

# A criticism of Leonard Talmy's Cognitive Semantics

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## Abstract

Leonard Talmy's cognitive semantics (Talmy 2000a, 2000b) is analyzed here in the light of the recent findings of attentional semantics (Marchetti, 2003, 2005). Talmy's cognitive semantics is founded on the main assumption that language is a major cognitive system in its own right, distinct from the other major ones (perception, reasoning, affect, attention, memory, cultural structure, and motor control). As such, language has some structural properties that are uniquely its own and some others that are in common with the other cognitive systems. This assumption conditions and determines in a major way Talmy's approach to the study of meaning. In fact, he is led to analyze language mainly by relating it to the other major cognitive systems, with the consequence of describing it in terms of the procedures and patterns of the particular cognitive system to which the language system is each time related. The unavoidable outcome of this way of approaching language is that Talmy puts forward as many kinds of linguistic analyses as there are major cognitive systems related to the language system. These various kinds of linguistic analyses are so different and distinct from each other that they cannot be related to each other: the negative impression is thus engendered that Talmy's work suffers, despite his intentions, from a lack of uniformity and generality, his ways of analyzing meaning being not equally and widely applicable to all linguistic instances. The alternative view of attentional semantics is presented. For attentional semantics the meanings of words are condensed, de-contextualized and "frozen" instructions on the attentional (and related non-attentional) operations one has to perform in order to consciously experience what the words refer to. Attention becomes then the unifying principle capable of relating the various and different experiential and cognitive fields, in terms of which the meanings of all the words can be analyzed.

**Keywords:** cognitive semantics, language, meaning, conceptual content, visual perception, attention, force dynamics, modal verbs, causative construction, attentional semantics, consciousness

Some years ago, Leonard Talmy, one of the best known, most important and representative cognitive linguists, collected his research in a two-volume set (Talmy, 2000a and 2000b). In these volumes, Talmy reviewed, systematized and further developed the numerous and various works he had carried out in more than 30 years of scientific and academic activity. My analysis of Talmy's cognitive semantics, which refers principally to the works published in these volumes<sup>1</sup>, is mainly carried out in the light of the recent findings of attentional semantics (Marchetti, 2003, 2005).

## **The basic assumptions of Talmy's cognitive semantics**

In Talmy's view, language is a major cognitive system in its own right, distinct from the other major ones: perception, reasoning, affect, attention, memory, cultural structure, and motor control. As such, language has some structural properties that are uniquely its own and some others that are in common either with only a few other cognitive systems, or with all other cognitive systems (Talmy, 2003a, p. 16). Such structural properties determine the specific way language organizes and shapes conceptual content and, more in general, our experience: a way that sometimes is unique to language, but that sometimes coincides with the way the other major cognitive systems structure concepts and experience.

This view of language so greatly and pervasively characterizes Talmy's work as to determine in a fundamental way the course of his linguistic research, which is mainly centred on:

- a) analyzing the specific way in which language shapes and structures conceptual content, that is, the specific patterns in which and the processes by which conceptual content is organized by and in language (Talmy, 2003a, p. 2),

and is highly constrained by the idea that:

- b) the means and procedures language uses to shape and structure conceptual content, and the patterns in which it structures conceptual content, are to a considerable extent drawn upon, and common to, the ones of the other cognitive systems (visual perception, kinaesthetic perception, attention, affect, motor control, pattern integration, reasoning, understanding, etc.).

Talmy's view of language as a major cognitive system that has its own specific characteristics and structural properties, and that, as such, differs from the other systems, despite being quite similar to Fodor's idea of "modules" (Fodor, 1983), is nonetheless distinct from it, in that the former implies a cognitive organization of structural overlaps across the various cognitive systems that can neither be accounted for, nor implied, by the strict autonomy organization of the latter. Talmy evidences several times and in several ways these overlaps. He draws for example parallels

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<sup>1</sup> The pages of the quotations refer to the paperback edition of 2003.

between the cognitive systems of language and visual perception (Talmy, 2003a, pp. 90-92, and pp. 160-167)<sup>2</sup>. Here is a list of some parallels:

- The two cognitive systems show the common function of providing conceptual *coherence*, that is, they act as a means of integrating and unifying a body of otherwise disparate conceptual material. Without such a kind of structuring: a) any selection of lexical specified concepts concurrently juxtaposed by a sentence would tend to be only a collection of elements, rather than elements assembled so as to convey an integrated idea or thought complex, and, likewise, b) any welter of optical sensations registered at any one moment from some whole visual scene would not be integrated into that kind of coherent and meaningful scene that we usually experience;
- In both cognitive systems, the fundamental function of providing conceptual coherence has two main forms of realization: coherence over a scene and coherence through time;
- Each of the two cognitive systems has a content subsystem and a structure subsystem. In language, the content subsystem is represented by the *open-class* forms, that is, the lexical elements: roots of nouns, verbs and adjectives. The structure subsystem is represented by the *closed-class* forms, that is, the grammatical elements: overt bound forms (inflections, derivations, and clitics), overt free forms (determiners, prepositions, conjunctions, and particles), abstract or implicit forms such as the major grammatical categories (e.g., verb and noun) grammatical subcategories (e.g., count noun and mass noun), grammatical relations (e.g., subject and direct object), word order pattern, and “zero” forms<sup>3</sup>. In vision, the content subsystem is represented by the concrete level of palpability, that is, the level at which an observer experiences an entity “as fully manifest and palpable, as clear and vivid, with the ostensive characteristics of precise form, texture, coloration, and movement, and with a precise location relative to oneself and to its surroundings, where this precision involves a Euclidean-type geometry and is amenable to metric quantification” (Talmy, 2003a, p. 144). The structure subsystem is mainly represented by the semiabstract level of palpability, that is, a level characterized by a topology-type and approximative geometry, at which an observer does not so much “see” an entity explicitly as “senses” its implicit presence, whether as the internal structure of an object, the delineations of a scene, or the plan of a path to be followed through obstacles.

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<sup>2</sup> Some of these parallels can be found also in Jackendoff (1987, 1992).

<sup>3</sup> On the existence in language of these two distinct systems, see also Landau & Jackendoff (1993).

- A number of particular structuring devices match across the two cognitive systems: many grammatically specified schematic categories, such as for example state of boundedness and level of exemplarity, correspond to structuring factors in visual perception.

As Talmy shows (Talmy, 2003a, p. 92), however, the two cognitive systems do not exhibit only similarities but also differences. Some major parameters that play a fundamental role in structuring visual perception – bilateral symmetry, rotation, dilatation, and colour – have little or no role at all in language. Conversely, some prominent linguistic categories (“status of reality” as expressed by inflections for mood, “status of knowledge” as expressed by evidentials, “relative temporal location” as expressed by tense markings, “degree” as expressed by inflections and modifiers, etc.) have little or no structural function in visual perception.

Another interesting case of structural overlap across different cognitive systems examined by Talmy is that concerning language and attention. According to Talmy, this structural overlap would be made possible by the fact that “the attentional system is able to establish active connections with aspects of other cognitive systems”, and, in a linkup of this sort, to lend “its own processing properties to the usual functioning of the other system” (Talmy, 2003a, p. 304). Talmy classifies such attentional processing properties according to whether they have a:

- *quantitative character*: enhancing the processing of the other linked-up system; differentiating factors in the other system in a more fine-structural fashion; processing a greater number of factors in the other system than that system itself can process; lowering the threshold above which certain kinds of activation in the other system can lead to further neural consequences;

or a:

- *quantitative and executive character*: selecting certain factors within the other linked-up system for special processing; comparing and contrasting various factors in the other system with each other; bringing in processing from still other cognitive systems to form a larger field of integrated processing; modulating or bringing about interactions between the other cognitive systems so as to make their forms of processing compatible with each other (Talmy, 2003a, p. 304).

By lending its processing properties to the other cognitive systems, attention makes it possible for the other cognitive systems to operate on the same referent object or scene in various and

different ways. Attention makes it possible in fact to perceive, categorize, conceptualize, act on, reason about, and more in general experience, the same object or event according to different patterns of various strengths. By lending its processing properties to language, for example, attention makes possible the process described by Talmy as the “*windowing of attention*”: a process by which one or more portions of a referent scene are “placed in the foreground of attention while the remainder of the scene is backgrounded” (Talmy, 2003a, p. 258). The most fundamental linguistic device that mediates the windowing of attention is the inclusion in a sentence of explicit material referring to the portion of the total scene that has to be foregrounded, and the omission of material referring to the remainder of the scene that has to be backgrounded. While the linguistic foregrounding (or windowing) of certain portions of a conceptual complex permits the allocation of greater attentional processing capabilities to only those conceptual areas that are considered as the most relevant or important relative to larger goals and concerns, the linguistic backgrounding (or gapping) of the remaining portion of the conceptual complex keeps the level of processing of the conceptual areas that are assessed as less relevant or more obvious (i.e., capable of being filled in by the hearer) at its usual unenhanced level, and allows the limited resources of the attentional system to be reserved for the more important areas.

By means of the windowing of attention, we can describe and conceptually shape the same event in different and alternative ways. An event can thus be presented either with maximal windowing over it, as in: “The crate that was in the aircraft’s cargo bay fell out of the plane through the air into the ocean”, or with different degrees of windowing or gapping over it, as in “The crate that was in the aircraft’s cargo bay fell into the ocean” (final windowing), or in “The crate that was in the aircraft’s cargo bay fell out of the airplane” (initial windowing).

The overlaps across the attentional system and the language system also make it possible for language to specify various *levels of attention*, that is, to direct greater attention either to the more integral or general characteristics of a referent, or to its more compositional or particular characteristics. Talmy identifies four different types of setting levels of attention (Talmy, 2003a, pp. 77-84):

- *Level of synthesis*: language can code different levels of synthesis, from the componential one to the Gestalt one. For instance, while the second NP of the phrase “A cluster of trees” specifies an unsynthesized multiplicity of independent items, the first NP specifies a particular Gestalt synthesized out of that multiplicity.
- *Level of exemplarity*: language can express the fact that a given multiplicity of objects manifests or possesses a given behaviour by placing in the foreground of attention either the full

complement of the multiplexity (as in: “Oysters have siphons”) or a single exemplar out of the multiplexity (as in: “An oyster has siphons”).

- *Level of baseline within a hierarchy*: “In the linguistic representation of a complex of referents that are related to each other across hierarchical levels, attention can be directed to one or another of these levels for treatment as a baseline – that is, as the principal reference with respect to which the other levels will be related” (Talmy, 2003a, p. 81). While for instance the sentence: “The boy has freckles on his face” places the baseline at the level of greatest scope (that of the whole – the boy – that includes particular parts – the face – that, in turn, have particular features – the freckles), the sentence: “There are freckles on the boy’s face” places the baseline at the level of minimal scope (that of the featural details).
- *Level of particularity*: linguistic expressions can refer to the same entity with greater or lesser exact specificity. The level of particularity can range from greater specificity (as in: “You have made a mistake here”) to greater genericity (as in: “Someone has made a mistake here”).

Another important manifestation of the overlaps across the attentional system and the language system is represented by the extensive and articulated system of *factors* used by language to assign different degrees of salience to the parts of an expression or of its reference or of the context. The importance of this system can be readily understood if one considers the fact that, in a speech situation, a hearer may variously attend to the linguistic expression produced by a speaker, to the conceptual content represented by that expression, and to the context at hand. As Talmy observes (Talmy, forthcoming), the reasons why the hearer allocates his or her attention preferably in a certain way instead of another one (for instance, more to the conceptual content of the message than to the linguistic form expressing the conceptual content) is only partially due to any intrinsically greater interest of certain elements over others, being on the contrary greatly determined by a system of *factors* that are of specifically linguistic nature. Each factor involves a particular linguistic mechanism that increases or decreases attention on a certain type of linguistic entity. Talmy has identified over fifty basic factors (Talmy, forthcoming<sup>4</sup>) that can be classified in some ten categories according to whether they concern properties of the morpheme (such as its formal properties, its componential properties, its frame and prototype properties, and its polysemy properties), morphological and syntactical properties (such as grammatical and constructional properties, and compositional properties), forms that set attention outside themselves (such as the forms that designate an outside referent as the object of attention), phonological properties (such as the morpheme length), properties of the referent (such as the forms that explicitly refer to how the

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<sup>4</sup> On the linguistic principles for assigning different degree of salience, see also Talmy, 2003b, pp.128-133.

addressee is to direct and set his or her attention), the relation between the reference and its representation (such as the relation between the intended reference vs. the actual representation), the occurrence of representation (such as the presence vs. the absence of explicit representation, and the presence vs. the absence in the lexicon of a morpheme for a particular concept), or properties of temporal progression (such as the recency of representation).

Just to illustrate how these factors work, we can consider for example the role played by positioning a given linguistic entity at a given location within a sentence. Each language may have certain locations within a sentence – for instance, initial position – that tend to foreground the referent of the linguistic entity placed there. Such added salience usually implies further accompanying cognitive effects, such as making the foregrounded referent the target of a conceptual contrast. For example, a sentence like: “Right now I can’t stand this kind of music” suggests, by foregrounding the temporal referent “right now”, that some other time would be more suitable. On the contrary, the sentence “This kind of music I can’t stand right now” suggests a different contrast, that between “this kind of music” and “another kind of music”, and implies that the latter would be all right.

Another factor is represented by the formal properties of the morpheme. A concept tends to be more or less salient in accordance with the lexical category of the form representing the concept. In general, as Talmy observes (Talmy, forthcoming), open-class linguistic categories “lend more salience than closed-class categories. Further, within open-class categories, nouns may tend to outrank verbs while, within closed-class categories, forms with phonological substance may tend to outrank forms lacking it”. To illustrate, the concepts of relative time seem much more salient when expressed by adjectives (as in: “On his *previous* arrival...” or in: “On his *upcoming* arrival...”) than by closed-class forms (as in: “When he *arrived*...” or in: “When he *will* arrive...”).

As was the case for language and vision, also in the case of language and attention it is possible to find not only commonalities but also differences. Not all the properties of attention are equally exploited by language. Some attentional properties that, for example, are present in the other cognitive systems cannot be found in language: as Talmy observes (Talmy, forthcoming), “abrupt change along any sensory parameter is one of the main mechanisms in the perceptual modalities for attracting attention to the stimulus exhibiting it. But it has a minimal role in the attentional system of language”.

In his work, Talmy (2003a and 2003b) also considers the cases of structural overlaps across, and parallels between, the language system and the following cognitive systems: kinaesthetic perception, the understanding/reasoning system, the cognitive cultural system, the pattern integrating system that underlies narrative, and the affect system.

According to Talmy, these overlaps across the language systems and the other major cognitive systems are motivated by the continuity of the brain areas dedicated to the former with those dedicated to the latter: “the language-related faculty of the brain evolved to its present character in the presence of other already existing cognitive domains (...) and no doubt developed in interaction with their mechanisms of functioning, perhaps incorporating some of these” (Talmy, 2003a, p. 96).

### **Some considerations on Talmy’s cognitive semantics**

The basic assumptions that language is a major cognitive system in its own right, distinct from the other major ones, and that as such it has some structural properties that are uniquely its own and some others that are in common with the other cognitive systems, condition in a major way Talmy’s approach to the study of meaning, directing his research toward, and predetermining, a specific kind of outcome. Let us see what this outcome is.

As we have seen, Talmy’s work is greatly based on the comparison between the language system and the other major cognitive systems (perception, attention, reasoning, affect, etc.). The assumption that the procedures language uses to structure conceptual content, and the patterns in which it structures conceptual content, are to a considerable extent drawn upon, and common to, those of the other cognitive systems, leads him to describe and analyze such linguistic procedures and patterns mainly in terms of the procedures and patterns of the particular cognitive system with which the language system is each time compared. The unavoidable outcome of this way of approaching the study of language (which we can define as a “multiple approach to language”) is that Talmy produces at least as many kinds of descriptions and analyses as there are major cognitive systems compared with the language system. If this fact, on the one hand, positively characterizes Talmy’s work as an example of the multiple and diverse ways in which linguists can approach language and the various methods and analytical tools they can adopt, on the other hand, it represents in my opinion its main limitation. Indeed, the various kinds of linguistic and semantic descriptions and analyses Talmy puts forward are so different and distinct from each other that they do not seem, at least at a first look, to be related or relatable to each other, were it not for the only reason that they are based on a general relationship between language and the other cognitive systems. Such a kind of unrelatedness unavoidably engenders the main negative impression that Talmy’s work suffers from a lack of uniformity and homogeneity. This impression seems to receive further support, moreover, by the fact that not all the kinds of analyses he proposes seem to be equally and extensively applicable to all semantic phenomena, but to have only a limited scope of applicability.



To illustrate the implications of Talmy's "multiple approach to language", let us consider his analysis of the grammatical category of modals in English (*can, may, must, shall, will, need, dare, had better, could, might, ought, should, would*, but also *have to, be supposed to, be to, get to*). Talmy's fundamental idea is that we understand modals thanks to the fact that they refer to our corporeal experience of physical forces acting in the presence or absence of barriers and obstacles. In his study on *force dynamics* (Talmy, 2003a, pp. 409-470), Talmy clearly shows how the grammatical category of modals in English forms a homogeneous grammatical class that can be semantically specified in terms of a dynamic set of forces: exertion of force, resistance to such a force, the overcoming of such resistance, blockage of the expression of force, removal of such blockage, and the like. If we consider for example the following sentence: "John cannot/may not/must not/will not/need not leave the house", we see that: *cannot* indicates that John has a tendency toward the action expressed by "leave", that some factor opposes that tendency, and that the latter is stronger, blocking the event; *may not* expresses this same force-dynamic configuration, but as limited to an interpersonal context, one where the opposing factor is an authority's denied permission; *must not* suggests an active social pressure acting against John to maintain him in place; *will not* indicates refusal by John to yield to external pressure to perform the expressed action; *need not* indicates the release from the subject of a socially based obligation, imposed from outside against the subject's desire, to perform the indicated action.

According to Talmy, the analysis in terms of force dynamics seems to gain further validation by the fact that it is able to explain not only the grammatical category of modals but also other, different linguistic entities, bringing them together into a previously unseen systematic relationship. Indeed, by resorting to the semantic category of force dynamics, it is possible for Talmy to analyze the group of verbs that take a *to*-less infinitive complement, that is, *make, let, have, help* (this group of verbs together with the group of modal verbs forms what Talmy, 2003a, p. 443, calls the "greater modal system": the regular-verb members of this larger category all take the Antagonist as subject, while the modals all take the Agonist as subject, so that the two subcategories complement each other), as well as the linguistic notion of "causative", which has always been considered by many linguists as an irreducible concept, and that now, according to Talmy, can be seen as a complex built up of novel primitive concepts (Talmy, 2003a, p. 428) (the notion of "causative" puts together both cases of "causing" and "letting" and is expressed, among others, by the words "because", "despite", "although", "against" "hindering", "helping" "leaving alone" and "trying")<sup>5</sup>, and some other concepts.

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<sup>5</sup> For an extensive analysis of the semantics of causation, see Talmy, 2003a, pp. 471-549.

Despite being able to cover so many linguistic phenomena, the semantic category (or *schematic system*, as Talmy prefers to call it) of force dynamics does not seem able however to explain all semantic phenomena. It is really difficult, indeed, to imagine what kind of contribution it could give to the analysis of even very simple and elementary linguistic expressions such as: “How are you, today?”, “Jim and John are two boys”, or “My name is George”. And I believe that Talmy too does not think that the schematic system of force dynamics can be used, or is suitable, to explain all semantic phenomena. How to explain otherwise his extensive use of the other schematic categories (“configurational structure”, “perspective”, and “distribution of attention”) to describe and analyze, for example, one of the most fundamental systems of language, if not the most fundamental one, that is, the closed-class linguistic forms (Talmy, 2003a, pp.21-96)?

It has to be noticed, moreover, that what can be described and analyzed in terms of force dynamics, can also be described and analyzed in terms of different schematic systems. For example, as Talmy himself shows, the causative construction is analyzable not only within the framework of force dynamics as the product of opposing forces, but also within the framework of the distribution of attention as a sequence of linked events or sub-events, that is, as a causal-chain event frame that can be attentionally windowed in various ways (Talmy, 2003a, pp. 271-279)<sup>6</sup>, or as a relationship between *figure* and *ground* (Talmy, 2003a, pp. 337-339).

The various and different ways of analyzing language characteristic of Talmy’s “multiple approach to language”, then, while offering new, interesting and revealing insights into language, do not possess the quality of *generality*, in the sense of being widely and equally applicable to all the various and different aspects of meaning, and usable in all linguistic instances. Taken separately, each of them allows us to understand how a distinct and partial portion of language (for instance, modals, causation, closed-class vs. open-class, etc.) functions, and throws a special, distinct light on language, letting us see and examine language from a new and unforeseen point of view (for example, as a system that allows us to variously distribute attention, or to build different conceptual perspective points from which to regard and describe objects and events). Taken together, however, these different approaches to language do not produce a coherent and uniform complex of analyses that are linked to each other by a common principle. They produce on the contrary a set of isolated, unrelated and unconnected analyses of language.

What lacks then in Talmy’s work is a unifying principle capable of relating each specific kind of analysis to the other kinds, and of integrating in a coherent system all the different approaches

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<sup>6</sup> As Talmy shows, causal sequences are usually characterized by medial gapping, that is, by the reduction or elimination of the middle portion of the casual sequence. The recurrence of this pattern seems to reflect, and can be explained by, a kind of experience recurrent from earliest age on “in which an intention and its realization, both in awareness, fell seamlessly linked. This experience includes little or no awareness of mediating actions and events” (Talmy, 2003a, p. 276).

devised and adopted by him. This does not mean, however, that Talmy does not recognize the importance of, and does not look for, generality and universality in scientific investigation: on the contrary he clearly states that his work presents “no phenomenon in any particular language for its own sake, but only insofar as it illuminates a typological or universalist issue” (Talmy, 2003a, p. 15), and that the long-range goal toward which his study is intended to contribute, is “the determination of the overall character of conceptual structure in human cognition” (Talmy, 2003a, p. 468). This simply means that his work has not fully attained such universality and generality. And this is precisely what he himself more or less explicitly admits when, presenting the five general *parameters* (the relating of one structure to another, relative quantity, degree of differentiation, combinatory structure, and evaluation) that should represent the foundational structural properties common to all the cognitive systems, he recognizes that they constitute the “*initial* outline of conceptual structure in human cognition in general” (Talmy, 2003b, p. 446: italics is mine).

### **The proposal of Attentional Semantics for a unifying principle of analysis**

Talmy’s main assumption that language is a major cognitive system in its own right, distinct from the other major ones, can then be considered as the principal reason for both the absence in his work of a unifying principle capable of relating each specific kind of analysis to the other kinds, and the difficulty he has in determining a conceptual structure common to all the cognitive systems. Would a different assumption have allowed Talmy to attain the desired level of generality and universality in his scientific investigation? What should this assumption be like? I think that an answer to these questions can be found in the proposals put forward by Attentional Semantics (Marchetti, 2003, 2005).

According to Attentional Semantics:

- (a) Everything we know is known in and through our consciousness. We come to know the world as it is thanks to our conscious experience. Conscious experience is the only level of reality we can directly access: all the other levels can be accessed only indirectly via the privileged medium of consciousness. Consequently, the world appears to us as our consciousness lets us experience it: it unavoidably bears the hallmark of our consciousness. Its qualities and characteristics are the qualities and characteristics of our consciousness.
- (b) Consciousness can be explained as the product of attentional activity. As Mack and Rock (1998) have extensively shown with their work on the phenomenon of inattentional blindness,

conscious experience in general is determined by attention: there cannot be consciousness without attention.

- (c) In this view, the phenomenal character of conscious experiences, that is, the fact that when we consciously perceive something, we have a subjective experience of that something, we feel it, we have some sensations of it, can be explained as the product of attentional activity. Attentional activity can be performed thanks to a special kind of energy: nervous energy. This energy is supplied by the organ of attention. When we perform attentional activity, we use our nervous energy. This activity directly affects the organ of attention, causing a variation in the state of the nervous energy. This variation constitutes the phenomenal aspect of consciousness (Marchetti, 2001).
- (d) Our conscious experience can be of different kinds. We experience reality as sounds, colours, pains, emotions, images, ideas, meanings, thoughts, expectations, etc. Each kind of conscious experience is determined by the way we use our attention: If we apply it to our sense-organs, we will have visual, auditory, olfactory, gustatory or tactile sensations; if we apply it to the proprioceptive system, we will have proprioceptive sensations; if we focus it on the sensory information stored in our memory, we will be able to imagine and remember something; if we use it to compare an object A with an object B, we will be able to make a judgment, or to form an idea, about them.
- (e) A very important kind of conscious experience is represented by the meanings of words and sentences, both for the space they occupy in our daily conscious life and for their specific characteristics. The meanings of words isolate, de-contextualize, “freeze” and classify in an articulated system the ever changing and multiform stream of our conscious experiences. Each meaning is composed of the sequence of invariable elements that, independently of any individual occurrence of a given conscious experience, are responsible for the production of any instance of that conscious experience. The elements composing the meanings of words are attentional operations: each word conveys the condensed instructions on the attentional operations one has to perform if one wants to consciously experience what is expressed through and by it. Words are then tools to pilot attention.
- (f) The main aim of semantics is to find the attentional instruction conveyed by the meanings of words. To achieve this goal, it has: i), to identify the sequence of the elementary conscious experiences that invariably accompany, and are prompted by, the use of the word being analyzed; and ii) describe these conscious experiences in terms of the attentional operations that are responsible for their production;

- (g) To adequately describe conscious phenomena, we also have to take into account those unconscious and non-conscious operations and organs that, directly or indirectly, serve either as a support that makes it possible for attentional operations to take place, be completed, and occur in a certain way, or as the necessary complement that makes it possible to execute and implement the activities determined and triggered by the conscious experiences. A taxonomy of these unconscious and non-conscious operations can be made on the basis of the kind of conscious experience they directly elicit or contribute to bring about. Until now, four fundamental kinds of conscious experiences have been identified (Marchetti, 2005): 1) conscious experiences that are determined by the direct application of attention to the other organs; 2) conscious experiences that are determined by the direct or indirect influence on the organ of attention of some other organs, independently of whether or not attention is applied to them; 3) conscious experiences resulting from the operations, performed by the other organs, on the products of the activity of the organ of attention; 4) conscious experiences resulting from activities that are triggered, organized and controlled by previous conscious mental acts. Accordingly, we can identify four major kinds of unconscious and non-conscious operations: 1) those performed by the sense organs, the proprioceptive system and memory that elicit most of the physical sensations and perceptions we have (tactile, visual, auditory, olfactory, gustative, proprioceptive); 2a) those performed by the interoceptive system, the internal milieu and viscera, nociceptors, and all those substances (such as hormones, neurotransmitters, neuromodulators) that supply the organ of attention, eliciting physiological states such as pain, pleasure, thirst, hunger, and tiredness, and psychological states such as emotions, moods, and impulses; 2b) those represented by all the automatisms, schemas, frames that we have acquired and learnt during our life and that make us perform complex activities such as driving and playing games; 3) those performed by organs such as memory, comparison systems and representational systems that allow us to variously combine our conscious experiences and to relate conscious experiences to each other: in a word, to think; 4) those performed by organs such as the musculoskeletal system and what I have called the “schema of self” (Marchetti, 2001). They allow us to intentionally plan and perform actions and activities, and to have those conscious experiences that are associated with self-consciousness: that is, those that make us aware of the fact that, by means of our conscious activity, we can govern and exert a voluntary control over our own actions, affect the course of our own actions, set our own aims and objectives, and choose what to do next.
- (h) The identification of these kinds of unconscious and non-conscious operations is essential for an exhaustive analysis and description of the elementary attentional operations that compose the

meanings of words, and the way these attentional operations are combined. Without them it would be practically impossible to account for the different ways attentional operations take place, can be combined and related, give rise to other conscious states, can be modulated and controlled by earlier conscious states. They represent the necessary complement and counterpart of attentional operations in the construction of most of, if not all, meanings. The proposed taxonomy helps us classify words in relation to the kind of unconscious and non-conscious operations we have to resort to when analyzing their meanings. Following such a taxonomy, we can classify words according to whether they refer to conscious experiences of: 1) exteroceptive and proprioceptive sensations, such as colours, sounds, tastes, smells and movements; sensations related to space; physical objects, beings, events and activities; 2a) interoceptive sensations, such as thirst, hunger, tiredness, and sexual desire; sensations of pain, pleasure and time; innate psychological states and activities, such as emotions, feelings, moods; 2b) culturally acquired psychological states and activities, such as motivations, intentions, expectations, desires, interests and aspirations; complex activities that, to be performed, require learnt schemas, frames, and automatisms; 3) thought activity and the constituents and operators that make this activity possible, such as conjunctions, prepositions, relative pronouns, the name-adjective correlation, the subject-verb correlation, logical and mathematical operators, articles, the singular and plural forms, indefinite adjectives and pronouns, abstract nouns, verbs referring to abstract actions, etc., that is, most of what Ceccato has defined as “mental categories” (Ceccato, 1969, Ceccato and Zonta, 1980); or: 4) meta-mental activities, usually identified by modal auxiliary verbs and more in general verbs denoting intention, volition, and personal decision.

Therefore, for Attentional Semantics, all kinds of conscious experiences - whether purely physical, such as visual, auditory, tactile, and muscular perceptions, or purely mental, such as thoughts, ideas, concepts, and meanings – can in the end be explained in terms of attentional operations, even though via the means of the unconscious operations that directly elicit, or somehow interact with, them. Things as disparate and diverse as sensations, feelings, memories, ideas, concepts, meanings, intentions, emotions, etc., being all conscious phenomena, find their unifying principle in attention. Attention becomes then the common element of analysis capable of connecting the various and different experiential and cognitive fields.

Talmy’s observation that each major cognitive system has its own way of processing information and structuring conceptual content, and provides a specific type of cognition different from the types provided by the other cognitive systems, is certainly right: the visual system lets us perceive

and make things that reasoning does not. Also his observations concerning the overlaps across the various major cognitive systems are true: language *does* have certain commonalities with vision. What he does not seem to realize is that it is possible to trace a common factor or structural property across all the cognitive systems inasmuch as each of them gives rise to (albeit various, specific and different) conscious phenomena. This common factor or structural property is what primarily makes consciousness possible: attention.

Talmy rightly observes that the specific structural properties of each cognitive system determine the specific way each cognitive system organizes and shapes conceptual content. But it must be added that this shaping of the conceptual content *is* first of all a shaping of our way of consciously experiencing (in its most general sense: perceiving, hearing, seeing, thinking about, imagining, etc.) the world. The fact, for example, that the visual system structures a scene according to certain properties (frontal vision, bilateral symmetry, rotation, dilatation, certain colours, etc.) means primarily: that it makes us consciously perceive the scene in a certain way, and only in that way; that we cannot see what stays behind us as we are looking at what stays in front of us; that we cannot see ultraviolet colours and infrared colours; but that we can perceive depth, moving objects, etc. Every kind of shaping of the conceptual content, caused by whatever kind of cognitive system, in the end results in, and produces, a specific conscious experience. Since consciousness is a product of attention, of how attention interacts with the other organs and systems, of the way its working is modulated by their activity, and of the operations they perform on the products of attentional activity, each specific way of shaping consciousness induced by a specific structuring of the conceptual content implies a specific way of structuring the working of attention.

### **What separates Talmy's cognitive semantics from Attentional Semantics**

Talmy seems anyway to be or come very close to the solution envisaged by Attentional Semantics in more than one occasion, as when for example he openly admits that cognitive semantics is centred on "content experienced in consciousness". For him (Talmy, 2003a, p.4), the main object of study of cognitive semantics is "qualitative mental phenomena as they exist in awareness"; cognitive semantics would be then a branch of phenomenology, and consequently "the only instrumentality that can access the phenomenological content and structure of consciousness is that of introspection". Here, Talmy realizes that the main gate to the study of meaning is consciousness: unfortunately, he does not fully develop and elaborate this idea to its extreme consequences.

In another occasion, he recognizes (Talmy, forthcoming) that a very wide range of linguistic phenomena (the relative salience of the "figure" and "ground" in a represented situation; the

“windowing” of attention; the attentional backgrounding vs. foregrounding of concepts when expressed by closed-class grammatical form vs. by open-class lexical forms; the “level” of attention set either on the whole of a scene or on its componential makeup; the differential attention, in a force-dynamic opposition, on the Agonist and the Antagonist; “fictive motion”; the backgrounding vs. the foregrounding of a concept when it is expressed in the verb complex vs. by a nominal complement; the backgrounding vs. the foregrounding of a proposition when it is expressed by a subordinate clause vs. by a main clause; the conscious as against unconscious processes in the acquisition, manifestation, and imparting of cultural patterns; etc.), which he had previously analyzed by means of various and different schematic systems, pertain all to “the same single cognitive system of attention” and can all be placed within this explanatory framework.

In this case, he sees the possibility of unifying under a common analytical principle most of the linguistic phenomena he had before separately investigated, described, and explained. However, he does not fully exploit this possibility in order to analyze the meanings of words. When he extensively and accurately describes the various (either automatic or consciously controlled) mechanisms afforded by language to assign different degrees of salience to the parts of an expression (mechanisms that allow the speaker to foreground certain elements while backgrounding the other elements, and represent the same scene or event from various perspectives and in various ways<sup>7</sup>), he clearly sees that language and words have an important function in directing and modulating the hearer’s attention; but, he does not go any further: he simply describes some superficial, *prima facie* effects that certain usages of language have on the hearer’s attention, and the mechanisms underlying these usages. Lacking a full awareness of the role played by attention in shaping consciousness, he does not investigate thoroughly the implications that considering language as a means for piloting attention has for the study of meaning. Therefore, he does not see that the use of language entails some deeper and more complex attentional effects than the superficial ones he describes: effects that lead not only to a coarse and general setting of strength of attention, but also to perform very fine, sophisticated and articulated mental and physical operations. In a word, he does not envisage the possibility of seeing the meanings of words as condensed, de-contextualized and “frozen” instructions on the attentional (and related non-attentional) operations one has to perform in order to consciously experience what the words refer to.

I think that this possibility could be easily envisaged when the following facts are taken into account.



1. Language does not only set different degrees of strength of attention on different parts of an expression, or increases or decreases attention on a certain type of linguistic entity: it also gives instructions on other kinds of attentional operations. For example, it conveys instructions on where to direct one's attention ("look *there!*"), when to direct it ("look at me *now*"), where not to direct it ("*do not* look at her"), how long to sustain it ("look at it *just for a while*"), how to focus it ("if we look at this *from this point of view...*"), how intensively to focus it ("look at it *carefully*"), how widely or narrowly to focus it ("look at *the whole scene*", "look only at *this part* of the scene"), etc. However, what counts more is that the instructions conveyed by words and grammatical constructions often require that very complex and structured sequences of attentional operations are performed: and this, despite the fact that these words and grammatical constructions are very commonly and frequently used. When, for example an operation of comparison is required ("can you please control if A is *higher than* B?"), one has first to focus one's attention on B, then suspend it momentarily from B, but in such a way as to keep or maintain B in the background as the term of reference, for the time necessary to focus on A and measure A against B. Also the instruction imparted by the plural construction, despite being so common, is very complex. Indeed, besides requiring an operation of comparison, it needs some additional operations. When one uses the plural, one has to repeatedly focus one's attention on the kind of object or event that is going to be pluralized, so as to get (i.e., perceive, imagine, think about, see, etc.) each time something that is considered to be equal to the things one has previously got, but that differs from them for some related aspect: the place occupied, the external form, the time in which things occur, etc. (Marchetti, 1993). Let us finally consider all those cases in which a grammatical instruction is given of referring one thing to another, such as for example when we use the adjective-substantive correlation or the subject-verb correlation (Marchetti, 1993). In these cases, what one perceives, imagines, thinks about, sees, etc. (the adjective, the verb) is produced on the basis of a term or frame or reference (the substantive, the subject) that was previously built (by means of the attentional operations described for the operation of comparison). From all these examples, one can see, then, how words convey instructions that require the performance of sophisticated and articulated sequences of attentional (and related non-attentional) operations of various kinds.
2. All the basic concepts Talmy<sup>8</sup> uses to perform his semantic analyses, whether in the form of schematic systems or of simpler concepts, such as Figure, Ground, Path, Motion, Manner and Cause (Talmy, 2003b, pp. 19-212), can be further analyzed in, and reduced to, attentional (and

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<sup>7</sup> Talmy terms the cognitive capacity to construe a scene in a range of ways the principle of "conceptual alternativity" (Talmy, 2003a, p. 14).

<sup>8</sup> But also other linguists: see for example Wierzbicka (1972, 1996).

related non-attentional) operations: theoretically, there is no word that cannot be analyzed in attentional terms (Ceccato and Zonta, 1980), including the words that are used as *definiens*, such as “attention” and “operation” (Vaccarino, 1981). For example, the semantics of causation, usually lexicalized by terms such as “because of”, “as a result of”, and “from”, as in: “the vase broke from a ball rolling into it”, results, generally speaking, from a specific combination of the attentional operations involved in the operation of comparison described above: i) assuming something, say A, as term of reference (the unbroken vase); ii) realizing that an instance of A, say A<sub>1</sub> (the broken vase), is different from A; iii) assigning B (a rolling ball) as the subject of the difference between A and A<sub>1</sub>, in the sense that the difference would not occur if B were not present<sup>9</sup>.

3. One of the main (perhaps the main) features of language, which Talmy extensively acknowledges and investigates, that is, the possibility of construing or categorizing a given situation, event or object in various and different ways (the same spatial configuration can be described for example as “X is above Y” or “Y is below X”; a “wood” can also be described as “an area of land covered with growing trees”), is not only a linguistic phenomenon: it is a phenomenon that characterizes and concerns all cognitive systems, and more in general our mental activity. When looking at a certain object (for example, a pencil), we can perceive different things (the whole pencil, a part of it, its colour, etc.). When listening to certain music, we can perceive the whole piece, a part of it, only a certain instrument, etc. The possibility of construing, categorizing, perceiving, thinking about, imagining, etc. a certain situation, event or object in various and different ways, is given primarily by the ability we have to voluntarily and intentionally control (i.e., stop, hinder, inhibit, pilot, trigger, change, adapt, etc.) our attentional activity. Indeed, depending on where, when, how, and why we move our attention, we can have different and various conscious experiences of the world we live in. Being able to control our attentional activity at will, we have the fundamental possibility of, firstly, stopping doing what we were doing and starting a new activity, and, secondly, modifying our previous or usual way of doing things. This entails that we can: relate things, objects, and events to each other in new and different ways; perceive, see, think about, imagine, describe the same object in different ways; perceive, see, think about, imagine, describe different objects in the same way; produce new products; and more in general, expand our knowledge<sup>10</sup>. What language does through semantic and syntactical means is precisely to implement and realize this ability in a more expanded, structured, systematized and consolidated way than the other cognitive systems. The

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<sup>9</sup> For the analysis of causation, see for example Ceccato, 1974, pp. 132-135.

<sup>10</sup> On our ability to stop attentional activity, and its importance for our mental life, see Logan (1983, 1985), Marchetti (1997, 2000) and Umiltà (1988, 1994).

analysis of meanings and grammar, by describing and revealing how language fully exploits and puts into practice this ability, should be the privileged way of showing the attentional operations and mechanisms on which the ability is founded.

## **Conclusion**

My criticism of Talmy's cognitive semantics highlights a major negative fault of his work: the lack of a unifying principle capable of relating all the specific kinds of analyses he performed. To bridge this gap, I propose attention as a unifying principle of analysis. I think that by adopting attention as the fundamental semantic unit, one can succeed in integrating and relating to each other Talmy's various approaches to language, and building a coherent and comprehensive framework of analysis of meaning.

My criticism of Talmy's cognitive semantics, being made principally in the light of the recent findings of attentional semantics (Marchetti, 2003, 2005), has necessarily been centred on some aspects and part of it, and has had to omit considering and analyzing many other aspects and parts of such an exceptionally in-depth and wide-ranging work. Moreover, it could hardly do justice to the enthusiasm and curiosity that only a direct and personal reading of Talmy's work is able to transmit to whoever is interested in semantics and linguistics.

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