【原著論文】

On the networks of the comitative-related functions of languages

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Abstract: The aim of this paper is to suggest the semantic space of the comitative-related functions in languages of the world, and on the basis of the semantic space, we will see how these semantic functions are related to one another, or developed from other functions. Also, this semantic space allows us to make some implicational universals on the comitative-related functions of languages.

1. Introduction[*1]

The aim of this paper is to suggest the semantic space of comitative-related functions found in languages of the world and to show how these semantic functions are related to one another, or developed from other functions, allowing us to make some implicational universals on the comitative-related functions of languages.

The comitative and its related functions can be shown by the English preposition 'with', as follows.

(1) (a) Taro went to the party *with* Helen. (comitative)

    (b) Here comes a girl *with* blue eyes. (possessive)

    (c) He was killed *with* an arrow. (instrument)

    (d) Jiro speaks English *with* a strong Japanese accent. (manner)

    (d) She is in bed *with* a fever. (cause)

Concerning the specific pattern of senses displayed by the preposition *with*, Croft (1990:9) made the claim that "intuitively, there seems to be little if any semantic connection between these three distinct uses of the same preposition." If one agrees with him, then it is extremely surprising that this specific pattern of conflation of semantic functions ('use,' in Croft 1990) is not limited to *with* in English, but is also found in other languages, such as Hausa (*dà*, as in example 2), and Classical Mongolian (*–iyer/-iyar*, as in example 3).

(2) (a) *nā   hàrbē shī **dà**   bindingà.*
    1sg comp shoot 3sg with gun
    'I shot him with a gun.'

    (b) *mum   ci àbinci tāre   **dà**   shī.*
    1pl comp eat food   together with 3sg
    'We ate food with him.'

    (c) *yā   gudū **dà**   saurī*
    3sg comp run   with speed
    'He ran fast (with speed)

(Abraham 1959: 22, Kraft and Kirk-Greene 1973: 85)

(3) (a) *küol **-iyer** giski-*
    foot -with tread.on
    'to tread on with the foot'

    (b) *manu   morin tegün   -ü   morin **-iyar** belcimuüi*
    1sg gen horse that.3sg -gen horse -with grazes
    'Our horse grazes with his horse.'

    (c) *türgen **-iyer** yabumui*
    speed -with goes
    'He goes fast.'

(Poppe 1974: 153–54)

2. On methodology

For the purpose of finding semantic characteristics of syncretism in the comitative-related space of languages in general, we must inquire into relevant (grammatical) categories of languages, but a question is what languages, or how many languages should be

investigated[*2]. Evidently, it is impossible to investigate every possible language because of limitation of time, money, existence (i.e. some languages no longer exist and others have not yet developed), or availability of description (i.e., the number of adequate descriptions of the world's languages are not sufficient), and then a certain number of languages must therefore be chosen for a language sample from the universe of languages. With the belief that in order for a language sample to be appropriate, languages should be randomly selected, and should be genetically and areally as distance as possible, this study chose the following twenty-five languages (Table 1).

According to the Voegelin and Voegelin (1978)'s classification of the world languages, the languages above, no single language belonging to the same phylum, avoids every possible genetic bias, but this ideal situation is only attainable by limiting the number of languages too far from being sufficient: fewer than thirty languages may not guarantee sufficient information. For this reason, another kind of supplementary sample will be suggested and called 'the secondary sample' to contrast this with the first sample, which will be called 'the primary sample'. Our second sample consists of the following thirty-eight languages (Table 2).

It must be admitted that the secondary sample is not as carefully controlled a sample as the primary sample to introduce as little bias as possible. But the use of the secondary sample may still be justified because of its advantage of providing a greater range of language data to supplement the small size of the primary sample.

After the language sample being determined, our next task is to define which forms of these languages should be investigated for revealing nature of the comitative-related space. This study has made observations on explicit and identifiable grammatical categories that display types of semantic relationship a noun has to the verb such as prepositions, postpositions, or cases. The term 'explicit' excludes word order, and the term 'identifiable' leads us to the exclusion of what has traditionally been called 'case' in highly inflectional languages such as Latin and Greek. The main reason to eliminate these traditional cases of highly inflectional languages is a practical one: it is notorious by difficulty to determine their case system.

3. Data on the comitaitve-related space

Based on the comitative-related pre/postpositions, or cases of the languages in our primary and secondary samples, we can find the following conflation patterns of the comitative-related functions.

Based on the list of conflation patterns of the comitative-related semantic functions, and the observation on the list, we can make the following universal claims.

Universal Tendency 1

If a language expresses the comitative and causal senses by the same gram, then that form always expresses the instrument sense.

Universal Tendency 2

If a language expresses the comitative sense and the agent sense by the same gram, then, the form always

Table 1

Abipon (Ge-Pano-Carib), Abkhaz (Caucasian), Alyawara (Australian), Bari (Nilo-Saharan), Buriat (Ural-Altaic), Chacobo (Andean-Equatoria), Cheyenn (Macro-Algonquian), Dakota (Macro-Siouan), Guaymi (Macro-Chibchan), Inuit (Unaffiliated), Karok (Hokan), Koho (Austroasiatic), Kui (Dravidian), !Kung (Khoisan), Lahu (Sino-Tibetan), Margi (Afroasiatic), Modern Greek (Indo-European), Motu (Austronesian), Mwera (Niger-Kordofanian), Palantla Chinantec (Oto-Manguean), Papago (Aztec-Tanoan), Shuswap (Salish), Slave (Na-dene), Tok Pisin (Creoles), Yagaria (Indo-Pacific), Zuni (Penutian)

Table 2

Arabic (Afroasiatic), Baka (Afroasiatic), Bihari (Indo-European), Burushaski (Language Isolates), Diyari (Australian), Dogon (Niger-Kordofanian), English (Indo-European), Ewe (Niger-Kordofanian), Evenki (Ural-Altaic), Finnish (Ural-Altaic), French (Indo-European), Ga (Niger-Kordofanian), German (Indo-European), Hausa (Afroasiatic), Hualapai (Hokan), Hungarian (Ural-Altaic), Indonesian (Austronesian), Island Carib (Andean-Equatorial), Japanese (Unaffiliated), Kashimiri (Indo-European), Kannada (Dravidian), Korean (Unknown), Lingala (Niger-Kordofanian), Malayalam (Dravidian), Maltese (Afroasiatic), Marathi (Indo-European), Mongolian (Ural-Altaic), Ngiyambaa (Australian), Punjabi (Indo-European), Spanish (Indo-Eurorpean), Sumerian (Language Isolates), Tibetan (Sino-Tibetan), To'aba'ita (Austronesian), Turkish (Ural-Altaic), Vayu (Sino-Tibetan), Welsh (Indo-European), Yoruba (Niger-Kordofanian), Zande (Niger-Kordofanian)

Table 3. Conflation Patterns of Comitative-Related Senses (Ab=ablative; Ag=agentive; Al=allative; B=benefactive; Cm=comitative; Cp=comparative; Cs=causal; F=function; I=instrumental; L=locative; Ma=manner; Me=means; Pa=path; Po=possessive; Pu=purposive; Rc=recipient; Su=substitution)

CONFLATION PATTERN	LANGUAGE	NOMINAL GRAM
Cm	Apalai	*maro*
Cm	Babungo	*ghɔ*
Cm	Tuvaluan	*mo*
Cm/Ab/Ag/Al/B/Cs/I/Po/Pu/Rc	Bari	*ko*
Cm/Ab/Al/I	Lahu	*gɛ*
Cm/against (OE?)/Cs/Cm/I/Ma/Po	English	*with*
Cm/Ag/Al/Cs/Cp/I/L/Rc	Diyari	*-naŋu/-ŋu/-ni*
Cm/Ag/Cs/I/Po	Baka	*tɛ*
Cm/Ag/I	Koho	*mə*
Cm/Cs/F/I/Su	Evenki	*-(i)t*
Cm/Cs/I	Kashimiri	*st:th/st:ten*
Cm/Cs/I/Ma	Modern Greek	*me*
Cm/Cs/I/Ma	Punjabi	*de naal*
Cm/Cs/Po	Alyawara	*-akirta*
Cm/I	Dogon	*-le*
Cm/I	!Kung	*-ǀxwa*
Cm/I	Motu	*-laia*
Cm/I	Sumerian	*-da*
Cm/I	Palantla Chinantec	*kuą?*
Cm/I	Hualapai	*-m*
Cm/I	Persian	*ba*
Cm/L	Gooniyandi	*-ya*
Cm/Ma	Malayalam	*-oo e*
Cm/Ma	Kashmiri	*sa:n*
Cm/I/Ma	Ndyuka	*anga*
Cm/I/Ma	Catalan	*amb*
Cm/I/Ma	Hausa	*dà*
Cm/I/Ma	Ewe	*kplé*
Cm/I/Ma	Ga	*kè*
Cm/I/Ma	Hungarian	*-val/-vel*
Cm/I/Ma	Spanish	*con*
Cm/I/Ma	German	*mit*
Cm/I/(Me?)/Pa	Buriat	*-aar4*
Cm/Ma/Po	Evenki	*-chi*
Cm/Me/I	Indonesian	*dengan*
Cm/Po	Evenki	*-gAi*
Cm/Po	Evenki	*-tAi*
Cm/Po	Arabic	*ma*
Cm/Po	Mongolian	*-toj/-tej/-taj* (j)
Cm/Po	Evenki	*-gAln*
I/Ag/Cs	Malayalam	*-aal*
I/Cs	Malayalam	*koŋə*
I/Cs/Ma	Maltese	*bi*
I/Ma	Yoruba	*kpèlu*

expresses the instrument sense.

Universal Tendency 2 clearly requires more data to ascertain its validity, but other linguistic data found in previous studies clearly support the validity of this universal. For example, Luraghi (2001a)'s survey of a number of Indo-European languages (Latin, Romance, Greek, Sanskrit, Slavic, Baltic, Germanic, Classical Armenian) shows that the conflation of the agent sense and the comitative sense is strikingly infrequent. Similarly, Stolz' (1997) survey of world-wide languages also demonstrates that their syncretism is usually avoided.

4. On the structure of the comitative-related space

An observation on the above list of conflation patterns of the comitative related functions leads to the following semantic space (Fig. 1).

Instead of regarding the comitative as the historically basic one, this study will treat the comitative function as being derived from the locative sense. To justify our decision, let us mention the following three facts.

First are the historical data. In many cases, the comitative sense has developed from the locative. For example, Ancient Greek *metá* 'with' is derived from the locative sense 'among,' and Catalan *amb* 'with' comes from Latin *apud* 'at' (Luraghi, 2003). Similarly, the Island Carib preposition *l-abu* appears to have developed from the locative 'under' sense to the comitative (Svorou 1994: 156); verbs such as 'follow,' 'take,' and 'join', are other possible sources of the comitative sense, and they are certainly not locative grams. However, even these verbs imply the concept of proximity, and are thus semantically related to the locative. Second, the comitative sense is conceptually so closely related to the locative sense of proximity, as has been often argued (see Anderson 1971; Dirven 1993; Heine 1997a, b; Luraghi 2003; Nilsen 1973; Schlesinger 1995). This conclusion has at least two justifications. First, the comitative sense prototypically suggests a spatial connection of the entities designated by the two nouns in question, as in the following examples.

(4) (a) The pantomimist gave a show *with* the clown.
     (b) Taro cooks the meal *with* his friend.

As in (4), typical cases of the comitative sense express an animate entity that accompanies or is associated with an agent, but at the same time they also imply a correspondence in space and time. Their

conceptual closeness can be also supported by Nilsen (1973: 72), according to which this conflation pattern is the third highest in frequency (after the conflations of manner/instrumental and instrumental/comitative). Second, the derivational patterns of the comitative are very similar to those of the locative, explicable most reasonably by their close conceptual relation. Third, as researchers have mentioned in previous studies, 'it is probably not wise to consider ... Comitative [and others] ... as deep cases, but rather as surface cases" (Nilsen 1973: 48), strongly suggesting that the comitative should be regarded as a derived sense.

Then, let us consider one by one, exactly how the comitative-related space was constructed.

4.1. Semantic change from the comitative sense to other senses

The comitative-related space indicates that there are roughly speaking two different semantic paths from the comitative sense. One leads to the possessive function, while the other develops to causal semantic roles (the instrumental, the causal, the agentive, the means, and the manner senses).

4.1.1. The comitative sense and the possessive sense

Let us begin by discussing the relation between the comitative and possessive senses. The following examples are from Swahili (5a; Heine et al. 2002: 88) and a dialect of English (5b; Heine 1997b: 93).

(5) (a) a-*na*   gari
         3:sg-be:with   car
         'He has a car'.
     (b) She is *with* child.

Here the possessors are typically the sentential subjects, while the possessed are complements of the comitative grams in the possessive expressions. Our primary and secondary samples show ten cases of the
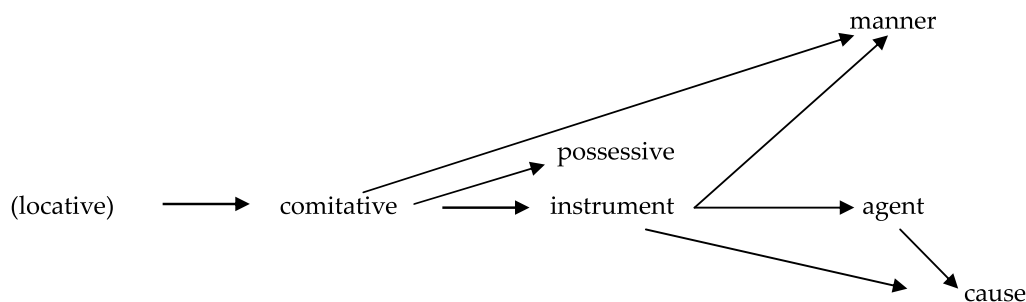

Figure 1

syncretism of the comitative and possessive senses; this degree of co-occurrence needs an explanation. We suggest, once again, that their co-occurrence can be attributed to their conceptual similarity. First, both of them are relational. That is, "Just as it is impossible to have a thing possessed without having a possessor, it is also impossible to have a thing accompanied without an accompanier" (Nilsen 1973: 46). Second, in the case of the prototypical possessive, "possessor and possessed need to be in close spatial proximity" (Taylor 1989: 202), which is clearly similar to the comitative sense.

The semantic shift from the comitative to the possessive is supported by the following two facts. First, the comitative sense obviously preserves more of a spatial concept than the possessive does, suggesting that, from the localist viewpoint, the former sense develops into the latter sense, and not vice versa. Second, the comitative function occurs much more frequently, and plays a central role, while the possessive function is a rather peripheral one in the comitative-related space. This difference allows us to conclude that new meanings are usually derived from core, or prototypical, meanings, so that the former sense should be regarded as the source for the latter sense. Previous studies also support this derivation. For example, Heine (1997a, b) suggests the extension pattern of 'X is with Y > X has, owns Y,' and Stolz (1997: 54) proposes the metaphor, 'A POSSESSEE IS A COMPANION' (a possession [derived] is conceptualized as a companion [source]).

4.2. The comitative and causal functions

This subsection will consider the syncretism of the comitative and the instrumental senses. As might be expected, our primary and the secondary samples indicate a high frequency of their co-occurrence: twenty-eight cases of this syncretism (see also samples in Nilsen 1973: 72 and LaPolla 1995: 1170, both of which also contain many instances of this syncretism). Schlesinger (1995) suggests that the comitative and instrumental senses are the ends of a continuum, which is supported by the examples in (6; Schlesinger 1995: 7).

(6) (a) The blind man crossed the street with his dog.
     (b) The general captured the hill with a squad of paratroopers.

'His dog' in (6a) can be conceptualized either as just an accompanying pet or as a helper. Similarly, 'a squad of paratroopers' in (6b) can be conceptualized either as a kind of 'tool,' with which the general accomplished his task, or as an identifying characteristic of the hill.

As can be seen in our samples, as well as in previous studies (e.g., Heine et al. 1991a; Luraghi 1973, 2001ab; Nilsen 1973; Schlesinger 1995), the manner sense is often conflated with the comitative. Our samples contain fourteen cases of the syncretism of comitative and manner senses; similarly, Nilsen (1973: 72–75) finds ten cases, the fifth most frequent syncretism in his sample. It is true that in many cases, the syncretism between these senses involves the instrumental also, but there are two reasons to suggest that the comitative may develop directly into the manner sense. The first is that our samples in fact include four cases of syncretism between the comitative and manner senses without the instrumental. The second is the evidence of historical derivation: Luraghi (2001) suggests that in the Greek preposition *metá*, the manner sense is derived from the comitative sense through the accompanying-circumstances sense (e.g., 'with such bad weather, it wouldn't make sense to go out'). Schlesinger's (1995: 61) argument also supports this derivational pattern: "it [Manner] might be looked on as a metaphorical extension of ACCOMP" [comitative].

Our samples contain eight cases of the syncretism of comitative and causal senses.

4.2.1. The instrumental, means, and manner functions

Our primary and secondary samples contain eleven cases of the syncretism of the instrumental and manner senses, Maltese (Borg et al. 1997: 148-49) illustrates this syncretism.

(7) (a) *Qaltu   l-ġurdien   **bi**   xkupa*
         killed -3pl the-mouse   with broom
         'They killed the mouse with a broom.'
     (b) *Sellmilhom   **bi**l-ħatfa*
         greeted-3pl-prn.3pl with-the-snatching
         'He greeted them fleetingly.'

The very high frequency of this syncretism in our samples, along with that found in previous studies (see below), suggests that the conflation pattern in question can be attributed to the conceptual similarity

between the instrumental and manner senses. First, in some contexts it is difficult to infer which sense is 'correct,' as in (8); this ambiguity seems to be triggered by their conceptual closeness.

(8)   Use care!   (Schlesinger 1995: 69)

Second, they share similar syntactic behavior. Lyons (1977: 722) argues that the form *how* in English (in both its relative and its interrogative functions) implies both instrumental and manner notions, and in each instance it can be paraphrased with a phrase containing the word *way* (e.g., 'This is the way in which he did it' and 'In what way did he do it?'). And Stine (1968: 76) demonstrated that the instrumental and the manner functions can be conjoined in both English and Thai (e.g., 'He makes mother happy with flowers and (by) speaking slowly,' or 'With hammer, nails, wood, and patience you can build a table.'). This is also true for Japanese (Ash 1970: 9). Notice that grammarians (e.g. Binkert 1970: 63, Greenbaum 1969, Lakoff 1968, Ross 1968) have used the conjunction test to distinguish functions (in deep structure) and have assumed that two cases are the same if they are successfully connected. Similarly, Nilsen (1973: 115) states that, "Instruments and Manners occur with basically the same classes of verbs."

Although the preceding discussion emphasizes the similarity between these senses, there are grounds for treating them as two separate categories: first, the manner function is usually designated by abstract nouns (e.g., 'hurry,' 'skill'), while the instrumental is usually indicated by concrete nouns (e.g., 'hammer', 'bat'). Second, the manner sense always presupposes the events or activities in question (i.e., 'with great skill,' in 'He completed the job with great skill' appears only when the activity in question actually happens). Third, the manner function tends to become adverbialized, while the instrumental function does not (Janda 1993: 149). Therefore, this study regards the instrumental and manner senses as two distinct but related categories.

Our next task is to investigate their historical development. There are two motivations for assuming a semantic change from the instrumental to the manner sense. First, the instrumental developed into the manner sense in Latin *ad* (Kilroe 1994: 55). Second, only this direction of semantic change agrees with the ten-

dency found in previous studies, whereby a resulting meaning tends to be more inclusive or general than its source meaning (see, for example, Bybee and Pagliuca 1985, Heine et al. 1991a: 157). The manner sense can be considered more grammaticized than the instrumental because, for example, the interrogative *how* (as in 'How did Taro do this?') can be answered with both the manner ('carefully') and the instrumental senses ('with a knife'), whereas a question such as 'What did Taro do this with?' can only be answered with an instrumental expression. Third, this view is consistent with our intuition. Jim Unger (personal communication) has pointed out that in Hausa, the manner sense is felt to be a derivational or metaphorical sense of the instrumental when the instrumental gram is used to mean manner. Consider also the fact that (as far as the author knows) no previous studies of the instrumental and manner senses have proposed the opposite development.

Before concluding this subsection, let us briefly discuss the means sense. Following Dirven (1993: 90), it can be assumed that the instrumental and manner senses are the endpoints of a conceptual continuum. Somewhere between them, but closer to the instrumental side of this conceptual continuum, is what has been called 'means.' Dirven's (1993) study found that in English prepositions, the prototypical gram covering the concepts of manner and instrument is *with*, while *at* (among other functions) expresses the manner sense ('at full speed'), and *on* and *by* can display the means sense ('drunk *on* whisky', 'by [means of] our budget'). As with the instrumental sense, the means sense designates some entity through which an agent brings about a change of state designated by the verb (e.g., 'I got this position through [by means of] lots of hard work'). Despite this similarity, however, the means function differs from the instrumental in that the pre/postposition for the former sense typically marks an event or activity with a certain time duration (e.g. 'stabbing'), not a manipulative inanimate entity (e.g. 'knife'), as in (9).

(9)   (a)   John assassinated the President with a knife.
      (b)   John assassinated the President by stabbing
            him with a knife.

Although this study recognizes their difference, they are often very difficult to distinguish (especially

in this kind of typological study, where most linguistic data are collected from reference books and dictionaries). Therefore, unless it becomes necessary, the means sense will be treated as a part of the instrumental.

4.2.2. The instrumental, agentive, and causal functions

Our primary and secondary samples contain eight cases of instrumental-agentive syncretism. As shown in Stolz (2001) and Nilsen (1973: 72), this conflation is attested in areally and geographically unrelated languages. Their conceptual similarity may be intuitively obvious; that is, they are both effectors and have the feature [CAUSE] (Nilsen 1973: 95). Indeed, many scholars have indicated their interrelation. For example, Brodda (1973: 21) suggests that the instrumental and agentive senses are subsumed within a single category (and thus can be considered different manifestations of the same form). William and Jeffreys (1982) propose a conceptual continuum, with the instrumental and agentive as endpoints. As for their syntactic similarities in English, Nilson (1973: 58) has argued that they both allow passivization, they cooccur with manner adverbials, and they are both indicated by the prepositions *with* and *by*. However, it is also easy to indicate their differences. For many scholars, intention is taken to be the criterion for the agentive sense (Jackendoff 1972: 32; Platt 1971: 73ff; Qurik 1972: 353; Talmy 1976: 87). Willis and Jeffreys (1982) suggest that the prototypical agent is animate, volitional, has self-energy and no immediate cause, whereas the prototypical instrument is negatively marked for these four features. For Nilsen (1973: 121), the two roles can be distinguished by three features: intent, control, and animacy. Janda (1993: 150) simply claims that, "in most cases, objects are identified as instruments and human beings as agents." This study emphasizes the fact that instrumental NPs, unlike the agents, exert no energy of their own, and therefore must be used by some animate entity.

The directionality of semantic change from the instrumental to the agentive can be found in the historical documents of Indo-Iranian, Vedic (early) Sanskrit and Slavic (Luraghi 2003: 32, Strunk 1991). In addition, passive agent constructions are found later in Indo-European languages than are instrumental constructions.

Lastly, let us consider three motivations for suggesting a progression from the instrumental to the causal sense. First, in our samples the instrumental sense is so frequently conflated with the causal that they must be closely related. This point can be supported by pointing out that the instrumental pre/postposition often invokes a causal reading, as in (10) and (11) (from Quirk et al. 1985: 700).

(10) Someone had broken the window *with a stone*.

(11) (a) Someone used a stone to break the window.
　　(b) A stone had broken the window.

Quirk et al. (1985) argue that the instrumental expression in (10) suggests not only the typical interpretation of (11a), but also that of (11b). Note that the latter implies that the stone is a responsible causer, backgrounding the existence of the agent.

Second, in many languages an instrumental adjunct NP can be promoted to the subject position of a transitive clause (e.g., 'He opened the door with the key,' and 'The key opened the door'; see Lyons 1968: 298; DeLancy 1984, 1991; Langacker 1991; Somers 1987). Assuming that the subject of a transitive clause prototypically expresses the 'causer' of an activity, it is reasonable to consider that the promoted instrumental NP comes to express the causal sense. Put differently, the NP in question changes the status of an intermediate stage in an energy flow to that of energy source, with the original energy source (such as human beings) backgrounded, as the following English examples suggest (see Croft 1991, Langacker 1991 for *energy flow*).

(12) (a) Joe took a minute to calculate the cost with a computer.
　　(b) A computer took a minute to calculate the cost.

Compared to its occurrence in (12a), 'computer' in (12b) more strongly suggests its ability to perform without a human agent. The promotion of an instrumental NP to the subject slot in a transitive clause indicates that the instrumental can quite naturally be conceptualized as the causal sense. Third, let us add that the directionality of this specific development (from the instrumental to the causal sense) is also supported by the historical example of Lhasa Tibetan (Genneti 1991: 231).

As for the relation between the agentive and causal

senses, their typical definitions show that both functions bring about a change of state, designated by the verb. Their differences can be attributed to the presence or absence (respectively) of volition and animacy on the part of the causer (although this is not sufficient to distinguish them in many cases).

5. Conclusion

This paper has suggested the semantic space of the comitative-related functions found in languages, and based on the semantic space, we have seen how these semantic functions are related to one another, or developed from other functions. Also, this semantic space allows us to make some implicational universals on the comitative-related functions of languages.

Notes

[*1] Parts of this paper are based on Yamaguchi (2005).
[*2] See Bybee and Pagliuca (1985) for the method of language sampling.

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(Because of space limitation, we cannot include all the information on the languages used in this study. Contact the author if they are needed: the author's e-mail address is as follow: kazuyamaguchi@nittai.ac.jp).

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