Phenomenon-Based Perception Verbs in Swedish from a Typological and Contrastive Perspective¹

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Abstract: The article starts with a brief review of current studies of perception verbs as a background to the major part of the paper, which is devoted to a discussion of Phenomenon-based perception verbs. Three broad types are distinguished: sensory copulas, perceptibility verbs and sensory verbs. Verbs of these types appear across the five sense modalities. The categorization is tested on data from a translation corpus consisting of Swedish original novels translated into English, German, French and Finnish. The paper focuses on vision and audition, in particular the Swedish sensory copula verbs *se ut* “look” (e.g. “look happy”) and *låta* “sound” and their translations. In the prototypical meaning, these verbs combine the reference to a sense modality with a modal or evidential component (roughly: SEEM). One of these components can be bleached to various degrees depending on the grammatical context. It turns out that French to a much greater extent than the other languages uses verbs that are unmarked for the sense modality. The place of the result within a general typological framework is briefly discussed. Perceptual verbs referring to an Experience such as *see* and *hear* follow a universal lexicalization hierarchy, whereas the structuring of Phenomenon-based verbs is typologically variable.

Résumé: Cet article commence par passer brièvement en revue les études actuelles des verbes de perception afin de contextualiser son propos, qui s'attache essentiellement aux verbes de perception orientés vers l'objet perçu. Trois grands types de verbes sont distingués: les copules sensorielles, les verbes de perceptibilité et les verbes sensoriels. Des verbes de ce type se rencontrent pour chacun des cinq sens. La classification est mise à l'épreuve des données issues d'un corpus de traduction, qui met en regard des romans suédois et leurs traductions en anglais, allemand, français et finnois. L'étude se concentre sur la vision et l'audition, en particulier sur les copules sensorielles du suédois *se ut* et *låta* et leurs traductions. Dans leur sens prototypique, ces verbes combinent une référence à un type de perception sensorielle et une composante modale ou évidentielle (schématiquement: SEMBLER). L'une de ces deux

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dimensions peut être neutralisée à des degrés divers en fonction du contexte grammatical. Il apparaît que le français a beaucoup plus que les autres langues recours à des verbes qui ne sont pas marqués pour ce qui est du type de perception sensorielle. La façon dont le résultat de l'étude s'inscrit dans un cadre typologique général est brièvement envisagée. Les verbes de perception référant à une expérience, comme voir ou entendre obéissent à une hiérarchisation lexicale universelle, alors que la structuration des verbes orientés vers l'objet perçu est typologiquement variable.

1. Introduction

This section gives a brief overview of selected aspects of the typology of verbs of perception in general as a background to the study of Swedish Phenomenon-based perception verbs referring to vision and audition, which will be discussed from a contrastive perspective in the following sections.

1.1. The semantic field of perception verbs

Table 1 (p. 19) presents a simple grid using English words as an illustration. Canonical verbs of perception like *look / see* and *listen / hear* obligatorily take an Experiencer as subject and refer to specific sense modalities, whereas Phenomenon-based verbs in various ways refer directly to what is perceived (the Phenomenon). Languages can make a distinction between Experiencer-based verbs that are Activities and Experiences. In English, different verbs are used for sight and hearing (*look / see, listen / hear*), but in some languages the distinction is signalled only grammatically (e.g. by using a dative subject to signal an Experience) and, in Australian languages, the distinction is usually not signalled at all (Evans & Wilkins 2000).

There are several types of Phenomenon-based perception verbs. English has sensory copulas in all sense modalities where the Phenomenon is realized as subject and the Experiencer is optional: *Ann looks happy (to me)*. In languages that have sensory copulas, these verbs are often – as in English – closely related to Experiencer-based verbs (in special constructions or by morphological derivation). The relationship between sensory copulas and ordinary copulas (primarily “to be”) is complex, see Staniewski & Gołębiowski (forthc.). In addition to sensory copulas, Swedish has verbs that indicate that a certain Phenomenon can be perceived, e.g. *synas* “be visible”: *Sjön syns (från balkongen)* “The lake can be seen / You can see the lake (from the balcony)”. The Phenomenon is realized as a subject, and there is an optional spatial adjunct that indicates the location of a potential Experiencer, which

is not explicitly referred to. Verbs of this type are the major type of Phenomenon-based perception verbs in Finnish according to Huumo (2010), who has coined the term *perceptibility verbs*. The Finnish perceptibility verbs are morphologically related to the Experiencer-based verbs. The sensory verbs, which are exemplified in the rightmost column in Table 1, are usually not formally related to the canonical perception verbs. Sensory verbs describe a relatively “raw” sensation without introducing an Experiencer explicitly.

Table 1. The verbs of perception in English. A simple grid

	Experiencer-based		Phenomenon-based		
Sense modality	Activity	Experience	Sensory copulas	Perceptibility verbs	Sensory verbs
NEUTRAL	examine	perceive, notice	seem	“be noticeable”	
SIGHT	look at	see	look	“be visible”	shine, shimmer, glimmer, gleam, glitter, glint, glisten, flash...
HEARING	listen to	hear	sound	“be audible”	crack, creak, rattle, crash, sough, surge, buzz...
TOUCH	feel, touch	feel	feel		tickle, abrade, tingle, sting, burn, smart...
TASTE	taste	taste	taste		
SMELL	smell (at), sniff	smell	smell		stink, reek

Several types of hierarchies have been proposed to account for lexicalization and associations between meanings within the field. Viberg (1983, 2001) presented a universal sense modality hierarchy for the lexicalization of (canonical) perception verbs (see Figure 1).

Figure 1. The sense modality hierarchy for perception verbs that are Experiences

The sense modality hierarchy, which applies primarily to Experiences, puts restrictions on lexicalization and on patterns of polysemy. There are languages such as Kobon (a Papua New Guinea language, see Viberg 1983: 150-152) that have one general verb of perception that does not seem to have a prototypical meaning tied to a specific sense modality, but most languages that have been described so far have at least one verb of that type. If a language has only one verb of perception that refers to a specific sense modality, it has SEE as its prototypical meaning. A common type of language has SEE and one more verb that covers the rest of the sense modalities. This verb tends to have HEAR as the prototypical meaning. This meaning is sometimes difficult to establish, but as long as it does not have a prototypical meaning referring to another sense than HEARING, the hierarchy is not contradicted (the language only has SEE). If a language has three or more perception verbs tied to a specific modality, it always has SEE and HEAR in addition to TOUCH, TASTE and / or SMELL. There are also more complex patterns, but, in general, verbs high (to the left) in the hierarchy tend to be lexicalized as simple verbs in more languages, tend to be more frequent, and tend to extend their meaning downwards (see Aikhenvald & Storch 2013; Maslova 2004; San Roque *et al.* 2015; Wälchli 2016 for discussion and critique).

1.2. Sensory verbs

The sense modality hierarchy primarily applies to Experiences. As shown in Viberg (2015), there is great variability across languages with respect to the lexicalization of sensory verbs. Like many European languages, English has a large number of sensory light verbs such as

gleam and *glisten* and of sensory sound verbs such as *clatter*, *rattle* and *patter*. The latter amount to more than a hundred different verbs in English as well as in Swedish (for a brief discussion, see Viberg 2015: 120–126). In stark contrast to the large sets of sensory light and sound verbs (see Section 2), European languages have few specialized verbs for taste and smell. However, these domains are richly elaborated in some non-European languages.

Elaborate systems of taste terms have been described for several African languages. Nakagawa (2012) describes two such elaborate fields in G|ui and G||ana, two Khoe languages spoken in Botswana (see Table 2). One field is referred to as elaborate taste verbs. Twenty verbs of this type have been attested (see Table 2.a for some typical examples).

Table 2. Examples of elaborate taste verbs
and food texture verbs in G|ui (based on Nakagawa 2012)

a. Elaborate taste verbs (20 attested verbs)	
Verb	Gloss
ts ^h àā	“to have a bad taste typical of wildebeest meat”
†hójō	“to have a good taste typical of (ostrich) egg”
g úrō	“to have a good taste typical of parched wild melon seeds”
!qχ’ōrō	“to have a distinct taste of honey”
cúm	“to have a bad taste common to ostrich meat or certain edible termites”
b. Food texture verbs (32 attested verbs)	
Verb	Meaning: “to have a certain texture like that of...”
!húi !húi	“fruit full of juice”
ts ^h án ts ^h án	“tender fillet meat”
g úra g úra	“steenbok meat lacking gravy”
χárù χárù	“fresh tamma melon”
!úi !úi	“meat with much gravy”

Several of the elaborate taste verbs refer exclusively to a taste that is characteristic of a traditional type of food. The meanings thus have a high degree of specificity and another important feature is that they

are not source based, i.e. derived from or etymologically related to the corresponding nouns that name the animals or plants, etc. that have the taste that the verb refers to. The food texture verbs are multimodal. Basically they refer to the experience of tactile features of a specific food or beverage, but often the characteristic sound arising through biting and chewing is a component of the meaning. Eighteen of the food texture verbs are derived from related ideophones and exhibit reduplication.

Elaborate systems of smell terms have also been found in non-European languages. The earliest documentation of such a system appears to be Aschmann's (1946) description of Totonac, a Totonacan language spoken in Mexico. In Totonac, there is no general word referring to smell but a choice must be made between eight different stems that refer to distinct types of smells as demonstrated in Table 3.

Table 3. Verb stems referring to eight categories of smells in Totonac (based on Aschmann 1946)

Semantic category	Root
1. Vegetation and good smells	mu-ʔ-uʔn
2. Bad smells	puʔ-
3. Medicinal and aromatic smells	ha-
4. Body and animal smells	-un-
5. Sour smells	-uʔt-
6. Smells that leave a taste in the mouth (e.g. of food cooking)	-iʔh-
7. Artificial smells (e.g. of perfume or hand soap)	ɕi.ʔ-iʔn
8. Air-permeating smells (e.g. a smell brought with the wind)	kinkala

More recently, olfaction and language have been extensively investigated in a number of studies from the Max Planck Institute for Psycholinguistics in Nijmegen (Majid *et al.* 2018a). Particularly interesting is the use of naming studies, for example Majid & Burenhult (2014), who compared speakers of English with speakers of Jahai, an Aslian language with 12 distinct smell terms spoken in peninsular Malaysia. Speakers of Jahai found the naming of odours easy, whereas English speakers struggled with the same task (see also Jędrzejowski & Staniewski *forthc.*; Viberg *forthc.* on olfactory verbs in Swedish).

One sense remains to be discussed. The experience of sensations perceived in various ways with the skin are regarded as manifestations of the sense of touch and jointly referred to by *feel* in English. Phenomenon-based sensory words that describe such sensations more in detail form more specific semantic subfields such as texture, temperature and pain. In English adjectives are used to describe aspects of texture such as *rough-smooth* and *hard-soft* and to describe temperature (e.g. *cold* and *warm*). Temperature terms have been described in a broad typological survey covering 50 diverse languages (Koptjevskaja-Tamm 2015). The number of basic terms varied from one, in languages that only had a single word for *cold/cool*, up to four in languages such as English that distinguish between *cold* and *cool* and *warm* and *hot*. Pain has also been studied typologically in a diverse set of languages. Reznikova *et al.* (2012) present a typological study of pain predicates based on data from more than 20 diverse languages. Verbs tended to be recruited from 4 semantic fields that describe the cause of the sensation, for example BURNING, which turned out to be the most frequent source (*She felt a burning pain in her midriff*).

The lexical elaboration of Phenomenon-based sensory verbs varies greatly across languages and thus represents a typologically variable feature. The present study is restricted to verbs. However, with respect to the set of semantic distinctions, sensory verbs in many respects resemble sensory words of other types such as adjectives and nouns. Recently, sensory words in general have attracted much interest. Strik Lievers & Winter (2018) discuss how the encoding of sensory concepts varies across parts of speech. A related study by Winter *et al.* (2018) shows that vision dominates in English if all types of sensory words are taken into account but point out that this does not generalize across all cultures. In a broad and well-documented typological study based on 20 diverse languages, Majid *et al.* (2018b) show that the degree to which sensory domains are richly or poorly coded varies across languages: “For each perceptual modality, there are communities that excel at linguistic expression and those that seem to struggle to put them into words” (Majid *et al.* 2018b: 11374). The conclusion applies to (in my terminology) Phenomenon-based sensory words that describe sensory properties. It can still be maintained that Experiencer-based perception verbs, which focus on the perceiver rather than the sensory stimuli, follow (with only few exceptions) the universal sense modality hierarchy (see Figure 1 above). The first step has particularly strong support. As demonstrated in Viberg (2012), a verb meaning SEE is the most frequent perception verb in 12 European and 9 non-European languages. It is also one of the 20 most frequent verbs in all of these languages,

which means that this verb holds a prominent position among basic verbs in general. The dominance of SEE gets strong support also from San Roque *et al.* (2015) in a study based on conversational data from 13 typologically diverse languages. San Roque *et al.* (2015: 55) conclude: “To summarize, talk about vision dominates conversation across diverse cultures, followed closely, but not universally, by hearing”.

1.3. *This study: presentation of aims and the corpus*

Swedish makes many semantic distinctions between various types of Phenomenon-based visual and auditory perception verbs and provides a good starting-point for studying what characterizes such verbs from a cross-linguistic perspective. What are the basic semantic parameters? The following sections are devoted to a discussion of such verbs from a contrastive perspective. Literal and extended meanings of visual and auditory Experiencer-based verbs have already been studied in Viberg (2008) based on the Multilingual Parallel Corpus (see below) and across 13 typologically diverse languages in San Roque *et al.* (2018). See also Ibarretxe-Antuñano (2013) on perception metaphors across languages.

Section 2 is devoted to sensory verbs, Section 3 to sensory copulas and Section 4 to perceptibility verbs. Data for Section 2 will be taken from the English Swedish Parallel Corpus (ESPC) consisting of English and Swedish original texts together with their translations into the other language (Altenberg & Aijmer 2000). Data for Sections 3 and 4 will be taken from the Multilingual Parallel Corpus (MPC), which at present consists of extracts from 22 Swedish novels and their translations into English, German, French and Finnish (around 600,000 words in the Swedish originals). Examples from this corpus will be marked by a text code based on the initials of the author’s name (see the list of the works quoted at the end of the article). French turns out to be a particularly interesting language to compare with. Vinay & Darbelnet ([1958] 1995: 53-56) state that English has a more diversified vocabulary than French to describe visual and auditory phenomena. Tegelberg (2000: 87-115) shows with data from a translation corpus that French has fewer such words than Swedish. Both these works discuss sensory light and sound verbs, whereas the present paper will focus on sensory copulas. Such verbs are compared in English and German with a focus on evidential meanings in Whitt (2010).

2. Sensory light and sound verbs

The MPC corpus is not large enough to allow a systematic contrastive study of the light and sound verbs. This section will primarily serve

to identify the major semantic parameters that distinguish such verbs from sensory copulas and perceptibility verbs as a background to the more systematic study of these verbs in Sections 3 and 4.

2.1. Sensory light verbs

Both English and Swedish have a number of sensory light verbs that describe the emission or reflection of light. The subject can appear in a *Source-based construction* and refer to the source which produces the light as in Swedish *Solen skiner* ‘The sun is shining’, *Lampan lyser* ‘The lamp is shining’ or *Kolet glöder fortfarande* ‘The coal is still glowing’. In Swedish, the sensory light verbs – like other sensory verbs – characteristically appear in an impersonal construction that will be referred to as the *Environmental construction* as in *Det lyser (i garaget)* ‘The light is on (in the garage)’, literally: ‘It shines (in the garage)’. This construction obligatorily consists of an impersonal subject *det* ‘it’ in combination with a sensory verb. Table 4 presents an overview of the sensory light verbs in Swedish. Timing is a major semantic parameter. The most general verbs *lysa* and *skina* refer to continuous light, whereas most of the other verbs refer to unsteady, frequentative light. (It is difficult to draw a sharp line, except for *lysa* and *skina*.) Often the frequentative verbs refer to reflected light as in (1).

1. Över kullerstenarna *gnistrade* det av gult och av rosa, trappan till stadshotellet *skimrade* av silver. (ESPC: Fiction)

The cobblestones *sparkled* yellow and pink and the steps up to the town hotel *gleamed* like silver.

Table 4. Sensory light verbs in Swedish

Continuous		Frequentative		
lysa		tindra	flimra	flamma
skina		skimra	skillra	
glöda	glänsa	glimra	glimma	glimta
stråla		glindra	glittra	
	blänka	gnistra	glinta	ulma

The frequentative verbs in Table 4 are sound symbolic or descriptive. The latter term, which takes the rather high degree of conventionalization into account, is used by Snell-Hornby (1983) in her contrastive study of English and German, which, like Swedish, have many such

verbs, but there is little one-to-one correspondence. As in English, many of the sound-symbolic verbs begin with *gl-* in Swedish, but even if the verbs have a similar form, the degree of correspondence is low. Two or three of these verbs appear as translations of one of these verbs in the other language. The Swedish verb *glittra* is an example of this in (2) and (3). The contrasts between some of these verbs appear to be fuzzy even language-internally to native speakers.

2. Solen *glittrade* i den svagt krusade vattenytan. (ESPC: Fiction)

The sun was *glistering* on the rippling surface of the water.

3. Och när dimman lyfte *glittrade* det i fönstren där borta i New York. (ESPC: Fiction)

When the fog lifted the windows *glittered* over there in New York.

It appears that the translation relations between Germanic languages tend to be many-to-many. Judging from Tegelberg (2000: 95-112), the relation between Swedish and French to a greater extent tends to be many-to-one, even if French has a group of such verbs.

2.2. Sensory sound verbs

In many European languages, there is a relatively high number (around 100 in English and Swedish) of sensory sound verbs. It is possible to describe such verbs with reference to psychoacoustic properties such as low-pitched (*buzz*) and high-pitched (*hiss*), intensity or loudness (*boom*) or the temporal characteristics: continuous (*sough*), frequentative (*rattle*, *clatter*), and punctual (*snap*). Table 5 shows the system of temporal distinctions with examples in Swedish.

Table 5. A selection of sensory sound verbs in Swedish

Continuous	Frequentative -ra			Punctual V + till
susa	knarra	knattra	knastra	fräsa till
fräsa	smattra	tjatträ	kvittra	
väsa	muttra	puttra	huttra	
vina	slamra	klappa	skallra	
	mullra	bullra	dundra	
	klirra	knorra	surra	

In Finnish, the temporal distinctions can be expressed systematically with derivational suffixes in sound verbs (Anttila 1976), see Table 6. What makes the number of sound verbs particularly large in Finnish is the possibility of forming sets of sound verb roots by varying the vowel between consonants as exemplified with one set of the continuous verbs in Table 6. Possible sources of the continuous sounds are shown to the left (Rea Peltola, personal communication).

Table 6. Examples of sensory sound verbs in Finnish

Possible sources	Continuous -ise-	Frequentative -erta-	Punctual -ahta-
a hot sauna oven	kihistä	nakertaa	pamahtaa
a large amount of flies, bees, etc.	kuhista	‘gnaw’	‘bang’
the voice of a person who has a cough	köhistä		
the sound of water in rapids or waterfall	kohista		
speaking with a raspy voice	kähistä		
the sound of a newspaper or leaves rubbing against each other	kahista		

As an alternative (or rather complement) to the psychoacoustic description, it is possible to follow an ecological approach. The sounds can often be traced to particular sources and to typical events causing the sounds to emerge from the source. Typical situations can be studied in corpora, see (4):

4. *Det knastrade* som när man stekte fläsk. (MPC: MN)

There was a crackling, like pork frying.

Es knisterte wie Speck in der heißen Panne.

Ça grésilla comme quand on fait frire du lard.

This example also shows the use of the environmental construction, which is characteristic of sensory verbs in Swedish, German and French (see above on sensory visual verbs). Such constructions can also be used in English, although an existential construction is used in this example. The environmental construction is a kind of impersonal construction with a subject that has a low degree of referentiality and refers to

perceptual characteristics of the whole scene. Like the visual sensory verbs, sound verbs can also be used in source-based constructions, where the subject refers to the source of the sound as in (5):

5. There are staircases, also of wood, which *creak* when we climb them. (ESPC: Fiction)

Det finns trappor, också de av trä, som *knarrar* när vi går uppför dem.

Intuitively, *knarra* has two prototypical sources in Swedish. One is dry wood such as in floorboards and wooden stairs, and the other is snow that crunches under the pressure of a boot. Such intuitions can be tested with large corpora, which make it possible to look systematically at collocates. In a Swedish corpus of fiction and social media texts (Korp: Bloggmix, Skönlitteratur; see Borin *et al.* 2012), the corresponding verb *knarra* can be studied with the help of a “word picture” (*ordbild*). The two most frequent nouns in the subject slot refer to *floor* (*golv*) and *bed* (*säng*). *Snow* (*snö*) has rank 5, if the words are ordered in descending frequency. The two most frequent adverbials refer to *under shoe* (*under sko*) and *under foot* (*under fot*), followed by *in floor* (*i golv*), *in stairs* (*i trappa*) and *in house* (*i hus*).

Information about typical sources is in many cases already given in good dictionaries, but, in order to give a complete description, information about psychoacoustic features are also needed. Sound verbs often have several translational correspondences that are difficult to keep apart. In spite of occurring only a few times in the ESPC, the verb *creak* is translated by three different Swedish verbs: *knarra*, *knirka* and *knaka*. For example, a wagon wheel can both *knirka* (as in 6) and *knarra*. *Knirka* appears to refer to a more high-pitched sound than *knarra* (said with the reservation that many of the sound verbs are subject to varied interpretations by native speakers).

6. Det började *gnissla* och *knirka* som av vagnshjul också. (ESPC: Fiction)

It started *screeching* and *creaking* like wagon wheels.

3. Sensory copulas

3.1. Visual sensory copulas

The subject of a sensory copula is a Phenomenon that is perceived by an Experiencer who is usually not explicitly mentioned, see (7):

7. Hon såg ledsen ut. (MPC: KE)

She *was looking* unhappy.Sie *sah* verdrossen *aus*.Hän *näytti* surulliselta.Elle *avait l'air* triste.

Swedish, like German, uses the verb meaning “see” in a special construction: *se* ADJ *ut* “see ADJ out”, whereas English uses *look* ADJ and Finnish *näyttää*, which is derivationally related to *nähdä* “see”, in combination with an adjective or a noun in the ablative case (*-lta* / *-ltä*). Another alternative is *olla* “be” + *näköinen* in combination with an adjective or a noun in the genitive. *Näköinen* is a denominal adjective (*näkö* “look; vision” + *-inen*, a suffix with an abstract meaning of possession and belonging), for example: *Marja oli iloisen näköinen* [Marja was happy-Gen *näköinen*] “Marja looked happy”.

The sensory copulas discussed so far are transparently related to verbs meaning “see” or “look” and share the meaning component VISION, and one part of their meaning can be paraphrased “give a visual impression of being in a certain way”. The interpretation of the most frequent French translation *avoir l'air* is not completely obvious. From a structural point of view, *avoir l'air* shows some signs to be developing into a lexicalized unit, since the adjective can optionally agree with the subject when it is animate rather than with the noun *air*, which is masculine: *Elle avait l'air curieuse* (f.) “She looked curious” (cf. *Il avait l'air curieux* (m.) “He looked curious”). However, the adjective obligatorily agrees with *air* in some contexts. (*Elle a l'air sérieux* (m.) *comme un pape* “She looks serious like a pope”). The basic meaning of French *air* is taken over from Latin *aer*, but the word has developed a secondary meaning (first attested in the 16th century, in particular *bel air* “elegant manners”), which according to Rey (2010: 43) is detached from the basic meaning and refers to the look or appearance of someone or something. *Avoir l'air* thus contains a reference to perception, to what can be observed but is not as clearly associated with vision as the visual sensory copulas discussed above.

In addition to the perceptual component, there is often an element of uncertainty in the sensory copulas (cf. *She looked unhappy* – *She was unhappy*). An emotion is an inner feeling that cannot be directly observed with the eyes but is presented as an inference based on visual evidence. The use of an auditory sensory copula (discussed in Section 3.2) refers to an inference based on auditory evidence (*She sounded unhappy*). Uncertainty could also be expressed with *seem*, but

that leaves open what kind of evidence the assumption is based on. For simplicity, this meaning component will be referred to as SEEM (disregarding the contrast between near synonyms such as *seem* and *appear*). It should be noted that the sensory copulas can also be used to simply describe the appearance of something, for example: *Mary has such a funny face. She looks happy even when she is sad.* However, inferences are more or less involved in most examples where the visual copula is used to make a description. When we describe the visual properties of a certain object, we often use the ordinary copula: *The coat is green.* Colour is a visual characteristic, and it is not necessary to state that the description is based on vision. Under normal conditions a coat “has” a certain colour as an inherent property. The use of a sensory copula rather points to uncertainty or special conditions: *The coat looks green but maybe it’s too dark to see clearly. The green coat looks blue in this light.*

A second frequent use of the visual copula is to express value judgments based on a personal opinion. Such judgments refer to some aspect of the visual appearance but do not normally express uncertainty. In all the languages in example (8), it would be possible to use an ordinary copula as in the French version, but an example such as *Erica was fantastic* does not specifically evaluate her looks but could also be used to express an opinion about what she said or did. The use of *seem* in examples of this type would indicate a lack of direct information to form a firm opinion (*Erica seems to have been fantastic from what I’ve heard*).

8. Erica såg som alltid fantastisk ut. (MPC: CL)

Erica *looked* fantastic, as always.

Erica *sah* wie immer phantastisch *aus*.

Erica *näytti* upealta, kuten aina.

Comme toujours, Erica *était* magnifique.

Table 7 (p. 31) shows the most frequent translations of *se ut* in the MPC corpus. The prototypical meanings of the verbs are indicated in the top row. The count includes cases where verbs combining the components SEEM + VISION are used with a more general meaning (see below). As can be observed, the most direct translations, which combine the meaning components SEEM and VISION in their prototypical meaning, dominate strongly in English and German, even though there are several translations that are unmarked for sense modality and only share the meaning component SEEM. In Finnish, *näyttää* dominates but the other expression related to vision *olla näköinen* is also relatively

frequent. The most frequent French translation is *avoir l'air* “have the appearance/look”, but, in French, there are several rather frequent translations that are neutral with respect to the sense modality. In addition, there is a greater variety of less frequent translations than in the other languages (see Other expressions in Table 7).

Table 7. The most frequent translations of Swedish *se ut* in the MPC corpus

	Prototypical meaning						
	SEEM + VISION		SEEM		BE		Other expressions
Swedish	<i>se ut</i>	473					
English	<i>look</i>	384	<i>seem</i> <i>appear</i>	23 8	<i>be</i>	7	51
German	<i>aussehen</i>	332	<i>scheinen</i> <i>wirken</i>	38 22	<i>sein</i>	4	77
Finnish	<i>näyttää</i> (<i>olla</i>) <i>näköinen</i>	329 60	<i>tuntua</i> <i>vaikuttaa</i>	5 3	<i>olla</i>	28	48
French	<i>avoir l'air</i> <i>ressembler</i>	105 59	<i>paraître</i> <i>sembler</i>	39 36	<i>être</i>	26	208

Se ut is used in several different constructions that affect the choice of translations. In Table 8 (p. 32), this is demonstrated for French, which has the most varied set of translations. The top row shows the type of complement that is characteristic of the construction. The use of an adjective or an adjectival participle as a complement (*_ADJ*), as described above, is by far the most frequent alternative in Swedish (259 out of 473 occurrences or 55%). The dominant French translation in this case is *avoir l'air*, which, however, has a much lower frequency than the dominant translations in the other languages (French: 84/32%; English: 213/82%; German: 175/68% and Finnish *näyttää + näköinen*: $178 + 45 = 223/69\% + 17\% = 86\%$).

The second most frequent complement of *se ut* is *som* + N (NP). This construction serves to make comparisons as in (9). *Som* is an indeclinable particle with many functions, the most frequent of which is as a relative marker. In combination with *se ut*, it marks the standard of comparison (cf. *Eva är lika lång som Lisa* “Eva is as tall as Lisa”). The dominant French translation in this use is *ressembler* “to resemble, be like”.

Table 8. Phenomenon-based constructions with *se ut* and their French correspondences

		<i>_ADJ</i>	<i>_som</i> N	<i>hur</i>	<i>att-</i> VPinf	<i>som</i> <i>om-</i> S	Other uses	Total
Swedish	<i>se ut</i>	259	85	34	42	46	7	473
French	<i>avoir l'air</i>	84	4	5	6	6	0	105
	<i>ressembler</i>	10	35	13	0	0	1	59
	<i>sembler</i>	14	1	1	15	4	1	36
	<i>paraître</i>	32	1	0	5	1	0	39
	<i>être</i>	19	3	3	0	0	1	26
	<i>on aurait dit</i>	1	9	0	0	13	0	23
	<i>on dirait</i>	0	4	0	0	2	0	6
	<i>faire</i>	4	1	0	0	1	0	6
	<i>avoir / donner l'impression</i>	1	0	0	1	7	0	9
	<i>Reduction</i>	21	3	2	2	0	1	29
	<i>Other</i>	73	24	10	13	12	3	135

9. Men jag *ser* inte *ut som* en baby. (MPC: PCJ2)But I don't *look like* a baby.Aber ich *sehe* nicht *aus wie* ein Baby.Mutta minä en todellakaan *näytä vauvalta*. (Ablative)Mais je ne *ressemble* pas à un bébé.

Examples with *hur* “how” have been singled out as a special case in Table 8, since *hur* covers descriptions that could be made both with *_ADJ* and *_som* N. The most frequent translation in French is *ressembler* even in this case, whereas the other languages in most cases use the most direct translation (see 10).

10. Hur såg Marty *ut* innan han kom i puberteten. (MPC: PCJ)

What had Marty *looked like* before he reached puberty.

Wie *sah* Marty Feldman *aus*, bevor er in die Pubertät kam.

Minkä *näköinen* Marty oli mahtanut olla ennen kuin tuli murrosikään.

À quoi *ressemblait* Marty avant d'entrer dans la puberté?

When *se ut* has an infinitive construction as complement (*att*-VPinf), the other languages except Finnish often use a verb meaning SEEM as translation (see 11).

11. Havel såg *ut* att fundera. (MPC: HN)

Havel *appeared* to be thinking.

Havel *schien* nachzudenken.

Havel *näytti* harkitsevan.

Havel *parut* réfléchir.

In the Swedish example, the supposition that Havel is thinking is presented as an inference based on visual information (e.g. that Havel is knitting his brows). This holds for most of the 42 examples where *se ut* has an infinitive as complement, but in some examples such as (12) a visual element is difficult to trace, and the statement is presented as an inference based on general conceptual information.

12. De riktiga författarna *ser ut* att veta allting. (MPC: TL)

Real writers *seem* to know everything.

Die richtigen Schriftsteller *scheinen* alles zu wissen.

Oikeat kirjailijat *näyttävät* tietävän kaiken.

Les véritables écrivains *semblent* tout savoir.

In French, the most frequent translation of *se ut* with an infinitival complement is *sembler* “seem” (15 occurrences) followed by *avoir l’air* (6) and *paraître* “appear, seem” (5). In English, *look* (21) alternates with *seem* (14) and *appear* (4), whereas Finnish mostly uses the dominant translation *näyttää* (32) in combination with a participial construction (described in Karlsson 2008: 279). In German, *scheinen* “seem” is the most frequent translation used in 26 examples. In 10 examples *aussehen* is used but always with restructuring of the complement, usually a subjunctive clause introduced with *als*-S as in (13):

13. Hon såg ut att vara vid gott mod. (MPC: POE)

She *seemed* to be in good heart.

Sie *sah aus*, als sei sie guten Mutes.

Hän *näytti* olevan hyvällä tuulella

Elle *avait l'air* de bonne humeur.

German *scheinen* is interesting because it is originally a light-source verb and still can be used as such: *Der Mond scheint* “The moon is shining”. As demonstrated in the thorough analysis of *scheinen* used with a *zu*-infinitive in Diewald & Smirnova (2010: 177-191), the verb can refer to accessible evidence of an unspecified type but still in certain contexts specifically refers to visual evidence.

Se ut can be used with a sentential complement introduced with *som om* or sometimes *som att* or only *som* (see 14). All these variants are represented as *som om*-S in Table 8. A further characteristic is that *se ut* often appears in an impersonal construction with *det* “it” as a subject.

14. Ett ögonblick såg det ut som om han tänkte fly. (MPC: MN)

For a moment it *looked as if* he might run away.

Einen Augenblick lang *sah es aus*, als wollte er fliehen.

Hetken *näytti siltä kuin* hän olisi ollut aikeissa paeta.

Un instant, *on aurait dit qu'il* avait l'intention de s'enfuir.

Most of the examples refer to imagined or other irrealis situations as in (14), which is often reflected in the form of the verb in the sub-clause in German (subjunctive) and Finnish (conditional mood, Karlsson 2008: 237). The major correspondent of *se ut* dominates as a translation except in French (out of a total of 46: English: *look* 37, *seem* 2, *appear* 2; German: *aussehen* 35, *scheinen* 5, *wirken* 2; Finnish: *näyttää* 33, *olla näköinen* 2, *olla* “be” 3, *tuntua* “feel, seem” 3). In French, the most frequent correspondent is an impersonal construction with *on*: *on aurait dit que* “one could have said that-S”, which signals irrealis or uncertainty. The most direct correspondent *avoir l'air* is also used but requires restructuring in the form of an infinitive complement as in (15):

15. På avstånd såg det ut som om vi var tungt beväpnade. (MPC: JM)

At a distance it *looked as if* we were heavily armed.

Aus der Entfernung *sah es so aus*, als ob wir schwer bewaffnet wären.

Matkan päästä *näytti siltä niin kuin* me olisimme olleet raskaasti aseistettuja.

À distance, nous *avons l'air d'être* lourdement armés.

The expression *se ut som om*-S can also be used in a counterfactual context as in (16):

16. Erika, jag kommer inte att lämna Millennium, men det är viktigt att *det ser ut som om* jag har gjort det. (MPC: SL)

Erika, I'm not going to leave Millennium, but it's important for it to *look as if* I have.

Erika, ich werde Millennium nicht verlassen, aber es muss so *aussehen, als ob*.

Erika, minä en jätä Millenniumia, mutta on tärkeää, että *näyttää siltä kuin* olisin jättänyt.

Erika, je ne vais pas quitter Millénium, mais il est important *que les gens en aient l'impression*.

French in this example uses *avoir l'impression* with *les gens* "people" as a kind of impersonal subject. This example shows how support verb + noun can be used with another noun than *air* as a translation of *se ut*. The same noun can also be used with "give": *donner l'impression*. Another type of restructuring in French is reduction as in (17), where the verb is omitted. Most frequently *l'air* is involved (12 of 29 examples).

17. Men så hejdade han sig *och såg rädd ut*. (MPC: MN)

But then he would change his mind *and look scared*.

Mais alors il s'arrêtait, *l'air peureux*.

To sum up, English, German and Finnish have rather close equivalents to the sensory copula *se ut*, which with a few exceptions noted above are used as translations across different constructions and functions of *se ut*. In French, *avoir l'air* is the most frequent translation, but it is not as dominant as in the other languages (43% of the translations vs. 71%-86%). The type of construction in which *se ut* is used influences the choice of translation more in French than in the other languages. Verbs meaning SEEM are used as translations in all the languages but to various degrees. This reflects the fact that the visual sensory copula has a prototypical meaning that includes the semantic components VISION + SEEM. At the same time, the visual copula has a tendency across languages to be used as a general marker of modality or evidentiality without referring to a specific sense modality. A more detailed analysis of modality and evidentiality would be interesting but requires a separate study.

3.2. Auditory sensory copulas

Swedish has a sensory copula associated with audition, namely *låta*. The most frequent complement of *låta* in this use is an adjective or a past participle as in example (18), which shows translations into Norwegian and Danish in addition to the other MPC languages referred to in this paper:

18. Swedish: Henrik Wijkner hade *låtit* sympatisk i telefon. (MPC: CL)

English: Henrik Wijkner had *sounded* pleasant on the telephone.

Norwegian: Henrik Wijkner hadde *hørtes* sympatisk *ut* i telefonen.

Danish: Henrik Wijkner havde *lydt* sympatisk i telefonen.

German: Henrik Wijkner hatte am Telefon sympathisch *geklungen*.

Finnish: Henrik Wijkner oli *kuulostanut* puhelimessa oikein mukavalta.

French: Henrik Wijkner lui avait *paru* sympathique au téléphone.

The Swedish verb *låta* is etymologically related to the Latin verb *laxāre*. Reflexes of this verb are used as a verb of letting causation in Swedish and the other present-day Germanic languages (e.g. English *let*, German *lassen*) as well as in the Romance languages (e.g. French *laisser*, Spanish *dejar*). In addition, these verbs have developed various more language-specific uses (Viberg 2009; see Rawoens 2008 and Levshina 2016 for a detailed discussion of the causative uses). The use of the verb of letting as a sensory copula is very language-specific. Danish uses *lyde* (related to the noun *lyd* “sound”) and Norwegian *høres ut* “be heard out” (alternating with *låte*). The German verb *klingen* is also clearly associated with sound (e.g. the frequentative *klingeln*: *Das Telefon klingelt* “The telephone rings”) as well as the Finnish verb *kuulostaa*, which is derivationally related to *kuulla* “hear”. In example (18), French uses *paraître* “seem”, which is not associated with audition. Table 9 (p. 37) shows the most frequent translations of the 170 occurrences of copulative *låta* in the MPC corpus. As can be observed, English and Finnish have one dominant correspondence (the verb used in example 18). That also applies to German, even though *klingen* alternates with the less frequent *sich anhören*. French, on the other hand, lacks any close correspondence. The most frequent translations are *paraître* “seem”, *être* “be” and *sembler* “seem”, which are not associated with sound. The verb *sonner* is derivationally related to the noun *son* “sound” and is frequently used as a sound-source verb that has a sound source as subject and refers to the emission of a sound without any further

complement (*La cloche / le téléphone sonne* “The bell / the telephone rings”). The use of *låta* as a pure sound-source verb is very restricted in present-day Swedish. *Sonner* can also be used as a sensory copula, for example *Ses mots sonnaient étranges au téléphone* “Her words sounded strange on the telephone” or *Ça sonne bien! (ce que tu me dis)*. “That sounds good! (what you are telling me)”. (I thank Flavie Feray, for these examples.) However, judging from the few examples in Table 9, *sonner* is only weakly established as a sensory copula.

Table 9. The translations of Swedish *låta* as an auditory copula

Prototypical meaning								
	SEEM + SOUND		SEEM		BE		SOUND, N	Other expres- sions
Swedish	<i>låta</i>	170						
English	sound	143	seem	4	be	5	6	12
German	<i>klingen</i> <i>sich anhören</i>	119 15	<i>wirken</i>	4	<i>sein</i>	5	5	22
Finnish	<i>kuulostaa</i>	134	<i>tuntua</i>	6	<i>olla</i>	7	4	19
French	<i>sonner</i>	7	<i>paraître</i> <i>sembler</i>	24 12	<i>être</i>	22	16	89

The lack of a direct equivalent in French motivates concentrating on that language. Table 10 (p. 38) shows how the French translations are distributed across the complements of *låta*. The top row shows the frequency of the complements of copulative Swedish *låta*. The use with an adjective or participle as complement (_ADJ) dominates strongly, followed by the use with *som* as a marker of comparison in combination with a noun / NP (_som N).

Apart from the fact that *avoir l'air* has a much lower frequency, the French translation pattern of *låta* is similar to the one of *se ut*. The most frequent translations of *låta* in the context _ADJ are *paraître* “seem”, *être* “be” and *sembler* “seem”, all of which lack any reference to a sense modality. It is also the case that these three translations primarily are used in the context _ADJ. *Avoir l'air*, which is the most frequent translation of the visual sensory copula *se ut*, also appears as a translation, but only 5 times.

The auditory copula has several functions. It can be used to *describe acoustic properties of a sound* as in (19).

Table 10. French translations of copulative *låta* across different types of complements

		_ADJ	_somN	<i>hur</i>	<i>som om-S</i>	<i>som när -S</i>	Other uses	Total
Swedish	<i>låta</i>	107	30	8	14	3	8	170
French	<i>sonner</i>	5	2	0	0	0	0	7
	<i>avoir l'air</i>	5	1	0	0	0	0	6
	<i>paraître</i>	22	0	0	0	0	2	24
	<i>être</i>	20	1	0	0	0	1	22
	<i>sembler</i>	6	0	0	1	0	0	7
	<i>ressembler</i>	1	2	0	0	1	1	5
	<i>faire</i>	4	2	2	0	0	0	8
	<i>on aurait dit</i>	0	6	0	4	0	0	10
	<i>dire other*</i>	0	2	0	2	0	0	4
	<i>avoir l'impression</i>	2	1	0	3	0	0	6
	N_ SOUND	13	1	1	0	0	1	16
	Other	29	12	5	4	2	3	55

*on dirait: 3, autrement dit: 1

19. Röstén *lät* skrovligare än hon önskat. (MPC: LM)

Her voice *sounded* rougher than she would have wanted.

Ihre Stimme *klang* rauher als gewollt.

Ääni *kuulosti* käheämmältä kuin hän olisi toivonut.

Sa voix *était* plus rauque qu'elle ne l'aurait voulu.

Another function is to *make an evaluative judgment of the sound*. In example (20) a character describes his first attempt to sing:

20. Jag gol och pep, och det *lät* värre än hunden. (MPC: MN)

I crowed, I whined and it *sounded* worse than the dog.

Ich johlte und quiekte, es *klang* schlimmer als ein Hund.

Minä kieuin ja piipitin, se *kuulosti* vielä koiran ulvontaakin kamalammalta.

Je hurlais et piaillais. C'était pire qu'un chien.

It is worth noticing that the auditory copula is frequently used to *form an evaluative judgment of the content* of what is said. This is clearly reflected in the French translation ("the idea") of (21). Actually, the auditory copula can be used to evaluate verbal content in general even when it is presented in written form. You can say *The new proposal sounds interesting*, even when the proposal has been presented in a letter.

21. Det *lät* genialiskt. (MPC: KÖ)

That *sounded* brilliant.

Das *klang* genial.

Se *kuulosti* nerokkaalta.

L'idée *paraissait* géniale.

Like the visual copula, *lâta* can be used to signal that an inference is made, based on auditory evidence in this case. (22) is an example of a clearly evidential use of *lâta*. The Finnish and French translations lack reference to auditory evidence, but in the case of Finnish this is an exception.

22. Jag vet inte... kanske att hon *lät* mera uppgiven än rädd, egentligen. (MPC: HN)

I don't know... Perhaps that she *sounded* more resigned than scared, in fact.

Ich weiß nicht... vielleicht, daß sie *sich* eher resigniert *angehört* hatte als ängstlich.

En tiedä... ehkä että hän *tuntui* oikeastaan olevan pikemminkin alistunut kuin peloissaan.

Je ne sais pas... peut-être qu'elle *était* plutôt à bout... pas qu'elle avait réellement peur.

Summing up, the auditory copula *låta* has close correspondences in English, German and Finnish and tends to be translated with an auditory copula across different constructions and functions. French largely lacks an auditory copula. The major candidate, *sonner* “sound”, is only used a few times as a translation. Sense modality sometimes is signalled with nouns referring to sound in combination with a support verb. Apart from that, French uses the same verbs as the ones that are used to translate *se ut*, except for *avoir l’air*, which only translates *låta* a few times.

4. Perceptibility verbs

Perceptibility verbs have a potential meaning component and refer to what can be perceived with the senses. Swedish has four such verbs: *synas* “be visible”, *höras* “be audible” and *kännas* “be possible to feel” and a verb that is neutral with respect to the sense modality: *märkas* “be noticeable”. As mentioned, such verbs are basic in Finnish according to Huumo (2010), but it turns out that they lack a direct equivalent in the other three languages. From a formal point of view, the Swedish perceptibility verbs are passive verbs with the passive suffix *-s* added at the end. From a functional point of view, the perceptibility verbs differ from canonical passives by not allowing an explicit Agent (or Experiencer). Such verbs imply a generalized Experiencer and basically describe what could be observed by anyone who potentially is present in the situation talked about. A typical example is (23):

23. Det *syns* på kartorna. (MPC: TL) (*det* “it” refers to a mountain)

You *can see* it on the maps.

Auf den Karten *ist er zu sehen*.

Se *näkyy* kartoissa.

Il *se voit* sur les cartes.

The visual perceptibility verb *synas* has a regular passive form, an added *-s*, but its tense forms are irregular. The active form *syna* “examine (by eye)” is only loosely related to the perceptibility verb since it is inflected as a regular verb both when it is active and when it is passive.

The most frequent translations of both the visual and the auditory perceptibility verbs are shown in Table 11 (p. 41). The most frequent translation of *synas* in English is *be seen*, the passive form of *see*, usually in combination with *can*. In (23), an active form is used with *you* as a generic subject. The potential meaning of *synas* and *höras* is reflected in

the frequent use of *can* in the English translations but the interpretation would deserve further discussion than what can be provided here. There is a general tendency to combine English verbs referring to perceptual experiences with *can* (see e.g. Gilbert 1987: 274-276).

Be visible is also relatively frequent (see example 24). German uses as special construction *zu sehen sein* “be to see” as in (23). A relatively frequent alternative is *sehen* with the impersonal subject *man*. French has no dominant translation, but the two most frequent translations are *voir* “see” in a reflexive (middle) construction (*se voir*) as in (23) or in a construction with impersonal *on* as subject as in (24). Only Finnish uses a perceptibility verb as the dominant translation, namely *näkyä* as in (23). This verb is derived from the stem *näke-* “see” with the detransitivizing suffix *-y/ -u*, which forms several types of intransitive verbs (see Hellerstedt & Peltola 2019, for a description of this suffix). Occasionally, a passive form of “see” is used as in (24):

24. På vissa platser *syntes* igår tre solar samtidigt på himlen. (MPC: TL)

In some places yesterday three suns *were visible* in the sky simultaneously.

An einigen Orten *waren* gestern gleichzeitig drei Sonnen am Himmel *zu sehen*.

Eilen *nähtiin* joissakin paikoin taivaalla kolme aurinkoa yhtä aikaa.

Hier, à certains endroits, *on a pu observer* trois soleils en même temps dans le ciel.

Table 11. The most frequent translations
of Swedish *synas* and *höras* in the MPC corpus

Swedish verbs	<i>synas</i>	65	<i>höras</i>	102
English	(can) be seen	21	(can) be heard	47
	be visible	13	Exp. + (can) hear	24
German	zu sehen sein	27	zu hören sein	51
	man + sehen	13	man + hören	18
Finnish	näkyä	42	kuulua	78
			Exp. + kuulla	4
French	on + voir	10	on + entendre	36
	se voir	7	Exp. + entendre	14
	apparaître	6		

From a formal point of view, the Swedish auditory perceptibility verb *höras* is the regular passive form of *höra* “hear” with the passive suffix -s. From a functional perspective, it is special, since it does not allow an explicit Experiencer, but rather implies a non-referential or generalized Experiencer (anyone potentially present in the situation talked about). Since *höras* is discussed in Hellerstedt & Peltola (2019), this verb will be commented on only briefly. As can be observed in Table 11, the same types of constructions are used with the verb meaning “hear” as were used with the visual copula. A representative example is shown in (25):

25. Inga röster hördes. (MPC: KE)

No voices *could be heard*.

Stimmen waren nicht zu hören.

Ihmisääniä ei kuulunut.

On n’*entendait* aucune voix.

The Finnish auditory perceptibility verb *kuulua* is derived from the stem *kuul-* “hear” with the suffix -y/-u in the same way as *näkyä* “be possible to see”. It strongly dominates as a translation. In English and French, an Experiencer-based expression is often used as a translation with an Experiencer that has specific reference and is derived from the context (Exp. + *hear/entendre* in Table 11). Both English and French have such constructions in (26):

26. ”En liten rar visa”, hördes försynt från korridoren. (MPC: KÖ)

“A sweet little song,” *I heard* faintly from the corridor.

»Ein nettes, kleines Liedchen«, *klang es* taktvoll aus dem Flur.

”Pienen herttaisen laulun”, *kuului* kaino ääni käytävästä.

«Une gentille petite chanson», *l’entendis-je* ajouter d’une voix timide dans le couloir.

In combination with an impersonal *det* “it” as subject and a *that-S* clause, the Swedish perceptibility verbs can be used to express factivity as in (27). Only Finnish has a direct equivalent, the perceptibility verb *näkyä*. The major structural difference is that Finnish does not have an impersonal subject.

27. *Det syntes att* hon hela tiden tänkte på honom. (MPC: KE)

It was clear she was thinking about him all the time.

Man sah, daß sie unablässig an ihn dachte. [One saw, that-S]

Näkyi että hän ajatteli miestä koko ajan.

*Et l’on voyait qu’*elle ne cessait de penser à lui.

The use of the perceptibility verbs with a *that*-S complement forms a parallel to the use of the sensory copulas with an *as if*-complement in Swedish as demonstrated in Table 12. (*Känns* is the passive form of *känna* “feel” in the present tense and *på smaken* / *på lukten* means “on the taste” / “on the smell”.)

Table 12. Sentential complements of Swedish sensory copulas and perceptibility verbs

Non-factive (with <i>as if</i> -complement): <i>det</i> “it” + V + <i>som om</i> “as if” + S	Factive (with <i>that</i> -complement): <i>det</i> “it” + V + <i>att</i> “that” + S
Det verkar som om Per är arg. “It seems as if Per is angry.”	Det märks att Per är arg. “It is obvious that Per is angry.”
Det ser ut som om Per är trött. “It looks as if Per is tired.”	Det syns att Per är trött. “You can see that Per is tired.”
Det låter som om Per är ledsen. “It sounds as if Per is sad.”	Det hörs att Per är ledsen. “You can hear that Per is sad.”
Det känns som om benet är brutet. “It feels as if the bone is broken.”	Det känns att benet är brutet. “You can feel that the bone is broken.”
Det smakar som om grädden är sur i tårten. “It tastes as if the cream is sour in the cake.”	Det känns på smaken att grädden är sur. “You can taste that the cream is sour.”
Det luktar som om det brinner. “It smells as if it is burning.”	Det känns på lukten att det brinner. “You can smell that it is burning.”

5. Conclusion and discussion

Verbs referring to perceptual Experiences follow a universal lexicalization hierarchy with SEE at the top, followed by HEAR, whereas Phenomenon-based perception verbs are typologically variable. Verbs typically have a human subject (topic) and refer to situations where humans act on or Experience their environment. The dominance of SEE is biologically and cognitively grounded. Overall, we rely more on vision than on other senses, even if this does not hold in all situations (e.g. Viberg 2001: 1306-1307; Stokes & Biggs 2015; Winter *et al.* 2018: 214). Phenomenon-based sensory words (including verbs) refer more directly to the environment and describe it more in its own terms. (In certain cosmologies, the environment / nature acts on humans.) In this area, there is greater typological variation (Majid *et al.* 2018b).

Sensory copulas and perceptibility verbs, which have been studied in this paper, are an example of that variability. Many languages do not have this type of verbs but such verbs can be found even outside Europe (e.g. in several Bantu languages such as Setswana, see Viberg 2001: 1299). The study shows that English, German and Finnish have visual and auditory copulas that are used as translations of *se ut* and *lâta* in the majority of cases, whereas the corresponding sensory copulas are weakly developed in French, in particular in the auditory domain. Perceptibility verbs are found in Swedish and Finnish but not in the other three languages studied. From a typological perspective, the following tentative conclusions can be drawn:

- Phenomenon-based perception verbs are of at least three different types (though typological studies may turn up more types): sensory copulas, perceptibility verbs and sensory verbs.
- The existence of such verbs is a typologically variable feature.
- Sensory copulas and perceptibility verbs refer primarily to a certain sense modality (like Experiencer-based verbs) and tend to develop modal and / or evidential meanings.
- These two types of verbs develop from canonical verbs of perception in special constructions, often in a derived form. Sensory copulas can also develop out of sensory light and sound verbs (e.g. German *scheinen*, *klingen*).
- Sensory verbs allow much more semantic elaboration than sensory copulas and perceptibility verbs. Intensity and evaluation are prominent. In addition, there is a wide range of values along parameters that are tied to the qualities of a specific sense modality.
- Sensory verbs tend to be based on sound symbolism (of various types). Reduplication is also common.
- In the languages studied in this paper, there are relatively many sensory light verbs but an even greater number of sensory sound verbs. This imbalance is probably a universal tendency due to the preponderance of sound symbolism, but this conjecture needs to be corroborated in studies based on typologically diverse languages. Many languages have a special class of ideophones that are not verbs.
- European languages typically have a restricted number of verbs referring to taste and smell, but this is a typologically variable feature. Richer systems can be found in languages outside Europe.

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2. The present study is based on 22 Swedish original works in the Multilingual Parallel Corpus (MPC). Below is the list of the codes for the texts quoted in this article. For a complete list, see Viberg (2013), Appendix 1.