Spatial Phenomenology and Cognitive Linguistics: The Case of Bodily and Perceptual Spaces

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ABSTRACT. A recurrent assumption in linguistic theory is the semantically basic nature of spatial senses, particularly the kind of spatial relations expressed by grammatical function words like adpositions. It has been argued that such linguistic forms express meanings closely related to perceptual experience, but they also extend to non-spatial meanings through processes of abstraction. In this way, space can be seen as a mediating link between cognition and language. In this paper, we explore this privileged status of space by examining two different proposals for the basic character of space in language and experience, both emanating from various strands in cognitive linguistics: *perceptual space* and *bodily space*. We compare how these spaces have been spelled out with similar proposals from phenomenological philosophy. In phenomenology, perceptual and bodily space have been of focal interest due to their constitutive role for human experience. From this comparison, we argue that there are clear connections between pre-linguistic capacities like visual perception and language, but in order to be viable proposals these connections need to be aware of the differences between meaning in

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language and in perception. Furthermore, while sympathetic to the view that space is experientially foundational, we stress that space is at the same time conceptually polysemous and open to cultural-specific meaning ascriptions. We show that parsing out the variations of space and analyzing the constitutive links between them is required for differentiating the various notions of space that have been proposed as basic, but nevertheless collocated under a general and vague concept of space. Following in the veins of the *spatial turn*, we show that the heterogeneity of space can be thought as invoking a plural conception of space. Moreover, we argue that the idea of heterogeneity of space can be accommodated introducing the concept of *n-spaces*.

1. Introduction

It is a long-standing assumption that the study of language provides knowledge about the human mind. Among many examples in the history of ideas, we cite Leibniz's claim that language is «the best mirror of the human mind, and that an exact analysis of the signification of words would give insight into the operations of the understanding better than any other means».[1] The connection between mind, meaning and language was for a large part of the 20th century anathema to linguistic research, but these questions have for the last decades returned through cognitive linguistics. We can thus find indications of a similar view on language to that expressed by Leibniz as the starting point for investigation. For instance, Evans and Green state that «language reflects patterns of thought. Therefore, to study language […] is to study patterns of conceptualization. Language offers a window into cognitive function, providing insights into the nature, structure and organization of thoughts and ideas».[2]

A common approach for further substantiating the immediate relation between language and cognition has been by considering spatial senses, often defined in terms of geometrical relations, as semantically and cognitively basic, i.e., more foundational vis-à-vis

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1   Leibniz 1966 [1765], quoted in Fortis 2012.

2   Evans and Green 2007, 5.

categorization, learning, etc. That is, spatial words are used to express abstract senses,[3] but the spatial and geometrical sense of a preposition like English *o n* (as in *the lamp is <u>on</u> the table*) is more basic than its temporal use (as in *the lecture is <u>on</u> Friday*). By virtue of being basic, the spatial domain also functions as a structural template for thinking and talking about more abstract domains (such as time). Following this view of spatial senses, linguistic meaning can be described and analyzed as derived from concrete experience of our physical, and thereby spatial. In its most extreme form, such a claim would consider linguistic meaning in all its forms as founded on general cognitive principles not restricted to language, such as perceptual categorization and sensorimotor abilities. This prioritized status attributed to spatial meaning is further seen in proposals suggesting a devoted set of linguistic resources first and foremost expressing fundamental topological and geometrical spatial relations.[4] The claim that spatial senses are linguistically basic can also be understood as that they are grounded in pre-linguistic meanings formed through sensorimotor embodied interactions with the physical world. These are the templates for basic linguistic meaning, which extends from spatial to less tangible senses such as time, existence and cause.[5]

In this paper, we are concerned with the ascribed importance given t o *space*.[6] Spatial meaning is presumably universal in the world's languages – expressed in form classes and construction like adpositions, adjectives, case markers, posture verbs, body part constructions, and classificatory verbs. This universal status of spatial relations set aside, we ask why space occupies such a theoretically privileged role. Quite commonsensically, it would seem reasonable to assume that spatial forms are linguistically basic, and so has indeed

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3   HERSKOVITS 1986; LAKOFF 1987; LANGACKER 1987; TALMY 2000, *inter alia.*

4   LANG, CARSTENSEN, & SIMMONS 1991; LANDAU & JACKENDOFF 1993; LYONS 1977; but for a rather functional approach see VANDELOISE 1991.

5   LYONS 1977; LAKOFF & JOHNSON 1980; LANGACKER 1991.

6   «Raum umgibt uns, wir sind stets ein Teil davon. Insofern haben wir zunächst einmal gar kein sprachliches Problem vor uns. Vielmehr stellen sich die Fragen, wie wir Räume erfahren, wie sie für uns erfahrbar werden und wie wir mit ihnen umgehen» (SCHWEIZER in VATER 1991, 1).

been assumed outside of cognitive linguists by linguists and philosophers alike.[7] But at the same time, exactly in what sense space is basic is rarely defined, and contains several different proposals.[8] Space is thus presumed to be basic but it is so in a way that harbors a multiple or heterogeneous assemblage of various notions and concepts.[9]

We examine two different suggestions for space as semantically basic and linguistically constitutive: space in visual perception and in bodily capacities. These suggestions, both emanating from cognitive linguistics, have in common that they take space to be an especially important link between language and cognition. Similar discussions concerning the importance of space can be found in phenomenological philosophy, albeit not typically connected to linguistic meaning. By comparing proposals from these two traditions, we argue that the relation between language and pre-linguistic experience is not as

7   e.g. HJELMSLEV 1972 [1935–7]; HEIDEGGER 1962 [1927], respectively.

8   A simple DWDS (Digitales Wörterbuch der deutschen Sprache) corpus search presents the etymology of the term space in German: **Raum** m. «sich dreidimensional ausdehnender Platz [3D extended place (based on geometry)], Weite [distance], Zimmer [room], nicht genau begrenztes geographisches Gebiet [unspecified geographic area], Weltall' [cosmos], ahd. *rūm* m. (11. century), mhd. *rūm, rūn, roum*. 'Raum, Platz zu freier Bewegung oder zum Aufenthalt [place of free motion and residence]', auch 'was wegzuräumen ist, Kehricht' [what needs be cleared away] (*Abraum*, see below), asächs. mnd. aengl. (auch 'Gelegenheit' [opportunity]) *rūm* m., mnl. *ruum*, nl. *ruim*, English *room*, Swedish *rum*, anord. got. *rūm* n. sind Substantivierungen (germ. **rūma-* m. und n.) des mit dem Suffix ie. *-mo-* gebildeten Adjektivs germ. **rūma-*, ahd. *rūmi* (neben *rūmo* Adv.) 'weit, fern' [far away, remote] (8. century.), mhd. *rūm(e)* 'geräumig' [spacious], n h d . *raum* (nur noch seemännisch) 'weit', (im Forstwesen[forestry]) 'offen, licht' [opening, clearing](*geraum, geräumig*, s. unten), asächs. *rūmo* Adv., mnd. *rūm*, mnl. *ruum*, *rūme*, nl. *ruim*, aengl. *rūm* (auch 'offen, reichlich, frei, freigebig, edel'), anord. *rūmr*, got. *rūms* 'geräumig'[spacious]. Außergerm. stellt sich dazu awest. *ravah-* 'freier Raum, Freiheit'[free space, freedom], lat. *rūs* (Gen. *rūris*) 'Land[rural] (im Gegensatz zur Stadt [as opposed to city]), Landgut'[manor], mir. *rōe, rōi* 'ebenes Feld'[plane field]. Erschließbar ist ie. **rēu-, *rū-* 'weiter Raum; öffnen'[wider space; open]. – **geraum** Adj., nur noch in den Verbindungen *eine geraume* ('längere' [a longer period in time]) *Zeit, Weile*, ahd. *girūmi* 'weit' (8. century), mhd. *gerūm(e)*». All translations by Johan Blomberg and Martin Thiering.

9   Another case in point is that space is one of the crucial domains in which linguistic effects on cognition have been shown (LEVINSON 2003; see also EVERETT 2013; HAUN et al. 2011; GUMPERZ and LEVINSON 1996; LEVINSON and WILKINS 2006; THIERING 2013a).

direct and immediate as i s often assumed in cognitive linguistics. Moreover, whereas space has been left as an unanalyzed and incontestable primitive, it is phenomenologically characterized as on the one hand experientially foundational, but on the other hand as conceptually polysemous. To consider space as basic requires an explication of the conceptual polysemy as well as a teasing out of the possible constitutive links between the various forms of space.

We open the discussion in Section 2 by tracing a few parallels and differences between language and visual perception. We do so by comparing attempts to model linguistic meaning on the basis of visual perception with Gestalt psychology and phenomenological accounts of perception (just as Talmy introduced it as «[c]ognitive semantics is thus a branch of phenomenology, specifically, the phenomenology of conceptual content and its structure in language»).[10] On the latter interpretation of visual perception, it is possible to account for the ways in which visual perception and linguistic meaning are both similar and different. In Section 3, we address the claim that meaning – in language and otherwise – emanates from bodily capacities. In contrast to the tendency to consider the body as primarily a physical body, we propose that the body has a dual experiential character as both a lived and physical body. With the help of this duality, it is possible to reinterpret previous analyses of spatial-linguistic phenomena and also point to some possible ways for future research. Moreover, we argue that an adequately spelled-out version of the body's dual constitutive functioning opens up a relation to the environing world, or what in phenomenological parlance is called the "life-world". Following this train of thought, in Section 4 we trace the links between different concepts of space, especially from a historical perspective. The epistemological primacy of space is in part the result of privileging a particular form of space at the expense of others. We summarize in Section 5 with a conclusion, and on the basis of our discussion, point out three questions of further relevance for both theoretical and empirical research.

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10 TALMY 2000, 4.

2. Can visual perception ground language or vice versa?

It is often held that linguistic meaning is closely related to perceptual space, in particular to visual space.[11] In Gestalt psychology, perception is guided by universal categorization principles, so-called Gestalt principles. These principles are first and foremost non-linguistic, but language aids the perceiver as a constructive device in ascribing meaning to perceptual Gestalts. Several linguists have picked up on a similar view, and have attempted to detect principles shared by visual perception and linguistic meaning. Before we turn to these accounts, one can notice at least two general similiarities between the two. First, both language and vision are at every given moment incomplete and open to further exploration. There is never a moment when the full potential of perception and language is exhausted, but there always remains the possibility to go on inquiring, as is proposed in theories of fuzzy boundaries[12] as well as Wittgenstein's[13] family resemblances and language games.

It is partly due to this open-ended (or "horizontal", see Section 3 below) structure that meaning can be inferred and "filled in" in both language and perception. With respect to the latter, it is easy to come to think of the example of the "Kanizsa triangle" shown in Figure 1.[14] Even though human beings perceive a white triangle, it is at the same time an "illusory" impression resulting from perceptual construction mechanisms, based on what Kanizsa called "cognitive contours".[15] In a perceptual situation, be it in urban, rural or even virtual space where

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11   e.g. MILLER and JOHNSON-LAIRD 1976.

12   e.g. LAKOFF 1987.

13   WITTGENSTEIN 1953.

14   KANIZSA 1976.

15   THIERING 2015 argues that to perceive the cognitive contours of a triangle as a geometrical figure requires acquaintance with the basics of geometry through training in for instance elementary school. In other words, to perceive a polygon with three edges as a triangle is not a universal principle independent of cultural heritage and subjective encoding preferences. In other words, these principles are to a considerable extent based on cultural- and learner-specific knowledge.

we have to orient ourselves, Gestalt principles can be seen as a cognitive economic triangulation process for navigation.[16] That is, in a given visual situation the cognitive apparatus adds the missing links or information cues to construe a reasonable Gestalt.[17] If applied to a less constructed context, Kanisza's triangle indicates that even though the perceptually available information in a particular situation might be scarce, the cognitive apparatus nevertheless construes reasonably coherent Gestalts in a process, which, in a sense, could be described as "adding" or "filling in" the missing visual information. Similarly to such underspecification, a specific linguistic expression can be incomplete in several different ways – one might not catch the expression in its entirety or its meaning might be semantically underspecified, and so on – but it is nevertheless possible to understand.
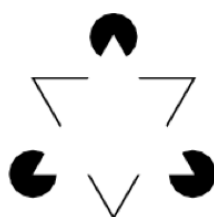
Figure 1. *Kanizsa's Triangle[18]. (Image from Wikimedia Commons).*

A second similarity between visual perception and linguistic meaning is ambiguity – or perhaps better yet, an indefinite deferral of complete determination. One of the classical examples is Jastrow's[19] so-called "rabbit-duck illusion" made famous by Ludwig Wittgenstein (see Figure 2). Wittgenstein[20] argues in the second part of his *Philosophical Investigations* that there are at least two ways of perceiving the picture (a so-called *Vexierbild* or *Kippfigur*): human

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16 Thiering 2015, p. 26, 31-34, 57-63.
17 Marr 1982, especially his 2.5D and 3D sketches.
18 Kanisza 1979, 192–221.
19 Jastrow 1899.
20 Wittgenstein 1953.

beings either perceive the image as a duck or a rabbit, but it is not possible to see it as representing both at the same time.[21] Following the discussion of Thiering[22] regarding the Kanizsa triangle, it could be speculated that also the ability to oscillate between the duck and the rabbit might depend on cultural and learner knowledge.[23]

Human beings construct different aspects in setting different reference points. In a constant shifting of aspects, human beings *see* ears at one moment, but in the next moment the same parts are *seen* as a beak. In other words, even though there is ambiguity in that the same drawing represents both a duck *and* a rabbit, it is nevertheless at every moment seen as either one or the other, something Wittgenstein describes as "aspektsehen". The indeterminacy arises from oscillating between *seeing* it as either rabbit or duck. Wittgenstein argues that this is the result of an interpretation on the subject's behalf, described as "continuous seeing" of an aspect and the "dawning" of an aspect.[24] Similar to the ambiguity of the duck-rabbit, linguistic meaning can, and often does, involve some kind of ambiguity. One simple example is polysemy, like the two different senses expressed by the sentence in (1) dependent on whether *duck* is interpreted as a noun or a verb. What these examples show, however, is that the decision on which meaning to settle for is in principle a matter of interpretation and encoding decisions (see the stage analogy in Section 2.1 below on the constructive process; see also Thiering 2011 on visual meaning ascription through language prompts).

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21 In most Western cultures human beings are used to visual perception using a number of devices on a daily basis like tablets, computers, smartphones, GPS systems. But this is not a universal given, but a cultural-specific way of interacting with the environment (see THIERING and SCHIEFENHÖVEL 2013 and 2016 on cultures with a less visually-driven history).

22 THIERING 2015.

23 see also SEGALL et al. 1963.

24 WITTGENSTEIN 2006 [1953], 520. While Wittgenstein proposes that meaning ascription in visual perception is based on language-driven encoding decisions, we only want to point to a similiarity between language and visual perception without discussing the question of possible linguistic influence on perception.

1. We saw her duck.
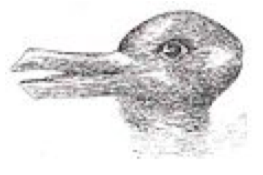
Figure 2. *Rabbit-Duck Illusion. (Image from Wikimedia Commons; originally Jastrow 1899)*

The two processes of filling-in and ambiguity are aspects in which perception and (specific facets of) language are similar to one another. However, in cognitive linguistics these two processes have not been – to our knowledge – discussed. Instead, attempts have rather been made to analyze and explain the meaning and structure of linguistic expressions in terms of how visual perception structure meaning. Our following discussion centers on two proposals where visual perception have been used to model linguistic meaning: the connection between language and perception in the works of Langacker and Talmy.[25] Both of these make explicit appeal to the close relation between the two, and propose analyses of linguistic meaning based on features of visual perception.

2.1. Predication and perception: back to language
Langacker proposes that a simple spatial expression like (2) is comprised of a focused entity of conception (*the lamp*) in relation to another entity (*the table*). These two are called "trajector" and "landmark(s)", respectively.[26]

2. The lamp is above the table.

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25 LANGACKER 1982, 1987; TALMY 2000.
26 LANGACKER 1987.

The relation between the trajector and the landmark is described as asymmetrical: «a trajector as the figure in a relational profile; other salient entities are identified as landmarks».[27] Thus, the sentence in (2) expresses a certain vertical distance between the trajector and the landmark. Langacker goes on to add that predicative structures in general manifest this asymmetry.

> With a few if any exceptions, relational predications display an inherent asymmetry in the presentation of their participants. This asymmetry is not reducible to semantic roles, i.e. the nature of participants involvement in the profiled relationship. [...] it is observable even for predications that designate symmetrical relationships: X equals Y is not precisely equivalent semantically to Y equals X, nor is X resembles Y equivalent to Y resembles X. [...] In the expression X equals Y [...], X is referred to as a trajector, and Y as a landmark. This terminology reflects the intuitive judgment that Y provides a reference point with respect to which X is evaluated or situated.[28]

The asymmetrical relation between a trajector and a landmark does not exist in a vacuum, either in perception or in language. A predication could thus be seen as situated against a more general region of available conceptions, what in phenomenological parlance would be phrased as an "intentional horizon".[29] There is always the possibility to inquire further and take a different perspective on a situation. Langacker proposes that this perspectival nature is shown in language through the variety of ways that one can linguistically profile one and the same situation. These variations are indicated by what Langacker[30] calls "construal". One form of construal operation

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27 Langacker 1987, 231

28 Ibid.

29 see Zlatev 2010 on the parallels between Langacker and phenomenological accounts of intentionality

30 Langacker 1987 ; 1991.

identified by Langacker is the varying attention to details. This can be exemplified with the sentences (3)–(5) where the same situation is referred to with different degrees of specificity.[31]

   3. Someone does something.
   4. A person bites an animal.
   5. The small blonde man with a mustache bites the big furry dog in the tail.

These variations could be seen as the result of the information perceptually available to the speaker, or signal different kinds of communicative intents on the speaker's behalf.[32] Alternations in construal are thus largely based on processes of visual perception, such as a higher degree of attention to distinguishing traits of the agent and patient in (5) than in (3) and (4). Apart from the attention to details, other kinds of perceptual alternations can be linguistically marked. For instance, the spatial uses of verbs such as *come* vs. *go*, and adverbs like *here* vs. *there* do not only locate entities in space, but they do so by explicitly marking the viewpoint (typically that of the speaker) of the construed situation, that is, the position a perceiver occupies in a staged construal. To a large extent, Langacker's account of linguistic meaning is based on the informational structure of visual perception, but instead of using the phenomenological metaphor[33] of horizon for the situated character of perception, Langacker uses the

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31 see on the degree of specificity, that is, the morphosyntactic detail of linguistic encodings in a language, SVOROU 1993; THIERING 2013b.

32 Notably, the notion of construal does not differentiate between at least the following three different aspects: (a) the organization of meaning at a cognitive level, (b) the perspective of conventional semantic expressions, and (c) the situated concerns in an actual linguistic discourse (see MÖTTÖNEN 2016). Still, Langacker's term identifies a non-objective, speaker-dependent meaning ascription. The term also allows for meaning variation that is not captured in formal approaches.

33 «Already the other body has ceased to be a mere fragment of the world, and become the theatre of a certain process of elaboration, and, as it were, a certain 'view' of the world. There is taking place over there a certain manipulation of things hitherto my property» (MERLEAU-PONTY 2005, 115, 412; see also 361, and below).

analogy of a "stage".[34] Before giving the quote defining the analogy, one might simply ask what is to be expected going to a theatre. The mental model, that is, the cognitive representation or schema of a theatre might imply a play, modern or old, actors on a stage, objects on the stage, a certain perspective taken based on the seating system. Moreover, the stage contains different objects in certain distances, sizes, scales and scopes. Perceivers focus on some aspects on stage, while others are left behind. Langacker formulates this in a slightly more complicated parlance, but the idea of the scope, the direction of attention, and the locus of attention certainly specifies some crucial aspects of the viewing process and arrangement of attending a theatre.[35]

> [T]he stage model […] pertains to how we apprehend the outside world. The term is meant to suggest that the general process is analogous to the special case of watching a play. We cannot see everything at once, so viewing the world requires the directing and focusing of attention. From the maximal field of view, we select a limited area as the general locus of attention (the analog of looking at the stage). Within this region, we focus our attention specifically on certain elements (analogous to actors and props). Of course, we are less concerned with vision as such than with the parallels it exhibits with conception overall (viewing in the broad sense). The stage model does seem broadly applicable. In particular, the maximal field of view, the onstage region, and the focus of attention correspond respectively to an expression's maximal scope, immediate scope, and profile.[36]

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34 LANGACKER 2008.

35 See THIERING 2015, 27-29.

36 LANGACKER 2008, 356. On an earlier account Langacker writes: «Just as actors move about the stage and handle various props, we tend to organize the scenes we observe in terms of distinct 'participants' who interact within an inclusive and reasonably stable 'setting'. We further impose structure along the temporal axis, by chunking clusters of temporally

The importance of space is in Langacker's cognitive grammar not restricted to sentences expressing perceptual situations, but extends to meanings that are not necessarily perceptually available. Thus, Langacker would argue that the subject-object structure in language actually reflects a general cognitive structure emergent from perceptual categorization of spatial situations in terms of trajector and landmark. Of course, where the latter is a semantic distinction, the former is a formal and grammatical distinction. Aware of this difference, Langacker states that «[t]he trajector/landmark distinction is far more general and broadly applicable than the subject/object distinction as this is traditionally understood».[37] However, given the insistence on language as based on a broad cognitive organization of meaning, we could say that Langacker is arguing for the structure of visual perception as an indispensable component for grammatical analysis. A case in point is that before Langacker coined the term "cognitive grammar", his framework was called "space grammar".[38] It is indicative that perceptual space is deemed central enough to be used as the name of a theory on linguistic structures.

2.2 Figure-ground in cognitive semantics and gestalt theory

An account similar to that of cognitive grammar is Talmy's "cognitive semantics".[39] Talmy emphasizes the importance of space for meaning, not only in that expressions of spatial relations are of focal concern, but also that the organization of visual perception is used to model and analyze linguistic meaning more generally.[40] In doing so, Talmy has a quite specific and delimited understanding of space in mind. As we shall see, space is specifically regarded as geometrical in character. To illustrate how such a geometrical space prefigures in Talmy's

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contiguous interactions (particularly those involving common participants) into discrete 'events'» (LANGACKER 1990, 210).

37 LANGACKER 1987, 232 ; see also CIENKI 1989, 44-47.
38 LANGACKER 1987.
39 TALMY 2000.
40 see THIERING 2011, 2015.

account, we touch on two particularly important analyses in cognitive semantics: the use of the Gestalt psychological terms "figure" and "ground", and how they are put to use in Talmy's influential semantic and conceptual analysis of motion.[41]

Beginning with the two Gestalt psychological terms, Talmy's understanding of figure and ground is quite specific. In comparison with Gestalt psychology, where figure and ground are used to point to foregrounded vs. backgrounded structures of perception, Talmy uses the terms to describe how linguistic meaning components are distributed in a sentence. Talmy shows that arguably similar sentences such as (6) and (7) are not semantically equivalent, despite having the same truth conditions. These two sentences present two different (inverse) forms of a symmetric relation.[42] In (6), the "bike" is the figure and the "house" is the ground, whereas their relation is reversed in (7). Even though it might be more natural to consider the smaller object as the figure and the relational object as the ground, the situation as such might make the speaker refer to the bike as the reference object.

6. The bike is near the house.
7. The house is near the bike.[43]

Spatial ascriptions typically display an asymmetry between a profiled entity in relation to a backgrounded entity, what in gestalt

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41 Talmy 2000.

42 Talmy 2000, 314.

43 As Thiering (2015) points out, Zlatev presents a similar example in support of construed situations. In the expressions (a) «The tree is by the car» and (b) «The car is by the tree», different situations are encoded. These differences indicate different worlds of human experience, that is, a non-objectivist approach is favored (Zlatev 2003, 332; see also Zlatev 2007). The semantic function chosen by the speaker does not correspond to the world of part-whole partitioning, but rather depends to some extent on language-specific information. A case in point is that the difference between figure and what is ground is in some languages not always semantically marked (cf. Bohnemeyer 2010). This indicates that language, or rather writers/speakers, can reverse ostensibly natural figure-ground asymmetries. The empirical evidence from different elicitations tools also supports this observation (cf. Thiering 2015, 81).

psychological terms is called "figure-ground asymmetry". Talmy deploys a similar analysis by stating that a physical object is either located or moves with respect to another object, which serves as a reference point for the former.[44] Similarly to Langacker's analysis described in 2.1, this is an asymmetry embedded in the processes where specific aspects of a reference point represent the whole Gestalt, what could be described as schematization processes.[45] Talmy defines the basic asymmetry in a schematization process as follows:

> The Figure object is a moving or conceptually movable point whose paths or site is conceived as a variable [...]. The Ground object is a reference-point, having a stationary setting within a reference-frame, with respect to which the figure's path or site receives characterization.[46]

Talmy specifies a list of the various characteristics of this asymmetry, such as the figure being of greater concern or relevance (more salient) as opposed to the ground being of lesser concern or relevance (or less salient and thereby more backgrounded).[47] The focus on semantic distribution is clearly different from the Gestalt psychological notion of figure and ground, which is rather based on an analysis of perceptual structures in terms of coordinates.[48] In this way, Talmy's appeal to a cognitive-perceptual basis for his analyses might be somewhat simplified.[49]

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44 TALMY 1978, 627; see also TALMY 1983, 2000.

45 TALMY 2000, 179; see also LANGACKER 1987; JOHNSON 1987; SINHA and KUTEVA 1995, 170, 196. Conceptualization can be seen as a «cover term that refers to fundamental cognitive processes such as *schematization* a n d *categorization*» (SHARIFIAN 2011, 4; emphasis original).

46 TALMY 1978, 627; cf. TALMY 2000, 315–16. «[…] the pervasive system by which language establishes one concept as a reference point or anchor for another concept. It posits the existence in language of two fundamental cognitive functions, that of the **Figure**, performed by the concept that needs anchoring, and that of the **Ground**, performed by the concept that does the anchoring» (TALMY 2000, 311; emphasis original).

47 TALMY 2000, 316.

48 LEWIN 1936; RUBIN 1921.

49 see especially the number of detailed Gestalt principles; figure-ground asymmetries are

From this semantic reading of the notions of figure and ground, let us move on to see how they are put to use in Talmy's influential analysis of motion.[50] In a so-called "motion event", an entity – the figure – changes location with respect to another reference entity – the ground. This means that it is not just a static projective relation between two entities, but a dynamic unfolding that not only involves two entities related to one another in static space, but it is also concerned with how their spatial relation changes. Talmy thus proposes that motion also involves at least the two additional components of path and manner. The former profiles the change in spatial relation between figure and ground, the latter how the figure moved in order to make this change come about. Examples of this are shown in (8) and (9) below. In (8), the main verb *enter* expresses path (together with motion). In (9), path is expressed by the fused adverb+preposition *into*, whereas the main verb *gallop* specifies manner (of motion).

8. The horse *entered* the barn.
9. The horse galloped *into* the barn.

How languages vary in these so-called "conflation patterns" has been the basis for an influential semantic typology of motion.[51] Exactly which grammatical constituents contribute to the expression of path has been a matter of debate, especially from a cross-linguistic perspective.[52] However, what has been even less discussed is the underlying rationale that informs Talmy's analysis. Talmy argues that the tendency for motion verbs to conflate with either manner or path, but not with both, indicates their conceptually separate nature.[53] This

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really only one minor part of these principles; THIERING 2015.

50 TALMY 1985.

51 TALMY 1991; see also POURCEL 2009; SLOBIN 1996, *inter alia.*

52 e.g. BEAVERS et al. 2010; SLOBIN 2004.

53 Several motion verbs in English seem however to conflate both a component of positional change and how this change was brought about, for instance *penetrate* and *drill*.

is captured in the following quote where Talmy suggests that the semantic difference between path and manner mirrors a cognitive, and perhaps even perceptual, differentiation.

> The cognitive correlate of this linguistic phenomenon is that we apparently *conceptualize, and perhaps even perceive,* certain complex motions as composites of two abstractly distinct schematic patterns of simpler motion.[54]

What is telling about Talmy's analysis of motion events is the conception of motion as being decomposable in two schematic simple motions. The cognitive parsing of motion can be seen as similar to the way forces are calculated in classical mechanics: forces are comprised of one component along the x-axis (manner) and one along the y-axis (path). One handles the internal movements of the figure and the other the positional change. Additional indications of Talmy's inspiration from classical mechanics are that terms such as *force* and *vector* frequently occur in his componential analysis of motion. What is striking about this is not the analysis *per se,* but rather that Talmy insists that perception in fact works by separating out these two different components – a conclusion reached only on the basis of (a particular analysis) of the linguistic material. We return in Section 4 to the possible influence a scientific conception of space might have had on Talmy and beyond. But we introduce a critical aspect already here by referring to a non-geometrical approach or functional approach on spatial relations.

Thiering concludes in his dissertation from 2007 with Vandeloise who writes that

> [r]ather than depending on a logical or geometrical system of description, I will offer a description of spatial words based on functional concepts that are tied to the extra-

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54 TALMY 2000, 36 ; emphasis Blomberg & Thiering.

linguistic knowledge of space shared by the speakers of one language. […] I use functional in the sense of utilitarian. Geometrical and logical analysis describe spatial terms by means of formal concepts that are independent of context […] In contrast, a functional description – I might even say a "utilitarian" description – depends also on non-spatial factors that are determined by the context and by the circumstances of the use of the prepositional terms.[55]

Vandeloise is objecting to the strong tendency to delineate a devoted set of linguistic resources as primarily spatial, and to define these in abstract and geometrical terms. This hits a blind spot in describing spatial senses as idealizing spatial relations clearly defined by geometrical relations. By instead thinking spatial words in terms of their uses, Vandeloise is arguing that they cannot be clearly differentiated from the function and purpose they serve. As we will go on to argue, there is not a semantically clear border between words with spatial senses and those with non-spatial senses.

2.3 Perception and non-concrete senses
Even though there are clear affinities between visual perception and language, such as ambiguity and postponement of determination, the differences between the two should not be forgotten either. From a phenomenological perspective, language can be seen to present meaning indirectly, that is, as mediated by conventional signs, whereas in perception, meaning is given directly and non-inferentially.[56] By virtue of being comprised of conventional signs, linguistic meaning is also more schematic and general than perceptual meaning. In their respective attempts to model language on a perception-based account of space, Talmy and Langacker seem at times to forget these differences between language and visual

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55 VANDELOISE 1991, 13 and footnote 6, page 239.
56 SONESSON 2007.

perception. One such indication is how their respective analyses aim to elucidate linguistic meaning with reference to perceptual space, but nevertheless do so by analyzing conventional semantic meaning (a methodological problem pointed out, for instance, by Itkonen).[57] For present purposes, a more pressing issue is the extent to which it is *in principle* possible to model linguistic meaning on *any* account of perception. Many challenges await such a proposal, but one that has been of specific concern for Talmy and Langacker is whether non-perceptual and non-concrete senses in language can be accounted for by appeal to the same analyses as for linguistic senses that express what is perceptually available. That is, if language is grounded and structured on the basis of perception, then similar type of mechanisms should be operative even when the expressed situation is not perceivable.

One influential and radical version of such a thesis is that of "mental simulation". When applied to linguistic meaning, it has been bluntly phrased as «the meanings of words and of their grammatical configurations are precisely the contributions those linguistic elements make to the construction of mental simulation».[58] Such a view has been used to explain various non-literal uses of language. A verb like *rise* can be used to express physical motion (10), but also to express situations that are not instances of physical change (11).

10. The balloon rose to the sky.
11. The stock value rose to a new all-time high.

In (11), the positional change does not take place in a perceptual situation, but expresses an increase in monetary value (which of course can be visually represented in the form of a graph). To account for the more abstract meaning, it has been claimed that mental simulation of motion is crucially involved. Without explicitly alluding to mental simulation, Langacker proposes a similar type of expla-

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57 ITKONEN, 2006.
58 BERGEN 2007, 278.

nation. The abstract motion in (11) is explained in terms of the visually structured process "mental scanning".[59] Quite concretely, mental scanning is based on continuously shifting visual attention over time. An example of this would be in (10) where the meaning of *rise* involves the balloon occupying gradually higher points of altitude over time. In other words, the explanation for the possibility of (11) resides in the dynamic structure of visual perception (see the stage metaphor Langacker uses above). Even if (11) refers to a different type of situation than (10), the former is motivated and founded on the cognitive features necessary for making sense of the situation expressed in (10).

One element missing from Langacker's explication is the generality of linguistic meaning. From a synchronic perspective, a verb like *rise* is domain-insensitive: it works just as well for physical motion as for other types of directed changes (of course, attested examples might provide additional indications for how generally applicable a particular word might be). In response to this, Langacker merely states that «it is not at all obvious that change and motion are ever strongly dissociated in our conceptual world».[60] This response does not really address what is at issue, namely that the *same* condition applies not just to words for motion and change, but to *all words.* In the endeavor to ground language in spatial senses possible to explain by appeal to non-linguistic cognition, there is the latent risk of losing track of language as *also* insensitive to divisions into domains. This does not rule out the importance of space, but the question is rather to what extent spatial senses can be differentiated from non-spatial ones, and exactly what space means in cognitive linguistic analyses of linguistic meaning.

In this section, we have argued that language and visual perception are clearly related and in some ways similar to one another. However, these connections have at times been exaggerated and made on the basis of a limited geometrical reading of perceptual space. The

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59 LANGACKER 1987, 102-109, 144-46;1991, 21.
60 LANGACKER 1990, 156.

challenge for any model that wants to argue for a close connection between language and perception is the formal differences between the two. Linguistic signs are typically semantically general with meanings that do not seem to be simply reducible to pre-linguistic experience. Furthermore, as we will further discuss in the following section, analyses claiming that visual/spatial perception is foundational for language do not always take the complexity, dynamicity and embodied nature of visual perceptual processes into account.

3. The body as the ground and template for meaning

A possible limitation of too strongly emphasizing visual perception as a "meaning-fundament" for language is that the dynamic and bodily character of perception might get lost on the way. From an "enactive" perspective, Noë argues that perception is not merely a matter of passively structuring incoming information, but it is rather incorporated as a dynamic bodily activity:

> Perception is not something that happens to us, or in us. It is something we do. Think of a blind person tap-tapping his or her way around a cluttered space, perceiving that space by touch, not all at once, but through time, by skillful probing and movement. This is, or at least ought to be, our paradigm of what perceiving is. The world makes itself available to the perceiver through physical movement and interaction. […] I argue that all perception is touch-like in this way: Perceptual experience acquires content thanks to our possession of bodily skills. What we perceive is determined by what we do (or what we know how to do); it is determined by what we are ready to do. In ways I try to make precise, we enact our perceptual experience; we act

it out.[61]

The coupling of action and perception is perhaps most clearly articulated by Merleau-Ponty.[62] Such a view suggests that the human body functions as a coherent and dynamic structure of experience. Merleau-Ponty starts off in his chapter on *The spatiality of one's own body and motility* with the following description of an everyday situation:

> Let us first of all describe the spatiality of my own body. If my arm is resting on the table I should never think of saying that it is beside the ashtray in the way in which the ashtray is beside the telephone. The outline of my body is a frontier which ordinary spatial relations do not cross. This is because its parts are inter-related in a peculiar way: they are not spread out side by side, but enveloped in each other. For example, my hand is not a collection of points.[63]

As formulated in this quotation, the body can be seen as not only directly related to perceptual experience, but in particular to *spatial* experience. The «hand is not a collection of points», but it is experienced as a spatially coherent Gestalt. Given this connection between visual perception, the human body and spatial meaning, it is not surprising to find similar themes highlighted in several influential analyses in cognitive linguistics. According to such a view, linguistic meaning can be explicated as founded not only in visual perception, but in a broader account of bodily capacities. Even if there is some variation across different analyses and models in exactly what is meant by the "body", the following two citations summarize the gist of what has become known as "embodied cognition".

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61 Noë 2004, 1 ; emphasis original.
62 Merleau-Ponty 1962[1945].
63 Merleau-Ponty 2005, 112.

> [O]ur experience is embodied, that is, structured by the nature of the bodies we have and by our neurological organization […] the concepts we have access to and the nature of the "reality" we think and talk about are a function of our embodiment: we can only talk about what we can perceive and conceive, and the things we can perceive and conceive derive from embodied experience.[64]

> [The] properties of certain categories are a consequence of the nature of human biological capacities and of the experience of functioning in a physical and social environment.[65]

On such a view, we have access to the world mainly by virtue of having a body or rather a neurological apparatus. It factors as both an enabling and a constraining condition for experience. In turn, this will also affect what can be linguistically expressed, and just as importantly, how it is expressed. It has been argued that a majority of more or less conventionalized expressions in language are formed on the basis of systematic connotations and associations through embodied sensorimotor interaction.[66] One such prominent analysis, originating from the collaborative and individual works of George Lakoff and Mark Johnson, proposes that linguistic meaning is to a large extent based on foundational categories or domains of bodily space. These meanings are then used as templates or schemas for structuring and ordering more complex and abstract meanings in both language and thought. This is why Lakoff and Johnson suggest language involves mappings from concrete conceptual domains like "space" to abstract domains like "time".[67] This is exemplified in (12)

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64 Evans and Green 2006, 46.

65 Lakoff 1987, 12.

66 See for instance the interpretation of Frege's distinction between *Sinn und Bedeutung* in Johnson 1987.

67 Lakoff and Johnson 1980; Johnson 1987; Lakoff 1987; Lakoff and Johnson 1999.

where the preposition *at* expresses the point in time when an occasion will occur, whereas in (13) the motion verb *soar* is used to express an emotional state.

12. The meeting is *at* noon.
13. My spirits are *soaring*.

According to Lakoff and Johnson, *a t* a n d *soar* would originally express spatial meanings, but they have through processes of abstraction been extended to other domains like time and emotions.[68] Due to our bodily interaction with the world, basic (i.e. spatial) meanings are formed, which stand in as templates or "schemas" for structuring less tangible meanings. These mappings between domains are called "conceptual metaphors".[69] Conceived in such a sense, a metaphor is not a figure of speech for rhetorical purposes, but rather a cognitive phenomenon reflecting systematic conceptual mappings between distinct domains. In other words, linguistic sentences are mere surface manifestation of a pervasive underlying structure of human cognition as establishing links between conceptually distinct domains. For the same reason, we could therefore expect metaphors to appear just as well in non-linguistic representations like visual media and art.[70]

A characteristic property of conceptual metaphors is the asymmetrical relation between the domains. Going back to the quote from Evans and Green above, metaphors indicate that concrete domains grounded in perception and action are mapped on to abstract domains, but the reverse has been claimed to be very uncommon.[71] Differently put, spatial senses grounded in bodily capacities stand as

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68 In making this claim, Lakoff and Johnson are largely relying on analyzing English expressions. It has proven difficult to find exceptionless patterns across languages in the mapping between domains.

69 LAKOFF AND JOHNSON 1980; see also GRADY 2007.

70 On conceptual metaphors in visual media and art, see FORCEVILLE 2012 and SULLIVAN 2006, respectively.

71 See BRANDT 2014 for a critical assessment of the "unidirectionality thesis" in conceptual metaphor theory.

templates for structuring abstract senses in both language and thought. Conceptual metaphor theory is thus largely based on meaning as being by and large a matter of the embodied subject's ability to form a systematic conceptual domain of space. Even though cross-linguistic and cross-cultural differences can be expected regarding cross-domains mappings, some mappings are assumed to be more foundational than others. These have been called "primary metaphors"[72] and are exemplified by expressions like (12) and (13). While languages might differ in which words and constructions that are used in conventional expressions, the mapping between domains is expected to be universally shared. Languages can thus vary in the spatial markers that are used for expressing a temporal occasion. What is expected is that *any* spatial marker is used for expressing temporal relations. What makes some mappings more primary than others, and hence expected to be cross-linguistically universal, is that they are «acquired by children simply because of the *nature of the bodily experience* (in perception and bodily movement) for the kinds of the structured environments they inhabit».[73] In other words, a primary metaphor is immediately related to features of the embodied human subject, such as upright posture, a left and a right side, the ability to move closer to the desirable and farther away from the unwanted, and so forth.

It has proven difficult to establish patterns for primary metaphors shared by all languages.[74] But we would like to pinpoint that there might be a deeper theoretical issue at the heart of conceptual metaphor theory: how bodily space is conceived and used to analyze conventional linguistic expressions. To elucidate this, we wish to make a comparison with phenomenological accounts of the body and how it has been considered as constitutive for space. In doing so, we point to possible ways to reinterpret the analysis of conceptual metaphors and mention some possible venues for fruitfully using embodiment in

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72   GRADY 1997.

73   JOHNSON 2010, 410.

74   see for example SINHA, DA SILVA SINHA, ZINKEN AND SAMPAIO 2011.

analyzing language.

3.1. *The duality of the body*

A phenomenological insight is that there are two different perspectives on the human body. It can be seen both as a a "lived body" and a "physical body". This is illustrated by the two German words for the human body: *Leib* and *Körper*. That is, I know my own body as something through which I experience the world, but also as a physical thing in the sense of having spatial extension and material qualities. The body can thus be seen as both being an interior and exterior. The body is interior by virtue of being immediately experienced as "my body" or rather: experience is bodily given. This body is not a thematic thing or object given in experience. Even if human beings can perceive parts of their body, the "interior" body is not a part of perception, but rather a condition for experience: the so-called "lived body" (*Leib*). The body as an experiential condition is what Husserl at other times label "a zero-point".[75] With these terms, attention is drawn to the body as (pre-)given for all experience – perceptual or otherwise.

   With respect to the constitution of space, the immediate givenness of the body highlights three different aspects, which Woelert & Blomberg (forthcoming) summarizes in three points: (a) the body is a "perceptual organ" that makes spatial experience possible. This is why Husserl can say that the lived body is necessarily involved in all perception; (b) the lived body is located exactly here in a distinctive manner. In contrast to all other bodies, it always remains persistently "co-present"; (c) These two features in turn enables the lived body to function as the orientational center of spatial experience. That is, this body is what makes fundamental spatial directions and distinctions to emerge in the first place.

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75 e.g. HUSSERL 1970 [1936]. Since «point» is initially a geometrical concept, Husserl's characterization of the lived body's immanent hereness as a «zero-point» remains somewhat problematic. It brings in a geometrical, and as such, ideal notion of space into the very bones of lived experience (see WOELERT 2012).

As Husserl writes: «[the lived body] stands there as the ever-abiding point of reference, to which all spatial relations seem to be attached. It determines the apparent right and left, front and back, above and below».[76]

The body is not only a tacit and non-thematic condition for experience in the way outlined above. It is also given as exterior in the sense that my own body can be perceived as a thing among other physical objects in the world (*Körper*). Since both of these aspects of the body are active at the same time, Husserl alludes to the dual nature of the body by compounding the two German words for the human body into *Leibkörper*. The dual character of simultaneously interior and exterior is summarized by Zahavi as «[m]y body is given to me as an interiority, as a volitional structure and a dimension of sensing, but it is also given as a tactually and appearing exteriority».[77] In a sense, the terms interior and exterior might not be the most suitable for describing the duality of the body. As an "organ of perception", the lived body is a condition for experience to appear in the first place. But at the same time as the body is constitutive in this sense, it also appears – to others and to me – as a thing among other things. As simple example as touching my left hand with my right hand unveils a correlative intentional structure of touching, but also being touched, or more generally between perceiving and being perceived, acting and reacting. Husserl calls this correlative structure present already at the level of one's own body "the double-sensation of the body" (*Doppelempfindung*). In this regard, we could see the emergence of differentiations such as interior and exterior as in part already dependent on the dual nature of the body. Put differently, bodily experience is structured in such a way to enable some of the most fundamental spatial oppositions. Moreover, the argument presented here goes one step further by stating that this duality is amalgamated and hence dissolved on constant bodily-environmental changes.

An alternative formulation of the body's duality, inspired by

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76 Husserl 1991 [1907], 80.

77 Zahavi 2001, 268.

Merleau-Ponty, is Gallagher's[78] differentiation between the "body image" and the "body schema".[79] Confirming the existence of two phenomenologically differentiated aspects of the body, Gallagher points to evidence from patients with different severe neurological deficits where the brain is disconnected to fundamental bodily functions.[80] Gallagher wants to clearly separate the two functions «to further our understanding of embodiment».[81] We believe that this is important for clarification in the long-standing discussion between the duality of body and mind, but argue that "body image" and "body schema" should be indeed amalgamated - similar to how the duck-rabbit example above amalgamates two constantly changing aspects.

Returning to the general theme of the body as a source for meaning, is the phenomenological notion of the body different from that of embodied cognition? Sonesson[82] argues that a substantial difference can be detected in the process of how the body is discovered. A recurrent trait of phenomenological approaches to the body is that its contribution to meaning is reached *through* consciousness (*ibid*.). The lived body appears as a condition for perceptual experience and action. My position and my movements make different perceptions possible and it is in this sense the body is an «organ of perception". In contrast, the type of embodiment frequently discussed in cognitive linguistics take consciousness as something has to be explained as seen in Evans and Green's[83] view that experience is basically governed

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78 GALLAGHER 2005.

79 See THIERING 2015, 72.

80 «The body image consists of a complex set of intentional states and dispositions–perceptions, beliefs, and attitudes–in which the intentional object is one's own body. This involves a form of reflexive or self-referential intentionality. Some studies involving the body image […] do make a distinction among three sorts of intentional contents: 1. *Body percept*: the subject's perceptual experience of his/her own body; 2. *Body concept*: the subject's conceptual understanding (including folk and/or scientific knowledge) of the body in general; and 3. *Body affect*: the subject's emotional attitude toward his/her own body. […] in our discussion of the body image, we focus primarily on the body percept» (GALLAGHER 2005, 25–26).

81 GALLAGHER 2005, 39.

82 SONESSON 2007.

83 EVANS AND GREEN 2006.

by our "neurological organization", or by Lakoff's[84] reference to "biological capacities" in two earlier quotations. From such a perspective, the question is rather how consciousness can emerge out of sensorimotor interactions carried out by a physical body.[85] In other words, the difference resides in the status attributed to consciousness: either it is the starting point for detecting the corporeal dimension of experience, or as something that needs explanation in an otherwise physical world.[86]

In relation to linguistic meaning as grounded in bodily interaction, we can point to two important divergences entailed by a phenomenologically inspired account. First, so-called "primary metaphors" emerging through bodily experience need not be a matter of mapping a concrete conceptual domain onto a more abstract domain. Zlatev[87] argues that from the perspective of experience, the two senses do not necessarily belong to two distinct conceptual domains. Corresponding to the duality of the body, they can rather be thought as incorporating two different aspects of the same experience. Consider for instance the metaphorical mapping between motion and emotion (as in (13) above). Instead of analyzing this connection "intellectually" as establishing a relation between two different conceptual spheres, the motivation can rather be sought in the way "inner" emotional states also has an "outer" bodily component.

Certain cross-domain mappings are expected to be universally shared across languages and cultures. From a linguistic perspective it is not really clear why *a t* is metaphorically temporal in (12). As discussed in relation to the verb *rise* in Section 2.3, the individual word does not distinguish between spatial and temporal uses. The problem with straightforwardly basing non-concrete senses in the concrete is how to account for the difference between concrete and non-concrete

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84 LAKOFF 1987.

85 EDELMAN 1990; LAKOFF AND JOHNSON 1999; NOË 2004.

86 In later publications, JOHNSON (2008) acknowledges the phenomenological roots of embodied cognition in the works of, for instance, Merleau-Ponty. Though, what the different routes to the body would entail is not further explored by Johnson.

87 ZLATEV in press.

senses: either the latter collapses into the former, or non-concrete senses must somehow remain independent from concrete senses. In other words, the possibility for cross-domain mappings imposes a separation between basic spatial senses and derived non-spatial senses of the same lexeme.[88] By virtue of grounding meaning in what can be perceived with our senses, the embodiment account runs into issues similar to that of classical forms of empiricism, viz. how to account for knowledge of that which is not perceivable.

Even though we have expressed doubts concerning the role of the body for anchoring linguistic meaning in cross-domain mappings, this should not be taken as an utter dismissal of bodily capacities as relevant and fruitful for linguistic research. There are strong indications for the role of the human body in grammaticization and lexicalization. In fact, Heine[89] argues that one prominent source for spatial markers are words from parts of the body, like "in front" and "back". This seems to suggest that spatial words might not have the linguistically reserved role sometimes attributed to them, but that they themselves have an origin.[90] Furthermore, the body – in the sense of *Körper* – is often used as a template for describing other things. We shall limit us to mention only four such examples. One is the tendency to map the structure of the human body, or at least parts of it, onto the environment and physical objects. We see this in expressions like "river mouth". A more far-reaching use of the human body can be found in the Malayan language Jahai where the complex river system is named after parts of the human body.[91] Another example is the various tributaries from the main river named as "arms" and "legs". This is also known from most Athapaskan languages.[92] The Mayan language Upper Necaxa Totonac is similar in that all spatial references

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88   see COSERIU 2000 for a similar remark.

89   HEINE 1997.

90   LEVINSON (2003) notes that the development of spatial markers is not restricted to the human body, but also develop from toponyms, prominent landmarks and words for animals to just mention a few recurrent sources.

91   BURENHULT 2006.

92   THIERING 2015.

are encoded by a detailed system of spatial markers such as body parts, posture verbs and adpositions.[93] Body parts encode spatial relations depending on the body. English *in*, for example, is encoded as "vagina", *up* is the "crown" of the head, down/below is "foot", back is the actual "back of a body", in front of is the "tummy", the middle height is based on the "hip" etc.[94] A rather different type of embodiment comes from house building processes in Eipomek, a language spoken on Papua New Guinea. Here embodiment is actually situated as a joint process. In building a new sacred men's house, its size is determined by the number of Eipo men showing up on that day and the actual material gathered weeks before.[95]

3.2 The body in the world

To have a body is not just a condition for individual experience, but it also entails that one is located somewhere. As *Leibkörper*, we do not find ourselves living in a vacuum, but we are always already in a world that matters in one way or another. How to exactly spell out the relation between self and world has been a long-standing debate in phenomenological philosophy, as can be illustrated by the different views of Husserl, Heidegger and Merleau-Ponty on this matter. As mentioned in 3.1, Husserl takes the perspective of the ego – its being "here" – as the indispensable starting point for perceptual experience. In contrast, Heiddeger as well as Merleau-Ponty problematize the sharp dichotomy between here and there.[96] We do not wish to enter this debate here, pointing out instead that, apart from their respective differences on the importance of "hereness", there is also an important similarity between these authors. They all reach the conclusion that bodily experience phenomenologically entails its belonging to a broader matrix. Somewhat metaphorically, Husserl refers to this broader aspect as a "horizon", which share certain important features

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93 THIERING 2013b, 2015.
94 see THIERING 2015 for a detailed description.
95 THIERING and SCHIEFENHÖVEL 2013, 2016, THIERING 2013b, 2015.
96 see HUSSERL 1913, HEIDEGGER 1962 [1927] and MERLEAU-PONTY 1962 [1945].

with Heidegger's notion of "being-in-the-world" (*in-der-Welt-sein*).[97] The similarity resides in the way experience is embedded in an openness and an attentiveness to the world. This openness renders any particular experience as an incomplete and partial glimpse inviting to further explorations. In this way, there is a reciprocal relation between self and world where the latter is given to the former, but it is only through the possibility of the self as finding itself embedded somewhere that the notion of the world can arise.

Conceived as an openness to the world, no one is – like in the sci-fi trope of the "last man alive" (as in for instance Richard Matheson's *I am Legend* or Cormac McCarthy's *The Road*) – alone in a world desolate of other human beings. This should not be read as just a brute empirical fact, but can rather be seen as an indispensable condition for meaning. This is clearly the case with language: by virtue of being *in principle* intelligible, language involves others even in their absence. A similar point can be made about the perspectival character of perception. Since I can at any given moment only perceive a particular profile of a thing (as we have seen with the stage analogy discussed in Section 2.1), its disclosure as a thing comprised of a multitude of profiles relies on the possibility of other profiles to become present. These absent, but possibly present profiles, are co-presented as profiles possible to made present, and this is so in at least two different senses.

(I) By changing my own position and perspective, a previously present profile fades into the background and another one becomes foregrounded. To relate back to the previous discussion of Langacker's stage analogy, a profile could be seen as the focus of a specific stage constellation. In his interpretation of Husserl's work on the relation between movements and present profiles, Zahavi refers to

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97 Given the importance of spatiality in Heidegger's thought, he has surprisingly little regard for the human body. Derrida (1983) notes that sexuality is neutralized from Heidegger's characterization of *Dasein*, and perhaps something similar can be said about the human body. Despite this, an account of bodily space can be read as implicity presupposed in, for instance, terms like «having-been-thrown» into the world (Heidegger 1962 [1927]).

this as a "kineastethic horizon".[98] As we continuously move, what was previously present fades into the background as new appearances becomes perceptually focal. This continuity of perception goes on in a seemingly endless fashion. To allude to the stage analogy, this is also familiar experience from being seated at a theatre where human beings constantly zoom-in and out of different information cues.

(II) Perception does not only rely on the relation between the self and its possible vantage points (which can be analyzed in terms of visual coordinate systems known as "frames of reference"), but also implicitly relies on the presence of others. This is not to say that someone else must simultaneously perceive the same thing as I am currently perceiving; rather that every perceptual act is structured to in principle comprise the perspective of other persons. We can thus say that all acts of meaning presuppose reference to other human beings.[99]

> My perceptual objects are not exhausted in their appearance for me; rather, each object always possesses a horizon of co-extending profiles which […] could very well be perceived by other subjects, and is for that very reason intrinsically intersubjective.[100]

Already at the level of (embodied) perception, things are not exhausted but always withdraw from full determination and disclosure, which thus invite for further exploration. It is perhaps due to this character of incomplete open-endedness that space evades any clear-cut definition, but is simultaneously foundational for perception and language. Given this characterization of bodily experience as opening up a world, two consequences can be highlighted. First, human beings belong to a world imbued with meaning; it is a world that can be described as «taken for granted»,[101] which Husserl refers to

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98 ZAHAVI 2001, 100.
99 ZAHAVI 1999, 2001.
100 ZAHAVI 2001, 271.
101 SCHUTZ and LUCKMANN 1974.

as a *life-world*. With respect to language, we can extend the concept in accordance with Merleau-Ponty's view of the life-world as being under constant negotiation. This can be seen to include what Wittgenstein called *language games*.

> Bodily space can be distinguished from external space and envelop its parts instead of spreading them out, because it is the darkness needed in the theatre to show up the performance, the back-ground of somnolence or reserve of vague power against which the gesture and its aims stand out, the zone of not being in front of which precise beings, figures and points can come to light. In the last analysis, if my body can be a "form" and if there can be, in front of it, important figures against indifferent backgrounds, this occurs in virtue of its being polarized by its tasks, of its existence towards them, of its collecting together of itself in its pursuit of its aims; the body image is finally a way of stating that my body is in-the-world. [102]

By insisting on being situated in a world that matters, the emphasis on meaning is not primarily a cognitive and individual phenomenon, but belongs to the shared features of the *life-world*. Meaning is by and large about this world in which we find ourselves, and something we share with others – even when we do not agree.[103] Second, it is not just

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102 MERLEAU-PONTY 2005, 115.

103 The shared nature of the life-world is often collocated into a kind of anonymous and unanimous collective, as in Husserl's recurrent references to a «collective we» and a «we-horizon» (e.g. Husserl 1970 [1936]). However, it should not be neglected that to insist on the life-world as shared between human beings need not entail a completely homogenenous utopia. On the contrary, life-worlds might better be conceived as plural and presuppose an opposition between home- and alien-world (Steinbock 1995). In other words, alienation and dissent are types of experiences that belong to the life-world just as much as belonging and consent do. A case in point is of course that such experiences are also to some extent possible to share with others, as exemplified by the numerous philosophical and literary works devoted to topics like loneliness, existential angst and so on.

perception that is situated in the life-world structure, but so is language as one crucial semiotic encoding system. From a life-world perspective, language is both a part of, and about not the "real world" or the mind, but the shared life-world. Linguistic meaning is ultimately situated at this, so to speak, intermediary layer between the physical and the mental, both of which can be seen as abstractions, derived by "leaving out" some parts of the life-world. In other words, language is both an aspect of the *life-world*, and at the same time about t h e *life-world*. That is, linguistic expressions are not only about something other than themselves, but also involve a horizonal structure. There is always the possibility to explicate, to rephrase, and to continue building on a particular expression. This could be seen as an "inner horizon of language" where there is always the possibility to inquire further.[104] Such a possibility is by and large granted by language as part of the life-world, with the life-world as the outer horizon of language.[105]

To end this section on the relation between bodily space and the world, it is interesting to note the extent to which the phenomenological characterization relies on spatial metaphors.[106] We have already mentioned Husserl's use of the term "horizon", which together with "ground" is often used to describe the pre-givenness of the life-world.[107] Such metaphors call attention to the life-world as not a thing among things in the world, but as something that we have beneath our feet and as constantly edging our perception. In a similar fashion, Merleau-Ponty characterizes the reciprocity between body and world through metaphors such as "depth" and "fold".[108] If we go beyond these particular spatial metaphors used to convey a quite specific sense, we can note that some of the most central conceptual

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104 WIDOFF forthcoming.

105 An immediate consequence is the interplay between what is explicitly coded in language and tacit presuppositions that is embedded in the remainder of the life-world, such as various forms of tacit knowledge and non-linguistic practices within the life-world (see THIERING 2015 and GEUS and THIERING 2014 on implicit knowledge).

106 see for instance WOELERT 2012.

107 e.g. HUSSERL 1970 [1936].

108 MERLEAU-PONTY 1968 [1964].

distinctions explicitly rely on spatial differentiations, for instance "inner/outer" and "left/right". Both of these are used, at least in Western cultures, to structure non-spatial conceptual oppositions, such as essential/derivative or progressive/conservative. That terms with spatial senses are used to convey deep philosophical notions points to the centrality of space for any conceptual endeavor.[109] This might in some respects resemble Lakoff and Johnson's notion of conceptual metaphors, and would perhaps more generally speak in favor of the significance of spatial language for conveying abstract senses. This similarity withstanding, there is an important lacuna left to be addressed as long as the notion of space is taken as an unanalyzable primitive. The next section focuses on this aspect specifically.

4. Generativity and spatiality

In the two previous sections, we have discussed and problematized the common appeal to space as a basic building block for linguistic meaning. From perceptual and bodily space, the discussion has grown exceedingly complex – even to the extent that spatial schemata might be an essential part for structuring conceptual oppositions. In other words, we have found space to be experientially foundational but at the same time a heterogeneous and complex concept not easily coalesced into a simple unity. In this section, we take something of a meta-perspective by asking why space has been taken as the linguistically basic domain, and why it has at the same time been left unanalyzed in the linguistic discussions. To anticipate our answer, a contributing reason can be found in the historical transformations of space.

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109 as summarized by, for instance, LEVINSON 2003.

4.1 The generativity of space

The conceptual polysemy of space is by no means a modern condition.[110] It has not come to be through the multiplicity of spaces we move through on a daily basis – be it in a physical or a metaphorical sense. While geo-political and technological conditions might exaggerate and accelerate both the prominence and the plurality of spaces, as has been argued for instance by Foucault[111] and Massey[112], the heterogeneity of space still seems to be as old as contemplation.[113] The difficulty in delineating and defining space was already an issue in ancient Western philosophy. As a testament to the conceptual proliferation, at least three different terms for "space" recurred in Ancient Greek: *topos*, *khôra* and *kenon*. From what can be gathered today, their non-technical senses seemed to have been somewhat interchangeable, but with different connotations and connections to related senses like "place" and "region".[114] As they were used in philosophical discourse, they entail radically different conceptions of space including space as complete void and space as a "container" for material objects (for a comprehensive overview, see *ibid*.).

Around the same time, Euclidean geometry emerged as the science of formal and ideal space. Just as Aristotle and Democritos, Herodotos writes that geometry originated with surveying land flooded by the Nile: «it became necessary for the purpose of taxation to determine how much land had been lost».[115] Herodotos' observation is echoed in the etymology of *geometry*: geo-metron literally means land-measurement. This possible connection between the above discussed practices in the service of an agricultural economy and the ideal science of geometry has been of profound interest to philosophers of space. One proposal, emanating from Husserl,[116] is that a number of

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110 see ALGRA 1995; GOSZTONYI 1976.
111 FOUCAULT 1997 [1967].
112 MASSEY 2005.
113 ALGRA 1995; CASEY 1995.
114 ALGRA 1995.
115 HERODOTOS, Histories II, 109.
116 HUSSERL 1970 [1936].

life-world prerequisites predated the institution of geometry as a science of ideal space, hence as predating the very notion of geometrical space comprised of points and lines. The techniques for measuring land, together with pre-geometrical shapes like "round" and "sharp" can be seen as indispensable for the process of idealization to take off in the first place.[117] Once idealized, the science of geometry is of course independent of its own historical genesis and the preconditions that had to be in place for its emergence.

The transformation of space does not end with geometry emerging from life-world practices. With the advent of modern science, a geo-metrical concept of space replaces the more nebulous life-world notion as the primary notion of space. It is in this moment in modern science that physical space can be essentially conceived as "extension" by Descartes. A statement in the same vein is often attributed to Galileo: «measure what can be measured, and make measurable what is not» (which, as can be seen from the etymology of mathematical concepts like topology, might perhaps rather be a form of *topos* than *khôra*).[118] From the standpoint of natural science, space becomes defined in terms of the three dimensions and all other properties are treated as secondary. Husserl describes this as a process of ideal space casting its ray back onto the world from which it emerged in the first place.

> The theoretical attitude […] led to pure geometry; and later
> – in the reversal – applied geometry arose, as the practical
> art of measuring, guided by idealities, i.e. an *objectification*
> of the concrete causal world of bodies.[119]

We could thus speak of an idealization or rationalization of space. Such a step has proven invaluable for the progress of the natural

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117 Apart from spatial practices and pre-geometrical, Husserl ascribes an exceptional importance to writing in instituting the ideality of geometry. To ensure the survivability through history, an ideal meaning must somehow be able to be preserved in a form independent of any *hic et nunc.*

118 KLEINERT 2009.

119 HUSSERL 1970 [1936], 36.

sciences, but its effects might be even more far-reaching.[120] From Husserl's account of the transformation of space, we can trace two interrelated consequences of specific relevance for our concerns: (1) a "technized" homogenization of space claimed to be (2) ontologically and epistemologically primary. It is primary when compared to other notions of space and – due to its alleged methodological rigor and explanatory adequacy – a metric for science in general. Today, of course, space in natural science has far surpassed and progressed beyond the early modern science of the 17th century. Despite this progression, one could however counter that this progress would not be possible *without* the idealization and objectification of space outlined above.

These consequences might be of decisive importance for the assumption that spatial senses are linguistically basic. As space in an idealized sense attained the position of being epistemologically primary, it is reasonable to view spatial language through the same lens. Jean-Michel Fortis presents a similar historical contextualization of the idea that spatial senses have a linguistically primary status.[121] Fortis argues that the emergence of a modern conception of space is a prerequisite for reading spatial senses as more primary than non-spatial ones. That is, space becomes epistemologically foundational through the development of science, which presents space and spatial meaning as monolithic. From that point onwards – similar to how Husserl describes ideal space casting its ray back on the world – it is possible to conceive of spatial senses as linguistically primary and with a clearly defined meaning. It is, we would argue, not a coincidence that spatial senses are often analyzed and represented in abstract and schematic forms of space reminiscent of geometrical space (see Section 2.2). To add to Fortis' intriguing account, one could mention that the notion of homogenous physical space might partially be the result of historical transformations with roots in actual and

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120 see for instance WOELERT 2013 on the possible political and administrative consequences of rationalization and technization.
121 FORTIS 2014.

concrete life-world practices with and in space. In other words, there are several different kinds and forms of spaces that do not neatly coalesce into a singular concept. To think space in the plural does not mean to subsume it to an unstable and incoherent notion; on the contrary, the various forms of space are related to one another in different ways with constitutive links between them.

5. Summary

The claim that spatial senses are linguistically basic is recurrent in linguistic theory, but has been provided with a more detailed theoretical and empirical anchoring in various contemporary strands of cognitive linguistics. This is in part due to the connection spatial senses have to visual perception and bodily capacities. In contrast to claims that want to ground linguistic meaning in spatial meaning, we have argued that connecting spatial experience to language is more difficult than what has been assumed. This is due to three interrelated reasons. First, space is experientially foundational, but conceptually complex. Experience is characterized by spatiality, but the attempt to describe this character often resorts to relying on spatial metaphors. By appealing to Husserl and Merleau-Ponty's description of the reciprocal relation between self and world, we noted how they often deliberately resort to spatial metaphors like "horizon" and "depth". This indicates on the one hand the importance of space for conceptual thought. On the other hand, to describe space would then be to describe the process of conceptual frameworks. We do not claim to have a solution or way out of this loop. Instead, we call attention to the problem it poses for all attempts to characterize space. Second, spatial senses need not be linguistically privileged. Language is typically insensitive to «domains» like space, which means that the ascription of which words that express a spatial meaning is to a considerable extent a matter of a particular theoretical and analytical perspective. From a different outlook, language can be analyzed as not

making rigorous conceptual divisions into different conceptual domains. The third conclusion is the nebulous character of space. Specifically, the concept of space has undergone conceptual transformations throughout history where one of the most decisive is the epistemologically privileged role of rationalized and idealized space. The homogenized account of space contributes strongly to treating spatial senses as linguistically basic, without considering the history sedimented into the modern conception of space.

An alternative approach would be to follow in the veins of the so-called *spatial turn*, where it has been argued that space is an inherently heterogeneous concept, based on the cultural-specific meaning ascriptions to spatial varieties.[122] By exploring the phenomenology of space in the works of primarily Husserl and Merleau-Ponty, we have found further support for the conceptual polysemy, but also experientially foundational character of space. The polysemy of space is in part an effect of its foundational character, as we have pointed out by looking at perceptual and bodily space. These different spaces and their associated practices latch onto language in different ways, which require further investigation than what could be attempted here. A question that thereby remains is how to integrate the dual character of space as simultaneously foundational and complex. One possible venue, in line with works in the spatial turn, is to depart from a deliberately pluralistic concept of space. Thiering proposes the concept of *n-spaces* that refer to different spatial systems such as linguistic, historical, physical, phenomenological, mental, urban, architectural space.[123] On the basis of Merleau-Ponty's analysis of visual perception rehearsed throughout this paper, Thiering has argued for the benefits of such a pluralistic concept of n-spaces. The advantages of such a heterogeneous and polysemous concept are several. It opens up for a rather dynamic model of spatial perception that destabilizes homogenous accounts of space. It does so by including a variety of spatial concepts that molds our spatial

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122 DÖRING and THIELMANN 2008.
123 THIERING 2015.

understanding in daily spatial routines. These routines are ever so often not encoded in the language systems only, but in various other spatial practices like the following.

> The windsurfer continually affects and is affected by the set of the rig, so the behavioral intention to successfully windsurf emerges as a result of interaction between the person and the environment. Focusing on the agent alone, or on how the agent responds to the environment, fails to capture the complex nuances of windsurfing behavior. Just as it is important to understand the significance of paper and pencil when one does long division, where the cognition of doing long division is in part "offloaded" into the environment, the intentionality in windsurfing is best understood as a distributed cognitive behavior involving a person, a device, and the environment.[124]

This example presents our understanding of cognitive linguistics and spatial phenomenology as spatial practices. These practices are in constant interaction between the body, the affordances of objects and the spatial coordination which is not only to be found in language, but in these actual practices (Thiering dwells on this in length). [125]Moreover, these practices, in turn, refer to n-spaces. It broadens the above introduced stage analogy in ascribing a crucial meaning potential to the perceiver in his spatial construals. These are not only based on mental triangulation processes of figure-ground alignments, but on actual bodily actions in meaning attribution.[126]

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124 GIBBS 2001, 117–18; see also THIERING 2015, 20–22. As Sharifian highlights, «[h]uman conceptualization is as much a cultural as it is an individual phenomenon […]» and conceptualization can be found at the «cultural level of cognition». Moreover the term distributed applies «across the minds constituting a cultural group» (SHARIFIAN 2011, 4).

125 See THIERING 2016; THIERING and SCHIEFENHÖVEL 2016.

126 Thiering (2015: 4) cites Oakley: «Performing a mundane activity, such as walking to a library, selecting a book from the collection, bringing it to the circulation desk, checking it out, and taking it home, is of complexity far outstripping any known formal description of it. Such routines involve the coordination of multiple acts of sensing,

From these more general theoretical and conceptual considerations, we would highlight three important points – each corresponding to one of the three main themes discussed in this paper: visual perception, the body and the life-world. First, the relation between visual perception and spatial language can be thought on the basis of functional rather than geometrical space. Second, the role of the body for linguistic meaning can be accounted for by taking the duality of body into account. This is seen in (a) the different forms of meaning that use the body as template across languages. Among several examples, we pointed specifically to grammaticization and extensions of body terms to the environment, which (b) shows how the body *qua* physical object is used as a template for expressing other kinds of meanings. Third, perception, body, and language are all situated in the life-world, which in itself is a generative and historical phenomenon. A historical exploration of space illuminates not only its pluralistic and nebulous character attributed by several scholars, but also helps to investigate how space has changed historically, and from a more empirical point of view, how spatial senses develop in different cultures and in different modalities. While spatial meaning has for a long time been a recurrent theme for linguistic research, its character necessarily changes if it is granted that space itself is prone to change historically.[127]

We close the phenomenological stage in referring to Vandeloise's functional approach again. Vandeloise points out that, rather than logical descriptions of spatial relations, we should instead focus on functional or rather language usages:

> [S]patial terms have been described in relation to our

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perceiving, moving, and conceptualizing in a three-dimensional world. It is these mundane activities that are most likely to reveal the basic features of human thought and language. Walking to the library already depends on a long history of simpler experiential patterns filtered through culture [and hence language] and the individuals it claims as its own» (OAKLEY 2007, 214).

127 see SCHEMMEL 2016 and forthcoming on the epistemology of space from a historical perspective.

knowledge of the world. We have here a kinetic and dynamic understanding, not simply a static knowledge. For reasons of descriptive ease, a static explanation of language is often given, just as it may be convenient for the film critic to stop the film for a moment to examine one image in greater detail. If he forgets to set it in motion again, however, he will lose an essential element of the cinema: the constant movement of images on the screen. I believe that the changes in situations motivating language have all too often been frozen for descriptive ease.[128]

The dynamic perspective of Vandeloise is to a large extent based on perceptual and bodily spaces. In this way, Talmy, Langacker and other cognitive linguistics can be seen to have further highlighted the origins of *cognitive linguistics* in the idea of *space grammar*. This term was coined by Langacker[129] as the initial term for the new paradigm nowadays known as cognitive linguistics. We believe indeed that spatial phenomenology and cognitive linguistics provide an epistemological heuristics towards an understanding of human spatial behavior.

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128 VANDELOISE 1991, 237.
129 LANGACKER 1979; 1982.

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