Schema Conflict: Functional Schema and Configurational Schema[1]

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Abstract. In this paper, I discuss the cases of schema conflicts in the process of combination of primitive schemas. I claim that a functional schema overcomes a configurational schema in a case of the conflict of the two schemas. I also show that a more abstract functional schema wins over a less abstract or more concrete schema when two functional schemas conflict with each other.

Keywords. Image schema, functional schema, configurational schema, preposition

1. Introduction

Primitive image schemas are considered universal components or building blocks of spatial linguistic forms. Image schemas of closed-class spatial forms such as prepositions have been extensively studied to update ([1], [2] among others). Primitive image schemas are combined to produce spatial relations terms ([2], [3]). I will discuss the cases of schema conflicts in the process of combination of primitive schemas. I propose that functional schemas are chosen over configurational schemas when conflicts occur in the choice of two schemas. As a case study, I look at two types of closed-classes, namely pre/postpositions and demonstratives in English, Japanese, and some other languages. The reason why closed-classes are investigated rather than open-classes is that closed-classes are basically bounded by schemas but it is not always the case of open-classes. In the usage of pre/positions and demonstratives, there are cases that (a) may be associated with a foregrounded configurational schema but not with a backgrounded functional schema; (b) may be used to describe situations that satisfy its functional schema even though the spatial configuration schema is not satisfied; and (c) where two or more closed-classes have the corresponding schema satisfied, one would prefer the one that has a functional or more abstract schema satisfied, over one that has only a configurational schema satisfied. Instances of (b) and (c) are treated as cases of "schema conflict" in this paper.

2. Schema conflict

The meaning of "*on*" in English is defined as CONTACT and SUPPORT[3] [4].

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[3] A whole word in capital letters is intended to refer to a schema.

(1) *a book on the table.*
(2) *a mirror on the wall.*
(3) *a bug on the ceiling.*

In (1), *on* refers to the configurational or geometrical relation the figure *book* and the landmark *table* underneath of the figure. This vertical configuration can be rotated as exemplified in (2) and (3). Vertical configuration is irrelevant to the use of *on* in (2) and (3). What matters in (2) and (3) is SUPPORT against the gravity rather than configurational relation. In (1), the configurational relation of the figure and the ground licenses the use of *on,* where SUPPORT is backgrounded. CONTACT, by the way, distinguishes *on* from *above* in the above examples. (4) is a case without CONTACT.

(4) *the lamp above the table.*

It is clear from the observations that the function SUPPORT overcomes configurational relation of a figure and a landmark in the usage of *on*.

Lindstromberg [4] argues that functional meaning rather than physical arrangements plays an important role in the use of "*in*" in English by referring to an example of figure 1. In figure 1, a banana is on top of apples, and the banana is not geometrically *in* the bowl, however, sentence (5) is natural.

(5) *A banana and some apples are in a bowl.*

Figure 1. *"In"* (from [4])

Lindstromberg [4] states that *"in"* involves not a just geometrical inclusion but also a functional inclusion as well. By functional inclusion, he means the function of keeping a figure(s) from falling out or escaping [5]. In other words, both geometrical ENCLOSURE and functional CONTAINMENT are the necessary conditions of the meaning of "*in*". *On* also requires both geometric and functional schemas, namely CONTACT and SUPPORT respectively. With this in mind, compare the following two sentences.

(6) *John is in the upside-down tent.*
(7) *Ken is standing on the upside-down tent so that it is not blown away.*

Figure 2. Upside-down tent (from iStock)

Although the physical arrangement of the figure and the ground is almost identical in both sentences, *in* is used in (6), while *on* is used in (7). In both sentences, the figure, i.e., a person, was enclosed by the contours of the ground, i.e., a tent. Therefore, both sentences satisfy ENCLOSURE and CONTAINMENT. In both sentences, the person had a contact with the surface of an upside-down tent, satisfying CONTACT. The functional schema SUPPORT is the key in the choice of prepositions of the two sentences. In (7), the person was keeping the tent from being blown off by the wind, which implies that SUPPORT function is involved. This SUPPORT function requires *on* in (7). The comparison between the two sentences indicates that SUPPORT wins over ENCLOSURE and CONTAINMENT. CONTAINMENT implies the boundary of the ground, the boundary, in turn, implies geometric connotation. CONTAINMENT is a more concrete schema than SUPPORT, which does not imply the boundary of the ground.

To sum up, CONTAINMENT is the stronger factor than ENCLOSURE, in turn, SUPPORT is the stronger factor than CONTAINMENT.[4] CONTAINMENT, which is defined as "functional inclusion" by Lindstrerg, connotes a geometrical configuration, namely, "inclusion". Such geometrical connotation does not exist in SUPPORT. SUPPORT with no geometric connotation is more abstract schema than CONTAINMENT with a geometrical connotation. In the case of the schema conflict, the more abstract schema is a stronger factor than the less abstract or more concrete schema for the choice of preposition. SUPPORT determines the choice of the preposition *on* against *in* which is licensed by the more concrete schema CONTAINMENT in (7). CONTAINMENT licenses the use of "*in*" in (5) in the sense of Figure 1, which violates the sense of ENCLOSURE.

There are some cases that, at a glance, none of schemas seems to be relevant to the usage of a preposition. For instance, you hear the announcement "welcome *on* board" when you are *inside* of an airplane. You travel "*on* the train" when you are inside of a train. These fixed expressions profile the floor of an airplane and a train, which in turn, evokes a configurational schema.

We can find some other examples of schema conflict in the usage of demonstratives, which are also closed-class forms, in many languages. We start with English examples. Suppose you are at one end of a billiard table and pointing at a ball at the other end of the table with your index finger. In this case, you use *that* rather than *this* as in (8).

(8) *That is my ball.*

You will switch to using *this* if you indicate a ball by reaching it with a cue. The choice between *this* and *that* is based on the speaker's recognition of his/her psychological TERRITORY. By using a long cue, the surrounding area of the ball is recognized within his/her territory even if the ball is located rather far from the speaker. This exemplifies that the functional schema TERRITORY overcomes the configurational schema DISTANCE in the choice of demonstrative forms.

An extreme case of this line is when a doctor is touching a patient's back. The patient's back is a part of his/her own body, nevertheless, the speaker recognizes his/her own back to be under the doctor's CONTROL in such a situation. Addressee's

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[4] CONTACT seems to be a necessary condition of SUPPORT. Further work is needed for the clarification of the relation of the two.

TERRITORY or CONTROL wins over the speaker's TERRITORY or CONTROL, therefore, the speaker will say, "I feel a pain there." rather than "I feel pain here." In other words, functional TERRITORY schema or CONTROL schema is a more influential factor than configurational DISTANCE schema. Although the part of speaker's body is maximally proximal to his/her own, proximal DISTANCE from the speaker is canceled by the Addressee's functional TERRITORY or CONTROL.

In Japanese, demonstrative systems consist of trichotomy rather than dichotomy as in English. In Japanese, *ko-* indicates PROXIMAL, *so-* indicates MEDIAL, and *a-* indicates DISTAL in terms of distance from the speaker. When the addressee's TERRITORY conflicts with distance from the speaker, it is always the case that functional TERRITORY wins over geometric distance schema.

(9) *Ano hito   wa dare desu ka.*
    that person TOP who be   INT[5]
    'Who is that person?'

(10) *Sochira no tenki   wa dou desu ka.*
    INT   of weather TOP how be   INT
    'How the weather there?'

In (9), *hito* or a person may be located ten meters away from the location at which both the speaker and addressee are standing. DISTAL distance of the location of *hito* 'person' from the location of the speaker (and the addressee) requires the use of *a-* following the DISTANCE schema. In (10), on the other hand, *so-* but not *a-* is used even if the speaker and the addressee, may be apart for hundreds or thousands of kilometers. *So-* is chosen in this case, because the location or vicinity of the address falls within the territory of the addressee. This is another example that a functional schema overrides a configurational schema.

It is noteworthy that in a doctor-and-patient case, Japanese requires *so-* but not *a-*. It indicates that the area touched by the doctor is recognized as belonging to the addressee but not to the speaker. Japanese example along with English example supports the view that a functional TERRITORY schema is superior to a configurational DISTANCE schema in the case of schema conflicts.

Some languages have demonstratives indicating verticality, visibility, and motion [6]. Let us briefly look how these demonstratives are coded and some cases of schema conflicts. Mizo (a language belonging to the Kuki-Chin group of Tibeto-Burman, spoken in eastern India) has distal demonstratives that distinguish "up", "same level" and "down". A lamp and a picture higher on a wall and a fan on the ceiling is referred to with a demonstrative *khii* or 'that up there'; and a stone in a pond is referred to with *khuu* 'that down there'; however, once the speaker touches a referent with one's hand or with a long tool such as a stick, the speaker switches to a verticality-neutral *hee* or "this". This shows that CONTACT/CONTROL schema overrides VERTICALITY schema. VERTICALITY is conceptualized through the speaker's perception while CONTRACT is conceptualized through an interaction of the speaker and a referent. It

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[5] Abbreviations used in gloss;

BND	bounded	DET	determiner	DIST	distal distance
INT	interrogative particle	INV	invisible	LOC	locative demonstrative
MED	medial distance	PROX	proximal distance	SG	singular
TOP	topic marker	UNB	unbounded	1	1st person

suggests that the speaker-and-referent interaction is more functional than visual perception. This gives a reason to the fact that CONTACT/CONTROL schema is chosen against VERTICALITY schema.

In Malagasy (a Malayo-Polynesian language spoken in Madagascar), an invisible location is coded with "invisible" locative demonstratives exemplified as *atsy* and *ato* in (11) and (12) respectively. (Following examples are from Imai 2009:166)

(11) *n-apetra-ko* ***atsy***   ***ilay***   *vola*   *madinika.*
     PST-put-1SG   MED.LOC.INV   DET.INV money small
     'I put the coin there.'

(12) *misy rasufutr*   ***ato***   *anatin'* ***itý***   *anganba kasseto* ***itý.***
     exist something   DIST.LOC.INV.BND   in   PROX think   cassette PROX
     'There is something in there. I think this is a cassette.'

The invisible referent is usually coded with "invisible" determiner exemplified as *ilay* in (11). However, in (12) a cassette-tape, which cannot be seen by the speaker since it it is in a bag, is coded with "visible" demonstrative adjectives *itý*. This is the case that CONTACT/CONTROL schema overrides VISIBILITY schema. Again, a functional schema, namely CONTACT/CONTROL chooses a closed-class form against a form motivated by a visual perception.

3. Subjective vs. objective

In Malagasy, a moving referent is coded with a distance-neutral demonstrative *iny*. Distance-neutral means that the demonstrative is used without regard to distance. It behaves like an English determiner *the*, which is used regardless the distance of a referent from the location of the speaker. One of the characteristics, which *iny* in Malagasy does not share with English is that the use of the form is restricted to a referent in motion as in (13). If a referent is not in motion, a distance-neutral demonstrative *io* or one of the distance-sensitive demonstratives, for instance, *irý*, is used as in (14).

(13) *mandeha*   *mafy*   ***iny***   *tomobilna*   ***iny.***
     running   fast   UNB.SG automobile   UNB.SG
     'That car is running fast.'

(14) *misy trano*   ***irý*** / ****iny***   *manapaka ny*   *lalana*   ***irý*** / ****iny.***
     exist house   DIST.SG/UNB.SG across   DET road   DIST.SG/UNB.SG
     'There is a house across that road.'

If a speaker refers to trees by the road while she is driving a car, she uses a "motion" form because trees look as if they were passing by. If a speaker refers to a car running in parallel with his car, he uses a "non-motion" form because the car next to his car looks as if it were not in motion. Thus, notion of motion depends on perception but not on physical motion. In other words, image schemas are based on perception or subjective interpretation but not objectivity. Examples of schema conflicts discussed

before also show that subjective perception rather than objective reality plays a vital role in the grammar of a language. The same applies to the following examples.

(15) A:*itý*   *ve?*   B:*tsy* **iny**.
        PROX.SG   INT   not UNB.SG
        'This one?'   'Not that one'

(16) A:*itý*   *ve?*   B:*tsy* **io**.
        PROX.SG   INT   not BND.SG
        'This one?'   'Not that one.'

In (15), the speaker A picks up a piece of chalk. The speaker B observes the chalk is moving and uses "motion" *iny*. In (16), the speaker A points at a chalk without touching it. The speaker B observes the chalk in situ and uses "non-motion" *io.*

Examples of this section indicated that grammar of a language is determined by the speaker's subjective construal of the world.

4. Conclusion

In this paper, I cited several usage examples of pre/postpositions, demonstratives and determiners from various languages and claimed that a more abstract/functional image schema rather than a more concrete/configurational image schema determines the usage of closed-class forms in case more than one image schemas are candidate for determining factor of linguistic forms. In addition, I noted that not physical world per se but the speaker's construal of the world is the basis of usage of language.

In our discussion, the term of "image schema" is used in a broad sense because it includes not only visual perception but also the functional interaction between the speaker and referents/location. "Image" in this sense is not limited to perception but is extended to subjective "construal" by the speaker. This broader scope of image schemas captures the linguistic behaviors and construal better than the narrow meaning of image schemas that is limited to perception.

References

[1] L. Talmy, *Toward A Cognitive Semantics. Vol. 1. Concept Structuring Systems,* Cambridge University Press, Cambridge, 2000.

[2] L. Talmy, The fundamental system of spatial schemas in language. In B. Hampe (ed.) From Perception to Meaning: Image Schemas in Cognitive Linguistics, 199-234, Mouton de Gruyter, Berlin/New York, 2005.

[3] E. Dodge and G. Lakoff, Image schemas: From linguistic analysis to neural grounding, In B. Hampe (ed.) From Perception to Meaning: Image Schemas in Cognitive Linguistics, 57-92, Mouton de Gruyter, Berlin/New York, 2005.

[4] S. Lindstromberg, *English Prepositions Explained: Revised Version,* John Benjamins Publishing Company, Amsterdam/Philadelphia, 2010.

[5] H. Annette, *Language and Spatial Cognition: An Interdisciplinary Study of the Prepositions in English*, Cambridge University Press, London/New York, 1986/2009.

[6] S. Imai, Spatial Deixis: How Finely Do Languages Divide Space?, VDM Verlag Dr. Müller, Saarbrücken, Germany, 2009.