Body part extensions with *mặt* ‘face’ in Vietnamese

Annika Tjuka

Abstract

Terms for body parts can denote other referents outside the semantic domain of the human body. Different meanings are connected with the term for the body part face in different languages and these semantic extensions provide insight into the principles that lead to the connection of multiple meanings to a single term. The present study investigated the similarity features that facilitate body part extensions. The examination of cross-linguistic patterns revealed that the term for the body part face tends to be extended to other body part concepts as well as to spatial concepts. By investigating the semantic extensions of the term *mặt* ‘face’ in Vietnamese, certain commonalities across languages were apparent. In social contexts, *mặt* occurred as a representative of an entity and a person's dignity. However, the detailed study also showed that *mặt* is used in expressions such as ‘face of the day’ in reference to the sun. The different meanings that are connected to a body part term based on various associations have important implications for how meanings are linked in the mental lexicon. Thus, future experimental studies need to consider the cultural and physiological motivation of body part extensions.

1. Introduction

In many languages, body part terms have multiple meanings. The English word *tongue*, for example, refers not only to the body part but also to landscape and object features, as in *tongue of the ocean*, *tongue of flame*. These examples illustrate that body part terms can be extended to concrete objects. In addition, body part terms are a source domain for semantic extensions describing abstract concepts, for example, emotional states (e.g., Yu 2002). Body part extensions are thus a common pattern in languages around the world. However, most studies focus on widespread cross-linguistic patterns of a particular polysemy in which a single term refers to a body part and an object (e.g., eye/seed). On the one hand, these common patterns may reveal generalizable cognitive principles that underlie the structure of the mental lexicon. On the other hand, there exists considerable linguistic variation in terms of the meanings that are connected to a particular body part term in a given language. This could be due to the cultural importance of a body part to a speech community. Therefore, the question arises which body part extensions are language-independent and which are language-dependent?

The present study examined the different meanings of the term for the body part face across languages to identify general patterns, and provides a detailed analysis of the uses of *mặt* ‘face’ in Vietnamese to uncover language specificities. By focusing on a single body part term and its

meaning extensions to objects, the mechanisms that contribute to the establishment of relations between meanings within the mental lexicon become apparent. The study is also important for improving psycholinguistic studies that often view polysemy as a straightforward phenomenon and fail to account for the diversity of meanings associated with a word. The approach of combining a cross-linguistic comparison with a qualitative analysis of one language offers important insights into the generalizability and cultural relevance of certain semantic extensions.

The phenomenon of assigning multiple meanings to a term is a type of ambiguity that is theoretically accounted for by the concept of polysemy. In recent years, polysemy has been widely discussed in theoretical lexical semantics (see Geeraerts 2010 for an overview). A fine-grained distinction is often not possible or necessary, so François (2008) proposed the more generic term "colexification" for vagueness and polysemy. The latter is characterized by the fact that the meanings are related to one another compared to the case of vagueness where the distinction between meanings is less clear. Apresjan (1974) distinguished polysemy further into words with meanings that are metaphorically motivated or based on metonymy. Metaphor occurs due to an analogy between two concepts whereas the basis for metonymy is an association. Apresjan (1974) assumed that a metaphorical meaning is transferred when similar features between source and target domain are present. Furthermore, he differentiated between irregular and regular polysemy. The former is close to metaphorical polysemy because the transfer of meaning is not applied in the same way to other concepts (Apresjan 1974). Regular polysemy includes instances of metonymic transfer in which the meaning of a word is mapped to multiple concepts in the same manner and is found in productive processes of word formations (Apresjan 1974). The differentiation between metonymy and metaphor is crucial for the present study in that metonymic extension of terms for the face seem to be more frequent across the world's languages whereas metaphorically motivated meanings seem to be language-dependent.

Although it may seem obvious that the relation between the meanings of polysemous words is based on similarity, it is not yet clear whether all languages have the same preference for particular similarity features. Expressions like *mouth of the river* and *foot of the bed* reveal the different analogies for extending body part terms to object parts. In the case of *mouth of the river*, the body part is extended on the basis of the function of the mouth as an opening. In contrast, the expression *foot of the bed* refers to the part of the bed where your feet are if you lie in it. Thus, the relation between body part and object is according to spatial alignment. Cross-linguistic

comparison can reveal the similarity features that are used frequently and studies on individual languages can illustrate the preferences for certain features in a speech community.

The study of meaning extensions of the terms for the body part face across languages in general and Vietnamese in particular aims to shed light on how meanings are connected in the mental lexicon. It also offers relevant implications for experimental studies that usually take words at their face value and do not differentiate between different meanings of a word. If one wants to investigate the occurrence of polysemy in the mind, theoretical distinctions such as metonymy and metaphor are important. In this article, I offer a detailed discussion of the types of similarity (Section 2) that can lead to cross-linguistic semantic extension patterns (Section 3). In Section 4, the use of the Vietnamese term *mặt* 'face' and its meaning extensions are introduced. Section 5 discusses the results of the analysis with regard to recent psycholinguistic studies on polysemous words.

2. Similarity features

Meaning extensions of body part terms are often based on a common similarity between the body part and an object or abstract concept. Different similarity features such as shape, spatial alignment, or function may play a role in the semantic extensions from the domain of the human body to the domain of concrete objects. It is an open question whether all language communities generally tend to rely on the same similarity features, or whether they have preferences for extending body part terms to objects based on a particular feature. Similarity appears to be an overarching principle in determining extensions of meaning, although the occurrence of language variation suggests that the choice of the similarity feature varies. For example, Vietnamese speakers refer to the tip of an arrow with *mũi* 'nose' using the connection with the similarity in shape. In contrast, Mandarin Chinese speakers use 头 *tóu* 'head' which illustrates that the two meanings are related based on spatial alignment since the head is the uppermost most part of the human body.

Cross-linguistic studies indicate that there are widespread patterns that show general tendencies for certain similarity features to facilitate semantic extensions. In a study of body part terminology across languages, Andersen (1978) noted that the similarity in shape and particularly, the features 'round' and 'long' evoke the extension of body part terms to objects. She also assumed

that visually perceptible body parts are more salient and thus, more frequently extended. The analysis of particular polysemy patterns across 118 languages by Brown and Witkowski (1983) revealed that polysemy is based on a part-whole relation (e.g., eye/face) or likeness (e.g., eye/seed) and is found in many languages of the sample. Another cross-linguistic study on various body part extensions showed that perceptually salient body parts develop polysemous meanings and are often used as a source domain (Kraska-Szlenk 2014). Kraska-Szlenk (2014) demonstrated that extensions of body parts to the object domain are based on visual, spatial, and functional features connected to a body part. These findings support psychological studies which investigated the properties associated with objects. Tversky and Hemenway (1984) found that perceptual salience and function of parts are important features to categorize everyday objects. The tendency to extend body part terms to objects seems to be a common pattern across languages. Therefore, it could be assumed that this pattern represents a form of regular polysemy since most meanings are connected based on a metonymic relation. However, this hypothesis needs to be tested with additional data.

In contrast, studies that focus on semantic extensions of individual patterns illustrate that speech communities have preferences of what similarity feature they commonly use to extend body part terms. Levinson (1994) demonstrated that shape is productively used to map body part terms to objects in Tzeltal (a Mayan language spoken in Mexico). The shape information was added to the locative description of the object (Levinson 1994). Tzeltal speakers consistently used body part terms to describe object features, for example, *s-nin*' 'its nose' for pointy object parts such as a knife tip. The advantage of the Tzeltal system is that it leads to stable predictions in terms of which body part term refers to a given feature (Levinson 1994). In addition, Hollenbach (1995) showed how the words for 'face' and 'foot' developed into prepositions and phrases such as 'in front of' or 'at the beginning of,' respectively. Her sample included Mixtecan languages which belong to the Oto-Manguean language family and are spoken in Mexico. These more fine-grained analyses of individual languages suggest that while there may be an overarching principle of meaning extension, the patterns of an individual language also reflect irregular polysemy by using metaphorical transfers to map body part terms to objects and other concepts. Thus, languages seem to have particular preferences for similarity features and use a particular analogy more frequently.

In an experimental study, Tilbe (2017) investigated whether speakers of different languages tend to use the similarity features of shape or function. He performed a series of verbal and non-verbal tasks in a fieldwork setting with speakers of two Mesoamerican languages (Tzeltal

and Zapotec, which also belong to a branch of the Oto-Manguean language family) and English speakers. In one experiment, the speakers had to group pictures together in which different object parts were highlighted in red, for instance, a match head, upper part of a lighter, and a pinhead (Tilbe 2017). The results showed that Tzeltal speakers based their choice significantly more often on the shape than the Zapotec speakers. In comparison, the English speakers used the function most frequently (Tilbe 2017). This study indicates that languages prefer a certain similarity feature to map body parts to objects. Tilbe (2017) concluded that the differences between the languages indicate that the strategies are shared cross-linguistically although languages differ in the strengths of preferences for particular strategies.

To examine the preferences for certain similarity features further, Tjuka (2019) conducted a systematic typological study of body part extensions. The study used a set of 93 body part extensions in the object and landscape domain which were illustrated in pictures. 13 native speakers of different languages (e.g., Mandarin Chinese, Wolof, Hungarian, Vietnamese) participated in an elicitation study. The participants had to recall whether or not they used a body part for a certain object feature highlighted in the picture (Tjuka 2019). The frequency of the body part extensions and the preference for the similarity features shape, spatial alignment, and function were analyzed in each language. The results showed that Wolof, Mandarin Chinese, and Vietnamese used body part terms more frequently to refer to object parts compared to Japanese and Marathi (Tjuka 2019). Although some languages had a tendency for mapping body part terms on the basis of a particular similarity feature, the preferences did not explain the language variation. However, the data illustrated a clear distinction in the overall frequency between body part extensions which were related to all similarity features: the expressions *leg of the table, leg of the chair,* and *leg of the bed* occurred in the entire language sample (Tjuka 2019).

The present study focuses on the terms for the body part face. The concept FACE includes the front part of the head, including eyes, nose, and mouth. The face is an important body part since we remember and distinguish people based on their faces. Additionally, facial expressions are important cues for emotional states. It is, therefore, no surprise that metonymic and metaphoric extensions of the meanings for the term *face* are common. Yu (2001) analyzed the use of *face* in English and *lian* ‘face’ and *mian* ‘face’ in Chinese and showed that both languages established similar meaning extensions although the speech communities live in different cultural settings. The terms for the face in Chinese are also found in many expressions for emotions, for example, a

red face expressing anger (Yu 2002). Expressions such as *save face* highlight another feature of the body part, namely dignity (Yu 2001, 2008). However, as of yet, there is no systematic study on meaning extensions of the term for face to objects. Possible similarity features that could be used for transferring the term include: round shape, function as a representative for an entity, visibility, and from a spatial perspective, contour and being opposite (e.g., *She faced a wall.*).

3. Colexifications of the concept FACE across languages

The investigation of general patterns of polysemy requires a large set of data to establish tendencies across languages. Due to the scarcity of available data, most cross-linguistic have focused on single polysemy patterns that occurred frequently in the languages of a given sample. Recently, data for several languages are becoming more accessible and initiatives that foster the comparison of cross-linguistic data (see, Forkel et al. 2018) facilitate large-scale studies on polysemy patterns. Instead of pre-selecting an intuitively frequent pattern, databases make it possible to study the tendency that emerges from the data. For the present study, I used the Database of Cross-Linguistic Colexifications (CLICS^3, Rzymski et al. 2020). As discussed above, the term "colexification" refers to the occurrence of one term for multiple meanings (François 2008).

The CLICS^3 database comprises colexifications for 2,906 concepts in 3,156 language varieties. The concepts which occur in CLICS^3 are curated in a reference catalog, the Concepticon (List et al. 2016). This catalog includes a set of comparative concepts and their elicitation glosses across languages. The words for a concept, which are recorded in concept lists,[1] are compared with each other and the result appears in the CLICS^3 database. This database is a valuable resource to study cross-linguistic patterns of semantic extensions of a given concept in various domains. A simple filter function on the CLICS^3 website (https://clics.clld.org/) shows the colexifications with a concept across languages.

The colexification of the concept FACE with other concepts and the number of language varieties in which each colexification occurs is listed in Table 1. The table shows that FACE is most commonly colexified with the concept EYE (36 language varieties). The second most frequent colexification (FACE~FOREHEAD) occurs in only 16 language varieties. Interestingly, six out of ten

[1] For historical language comparison and documentation, linguists often use versions of Swadesh-lists (see also Swadesh 1955).

colexifications are body part concepts within the area of the face (EYE, FOREHEAD, CHEEK, MOUTH, JAW, NOSE). The other colexifications are spatial terms: IN FRONT OF, SIDE, EDGE. In addition, the concept FACE colexifies with COLOR in three language varieties.

	Colexified Concept	Language Varieties
FACE	EYE	36
	FOREHEAD	16
	CHEEK	15
	IN FRONT OF	11
	MOUTH	10
	SIDE	4
	JAW	4
	NOSE	3
	EDGE	3
	COLOR	3

Table 1: Colexifications of the concept FACE in the CLICS^3 database (Rzymski et al. 2020).

The CLICS3 database also provides a graph with a network structure for each concept and its colexifications, see Figure 1. This graph shows the concept FACE in relation to its colexifications. The frequency of occurrences of a colexification is indicated through the weighted connections (i.e., lines) between the nodes (i.e., concepts). For example, the concept EDGE is more frequently colexified with the concept SIDE than with FACE as is indicated by the thicker line between EDGE~SIDE versus EDGE~FACE. The graph shows that there are further connections of concepts referring to other body parts (CHEEK, MOUTH, JAW) and spatial terms (SIDE, EDGE). On the other hand, the body part concepts NOSE, EYE, and FOREHEAD are not colexified with any other concept in the network.

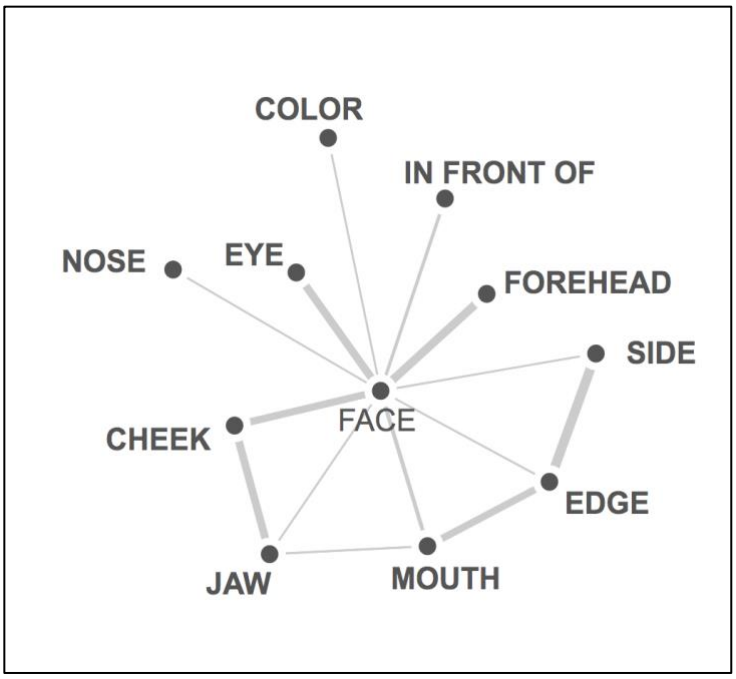

Figure 1: Network structure of the concept FACE in the CLICS[3] database (Rzymski et al. 2020). The nodes represent the colexified concepts and the edges represent the weighted connection between them.

The results of the cross-linguistic comparison illustrate that the concept FACE often refers to other body part concepts, which are denoted by a separate term in English. The different colexified concepts reveal an interesting pattern in which the term for the face also includes other parts of the face. This may be due to a metonymic relation between the parts. However, the frequencies of the individual colexifications between body part concepts differ greatly. Similar to the English compound *forehead*, some languages do not distinguish the forehead from the general term for face. The cheeks are also sometimes not differentiated. The relatively high number of languages that do not have a single term to distinguish the body parts face and eye is striking. This pattern appears to be an independent invention and may represent an intermediate stage in a diachronic development into two separate forms (Brown and Witkowski 1983).

The colexifications of the concept for the body part face with the spatial concepts SIDE, and EDGE illustrate another pattern that seems to be based on an association with the face representing a part of an object. The contour of the face stands out from other adjacent body parts such as the ears or the neck. Furthermore, the term for face seems to have developed into a function word for the concept IN FRONT OF. The pattern is in line with other studies that show a diachronic development from denoting the concrete body part to prepositions (Hollenbach 1995). However,

these patterns are less widespread across the world's languages as shown by the frequencies of the colexifications. The colexification with COLOR might point to the similarity feature of visibility as in the English word *typeface*.

The data in CLICS[3] provide valuable insights into the colexification patterns that are established across languages. Due to the fact that extensions of meanings from body parts to objects are commonly utilized as compounds or genitive constructions, i.e., *table leg*, *tongue of the sea*, it is important to note that the CLICS algorithm does not yet incorporate partial colexifications. Thus, many instances, for example, *tree skin* for the concept BARK, are not included in the present analysis although they may be present in several languages.

4. The use of *mặt* in Vietnamese

The Vietnamese word to refer to the body part face is *mặt*. There is also another term in the Sino-Vietnamese vocabulary, namely *thể diện*. The term *mặt* belongs to the basic Vietnamese vocabulary whereas *thể diện* is a borrowing from Chinese 体面 *tì mián* 'body face'. The borrowed term *thể diện* is used in more formal settings. Although Vietnam and China are in close geographical proximity, the languages spoken in the two countries belong to different language families: the Sino-Tibetan and the Austroasiatic language families, respectively. Nevertheless, the Vietnamese language still contains words that can be traced back to a Chinese origin.

A cultural commonality between Vietnamese and Chinese speakers is the importance of the concept 'to save face'. Nguyen (2015) investigated the concept of respect towards people in everyday life in interviews with native and non-native Vietnamese speakers. The analysis was based on the use of *mặt* and *thể diện* in the social domain. He showed that Vietnamese speakers employ deference mechanisms (*lễ phép* 'deference') in everyday life to 'save the face' of a person. These social strategies entail behaviors that are expected from a younger person or a person of a lower status when they address an older person or a person of higher status. Some expressions from Nguyen (2015) that describe aspects of these social customs are given in (1).

(1) a. *thể* *diện*
body face
'someone's face, representing their dignity, reputation'

b. *mặt* *mũi*
face nose
'someone's face, representing their dignity, reputation'

c. *mất* *thể.diện/mặt*
lose face
'to lose face'

d. *nhục* *mặt*
dishonor face
'to make someone lose face and feel embarrassed'

e. *giữ* *thể.diện/mặt*
keep face
'to maintain face/to keep face/to save face'

f. *nể* *mặt*
respect face
'to give face to someone'

The concept of 'losing face' is also present in English (Yu 2001, 2008). However, in Vietnamese, a hierarchical order needs to be respected which is in favor of the super-ordinate person (Nguyen 2015). These communication strategies are intertwined with the Vietnamese culture and lead to a continuing significance of the term *mặt* and *thể diện* in social encounters.

The concept 'to save face' seems to be common across the languages of the world. The metonymic transfer of the face as a representative for an entity and in turn for a person's dignity may be a cross-linguistic pattern that could indicate the importance of the body part face independent of cultural influence on the connection of several meanings to one word. However, further studies that investigate whether all languages connect a person's face to their dignity need to be conducted.

4.1. The *face* of the moon

The data presented in this and the following section (Section 4.2) are collected through conversations with Vietnamese native speakers, elicitation in Tjuka (2019), an English-

Vietnamese online dictionary (https://dict.laban.vn/), and the data in *The Intercontinental Dictionary Series* (Key and Comrie 2016) as well as the *World Loanword Database* (Haspelmath and Tadmor 2009). The analysis focused on the extensions of the term *mặt* to the semantic domain of objects.

The term *mặt* occurs in compounds denoting the two celestial bodies of the moon and the sun, see examples (2) and (3). Both objects are relevant in Vietnamese culture since the traditional Vietnamese calendar follows the lunar cycle. The beginning of the new year (*Tết Nguyên Đán*) is celebrated by all Vietnamese people and is one of the most important holidays in their culture. The celebration begins from the first day of the first month of the lunar calendar and continues for about one week.

(2)	*mặt*	*trăng*
	face	moon
	'moon'	
(3)	*mặt*	*trời*
	face	sky
	'sun'	

The connection of the moon with the body part face reflects the emphasis on the similarity feature shape when the moon is in its main stage: full moon. The body part extension could also be based on the function of the face as a representative for an entity. Interestingly, the use of *mặt* is additional because *trăng* on its own already has the meaning 'moon'. The addition of *mặt* highlights the significance of the moon in Vietnamese culture and its status as a human-like entity. The lexicalization of *mặt* in the term for 'sun' in (3) has the literal meaning 'face of the sky'. The description of the sun as a body part (face) of an entity (sky) indicates that the mapping is based on the representative function of the face. However, another plausible explanation could be that this meaning extension is based on a metaphor since the similarity feature of the round shape of the sun also facilitates the mapping. In addition, other Southeast Asian languages, for example, Jahai, make another choice. They refer to the sun as the 'eye of the day' (Urban 2010)[2]. It cannot be ruled out that those languages do not differentiate between the concept EYE and FACE in general,

[2] Note that Urban (2010) also included Vietnamese as a language with this body part extension. This interpretation is based on the spelling of *mặt* 'face' and *mắt* 'eye'. However, Vietnamese has a lexical tone system and the meaning of the two words can be distinguished.

which is a common pattern across languages (see Section 3). Thus, using the same term for the body part face and both celestial bodies may not be culturally specific and point to a general pattern of metonymy.

Another example in which the term *mặt* is used to represent the face of an entity is in reference to a *clock face* (equivalent with the English term), given in (4).

(4) *mặt* *đồng.hồ*
face clock
'face of the clock'

The similarity of the part of the clock with the body part leads to the extension. The use of *mặt* reflects the function of the face as the most important part of the clock and also its representative status. However, the round shape seems to be the prominent factor that establishes the connection between the two meanings to the same word. It would be interesting to collect data on additional languages to see whether the pattern holds across a wide range of languages. The examples presented in this section indicate that the body part term *mặt* is transferred to objects on the basis of its function and shape. This supports the finding in Tjuka (2019) that Vietnamese tends to prefer body part extensions which highlight the similarity features function and shape.

4.2. The (sur)*face* of the water

In English, the prefix *sur-* 'on, above' (from French) was added to 'face' in the early 17th century (Oxford English Dictionary, online version). The composition was patterned after Latin *sŭperfĭcĭes* 'surface, upper side, top' (Lewis and Short 1879). The prefix indicates that *surface* refers to the outer or often upper part of an object. Vietnamese also has a designated term for 'surface,' namely *bề mặt*. The first part of the compound has the meaning *bề* 'side, dimension'. The literal translation of *bề mặt* is 'the side with the face'. Example (5) demonstrates how the compound is used to refer to the outer layer of the moon.

(5) *bề.mặt* *mặt.trăng*
surface moon
'surface of the moon'

The term *bề mặt* occurs mainly in formal contexts, for example, science textbooks or reports. However, in everyday language, the body part term *mặt* is commonly used to refer to surface areas without *bề*, as shown in examples (6)-(9).

(6) *mặt* *đất*
surface earth
'surface of the earth'

(7) *mặt* *bàn*
surface table
'surface of the table'

(8) *mặt* *nước*
surface water
'surface of the ocean'

(9) *mặt* *đường*
surface road
'surface of the road'

The examples illustrate a regular pattern of polysemy in which *mặt* is metonymically transferred to objects. In dictionaries, only the above examples are listed, but based on native speakers' intuitions it is possible to extend *mặt* to all kinds of object surfaces. Experimental studies that test the productive use of *mặt* in other contexts could indicate whether it is a general principle that enables these meaning extensions. Body part extensions such as *mặt bàn* 'table surface' highlight the similarity of the body part face and its status as a representative of an object. In addition, the face is the external appearance of an object which reflects the similarity feature of visibility. Furthermore, the examples show that the face is something that lies on top or is an outer shell. Compared to the examples in Section 4.1, the shape feature does not play a role in the extension of *mặt* to surfaces since tables and roads do not have a round shape.

The meaning extension of *mặt* to other parts of objects that are associated with the spatial concept SIDE are shown in (10). Based on the intuition of Vietnamese native speakers, it is possible to extend *mặt* to the different sides of a cupboard. Thus, in contrast to the examples above, it is not necessary that the side is on top or in front. In the case of a cupboard, the spatial dimension of 'being in front' and visibility are not the decisive similarity features. The similarity of 'being the outer part' of an object is the basis for this mapping since the backside of the cupboard can also be

referred to with *mặt*.

(10) a. *mặt* *tủ*
face cupboard
'front side of the cupboard'

b. *mặt* *sau* *tủ*
face behind cupboard
'backside of the cupboard'

c. *mặt* *trên* *tủ*
face above cupboard
'top of the cupboard'

d. *mặt* *bên.trái* *tủ*
face left cupboard
'left side of the cupboard'

e. *mặt* *bên.phải* *tủ*
face right cupboard
'right side of the cupboard'

The expressions discussed in the previous sections introduce a variety of possible use cases for *mặt* in Vietnamese. They also showed that a single body part term can incorporate many meanings. The term *mặt* can refer to an entity like the moon, to surfaces of objects, and sides of objects. However, the similarity features that lead to the connection between the concept of FACE and an object part differ. In the social domain, the polysemy is based on a metonymic pattern of using the face as a representative for an entity and in extension for a person's dignity. In the domain of objects, the term *mặt* is extended on the basis of its round shape, visibility, and representing a side of an object. The qualitative analysis of the meanings for *mặt* in Vietnamese provide a more fine-grained picture of how different meanings are connected and additionally, support the cross-linguistic patterns. In some cases, it is difficult to distinguish whether a meaning extension should be categorized as a metaphor or metonymy. The two phenomena seem to be closely related and may better be thought of as a continuum. Detailed studies of meaning extensions of body part terms to the semantic domain of objects in other languages could offer further evidence for the existence of a cognitive principle that is language-independent.

5. Discussion and Conclusion

The present study investigated patterns of meaning extension of the term for the body part face. The cross-linguistic comparison of colexifications with the concept FACE revealed general patterns showing that many languages have polysemous terms which refer to the face and also individual parts within the face, i.e., the concepts EYE, FOREHEAD, CHEEK, MOUTH, JAW, and NOSE. In addition, the concept FACE was colexified with spatial concepts, i.e., IN FRONT OF, SIDE, and EDGE. By examining the uses of the body part term *mặt* 'face' in Vietnamese to uncover language-specific patterns, this article offers the first systematic investigation of meaning extensions to the semantic domain of objects. It illustrated that the Vietnamese term *mặt* occurs in many compounds referring to concrete objects such as the moon and the sun, different types of surfaces, and side parts.

The various semantic extensions of the concept FACE indicate that different similarity features play a role. Especially, the similarity features spatial alignment and shape give rise to body part extensions. Furthermore, the function of the face as a representative of an entity is a similarity feature that is used in cases such as *mặt đồng hồc* 'clock face'. The meanings connected to the term for face referring to surfaces or side parts in Vietnamese and other languages demonstrate a regular pattern of polysemy which indicates a metonymic transfer. There are also extensions where the similarity features are not clear or multiple features could be the basis, for example, the colexification of FACE~COLOR in three languages and the use of *mặt trời* 'sun' in Vietnamese. Thus, there are also instances illustrating that the term for face might be used metaphorically. These findings support the distinction between regular versus irregular polysemy proposed by Apresjan (1974).

Databases such as CLICS^3 (Rzymski et al. 2020) are a valuable resource to identify common patterns across multiple languages. With the coverage of more languages, CLICS^3 allows testing claims that certain colexifications are frequent across languages. For example, Brown and Witkowski (1983) proposed that many languages have eye/face polysemy. The frequency of this pattern is supported by the data in CLICS^3 which shows that the pattern is even more frequent. In addition, the frequency of a certain colexification can highlight grammaticalization paths that are usually studied closely in a small set of languages (e.g., Hollenbach 1995). The colexification between the concept FACE and the concept IN FRONT OF is such a case. However, since the CLICS^3 database does not include partial colexifications (e.g., *clock face*) the picture is somewhat

restricted. Patterns of body part extensions to concrete objects that may occur frequently across languages are not yet visible. This makes it difficult to test cross-linguistic studies that rely on individual examples in a few languages (e.g., Kraska-Szlenk 2014; Tjuka 2019). However, databases offer the possibility of interpreting the results of cross-linguistic studies on a larger scale and can put intuitions about what patterns are or are not common into a larger perspective. They also provide an opportunity to see patterns we have not noticed before.

One common association with the body part face across cultures is a person's dignity. Similar to English and Chinese, Vietnamese speakers employ deference mechanisms to save their own or someone else's face (Yu 2001; Nguyen 2015). This feature of the face as being a representative for an entity occurs also in German expressions like *das Gesicht verlieren* 'to lose one's face' or *das Gesicht retten* 'to save one's face' which are loan translations from English. These cases indicate a metaphorical transfer of the meanings of the term for face which may be conceptualized across cultures. Additionally, the face is often used in expressing emotional states (Yu 2002). The body part face, thus, has an important value for social interactions and the concepts associated with everyday conversations. Further studies on the domain of emotion or other abstract semantic domains focusing on the Vietnamese language could shed light on the concepts that are associated with the face.

In the domain of concrete objects, the analysis of the term *mặt* 'face' in Vietnamese showed several extensions. The expression *mặt trăng* 'moon' is based on the round shape of the full moon, similar to German *Mondgesicht* 'moon face' which illustrates the personification of the moon. On the other hand, the expression *mặt trời* 'sun' can be literally translated as 'face of the sky' and seems to be a metaphorical extension. Compared to other Southeast Asian languages that have similar expressions like 'eye of the day' (Urban 2010), Vietnamese uses the term for the face instead of the term for eye. A comparison between languages that have eye/face polysemy and languages that have the expression 'eye/face of the sky' could test whether there is any overlap. This may indicate a historical pattern and could give insights into the directionality of semantic change. Other meaning extensions of *mặt* based on metonymy seem to be productive in Vietnamese. Different kinds of surfaces such as roads and the ocean can be referred to with *mặt* which points to the association with the face as a spatial relation in that it is the upper part. However, *mặt* can also occur in reference to side parts denoting the front, left/right, and backside of a cupboard. The patterns that are found in Vietnamese are in line with other cross-linguistic

patterns (e.g., Yu 2008). However, Vietnamese has several different referents for the term *mặt* and the pattern found in this study illustrate that Vietnamese speakers prefer the similarity features shape and function equally which is in contrast to other languages that prefer one or the other (see, Levinson 1994; Tilbe 2017; Tjuka 2019). The focus on one particular term and its meanings reveal that the basis for meaning extensions is not always clear-cut and can include multiple similarity features. The various meanings of a term have also important implications on the study of the mental lexicon.

The storage of two types of polysemy (metaphor and metonymy) in the word *mặt* challenges how psycholinguistic studies investigating the mental lexicon are conducted. Most studies do not consider the various associations that are evoked in a person's mind when seeing or hearing words in an experimental setting. Although psycholinguists are becoming aware of the distinction between homonymy and polysemy as two separate phenomena (Klepousniotou 2002), this division is not exhaustive enough for the case of *mặt*. More recent accounts investigated the different mechanisms involved in the processing of polysemous words (e.g., Klepousniotou and Baum 2007; MacGregor et al. 2015). They studied whether words with metaphorical meaning are accessed and stored in the same way as words with metonymic meaning. In two lexical decision tasks (auditory and visual), Klepousniotou and Baum (2007) examined the different processes and reaction times of ambiguous words (polysemous and homonymous) versus unambiguous words. The analysis showed that metonymous words are processed faster than metaphorical words compared to unambiguous words, whereas homonymous words did not show a facilitative effect. Klepousniotou and Baum (2007) concluded that this finding suggests a continuum in the processing of ambiguity, as illustrated in Figure 2.

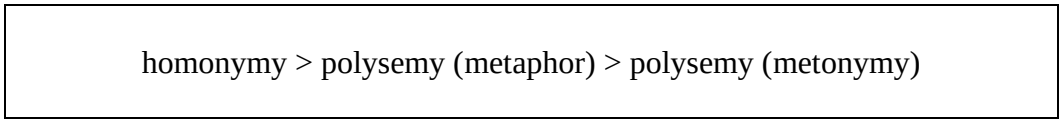

Figure 2: Continuum of ambiguous meanings from unrelated to related meanings.

The results seem to support the assumption that meanings are retrieved on the basis of lexical rules which use a core meaning to generate other meanings of a word (see, Pustejovsky 1991). However, the study did not consider the number of meanings that are incorporated in each word. For example, the word *doll* has only two meaning associations whereas *fox* has ten according to WordNet

(Fellbaum 1998; Princeton University 2010). In addition, the categorization of certain words into having metaphorical versus metonymic meanings is not clear, for example, *nucleus* refers commonly to core parts of objects which accounts for a regular polysemy. The stimuli are also not balanced for semantic categories: six out of eighteen stimuli in the 'metaphor' category are body part terms. An interdisciplinary approach that uses insights from cultural linguistics, including cross-linguistic and individual language studies, in creating experimental studies would be desirable. As the present study showed, a clear distinction between metaphor and metonymy is not always possible even in qualitative analysis. The conception of the two phenomena as instances on a continuous scale is therefore reasonable.

An alternative explanation for the different processing of ambiguous words is that the representation of a word is stored as a collection of features related to the central meaning of the word (Vicente 2018). The term for the concept FACE in a language is extended based on analogy or association so that the different meanings are activated when the word is processed. This account coincides with the general assumptions by Apresjan (1974) that the metaphorical process is based on suppressing or focusing on certain aspects of a concept. It is also supported by experimental studies that found perceptual and functional similarity to facilitate the use of a body part for object parts (Tversky and Hemenway 1984). However, it is not yet apparent how to test the individual connection of a feature to a given word and what features need to be considered. The cross-linguistic analysis showed that part-whole relations and spatial associations are common for colexifications with FACE. The study on meaning extensions with *mặt* in Vietnamese additionally revealed the importance of using the term for social encounters as well as a representative for an entity. Future studies could test whether these connections are based on general cognitive principles, in that speakers of other languages may be able to follow the choice of referent made by Vietnamese speakers.

The study of cross-linguistic and individual language patterns of body part extensions sheds light on the principles that are used by speakers of different language communities to connect related meanings to a single term. A close examination of the underlying similarity features and their generalization needs to also take into account cultural and physiological motivation of body part extension. As more cross-linguistic data becomes available, the hypothesis that the emphasis on one or more features leads to the body part extension can hopefully be tested on a larger scale.

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