spanish, pondered Langacker, nouns are clearly divided into two broad categories: nouns like “hombre” (“man”), “hijo” (“son”), and “tío” (“uncle”) are masculine, whereas “mujer” (“woman”), “hija” (“daughter”), and “tía” (“aunt”) are feminine. Nonetheless, asserted the author, this category distinction extends to all nouns in the lexicon, for most of which the notions “male” and “female” are irrelevant: “tenedor” (“fork”), “mes” (“month”), and “techo” (“roof”), for instance, are masculine, whereas “cuchara” (“spoon”), “semana” (“week”), and “casa” (“house”) are feminine. In general, therefore, the basis for categorization is grammatical rather than semantic, said Langacker. Nevertheless, he sustained, on the basis of expressions like “el hombre”, “el hijo”, and “el tío”, we can posit the constructional schema [el Nm], where Nm indicates a noun referring to a male. To Langacker, this schema represents an important generalization concerning the use of the article “el” and since it is further used with inanimate nouns like “tenedor”, “mes”, “techo”, and countless others, the highest-level schema specifies its occurrence with a noun: [el N]. Analogously, concluded Langacker, expressions like “la mujer”, “la hija”, and “la tía” give rise to the constructional schema [la Nf], where Nf is

a noun referring to a female, while the further use of the article “la” with “cuchara”, “semana”, “casa”, etc. supports the higher-level schema [la N].

The first weakness that can be pointed out to Langacker’s argument is its circularity. That is because, according to Langacker, a typical noun-class system shows a kind of prototype organization and each class has central members that instantiate a prototypical semantic value. But how can we identify central members of a noun class? To Langacker, they are semantically defined and their behavior can be predicted from its meaning. Moreover, Langacker’s argument itself is flawed and refutable. To corroborate this assertion, it is sufficient to return to the analysis of the neuter gender in the German language, in which theoretically prototypical examples of nouns do not have the gender semantically motivated. “Das Mädchen” (“the girl”), just to give an example that has already become a kind of commonplace in discussions about the incongruities between natural gender and grammatical gender, according to Langacker’s reasoning, should necessarily receive the feminine grammatical gender (“die”), but it is a neuter gender noun since “-chen”, a diminutive suffix to express that something is small, is always correlated with neuter gender in that language – i.e., the basis for its categorization is grammatical rather than semantic. Therefore, Langacker’s claim that gender, at least of prototypical nouns, is semantically motivated is empty. As a consequence of this situation, which becomes even more complicated considering the high productivity of inanimate nouns in the most diverse languages and the existence of “distributional classes,” the key idea of cognitive grammar that ‘meaning is what language is all about’ loses any foundation.

4 A statement of ideology

Extending the discussion to other aspects of cognitive grammar, it becomes clear that the same problem concerning gender classes runs through all of Langacker’s work. In investigating the elementary concepts of noun and verb, for example, Langacker (1991b, p. 13-14; 2008, p. 34-35, p. 104, p. 112) stated that prototypical nouns are ‘discrete physical objects’ and prototypical verbs are ‘energetic interactions’ of physical objects. To make Langacker’s point of view clearer, it is worth noting that he started from the assumption that we human beings think of the world as the ‘billiard-ball model’ (Langacker, 1991b, p. 13). According to this model, we think of our world as something populated by discrete physical objects. These objects can move through space and make contact with each other, their movement being given by their internal energy or by the energy they receive externally. ‘This archetypal folk model exerts a powerful influence on both everyday and scientific thought, and no doubt reflects fundamental aspects of cognitive organization,’ asserted Langacker (1991b, p. 13) without presenting any empirical evidence to support his claim. In any case, without stopping at the lack of scientific basis for the ‘billiard ball model,’ Langacker (1991b, p. 15) suggested that physical objects and ‘energetic interactions’ serve as the respective noun and verb prototypes. Thus, both categories would be semantically motivated, in accordance with the theoretical assumptions adopted in cognitive grammar.

However, it is elementary that many nouns and verbs do not share the characteristics of these supposed prototypes, as Langacker himself recognized (1991b, p. 15). Therefore, just as a multitude of nouns from languages such as Spanish do not have a semantically motivated gender, a multitude of nouns and verbs from the most diverse languages are not semantically

motivated either. In addition, it should be pointed out that again Langacker's argument is circular. After all, according to him, prototypical nouns are discrete physical objects, and prototypical verbs are energetic interactions of physical objects. But how can we identify prototypical (central) members of the grammatical classes of nouns and verbs? The first ones are discrete physical objects and the second ones are energetic interactions of physical objects, said Langacker. Apparently unaware of such problems in his theory, Langacker (1991b, p. 15) claimed that 'universal categories of such fundamental grammatical significance should be expected to have a conceptual basis' – that is, a semantic basis.

In the 1998 essay "Conceptualization, symbolization, and grammar," Langacker reaffirmed his cognitivist analysis of nouns and verbs but conceded: 'I have no definite proof for this conceptual characterization of nouns. [...] It is merely offered as a coherent proposal. [...] I personally find it hard to imagine that fundamental and universal categories like noun and verb would not have a conceptual basis' (Langacker, 1998, p. 19). In an appropriate comment to this assertion, Jackendoff (2003, p. 124) confessed: 'I think it safe to consider this simply a statement of ideology.' Indeed, given the precarious way in which Langacker defended the idea that nouns and verbs have a conceptual basis, his position sounds more like the result of an ideological view than a scientific one. This impression is reiterated by Langacker's own admission in the same essay of the broad limitations of his conceptualist theory of grammatical classes:

The claim that such classes are susceptible to schematic semantic descriptions valid for all members is specifically intended for basic and universal classes like noun and verb, for their major subclasses (e.g., count vs mass noun), and for certain other 'part-of-speech' type classes (such as adjectives, adpositions, and particular kinds of participles). It is definitely not asserted that every class a linguist might validly posit is definable in this manner. Such a claim would obviously be untenable for many distributional classes consisting of the lexical items conventionally allowed to participate in a given syntactic, morphological, or even phonological pattern. Even when a construction has a semantic basis, and the lexical items entering into it exhibit some degree of semantic coherence (as in the English passive), the exact inventory is often conventionally determined and less than fully predictable. The membership of some classes (e.g., the class of verbs taking a particular irregular past tense form) may be totally arbitrary. (Langacker, 1998, p. 23)

Contrary to Langacker's semanticocentric ideology, Jackendoff (2003, p. 124-125) emphasized that nouns have in common not a semantic basis, but syntactic properties, such as their ability to occur in noun positions in relation to verbs and prepositions, to govern number/gender agreement and take case endings (in languages that have such functions), to occur with certain kinds of quantificational expressions such as many, much, and all, and so forth. But unpersuaded by this line of argument, Langacker (e.g., 2013, 2015, 2023) continued to defend his 'central theoretical claim' that 'grammatical structure is inherently symbolic and that all valid grammatical constructions have some kind of conceptual import' (1991b, p. 282). However, given that Langacker never even managed to show that 'notions [...] fundamental to grammar' like nouns and verbs (1991b, p. 313) have a conceptual basis – not to mention the counterexamples to his theory such as those analyzed above –, it is safe to say that his central theoretical claim is just another statement of ideology.

5 A paradoxical situation

The perception that Langacker's central theoretical claim is a statement of ideology is reinforced by the analysis of the phonological component of language. After all, Langacker's theoretical approach minimizes or even eliminates the phonological formation rules, so that phonology is determined entirely by meaning. However, the differences among languages in phonological respects, as in syntactic respects, are not predictable from semantics. Nonetheless, to Langacker, meaning is what language is all about and grammar is simply the structuring and symbolization of semantic content. In fact, as observed by Jan Nuyts (2007, p. 550), cognitive linguistics is predominantly oriented to semantic phenomena. Considering this, it is no wonder that Langacker (2007, p. 443) recognized that his own theoretical discussion regarding phonology is 'at best programmatic,' that Margareth H. Freeman (2007, p. 1193) declared that cognitive phonology is 'in its infancy,' and that John R. Taylor (2003, p. 265) stated that 'cognitive linguistic treatments of phonological issues are still very thin on the ground.' Actually, according to Taylor (2007, p. 580), phonology has tended to be neglected by cognitive linguistics researchers, among other reasons, because 'phonological units such as phoneme, syllable, and foot have no conceptual content in themselves and cannot therefore be reduced to matters of conceptual structure and its symbolization.' So, it is not surprising that Geoffrey Nathan's essay on phonology published in the *Oxford handbook of cognitive linguistics* is basically a summary of the history of phonology in the 20th century that announced 'what a cognitive phonology will look like' (Nathan, 2007, p. 611). It is not surprising either that Nathan's 2008 book *Phonology: a cognitive grammar introduction* is essentially 'an introduction to most aspects of contemporary twenty-first century phonology,' as the author stated in the first line of the preface.

By being aware of 'the simple fact that phonology and morphology are underrepresented fields in cognitive linguistics' (Nesset, 2008, p. 1), Tore Nesset presented in his 2008 book *Abstract phonology in a concrete model* what seems to be the most consistent attempt until today to develop something like a cognitive phonology. In fact, cognitivists have been investigating for decades how phonological and morphosyntactic units are categorized (e.g., Aarts *et al.*, 2004; Nathan, 1986; Vihman and Croft, 2007). However, as stated by Nesset (2008, p. 2), there are several topics that any framework with the pretensions of being a model of phonology must be able to account for, such as the need to address phonological contrast and neutralization; the necessity to account for segments, features, natural classes, and segment systems; and the obligation to represent phonological rules and accommodate their interaction, including what is often referred to as "opaque" rule interaction. Nesset treats all these topics in his book, whose purpose is to show how "abstract phonology" – that is, Chomsky and Halle's (1968) approach to phonology – can be accounted for in a concrete model (Nesset, 2008, p. 3).

Since Nesset's analyses are based on Langacker's cognitive grammar (Nesset, 2008, p. 10), he assumed a non-modular approach to grammar, where phonology, morphology, and syntax are not relegated to different modules, but rather interact directly in category networks (Nesset, 2008, p. 4). First of all, it is necessary to highlight that, by investigating how the morphology-phonology interface can be accommodated in cognitive linguistics and if morphophonological alternations have a meaning, addressing these two questions based on an analysis of two sets of alternations in the Russian verbal stem, Nesset disproved

Langacker's claims that meaning is what language is all about and that grammar is simply the structuring and symbolization of semantic content. The phonological phenomena examined by Nessel, such as neutralization in (de)voicing, palatalization, and vowel reduction in Russian, are definitely not semantically motivated. Besides, contradictorily, Nessel identified right from the start the phonological, morphological, and syntactical properties of the linguistic elements under investigation. For instance, Nessel (2008, p. 11-12) observed that the words "bird", "ostrich", "sparrow", and "penguin" have the (morpho)syntactic properties "noun", "nominative" and "singular" in addition to their lexical meanings. Of course, these (morpho)syntactic properties are different from semantic features as well as phonological properties such as segments, stresses, syllable structures, and so on. Considering Nessel's non-modular view of language, it is really a paradoxical situation.

Overall, these observations concerning Nessel's book can be extended to cognitivism as a whole. In fact, despite its non-modular approach to grammar, cognitive linguistics not only underrepresents linguistic components like phonology and morphology but also deals with them in a non-cohesive manner. Furthermore, considering that most cognitivists reject the conception that language is a system composed of different interacting components (phonology, morphology, semantics, syntax), each of which with its specifications, cognitive linguistics should not be a 'conglomerate' of research without a 'well-defined theory,' as Dirk Geeraerts (2006, p. 2) characterized this framework.

6 Domains of language structure

True to the non-modular conception of language, but contrary to the perception that cognitive linguistics is not very concerned to integrate its results with the rest of psychology, Langacker (2007, p. 423) stated that cognitive grammar's claims about language should be broadly compatible with secure findings of related disciplines such as cognitive psychology, neuroscience, and evolutionary biology. Nevertheless, Langacker seems to deliberately ignore scientific evidence that disproves his conception of the human mind/brain as a whole and of language in particular. For instance, Langacker has never properly addressed Paul Broca's and Carl Wernicke's classic works on aphasia that apparently corroborate the modular view of language (e.g., Jackendoff, 1993, p. 146ff; Lenneberg, 1967, ch. 2). Likewise, he does not seem to consider more recent research that supports the foundations of generativism, including the innateness thesis and the autonomy of syntax hypothesis (e.g., Aronoff and Rees-Miller, 2006; Boeckx and Grohmann, 2013; Piattelli-Palmarini and Berwick, 2013; Traxler and Gernsbacher, 2006). In fact, since 1976, when Langacker started developing his cognitive grammar (Langacker, 2007, p. 421; 2008, p. vii), he seems to disregard empirical evidence contrary to his postulations.

The famous case of Genie, for example, which reinforces the hypothesis of the existence in the human mind/brain of a language faculty, came to light in 1970 (e.g., Curtiss *et al.*, 1974; Fromkin *et al.*, 1974). As is well known, Genie was a victim of severe child abuse, neglect, and social isolation. The extent of her isolation prevented her from being exposed to any significant amount of speech in her first years of life – that is, the so-called 'critical period' (Lenneberg, 1967, ch. 4), understood as a biologically determined stage of development in which an organism is optimally ready to acquire some competence that are part of typical

development. As a result of her abuse, Genie did not acquire a first language during her childhood. At 13 years old, she was rescued, and a group of psychologists and linguists, among other professionals, began to work with her, trying to facilitate her cognitive and social development. At around 15 years old, Genie was presenting a good amount of vocabulary and she could accurately name most objects she encountered. Nonetheless, she had great difficulty with learning and using basic grammar, mainly producing short sentences such as “Eat lunch on plate”, “Genie angry at teacher”, and “I want go school”. In contrast to her linguistic abilities, Genie’s nonverbal communication increased significantly. For instance, she invented a system of gestures and pantomimed certain words as she said them. Despite this, her conversational competence remained very low compared to normal people. Genie, in fact, had a severely limited grammar that lacked functional structure, alongside excellent vocabulary learning ability, good ability to initiate and sustain topics, excellent ability to apprehend complex hierarchical structure outside the realm of grammar, good ability to logically sequence pictures into stories, ability to count, ability to draw in silhouette and capture in drawing juxtapositions of objects and events that she could not communicate verbally, powerful non-verbal communicative ability, and superior visual and spatial cognition (Curtiss, 2013, p. 68).

In 1981, the same year that Langacker presented the first version of his cognitive grammar in the paper “The integration of grammar and grammatical change” (Langacker, 2007, p. 421), Susan Curtiss and Jeni Yamada described in the paper “Selectively intact grammatical development in a retarded child”⁴ the case of Antony, whose profile is quite the opposite of Genie’s. Antony was a child of 6-7 years old with an IQ estimated between 50 and 56 (the average IQ is 100). According to Curtiss and Yamada, his language was well-formed phonologically, morphologically, and syntactically. For instance, his grammar was fully elaborated with inflectional and derivational bound morphology. Besides, it included syntactic structures involving movement, embedding, and complementation. However, Antony’s language was semantically quite deficient. His lexical specifications were incomplete and sometimes inaccurate. For example, his errors with lexical substantives involved confusion or inadequate definitional differentiation between words within a particular semantic area, such as “birthday” for “cake”, and “cutting” for “pasting”. Moreover, propositional content, unless quite simple, was often confusing and incompletely expressed. Therefore, Antony frequently failed to grasp the intent or full meaning of his own and others’ utterances, causing consistent communication failures.

That same year, Curtiss also published the paper “Dissociations between language and cognition: cases and implications,” in which she presented data from case studies of children – including Genie and *Antony* – showing clear dissociations between language and nonlanguage cognitive abilities. Based on the case studies discussed in the paper, Curtiss concluded that apparently lexical and relational semantic abilities are deeply linked to broader conceptual development but morphological and syntactic abilities are not. Nonetheless, observed Curtiss, the development of a normal linguistic system, one in which grammar is systematically related to meaning, requires concurrent and concomitant linguistic and nonlinguistic cognitive development. In other terms, stated Curtiss, while the acquisition of syntax and morphology may to some extent proceed independently of other cognitive development,

⁴ The expression “mental retardation” has gradually been abandoned since the 1980s and the 1990s in favor of the expression “intellectual disability.”

normal language in which meaning is systematically related to the syntactic and morphological structure would seem to depend on the development of nonlinguistic cognitive knowledge alongside the acquisition of the grammar.

In the 1990 book *Laura: a case for the modularity of language*, Yamada described another case of a person whose language was remarkably preserved, even in the face of a relatively severe intellectual disability. According to Yamada, Laura presented a dramatic contrast between complex linguistic abilities and markedly depressed nonlinguistic cognitive abilities, with a testable IQ in the low 40s. For instance, at 16 years old, Laura could not read, tell time, give her age, count, or do simple problem-solving, but her language was rather well-developed (Yamada, 1990, p. 7). In fact, like Antony, Laura revealed an extensive knowledge of English syntax in her language production. Her linguistic sophistication was especially evident in her use of syntactically and morphologically rich structures that are relatively late acquisitions in normal development, including the use of passive sentences and subordinating conjunctions of time, causality, and so on (Yamada, 1990, p. 27-35). Nevertheless, like Antony's, Laura's language was semantically deficient (Yamada, 1990, p. 39-62). *She* seemed to grasp the meaning of many words she used, though she apparently understood others only partially and still others minimally, if at all. Besides, she had a limited understanding of the notion of a joke, for example. Considering these particularities, Yamada (1990, p. 6) observed that *Laura's case* supports a modularity model. 'Her profile refutes the contention that cognitive, socialinteractive, and perceptual factors can account for language acquisition and supports the notion that language is a highly evolved, specialized human ability driven at least in part by a set of principles seen in no other cognitive domain,' stated Yamada (1990, p. 6). 'In addition, this case shows that various aspects of language are separable and differentially related to nonlinguistic abilities.' Moreover, stressed Yamada (1990, p. 112), 'Laura's profile challenges the conceptualization of grammar as semantically based and the notion that syntax depends upon semantic.'

Many works that came to light after Yamada's research also challenged non-modular and semanticocentric linguistic theories such as Langacker's. In the 1995 book *The mind of a savant: language learning and modularity*, for example, Neil Smith and Ianthi-Maria Tsimpli presented ample evidence that supports Curtiss's and Yamada's conclusions. In this book, Smith and Tsimpli reported on the case of the autistic savant Christopher Taylor. At 29 years old, Taylor had a mental age of 9,2 years old and an IQ of 56. He could not, for instance, cross the road alone, do up his own buttons, shave, or dress himself. Nonetheless, besides English, his native language, Taylor had some knowledge (ranging from fluency to the bare elements) of 15 languages: Danish, Dutch, Finnish, German, Modern Greek, Hindi, Italian, Norwegian, Polish, Portuguese, Russian, Spanish, Swedish, Turkish and Welsh. 'Christopher's condition is correctly characterized in terms of an intact language module co-existing with an impaired central system,' observed Smith and Tsimpli (1995, p. 67). In fact, Taylor had considerable semantic and pragmatic problems (Smith and Tsimpli, 1995, p. 63ff), including autistic traits such as a poor Theory of Mind (Smith and Tsimpli, 1995, p. 183) – which refers to our ability to make accurate guesses about what people might be thinking or feeling or willing to do – and difficulties to understand jokes, irony, and metaphors (Smith and Tsimpli, 1995, p. 74ff). Based on Taylor's case study, and assuming Jerry Fodor's (1983) modular theory, Smith and Tsimpli not just defended the existence of a 'language module' in the human mind/brain but also hypothesized that the syntactic representation and the phonological representation belong

to the language module, while the pragmatic interpretation requires the language module as well as the central mental systems (not modular), in which general and encyclopedic knowledge are stored (Smith and Tsimpli, 1995, p. 30).

Notwithstanding the consistency of these works as well as many others (e.g., Baron-Cohen, 1988; Champagne-Lavau and Joannette, 2009; Lomlomdjian *et al.*, 2017), Langacker, like most cognitivist linguists, seems to ignore their conclusions in his cognitive grammar. Actually, by neglecting the investigations of researchers such as Curtiss, Yamada, Smith, and Tsimpli, Langacker, for example, asserted in his 2007 essay “Cognitive grammar” that ‘insofar as possible, language is seen as recruiting more general cognitive phenomena (e.g. attention, perception, categorization, memory) from which it cannot be dissociated’ (Langacker, 2007, p. 422). As a matter of fact, Chomsky himself has been stressing for decades that the mental organ of language interacts with other cognitive faculties despite being in principle independent of them (e.g., Cella-Conde and Marty, 1998, p. 31; Chomsky, 2007c [1979], p. 45-46, p. 49, p. 142, p. 153; Chomsky, 1980, p. 59, p. 188, p. 206, p. 244). Besides, Langacker restated in his 2008 book *Cognitive grammar: a basic introduction* his nonmodular conception of language (Langacker, 2008, p. 4, p. 8) and his attack on Chomsky’s hypothesis of the autonomy of syntax (Langacker, 2008, p. 5-6). Moreover, without even discussing in this book the scientific evidence of the existence in the human mind/brain of a language faculty and of the autonomy of syntax, Langacker opened the first chapter of the book by stating that cognitive grammar is ‘intuitively natural, psychologically plausible, and empirically viable’ (Langacker, 2008, p. 3).

In other texts, Langacker presented similar declarations. For instance, in his 1999 book *Grammar and conceptualization*, Langacker reaffirmed that ‘grammar and meaning are indissociable’ (Langacker, 1999, p. 1) and not only asserted that ‘language necessarily comprises semantic structures, phonological structures, and symbolic links between the two’ but also informed that ‘the central claim of CG [cognitive grammar] is that nothing else is needed’ (Langacker, 1999, p. 1). However, in the very same book, Langacker listed semantics, phonology, lexicon, morphology, and syntax as ‘all domains of language structure’ (Langacker, 1999, p. 121), implying that language needs other things besides semantic structures, phonological structures, and symbolic links between the two. By trying to clarify his perspective, Langacker argued:

CG itself offers conceptual unification. It posits only semantic, phonological, and symbolic structures. Lexicon, morphology, and syntax form a gradation claimed to be fully describable as assemblies of symbolic structures. The distinction between grammatical rules and symbolically complex expressions is only a matter of whether (or the degree to which) the symbolic assemblies constituting them are schematic rather than specific. While there is some tendency for morphological and syntactic rules to differ in terms of generality and productivity, the only consistent basis for distinguishing them is whether the phonological composition they specify takes place within a word or involves word sequences. Expressions constructed in accordance with grammatical schemas can also be of any size. With repeated use, an expression of any size or degree of compositionality can be entrenched and conventionalized. The lexicon of a language is then definable as the set of expressions with the status of conventional units. (Langacker, 1999, p. 122)

The following pages of *Grammar and Conceptualization*, as well as other texts written by Langacker, do not do much to help the reader to understand the central claim of cognitive

grammar. Be that as it may, it is notorious that syntax, morphology, and especially phonology are underrepresented in Langacker's theoretical framework.

7 Conclusion

Taking into account the generative origins of cognitive linguistics, as well as the fact that years before its creation generative grammar already had a cognitive approach in the study of language (Geeraerts, 2006, p. 2), it is possible to say that Jackendoff (2007, p. 35) did not exaggerate so much when he characterized cognitive linguistics as a non-Chomskyan tradition of generative grammar. Without going into detail about this assessment, it should be noted that most of the issues addressed by cognitivists are not new (Ungerer and Schmid, 1996, p. 280). Being aware of it, researchers such as Dirk Geeraerts (1988, 1999, 2002) and Brigitte Nerlich and David D. Clarke (2000, 2001, 2007) highlighted that cognitive linguistics, in fact, reclaims a good amount of problems previously discussed by many authors over the centuries. Thus, as Augusto Soares da Silva (1997, p. 63) pointed out, the 'cognitive' perspective of language is not new, contrary to what some cognitivists claim, notably Lakoff. What is new in the cognitivist perspective in relation to the perspective of its precursors is the misappropriation of the themes investigated by them to attack generative grammar – in particular, the hypothesis of the existence of a language faculty and the autonomy of syntax. Considering this situation, it seems possible, and even necessary, to reconcile generative grammar and cognitive linguistics. After all, as observed by David Adger (2015, p. 160), 'cognitive grammar [i.e. cognitive linguistics] has made empirical discoveries with cross-framework relevance and developed insightful theoretical accounts of aspects of language that generative grammar has little to say about. Both theoretical approaches make different contributions to the shared enterprise of understanding language.' Moreover, by perceiving and eliminating their syntactocentric and semanticocentric traits, we can indeed unite these two theoretical frameworks in a parallel architecture model of language such as Jackendoff's (Silva, forthcoming). In this case, the syntactic and phonological theories developed by the generativists would be allocated to the syntactic and phonological components of language, respectively, and the semantic theories proposed by the cognitive linguists, including Langacker's, would be assigned to the semantic component of language. At other times, this division justifiably would seem banal. In the current scenario, however, largely as a consequence of the linguistics wars of the 1960s and 1970s, it is a real challenge to support it.

Acknowledgments

I would like to thank the Editorial Coordinator of the review panel, Professor Janayna Carvalho, and the referees of this journal for their insightful criticisms and suggestions on an earlier version of this paper. This revised version owes a great deal to their input. I am also extremely grateful for the helpful comments by Professor John Goldsmith and Professor Ray Jackendoff. Any remaining errors or shortcomings are my own responsibility.

References

- AARTS, B.; DENISON, D.; KEIZER, E.; POPOVA, G. (eds.). *Fuzzy grammar: a reader*. Oxford: Oxford University Press, 2004.
- ADGER, D. More misrepresentation: a response to Behme and Evans 2015. *Lingua*, v. 162, p. 160-166, 2015. DOI: <https://doi.org/10.1016/j.lingua.2015.05.005>
- ARNAUD, A.; LANCELOT, C. *The Port-Royal Grammar: General and Rational Grammar*. The Hague, Paris: Mouton, 1975.
- ARONOFF, M.; REES-MILLER, J. *The handbook of linguistics*. 3rd ed. Malden: Blackwell, 2006.
- BARON-COHEN, S. Social and pragmatic deficits in autism: cognitive or affective? *Journal of Autism and Developmental Disorders*, v. 18, n.3, p. 379-402, 1988. DOI: <https://doi.org/10.1007/BF02212194>
- BARON-COHEN, S. *Mindblindness: an essay on autism and theory of mind*. Cambridge: MIT Press, 1995.
- BARON-COHEN, S.; LESLIE, A. M.; FRITH, U. Does the autistic child have a "theory of mind"? *Cognition*, v. 21, n. 1, p. 37-46, 1985. DOI: 10.1016/0010-0277(85)90022-8
- BICKERTON, D. Some problems for biolinguistics. *Biolinguistics*, v. 8, p. 73-96, 2014. DOI: <https://doi.org/10.5964/bioling.8993>
- BISHOP, D. V. The underlying nature of specific language impairment. *Child Psychology & Psychiatry & Allied Disciplines*, v. 33, n. 1, p. 3-66, 1992. DOI: 10.1111/j.1469-7610.1992.tb00858.x.
- BOECKX, C.; GROHMANN, K. K. *The Cambridge handbook of biolinguistics*. Cambridge: Cambridge University Press, 2013.
- CELA-CONDE, C.; MARTY, G. Noam Chomsky's Minimalist Program and the Philosophy of Mind. *Syntax*, v. 1, n. 1, p. 19-36, 1998. DOI: <http://dx.doi.org/10.1111/1467-9612.00002>
- CHAMPAGNE-LAVAU, M.; JOANETTE, Y. Pragmatics, theory of mind and executive functions after a right-hemisphere lesion: different patterns of deficits. *Journal of Neurolinguistics*, v. 22, n. 5, p. 413-426, 2009. DOI: <https://doi.org/10.1016/j.jneuroling.2009.02.002>
- CHOMSKY, N. *Aspects of the theory of syntax*: 50th anniversary edition. Cambridge: MIT Press, 2015.
- CHOMSKY, N. Biolinguistic explorations: design, development, evolution. *International Journal of Philosophical Studies*, v. 15, n. 1, p. 1-21, 2007a. DOI: <http://dx.doi.org/10.1080/09672550601143078>
- CHOMSKY, N. Deep Structure, Surface Structure, and Semantic Interpretation. In: JAKOBSON, R.; KAWAMOTO, S. (Eds.). *Studies in General and Oriental Linguistics Presented to Shiro Hattori on the Occasion of his Sixtieth Birthday*. Tokyo: TEC Co. Ltd., 1970. p. 52-91.
- CHOMSKY, N. *Knowledge of language: its nature, origin, and use*. Westport: Praeger Publishers, 1986.
- CHOMSKY, N. *Lectures on government and binding*. Dordrecht: Foris, 1981.
- CHOMSKY, N. Of minds and language. *Biolinguistics*, v. 1, p. 9-27, 2007b. DOI: <https://doi.org/10.5964/bioling.8585>
- CHOMSKY, N. *On language: Chomsky's classic works Language and responsibility and Reflections on language*. New York, London: The New Press, 2007c.

- CHOMSKY, N. *Rules and representations*. New York: Columbia University Press, 1980.
- CHOMSKY, N. *Syntactic structures*. 2nd ed. Berlin, New York: Mouton de Gruyter, 2002.
- CHOMSKY, N. *The Minimalist Program*. Cambridge, Mass.: MIT Press, 1995.
- CHOMSKY, N.; HALLE, M. *The sound pattern of English*. New York: Harper & Row, 1968.
- CORBETT, G. G. *Gender*. Cambridge: Cambridge University Press, 1991.
- CRAIN, S. Language acquisition in the absence of experience. *Behavioral and Brain Science*, v. 14, p. 597-650, 1991.
- CRAIN, S. *The emergence of meaning*. Cambridge: Cambridge University Press, 2012.
- CRAIN, S.; NAKAYAMA, M. Structure dependence in grammar formation. *Language*, v. 63, n. 3, p. 522-543, 1987. DOI: <https://doi.org/10.2307/415004>
- CRAIN, S.; PIETROSKI, P. Nature, nurture and Universal Grammar. *Linguistics and Philosophy*, v. 24, n. 2, p. 139-185, 2001. DOI: <https://doi.org/10.1023/A:1005694100138>
- CRAIN, S.; THORNTON, R. *Investigations in universal grammar: a guide to experiments on the acquisition of syntax and semantics*. Cambridge: MIT Press, 2012.
- CROFT, W. The structure of events and the structure of language. In: TOMASELLO, M. (Ed.). *The new psychology of language: cognitive and functional approaches to language structure*. Mahwah; London: Lawrence Erlbaum Associates, Publishers, 1998. p. 67-92.
- CROFT, W. *Radical construction grammar: syntactic theory in typological perspective*. Oxford: Oxford University Press, 2001.
- CURTISS, S. Dissociations between language and cognition: cases and implications. *Journal of Autism and Developmental Disorders*, v. 2, n. 1, p. 15-30, 1981. DOI: 10.1007/BF01531338.
- CURTISS, S. Revisiting modularity: using language as a window to the mind. In: PIATELLI-PALMARINI, M.; BERWICK, R. C. (eds). *Rich languages from poor inputs*. Oxford: Oxford University Press, 2013. p. 68-90.
- CURTISS, S.; YAMADA, J. Selectively intact grammatical development in a retarded child. *UCLA Working Papers in Cognitive Linguistics*, v. 3, p. 61-91, 1981.
- CURTISS, S.; FROMKIN, V.; KRASHEN, S.; RIGLER, D.; RIGLER, M. The linguistic development of Genie. *Language*, v. 50, n. 3, p. 528-554, 1974. DOI: <https://doi.org/10.2307/412222>.
- DE AGUIAR, V.; PAOLAZZI, C. L.; MICELI, G. Tdcs in post-stroke aphasia: the role of stimulation parameters, behavioral treatment and patient characteristics. *Cortex*, v. 63, p. 296-316, 2015. Doi: <https://doi.org/10.1016/j.cortex.2014.08.015>
- FILLMORE, C. J. The mechanisms of "construction grammar". *Berkeley Linguistics Society*, v. 14, p. 35-55, 1988.
- FODOR, J. *The modularity of mind: an essay on faculty psychology*. Cambridge: MIT Press, 1983.
- FREEMAN, M. H. Cognitive linguistic approaches to literary studies. In: GEERAERTS, D.; CUYCKENS, H. (eds.). *The Oxford handbook of cognitive linguistics*. New York; Oxford: Oxford University Press, 2007. p. 1175-1202.

- FROMKIN, V.; KRASHEN, S.; CURTISS, S.; RIGLER, D.; RIGLER, M. The development of language in Genie: a case of language acquisition beyond "critical period". *Brain and Language*, v. 1, n. 1, p. 81-107, 1974. DOI: [https://doi.org/10.1016/0093-934X\(74\)90027-3](https://doi.org/10.1016/0093-934X(74)90027-3)
- GEERAERTS, D. Cognitive grammar and the history of lexical semantics. In: RUDZKA, B. (ed.). *Topics in cognitive linguistics*. Amsterdam: Benjamins, 1988. p. 647-677.
- GEERAERTS, D. Hundred years of lexical semantics. In: 1º Encontro Internacional de Linguística Cognitiva. Atas... Porto, p. 123-154, 1999.
- GEERAERTS, D. Introduction: a rough guide to cognitive linguistics. In: GEERAERTS, D. (ed.). *Cognitive linguistics: basic readings*. Berlin; New York: Mouton de Gruyter, 2006. p. 1-28.
- GEERAERTS, D. The theoretical and descriptive development of lexical semantics. In: BEHRENS, L.; ZAEFFERER, D. (eds.). *The lexicon in focus: competition and convergence in current lexicology*. Bern: Peter Lang Verlag, 2002. p. 23-42.
- GEERAERTS, D.; CUYCKENS, H. Introducing cognitive linguistics. In: GEERAERTS, D.; CUYCKENS, H. (eds.). *The Oxford handbook of cognitive linguistics*. New York; Oxford: Oxford University Press, 2007. p. 3-21.
- GIVÓN, T. *Bio-linguistics: The Santa Barbara Lectures*. Amsterdam: John Benjamins, 2002.
- GIVÓN, T. *On understanding grammar*. New York; San Francisco; London: Academic Press, 1979.
- GOLDBERG, A. E. *Constructions: a construction grammar approach to argument structure*. Chicago: University of Chicago Press, 1995.
- GOLDBERG, A. E. *Constructions at work: the nature of generalization in language*. Oxford: Oxford University Press, 2006.
- GOLDBERG, A. E. Patterns of experience in patterns of language. In: TOMASELLO, M. (Ed.). *The new psychology of language: cognitive and functional approaches to language structure*. Mahwah; London: Lawrence Erlbaum Associates, Publishers, 1998. p. 203-219.
- GREENBERG, J. H. How does a language acquire gender markers? In: GREENBERG, J. H. (Ed.). *Universals of human language*. Vol. 3, Word Structure. Stanford: Stanford University Press, 1978. p. 47-82.
- HARDER, P. Cognitive linguistics and philosophy. In: GEERAERTS, D.; CUYCKENS, H. (eds.). *The Oxford handbook of cognitive linguistics*. New York; Oxford: Oxford University Press, 2007. p. 1241-1265.
- HARRIS, R. A. *The linguistics wars*. New York; Oxford: Oxford University Press, 1993.
- JACKENDOFF, R. *Foundations of language: brain, meaning, grammar, evolution*. Oxford; New York: Oxford University Press, 2003.
- JACKENDOFF, R. *Language, consciousness, culture: essays on mental structure*. Cambridge, Mass: MIT Press, 2007.
- JACKENDOFF, R. *Patterns in the mind: language and human nature*. New York: Harvester Wheatsheaf, 1993.
- JACKENDOFF, R. *Semantic interpretation in generative grammar*. Cambridge: MIT Press, 1972.
- JACKENDOFF, R. *The architecture of the language faculty*. Cambridge: MIT Press, 1997.
- JENKINS, L. Biolinguistics: a historical perspective. In: BOECKY, C.; GROHMANN, K. K. *The Cambridge handbook of biolinguistics*. Cambridge: Cambridge University Press, 2013. P. 4-11.

- KATZ, J.; POSTAL, P. *An integrated theory of linguistic descriptions*. Cambridge: MIT Press, 1964.
- LAKOFF, G.; JOHNSON, M. Afterword. In: LAKOFF, G.; JOHNSON, M. *Metaphors we live by*. Chicago; London: The University of Chicago Press, 2003a. p. 243-274.
- LAKOFF, G.; JOHNSON, M. *Metaphors we live by*. London: The University of Chicago Press, 2003b.
- LANGACKER, R. W. (2007). Cognitive grammar. In: Geeraerts, Dirk; Cuyckens, Hubert (eds.). *The Oxford handbook of cognitive linguistics*. Oxford: Oxford University Press. p. 421-462.
- LANGACKER, R. W. *Cognitive grammar: a basic introduction*. Oxford; New York: Oxford University Press, 2008.
- LANGACKER, R. W. Cognitive grammar. In: HEINE, B.; NARROG, H. (eds.). *The Oxford handbook of linguistic analysis*. Oxford: Oxford University Press, 2010. p. 87-109.
- LANGACKER, R. W. *Concept, image, and symbol: the cognitive basis of grammar*. Berlin; New York: Mouton de Gruyter, 1991a.
- LANGACKER, R. W. Conceptualization, Symbolization, and Grammar. In: TOMASELLO, M. (Ed.). *The New Psychology of Language*. Hillsdale, NJ: Erlbaum, 1998. p. 1-39.
- LANGACKER, R. W. *Essentials of cognitive grammar*. Oxford: Oxford University Press, 2013.
- LANGACKER, R. W. *Foundations of cognitive grammar*. Volume 1: Theoretical prerequisites. Stanford: Stanford University Press, 1987.
- LANGACKER, R. W. *Foundations of cognitive grammar*. Volume 2: Descriptive application. Stanford: Stanford University Press, 1991b.
- LANGACKER, R. W. *Grammar and Conceptualization*. Berlin; New York: Mouton de Gruyter, 1999.
- LANGACKER, R. W. Levels of reality. *Lublin Studies in Modern Languages and Literature*, v. 47, n. 1, p. 11-36, 2023. DOI: <http://dx.doi.org/10.17951/lsmll.2023.47.1.11-36>
- LANGACKER, R. W. On grammatical categories. *Journal of Cognitive Linguistics*, v. 1, p. 44-79, 2015.
- LANGACKER, R. W. The integration of grammar and grammatical change. *Indian Linguistics*, v. 42, p. 82-135, 1981.
- LENNEBERG, E. H. *Biological foundations of language*. New York: Wiley & Sons, 1967.
- LEONARD, L. B. *Children with Specific Language Impairment*. 2nd ed. Cambridge: MIT Press, 2014.
- LOMLOMDJIAN, C.; MÚMERA, C. P.; LOW, D. M.; TERPILUK, V.; SOLÍS, P.; ABUSAMRA, V.; KOCHEN, S. *The right hemisphere's contribution to discourse processing: a study in temporal lobe epilepsy*. *Brain and Language*, v. 171, p. 31-41, 2017. DOI: <https://doi.org/10.1016/j.bandl.2017.04.001>
- MARCUS, G. F.; RABAGLIA, C. D.; RABAGLIATI, H. Modularity and descent-with-modification. In: BOECKX, C.; GROHMANN, K. K. (eds.). *The Cambridge handbook of biolinguistics*. Cambridge: Cambridge University Press, 2013. p. 326-340.
- MARSHALL, J. C. Foreword. In: YAMADA, J. E. *Laura: a case for the modularity of language*. Cambridge, Mass: MIT Press, 1990. p. vii-xi.

- MILLOTTE, S.; CAUVET, E.; BRUSINI, P.; CHRISTOPHE, A. Discovering word forms and word meanings: the role of phrasal prosody and function words. In: BOECKX, C.; GROHMANN, K. K. (eds.). *The Cambridge handbook of biolinguistics*. Cambridge: Cambridge University Press, 2013. p. 86-93.
- NEWMAYER, F. J. *Generative linguistics: a historical perspective*. London; New York: Routledge, 1996.
- NATHAN, G. Phonemes as mental categories. In: TWELFTH ANNUAL MEETING OF THE BERKELEY LINGUISTICS SOCIETY, Berkeley, 1986. *Proceedings...*. Berkeley, p. 212-223, 1986.
- NATHAN, G. Phonology. In: GEERAERTS, D.; CUYCKENS, H. (eds.). *The Oxford handbook of cognitive linguistics*. New York; Oxford: Oxford University Press, 2007. p. 611-631.
- NATHAN, G. *Phonology: a cognitive grammar introduction*. Amsterdam; Philadelphia: John Benjamins, 2008.
- NERLICH, B.; CLARKE, D. D. Cognitive linguistics and the history of linguistics. In: GEERAERTS, D.; CUYCKENS, H. (eds.). *The Oxford handbook of cognitive linguistics*. New York; Oxford: Oxford University Press, 2007. p. 589-607.
- NERLICH, B.; CLARKE, D. D. Mind, meaning, and metaphor: the philosophy and psychology of metaphor in nineteenth-century Germany. *History of the Human Sciences*, v. 14, p. 39-61, 2001. DOI: <https://doi.org/10.1177/09526950122120952>
- NERLICH, B.; CLARKE, D. D. Semantic fields and frames: historical explorations of the interface between language, action and cognition. *Journal of Pragmatics*, v. 32, n. 2, p. 125-150, 2000. DOI: [http://dx.doi.org/10.1016/S0378-2166\(99\)00042-9](http://dx.doi.org/10.1016/S0378-2166(99)00042-9)
- NESSET, T. *Abstract phonology in a concrete model*. Berlin/ New York: Mouton de Gruyter, 2008.
- NUYTS, J. Cognitive linguistics and functional linguistics. In: GEERAERTS, D.; CUYCKENS, H. (eds.). *The Oxford handbook of cognitive linguistics*. Oxford: Oxford University Press, 2007. p. 543-565.
- PARRET, H. *Discussing language*. The Hague: Mouton, 1974.
- PAUL, H. *Principles of the History of Language*. London: Sonnenschein, 1888.
- PIATTELLI-PALMARINI, M. Biolinguistics yesterday, today, and tomorrow. In: BOECKX, C.; GROHMANN, K. K. (eds.). *The Cambridge handbook of biolinguistics*. Cambridge: Cambridge University Press, 2013. p. 12-21.
- PIATTELLI-PALMARINI, M.; BERWICK, R. C. (eds.). *Rich languages from poor inputs*. Oxford: Oxford University Press, 2013.
- PINKER, S. *Language learnability and language development*. Cambridge: Harvard University Press, 1984.
- PINKER, S. *Learnability and cognition: the acquisition of verb-argument structure*. Cambridge: Harvard University Press, 1989.
- POSTAL, P. The best theory. In: PETERS, S. (ed.). *Goals of linguistic theory*. Englewood Cliffs: Prentice-Hall, 1972. p. 131-170.
- SEUREN, P. A. M. *Chomsky's minimalism*. New York: Oxford University Press, 2004.
- SILVA, A. A linguística cognitiva: uma breve introdução a um novo paradigma em linguística. *Revista Portuguesa de Humanidades*, v. 1, n. 1-2, p. 59-101, 1997.

- SILVA, G. (forthcoming). *Toward the union of generative grammar, cognitive linguistics and emergentism in biolinguistics*.
- SINANOVIC, Osman; MRKONNJIC, Z.; ZUKIC, S; VIDOVIC, M.; IMMAMOVIC, K. Post-stroke language disorders. *Acta Clinica Croatia*, v. 50, n. 1, p. 79-94, 2001.
- SMITH, N.; TSIMPLI, I.-M. *The mind of a savant: language learning and modularity*. Oxford; Cambridge, Mass: Blackwell, 1995.
- TALMY, L. *Toward a cognitive semantics*. Cambridge, Massachusetts: MIT Press, 2v, 2000.
- TAYLOR, J. R. Cognitive linguistics and autonomous linguistics. In: GEERAERTS, D.; CUYCKENS, H. (eds.). *The Oxford Handbook of cognitive linguistics*. New York; Oxford: Oxford University Press, 2007. p. 566-588.
- TAYLOR, J. R. *Linguistic categorization*. 3rd ed. Oxford; New York: Oxford University Press, 2003.
- TRAXLER, M. J.; GERNSBACHER, M. A. (eds.). *Handbook of psycholinguistics*. 2nd ed. Amsterdam; Boston: Elsevier/Academic Press, 2006.
- UNGERER, F.; SCHMID, H.-J. *An introduction to cognitive linguistics*. London; New York: Longman, 1996.
- UNTERBECK, B.; RISSANEN, M.; NEVALAINEN, T.; SAARI, M. (eds.). *Gender in grammar and cognition*. Berlin; New York: Mouton de Gruyter, 2000.
- VIHMAN, M.; CROFT, W. Phonological development: toward a "radical" templatic phonology. *Linguistics*, v. 45, n. 4, p. 683-725, 2007. Doi: <https://doi.org/10.1515/LING.2007.021>
- WILLIAMS, C.; WRIGHT, B. *How to live with Autism and Asperger Syndrome: practical strategies for parents and professionals*. London, Philadelphia: Jessica Kingsley Publishers, 2004.
- YAMADA, J. E. *Laura: a case for the modularity of language*. Cambridge, Mass: MIT Press, 1990.