Diachrony of Stative Dimensional Verbs in French¹

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Abstract

In the present paper we will trace the evolution of French verbs like *peser* ‘weigh’ and *coûter* ‘cost’ which encode a dimension – WEIGHT and PRICE, respectively – and allow for the external specification of a value of this dimension as in *peser 2 kilos* ‘weigh 2 kilos’ and *coûter 5 euros* ‘cost 5 euros.’ We call these verbs stative dimensional verbs (SDVs). Our main focus will be on SDVs which evolve from verbs encoding sensorimotor concepts such as main body postures (e. g., STANDING) or elementary hand actions (e. g., GRASPING). We will try to delineate the semantic changes they undergo in the course of their development. Special attention will be paid to the correlation between source concepts and the emergence of specific dimensional readings.

1 Stative dimensional verbs, functional nouns and dimensional adjectives

Stative dimensional verbs (henceforth SDVs) include verbs such as *peser* ‘weigh’ and *coûter* ‘cost’ that encode a dimension (or attribute) – WEIGHT and PRICE, respectively – and allow for the external specification of a value of this dimension as in *peser 2 kilos* ‘weigh 2 kilos’ and *coûter 5 euros* ‘cost 5 euros.’ Constructions with SDVs can be described in terms of a mathematical function $f(x)=y$, where f is the dimension given by the verb meaning, x is the subject argument and y is

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x	f	y	
<i>Le pain</i>	<i>pèse</i>	<i>2 kilos</i>	'The bread weighs 2 kilos'
<i>Le pain</i>	<i>coûte</i>	<i>5 euros</i>	'The bread costs 5 euros'

Table 1: SDV construction

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f	x	=	y	
<i>Le poids</i>	<i>du pain</i>	<i>est</i>	<i>2 kilos</i>	'The weight of the bread is 2 kilos'
<i>Le prix</i>	<i>du pain</i>	<i>est</i>	<i>5 euros</i>	'The price of the bread is 5 euros'

Table 2: Functional noun construction

The variants presented in Tables 1 and 2 both specify the value ‘2 kilos’ for the dimension WEIGHT and ‘5 euros’ for the dimension PRICE. However, in the nominal variant in 2, the dimension is explicitly referred to, whereas in the verbal variant in 1, the verb encodes the respective dimension without explicitly expressing it.

Moreover, there is a third means of expressing functional concepts, namely by dimensional adjectives such as Fr. *lourd* ‘heavy’ and *cher* ‘expensive.’ Dimensional adjectives only imply the dimension and, in contrast to SDVs and functional nouns, they are usually value-specific, i.e., they themselves denote a certain value. Thus, they are generally less flexible; in most cases, they cannot be combined with explicit value specifications, as demonstrated in Table 3.

However, some languages – like German, for example – allow for the use of the verbal, the nominal, and the adjectival variant at the same time. As shown

² For the notion of functional concept, the corresponding lexical noun type and the role of determination cf. Löbner (1979), (1985), (2011).

x	=	f	y
<i>Le pain</i>	<i>est</i>	<i>lourd</i>	
<i>*Le pain</i>	<i>est</i>	<i>lourd</i>	<i>de 2 kilos</i>

in Tables 4 to 6. In French, the nominal variant is not available for the noun *a*

x	=	y	f	
<i>Das Brot</i>	<i>ist</i>	<i>2 Kilo</i>	<i>schwer</i>	lit.: 'The bread is 2 kilos heavy'

Table 6: Dimensional adjective construction (German)

The lexical devices for expressing functional concepts vary considerably across languages. In modern Indo-European languages, the nominal variant seems to outweigh dimensional verbs and dimensional adjectives, both in number and frequency. Our cross-linguistic investigation of functional concepts clearly shows

³ In French, the combination of dimensional adjectives and explicit value specifications is mainly restricted to a subset of spatial adjectives (e. g., *long* 'long,' *haut* 'high,' *large* 'large, wide,' *profond* 'deep,' etc.), whereas such a restriction does not exist in German. This does not mean that there are no restrictions at all in German; in many cases, the availability of the adjectival paraphrase is at least questionable (cf.: *?Das Brot ist fünf Euro teuer*. Lit.: 'The bread is five euros expensive.'). Starting out from a large-scale analysis of German SDVs, Gamerschlag (2014) demonstrates that even in German only few SDVs can be paraphrased by adjectives.

Figure 1: Lt. *pendere* > Fr. *poids*

that this class of nouns saw a significant upsurge in German and French in scientific discourse and all kinds of expository texts that try to impart depersonalized, objective knowledge during the last centuries. Nevertheless, there are many dimensions which are encoded alternatively by nouns or by SDVs. Furthermore, in many cases SDVs seem to have constituted a preliminary stage for the later nominal encoding of functional concepts. This is true, for example, of French *poids* ‘weight.’ It can ultimately be traced back to the Latin verb *pendere* which originally meant ‘let hang down.’ As it was used in the context of weighing (‘let the scales of a balance hang down in order to weigh something’), it acquired the transitive reading ‘weigh something’ as well as the dimensional reading ‘weigh’; the noun then derives from a nonfinite form of *pendere*, namely the past participle *pensum*.

A comparable development is attested in case of Fr. *coût* ‘(the) cost(s),’ a near synonym of *prix* ‘price.’ *Coût* goes back to Lt. *constāre* which is composed of the prefix *con/com* (from the Old Latin comitative preposition *cum*) and the verb *stāre* ‘stand.’ Its original meaning is ‘come to stand’ or ‘stand still.’ In commercial discourse it developed the dimensional reading ‘cost.’ Here again it is a nonfinite form, the infinitive in this case, from which the noun is finally derived.

A third example is Fr. *contenu* ‘content.’ It stems from the Latin verb *continēre* ‘hold (together).’ Once more, an SDV reading, ‘enclose’/‘contain’ in this case, had been acquired before the functional noun was coined on the basis of the nonfinite past participle form of the verb.

These examples also indicate that the dimensional reading of the verbs themselves can often be traced back to nondimensional usage. The verbs initially refer to intersubjectively stable bodily experience, to body posture or motion and hand

Figure 3: Lt. *continere* > Fr. *contenu*

action. In the following sections we will take a closer look at possible origins and lines of development of SDVs. We will try to outline how these anthropomorphic concepts are transformed into more abstract concepts by means of associative processes like metonymy and metaphor, and how this finally leads to the isolation of a single semantic property that allows us to assign a dimension to an object.

2 Diachrony of stative dimensional verbs in French

2.1 Data

Our inventory of French SDVs has mainly been developed by analyzing approximately 2500 entries in the verb dictionary compiled by Busse & Dubost (1977/²1983). The SDVs and SDV readings identified here were revised and extended by means of other synchronic dictionaries (e. g., Petit Robert and TLFi), the syntactic semantic thesaurus of French verbs by Dubois & Dubois-Charlier (1997),

the data offered in the realm of lexicon-grammar,⁴ and French text corpora (Fran-text). We eventually distinguished more than one hundred items⁵ which have been examined in terms of their diachronic sources and stages of development using different etymological dictionaries (e. g., EWFS, FEW, Robert Historique).⁶

2.2 Origins of SDVs

The analysis has shown that the majority of SDVs are transparent. Most of them do indeed go back to dynamic verbs or special groups of stative verbs, which originally encode sensorimotor concepts. In many cases, the source concepts which can be attested for the Latin period, e. g., basic hand actions like HOLDING reoccur in more recent developments. This can, for example, be illustrated by Fr. *tenir* < Lt. *tenēre* ‘hold.’ In modern French *tenir* is still used in the sense of ‘hold’ in sentences like (1a) and (b)

- (1) (a) La petite fille tient un sac à main.
 ‘The little girl holds a handbag.’
 (b) Tiens-moi ça un instant, s’il te plaît.
 ‘Hold this for me a moment, please.’

but it is also used as an SDV denoting CAPACITY, e. g., in (2):

- (2) La cuve tient mille litres.
 ‘The vat holds a thousand liters.’

⁴ See particularly the material available on the website (<http://infolingua.univ-mlv.fr/>).

⁵ Note that the number of SDV readings is actually higher than the number of items (verbs) in our inventory, since one verb generally displays several SDV readings (cf. *infra*).

⁶ There are different types of SDVs which we cannot discuss in detail in this paper. Some SDVs like *pēser* and *sentir* can take an absolute use without a value argument. In this case, they denote a fixed (positive or negative) high value (cf.: *Ce sac pèse*. ‘This bag weighs (a lot).’/ *Ce poisson sent*. ‘This fish smells (bad).’). Other verbs can adopt a dimensional reading in special contexts (cf. *vendre* ‘sell’ in *Cette voiture se vend bien*. ‘This car sells well.’). Still others may be used to specify more than one dimension like, for instance, German *sitzen* ‘sit’ (POSTURE and LOCATION) or *kleben* ‘stick’ (CONTACT and LOCATION). As has already been pointed out in other contexts (cf. Talmy 1985, Schwarze 1993), these ‘bidimensional’ uses can be described as rare in Modern French as well as in other Romance Languages; French makes use of resultative constructions instead (cf. *être assis* ‘be seated’, *être collé* ‘be stuck’). For an overview of the different types of SDVs cf. Schwarze (2008), for a more detailed account cf. Gamerschlag (2014).

Not every speaker accepts this kind of construction, but it is attested.⁷ So once again, it is the concept of HOLDING which gives rise to a CAPACITY reading.

Another example which is completely uncontroversial among native speakers of French is *composer*. It is derived from OFr. *poser* ‘rest’/‘put in a place’ which goes back to Lt. *pausare* ‘pause, halt, seize’ and whose meaning was presumably influenced by Lt. *ponere* ‘lay down’/‘put down’ and *componere* ‘put together’/‘compose.’ Although the sense of Lt. *componere* is (still) vivid in Modern French, the middle construction as well as the resultative yield a dimensional reading and allow us to specify the dimension STRUCTURE or COMPOSITION:

- (3) (a) Le groupe se compose/est composé de garçons et de filles.
‘This group is composed of/consists of boys and girls’
- (b) Cet ouvrage se compose/est composé de trois parties.
‘This work is composed of/consists of three parts.’

Only minor groups of SDVs do not evolve from verbs but from adjectives – such as Lt. *durus* ‘hard’ which gives rise to Lt. *durare*, Fr. *durer* ‘last.’ Another (and apparently more frequent) source is nouns. Denominal derivation can be of two kinds: Derivation from sortal nouns which designate (classes of) objects with specific salient characteristics seems to be typical of particular semantic groups of SDVs, such as SDVs denoting light emission (cf.: *chatoyer* ‘shimmer’ < *chat* ‘cat’ (supposedly because of the cat’s eyes), *étinceler* ‘sparkle’ < *étincelle* ‘spark,’ *flamboyer* ‘blaze’ < OFr. *flambe* ‘flame’/‘blaze’ etc.). On the other hand, we assert that more concrete functional nouns, such as *bouche* ‘mouth’ or *bout* ‘limit’/‘endpoint,’ constitute the basis for the derivation of verbs displaying an SDV reading. *Bouche* gives rise to *déboucher* (*dans/sur*) ‘flow into’/‘lead to,’ *bout* yields *aboutir* (*à*) ‘lead to (an end)’; both specify the dimension ENDPOINT, GOAL or OUTCOME:

- (4) (a) La rue débouchait sur une place immense.
‘The street led to an enormous square.’
- (b) Une philosophie qui débouche sur l’action.
‘A philosophy which leads to action.’

⁷ The example is taken from Dubois & Dubois-Charlier (1997). Standard dictionaries of modern French do not unambiguously account for a CAPACITY reading. The judgements of native speakers on the acceptability of CAPACITY denoting uses vary considerably. According to Petit Robert one meaning of *tenir* is “occuper (un certain espace)” (Petit Robert s. *tenir* I, 8), TLFi is more explicit in this respect, since they add “avoir une certaine capacité” (TLFi s. *tenir* IV/A, 2).

- (5) (a) Le chemin aboutit au village.
 'The path leads to the village.'
 (b) Ses recherches n'ont abouti à rien.
 'His research didn't lead to anything.'

However, we have to be considerate here because in some cases this kind of denominal derivation as well as the deadjectival derivation does not *immediately* lead to an SDV reading. As for Fr. *déboucher* (*dans/sur*) and Lt. *durare*, dynamic uses of the verbs in question might be older.⁸ Taking this into account, we state that the SDV readings develop, once again, from a verb.⁹ Nevertheless, these verbs usually do not pertain to the most prototypical group of source verbs, namely the one encoding sensorimotor concepts, which we will look at in the remainder of this paper.

2.3 From sensorimotor concepts to functional concepts

Some of the most frequent sensorimotor concepts originally expressed are 'drag,' 'put,' 'give,' 'hold,' 'take,' 'touch,' 'carry,' etc. These concepts give rise to a number of different dimensional readings. In (6) to (10) this is illustrated by French *porter* which also keeps the 'original' meaning, that is the meaning of the Latin verb *portare* 'carry'.¹⁰

- (6) RANGE: Le canon porte (jusqu') à 10 km.
 'The range of the cannon is 10 km.'
 (Lit.: 'The cannon carries (up) to 10 km.')
- (7) SUBJECT: Cette étude porte sur le chômage.
 'This study deals with unemployment.'
 (Lit.: 'This study carries on unemployment.')

⁸ *Déboucher* is initially used in the sense of 'appear,' 'come out of,' *durare* first means 'make hard.' Less controversial for the second denominal type are German verbs like *abstammen* < *Stamm* 'trunk (of a tree)' and *beinhalten* < *Inhalt* 'content.'

⁹ Moreover, the nominal base of the verb in question may ultimately go back to a dynamic verb (cf. *bout* 'limit'/'endpoint' which, according to most scholars, is derived from *bouter* < Old Low Franconian **bōtan* 'push'/'beat').

¹⁰ Note that the following SDV uses are not meant to cover the full meaning range of French *porter*.

- (8) LOCATION: L'accent porte sur la dernière syllabe.
 'The accent lies on the last syllable.'
 (Lit.: 'The accent carries on the last syllable.')
- (9) POTENTIAL: Un argument qui porte.
 'A convincing/valid argument.'
 (Lit.: 'An argument that carries.')
- (10) PREGNANCY TIME: La chatte porte soixante jours.
 'Cats' pregnancy lasts sixty days.'
 (Lit.: 'Cats carry sixty days.')

The development of deverbal SDVs from the above mentioned source concepts is propelled by associative processes such as metonymy and metaphor. These processes rely on gestalt principles of perception (like figure and ground, proximity or contiguity and similarity) and can be specified for every step in concept development.¹¹ In initial stages, metonymic profiling strategies in verbally encoded event frames appear to dominate. Metonymies serve to highlight specific meaning components and to profile noncanonical roles (like theme, path, source, goal, instrument etc.). Subsequently, metaphors enable domain mapping of functional concepts.

This development can be illustrated by means of Lt. *ducere* 'drag' (Figure 4). According to different syntactic as well as semantic parameters (such as animacy, control and volitionality on the side of the agent), Lt. *ducere* can be regarded as a prototypical transitive verb. The semantic changes motivated by metonymies involve a gradient loss of transitivity. In a first step, the meaning of *dūcere* shifts from the concept of DRAGGING to the concept of LEADING and ACCOMPANYING, and this is how Fr. *conduire* (< VLt. *conducere*) is first used. Apart from the agent and the experiencer, the underlying concept frame comprises elements such as instrument, path and goal. Since Old French, the orientation or goal component becomes central, while the comitative reading recedes.¹² This tendency seems to be a prerequisite for subsequent argument alternations and the emergence of

¹¹ There is a whole wealth of contemporary literature dealing with the different associative processes and their relevance in (synchronic) language variation and (diachronic) change. For comprehensive discussions which draw especially on French and other Romance Languages cf. Blank (1997), Waltereit (1998), Koch (2001) and Gévaudan (2007).

¹² "Dès l'ancien français, l'extension des sens s'est faite [...] par la valorisation de l'idée d'«orientation» aux dépens de celle d'«accompagnement»" (Robert Historique, s. *conduire*).

dimensional readings: The agent is finally shifted out of its canonical subject

Figure 4: Lt. *ducere* > Fr. *conduire* à

Unergative and unaccusative verbs denoting elementary movements, such as *go*, *run*, *fall*, transform in a similar way. In accordance with transitive verbs, less prominent components of the original event frame become highlighted while all anthropomorphic and dynamic aspects are lost. Starting from a complex event verb, the associative processes even allow us to single out different attributes leading to different dimensional readings, as has already been illustrated for French *porter* above. In the following, we will go into more detail for the intransitive French verb *descendre* to demonstrate how this diversity may occur.

For French *descendre* (< Lt. *descandere* ‘move down’/‘go down’ < *scandere* ‘jump up’/‘climb’) at least three SDV readings can be distinguished:

- (11) ORIGIN: Elle descend d’une ancienne famille./L’homme descend du singe.
‘She descends from an ancient family.’/‘Man descends from ape.’
- (12) GRADIENT: La rue descend à pic.
‘The street falls away/drops steeply.’
- (13) DEPTH: Le puits descend à 40 mètres.
‘The well is 40 meters deep.’

The original reading given in (11), which is first attested in the 12th century, is metaphorically motivated. The underlying conceptual metaphor is GENEALOGY IS A PATH. The relevant aspect of the DESCENDRE concept is that DESCENDRE is a movement that implies a change of location of the subject referent leading from a starting point, the high point A, down to a low point B (*descendre* = ‘move/go down from A to B’). The starting point of the downward movement is overtly expressed when *descendre* is followed by a prepositional phrase introduced by *de* (e.g., *descendre du grenier* ‘move/go down from the loft’). Transferred to the concept of genealogy, *descendre de* acquires a purely relational meaning. Since movement is lost, it serves to express the ‘starting point,’ i.e., ORIGIN of the subject referent.¹³

The SDV reading in (12) dates back to the 17th century and is based on a transitive use of *descendre* (e.g., *descendre une rue* ‘move/go down a street’). The gradient reading arises out of a metonymical shift parallel to the one observed in the *ducere* example above. In the case of *descendre*, the coding of the path argument in the subject position leads to the isolation of the downward orientation (=GRADIENT); accordingly, the adverbial, which in the underlying event frame would serve to express the manner of the downward movement (cf. *descendre rapidement/en courant* ‘go/move down fast/in a running manner’), turns out to express the value that the object acquires with reference to this dimension (i.e., measure of GRADIENT).

Finally, the depth reading given in (13) is best interpreted as the outcome of a metaphorical transfer. Due to its downward orientation *descendre* can be applied to (subterranean) vertical cavities such as wells and shafts. From the point of view of the observer, objects of this nature are essentially characterized by the directional dimension DOWN (or having DEPTH). Now, *descendre à* which originally serves to express the endpoint of the downward movement (e.g., *descendre à la cave* ‘move/go down to the cellar’) allows the specification of the value that the object acquires along the dimension of DEPTH.¹⁴

¹³ In our opinion, the downward orientation of *descendre* does not play any crucial role for the metaphorical transfer. Nevertheless, *descendre* originally may have been preferred against other options due to its orientation, since family trees, for example, are usually arranged in a top-down manner.

¹⁴ Note that the depth reading is neither recorded in etymological dictionaries nor in standard dictionaries of modern French. It is attested in Dubois & Dubois-Charlier (1997) and the online version of the Larousse encyclopedia (*Larousse Encyclopédie sur Internet*, cf.: <http://www.larousse.fr/>).

2.4 Correlation between source concepts and dimensional readings

Up to now, we have seen how different dimensional readings emerge from one and the same source concept – depending on which aspect or attribute of the underlying frame becomes isolated. However, if we take specific dimensional readings as a :

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Figure 6: Correlation of source and dimension: CONTENT

The meaning changes leading to the SDV readings are usually motivated by common types of metonymies and metaphors which remain stable over time, e. g., starting point of movement → origin of state or entity → cause of state or entity, container → contained/content. Therefore they occur more than once within a

References

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Figure 7: ORIGIN/CAUSE and CONTENT in German

3 Conclusion

Our analysis of the historical development of SDVs shows that even highly abstract functional concepts are rooted in sensorimotor experience. There are striking parallels to concept formation in general as put forth by the *embodied cognition theory* (cf. Ziemke 2003 for an overview). The idea that concepts are embodied assumes that we have a species-specific view of the world, due to the nature of our physical bodies. This is corroborated by our work on SDVs (and functional concepts in general), since we could demonstrate that a restricted set of action and posture verbs combined with a handful of locational and directional particles and prepositions seem to be a convenient remedy for all denotational needs.

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