The Semantic Map of the Spatial Domain and Related Functions*

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This paper employs the Semantic Map Model, a new tool for typological research, to study functions in the spatial domain and related domains. It takes a bottom-up approach, which starts with a limited number of dialects spoken in the single Chinese province of Hunan, and progressively moves on to include more data from other dialects of Chinese. It eventually establishes a map that can account for multifunctional patterns of relevant grams in the Chinese dataset. One highlight of this study is the Multi-layer Semantic Map Model, a methodological innovation to deal with polygrammaticalization.

Key words: Multi-layer Semantic Map Model, polygrammaticalization, semantic map, spatial domain

1. Introduction

1.1 Overview

Space is generally viewed as a basic domain in human cognition. Recent years have witnessed an upsurge in the interest of spatial motion events, which are expressed in various ways in different languages. What interests us is how spatial functions, such as Location, Source, Goal and Path, are encoded. Interestingly, linguistic forms that encode these functions are usually multifunctional, which can mark non-spatial functions as well. For example, *from* in English signals the Source of motion in '*She came from New York*', while it encodes the Cause of an event in '*He died from indigestion*'. Similarly, the English *to* can mark the Goal of motion, as in '*He went to Beijing last night*', and it can also function as a Recipient marker, which can be exemplified in '*He gave an ice cream to me*'.

The multifunctionality of spatial morphemes is not an isolated phenomenon found in a single language; it is attested across languages. Therefore, this paper intends to investigate how spatial functions are encoded and how they are related to non-spatial functions in a conceptual sense. The Semantic Map Model is employed to uncover and represent regularities underlying the multifunctional patterns. Specifically, the objective of this paper is to construct a semantic map to represent the arrangement of the spatial domain and related non-spatial domains in human conceptualization. Moreover, the semantic map established in this paper will be utilized to solve existing problems.

One distinctive feature of this study is that it starts with the dialects of one region and a preliminary semantic map is established. As the research scope is expanded to other dialects of Chinese, the preliminary map is complemented and modified.

1.2   Semantic Map Model

The Semantic Map Model is a method for describing and illuminating the patterns of multi-functionality of grammatical morphemes (Haspelmath 2003). The basic goal of a semantic map is to sketch out the relations among different function nodes, which are semantically or functionally defined. The Semantic Map Model is based on the hypothesis that similar functions tend to be similarly encoded and, in particular, can be subsumed under the same polyfunctional form (Haiman 1985). Croft (2001) proposes the Semantic Map Connectivity Hypothesis: 'Any relevant language-specific and/or construction-specific category should map onto a connected region in conceptual space.' Haspelmath (2003) notes that a semantic map generates a series of implicational universals predicting that if two particular functions, discontinuous on the map, share the same form, this form will be available for the intermediate function(s). The predictability makes the Semantic Map Model a powerful tool in cross-linguistic investigation. Note that in many semantic map studies the language-specific map is called semantic map, whereas the language-universal map, which is hypothesized to represent the conceptualization in human cognition, is called conceptual space. However, there are some studies that use semantic map to denote both language-specific and language-universal maps. The present study follows the latter terminology, using semantic map only.

The Semantic Map Model has advantages over traditional typological approaches. First, it guarantees cross-linguistic comparability since all the function nodes used for comparison are semantically defined. Second, it is effective in detecting and representing form-meaning correspondence on a large scale. Moreover, this approach can generate a number of implicational universals and offer insights on diachronic changes.

1.3   Previous studies

There have been studies on relationships among semantic functions within or without the semantic map approach. Haspelmath (2003) provides a semantic map of dative functions (Figure 1) and a semantic map centered on Instrument function (Figure 2).
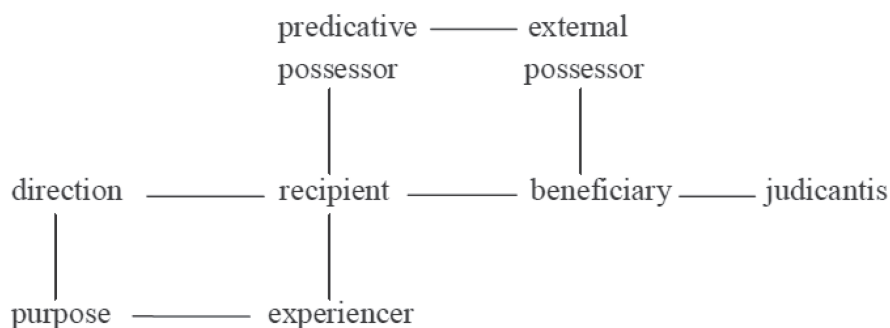

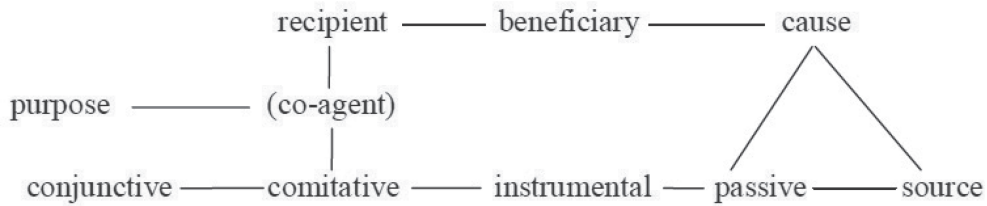**Figure 1:** Semantic map of dative functions (Haspelmath 2003)

Figure 2: Instrumental and related functions (Haspelmath 2003)

Yamaguchi (2004) looks at the connection between the spatial domain and the non-spatial domain based on 26 primary languages and 46 secondary languages. Instead of looking for an implicational map, the author connects any two functions that are found encoded by the same form. This results in massive connecting lines and therefore weakens the predictability of the map (Figure 3).
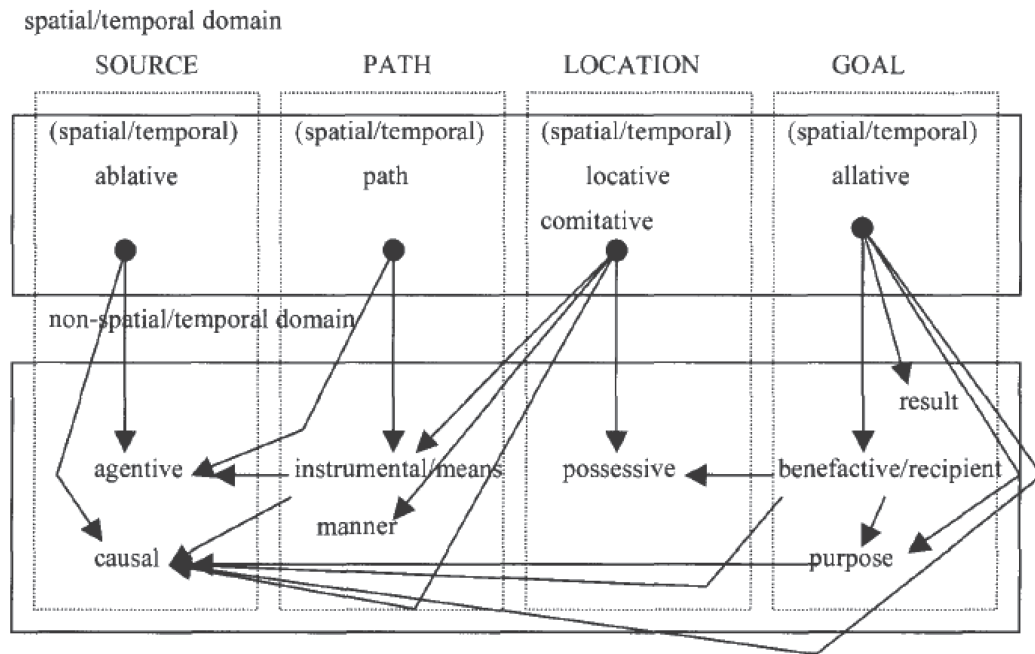

Figure 3: Nominal gram macro-structure in Yamaguchi (2004)

Narrog (2010) takes a semantic map approach to study the Goal–Recipient domain and arrives at a dynamic semantic map (Figure 4), which indicates the direction of functional extension.

If we compare the four maps, they have different function nodes, though they share a few common nodes, such as Recipient and Beneficiary. More importantly, they differ considerably in connections between nodes. This is primarily due to different foci of study, some concentrating on dative functions, others interested in the spatial domain. This results in various degrees of sub-categorization. For instance, Yamaguchi (2004) identifies four spatial functions, namely Source,
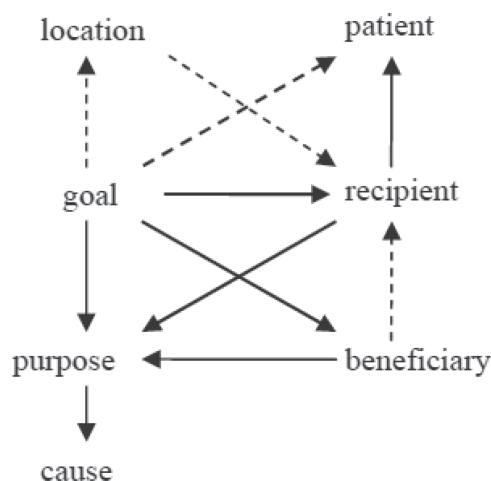
Figure 4: Semantic map of the Goal–Recipient domain (Narrog 2010)

Path, Location and Goal, whereas Narrog (2010) only looks at two spatial functions, namely Location and Goal. Another reason is that the same function nodes are defined differently; some are more inclusive than others. Therefore, one should be particularly careful when comparing different semantic maps with apparently identical functions.

This study attempts to build a semantic map centered on the spatial domain from scratch for three reasons. First, the spatial domain is a basic source domain based on which other domains are extended. Yet so far there has not been any work on the spatial domain under the Semantic Map Model. Second, some of the existing semantic map studies do touch upon a few functions that this study is interested in. However, because of different research focus, these studies do not give adequate attention to spatial functions, rendering their arrangement of spatial functions less credible (Haspelmath 2003; Narrog 2010). Third, the Sinitic languages (Chinese dialects included) often fall out of the scope of cross-linguistic typological studies, especially under the semantic map approach. It would contribute to the diversity and validity of this approach to build a semantic map based on Chinese dialects.

1.4   Function nodes

Function nodes are basic items on a semantic map. In order to distinguish case function labels from case labels, we employ Location, Source and Goal instead of Inessive, Ablative and Allative. The following chart provides the definition for each function discussed in this study, followed by examples in either Mandarin Chinese or English.[1]

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[1]   Our definitions are based on Heine & Kuteva (2002), Trask (1993), and Van Valin & LaPolla (1997).

Domain	Node	Definition	Example[2]
Spatial domain	Location	The place where an action takes place or a state exists.	他**在**家裡吃飯 'He is having dinner **at** home.'
	Source	The starting point of a motion.	他**從**電影院走到學校 'He walked **from** the cinema to school.'
	Goal[3]	The end point of a motion.	他從電影院走**到**學校 'He walked from the cinema **to** school.' **上**哪裡去 'Which place are you going **to**?'
	Path	The route of a motion.	**從**小路走，不要走大路 'Go **from** the path, do not go from the main road.'
Non-spatial domain	Target	A person or a thing that an action is aimed at.	我**跟**他打了招呼 'I said hello **to** him.' 他**朝**老王笑了笑 'He smiled **toward** Laowang.' 他**跟**他爸長得一模一樣 'He looks exactly the same **as** his father.'
	Recipient	A person or a thing that receives something.	我送了一本書**給**他 'I gave a book **to** him.'
	Beneficiary	A person for whose benefit some action is performed.	他**幫**奶奶寫信 'He writes a letter **for** grandma.'
	Maleficiary	A person who suffers from an action.	那本書我**給**你弄丟了 'I lost your book.'
	Companion	A person or a thing in whose company something is done.	我**跟**他商量商量 'I (will) discuss **with** him.' 張三**跟**李四打了一架 'Zhangsan had a fight **with** Lisi.'
	Instrument	The inanimate means by which something is done.	他**用**毛筆寫字 'He writes **with** a writing brush.' 她**用**毛線織毛衣 'She knitted a sweater **with** wool.'
	Conjunction	Two noun phrases that are conjoined by a conjunction.	我**跟**他都拿了一等獎 'He **and** I won the first prize.'
	Disposal Patient	The patient of an action in disposal constructions.	他**把**花瓶打碎了 'He broke the vase.'
	Passive Agent	The agent in passive constructions.	花瓶**被**他打碎了 'The vase is broken **by** him.'
	Causee	The participant who performs an action under the direct influence of the initiator in a causative construction.	他**把**我嚇了一跳 'He had me scared.'

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[2] The function markers are in bold fonts.
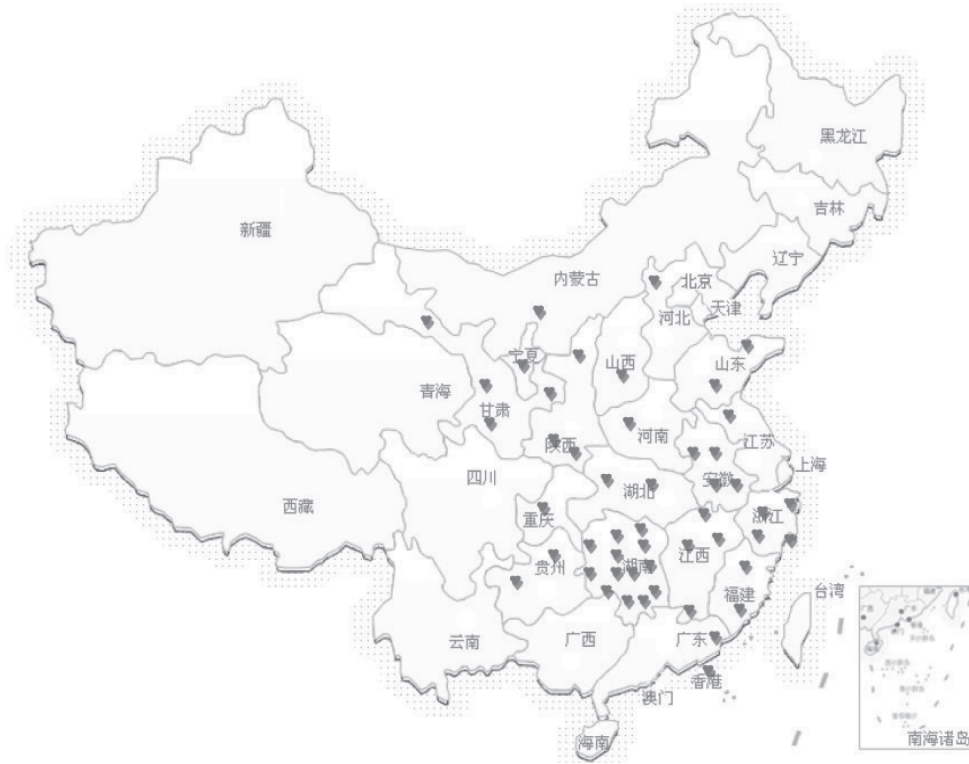[3] The syntactic position of Goal can be either preverbal or postverbal.

Figure 5: Dialect data obtained from fieldwork

1.5 Data and organization

In order to ensure a solid base for this study, we collected 449 linguistic forms from 148 dialect varieties of Chinese. Among them, 214 forms from 56 varieties are from our own fieldwork (Figure 5).

This paper is organized as follows. §2 is an approximation of the semantic map based on dialects within Hunan province, PRC. In §3, data from other dialects of Chinese are added into the discussion and more function nodes will be located on the semantic map. Following this is a discussion of *give* verbs, *follow* verbs and the Bailongjiang 白龍江 [lan] respectively. Finally, §4 gives a brief summary of the study.

2. Building up the semantic map based on Hunan dialects

The Hunan dialects are the starting point for building a semantic map. The question that immediately arises is whether it is feasible and convincing to generate a semantic map based only on a limited variety of dialects within a province. Theoretically, a semantic map, as the product of cross-linguistic comparison, would be more accurate if a greater number of languages/dialects are taken into consideration. However, the key element being compared in this approach is semantic
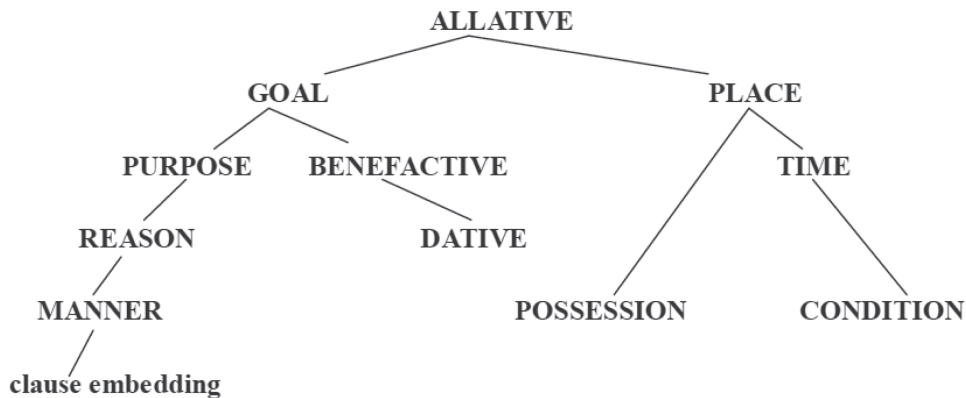
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                          ALLATIVE
                    ╱                  ╲
              GOAL                        PLACE
           ╱        ╲                  ╱        ╲
    PURPOSE      BENEFACTIVE       ╱       TIME
       ╲              ╲         ╱              ╲
      REASON          DATIVE ╱                   ╲
         ╲                                          ╲
       MANNER              POSSESSION          CONDITION
          ╲
    clause embedding
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Figure 6: Heine's (1990) model of allative extension based on two Nilo-Saharan languages

concepts, which are encoded by different forms in a language. For example, the concept Conjunction is encoded by *gen* 跟 and *he* 和 in Standard Mandarin. As long as the linguistic forms within a group of languages/dialects, or within a single language/dialect, are diversified enough, it is possible and credible to build a semantic map based on them. Heine (1990) establishes a model of allative extension based on only two multifunctional suffixes in Ik and Kanuri (Figure 6). More detailed discussion on the feasibility of this approach can be found in Zhang (2010).

Hunan Province boasts a wide variety of dialects, including Xiang 湘, Southwest Mandarin 西南官話, Gan 贛 and Xianghua 鄉話. Such variety offers abundant overlapping multifunctional forms that can be utilized for building a semantic map. Therefore, Hunan dialects are taken as the point of departure for this study. However, a semantic map based on Hunan data can never claim to be a complete representation; rather, it provides a basis, which is subject to modification when more data from other dialects/languages are included into discussion.

The Semantic Map Connectivity Hypothesis requires a semantic map to be arranged in such a way that the functions encoded by the same form should occupy a connected area on the map. In the light of this hypothesis, linguistic forms that only have two functions are direct evidence that these two functions should be connected on a semantic map. Therefore, we shall start from two-function syncretism patterns in Hunan dialects.

2.1 Spatial functions

Pattern 1: Source–Path[4]
Attested prepositions: (1) [tsoŋ] 從 in Changsha 長沙; (2) [tsiɤ] 走 in Loudi 婁底; (3) [ta] 打 in Suining 綏寧; (4) [tɑ] 打 in Longhui 隆回; (5) [xã] 行 in Hengshan (Qianshan) 衡山 (前山); (6) [pa] 把 in Fenghuang 鳳凰, etc.

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[4] All the data sources will be provided in the Appendix.

Fenghuang 鳳凰

(1) | 把 | 鳳凰 | 到 | 吉首 | 有 | 好遠？(Source) |
|---|---|---|---|---|---|
| *pa* | *foŋ xuaŋ* | *tau* | *tɕi səu* | *iəu* | *xau yan* |
| SOU[5] | Fenghuang | GOA | Jishou | have | how far |

'How far is it from Fenghuang to Jishou?'

(2) | 渠 | **把** | 井水 | 過 | 山 (Path) |
|---|---|---|---|---|
| *kei* | *pa* | *tɕin suei* | *ko* | *san* |
| 3SG | PAT | well water | pass | mountain |

'She went by a well.'

Pattern 2: Location–Goal

Attested prepositions: (1) [tɔ] 倒 in Guiyang Tuhua 桂陽土話; (2) [tau] 到 and [tai] 待 in Changde 常德; (3) [ɕi] 是 and [kəu] in Xintian 新田; (4) [ze] 在 in Longhui 隆回; (5) [tə] in Jishou (Donghe) 吉首 (峒河); (6) [hai] 在 in Yizhang Tuhua 宜章土話, etc.

Changde 常德

(3) | 飛機 | **到** | 天 | 上 | 飛 (Location) |
|---|---|---|---|---|
| *xuei tɕi* | *tau* | *tʰian* | *saŋ* | *xuei* |
| plane | LOC | sky | LOZ | fly |

'The plane is flying in the sky.'

(4) | 你 | 坐 | **到** | 椅子 | 上 (Goal) |
|---|---|---|---|---|
| *li* | *tso* | *tau* | *itsɿ* | *saŋ* |
| 2SG | sit | GOA | chair | LOZ |

'Please sit down on the chair.'

Pattern 3: Source–Goal

Attested prepositions: (1) [tsau] 走 in Xintian 新田; (2) [tsei] 走 in Hengshan (Wangfeng) 衡山 (望峰); (3) [tsəu] 走 in Ningyuan 寧遠; (4) [dʐəu]/[dʐəu-təu] 朝/朝倒 in Dongkou 洞口.

Ningyuan 寧遠

(5) | 我們 | **走** | 電影院 | 去 (Goal) |
|---|---|---|---|
| *ŋomən* | *tsəu* | *tininyn* | *kʰə* |
| 1PL | GOA | cinema | go |

'Let us go to the cinema.'

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[5] Adverb(ial) is abbreviated as ADV; Aspect marker, ASP; Beneficiary marker, BEN; Causee marker, CAE; classifier, CL; Companion marker, COM; Conjunction marker, CONJ; copula, COP; modifier marker/ genitive marker, DE; Disposal Patient marker, DP; Goal marker, GOA; Instrument marker, INS; Location marker, LOC; localizer, LOZ; Maleficiary marker, MAL; Negation/Negative marker, NEG; Passive Agent marker, PA; Path marker, PAT; plural, PL; particle, PT; Purpose marker, PUR; question particle, Q; Recipient marker, REC; Source marker, SOU; Target marker, TAR; topic, TOP.

(6)　我　　**走**　　學校　　裡　　出來 (Source)
　　　ŋo　　*tsəu*　　*ɕioɕiau*　　*li*　　*tɕʰylœi*
　　　1SG　SOU　school　LOZ　come out
　　　'I went out of the school.'

Pattern 4: Location–Source
Attested preposition: (1) [loʔ] 落 in Pingjiang 平江; (2) [tsʰei] in Yizhang 宜章; (3) [nai] 在, [zʅ] 是 and [ɦiəu] 號 in Dongkou 洞口.

Pingjiang 平江

(7)　我　　**落**　　咯　　邊　　過來　　咯 (Source)
　　　ŋo　　*loʔ*　　*ko*　　*piɛn*　　*kuølai*　　*ko*
　　　1SG　SOU　that　side　come　PT
　　　'I came from there.'

(8)　我　　**落**　　街　　上　　做　　事 (Location)
　　　ŋo　　*loʔ*　　*ka*　　*ʃoŋ*　　*tsʅ*　　*sʅ*
　　　1SG　LOC　street　LOZ　do　things
　　　'I work in the town.'

Based on the five patterns observed in the Hunan data, we get the following arrangement of spatial functions (Figure 7).
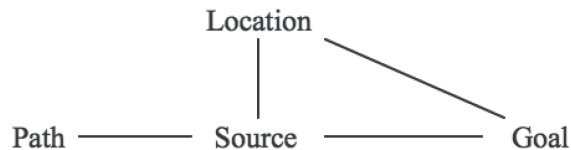

Figure 7: Arrangement of spatial function nodes based on Hunan data

2.2　Related functions

Spatial functions usually share the same form with non-spatial functions.

First, we look at function nodes that are directly linked to spatial nodes. Throughout the Hunan data, Recipient and Target are observed to appear together with spatial functions alone. As for Recipient, there are three patterns in which it shares a common morpheme with spatial functions. They are:

(a)　Recipient–Goal ([tə] 得 in Yueyang 岳陽);
(b)　Recipient–Goal–Location ([tə] 得 in Changsha 長沙);
(c)　Recipient–Goal–Location–Beneficiary–Maleficiary–Target–Companion　([tɑ]　搭　in Pingjiang 平江).

Changsha 長沙

(9) 你　　住　　**得**　　幾　　樓？──　我　　住　　**得**　　三　　樓 (Location)
　　 ŋi　 *tɕy*　 *tə*　 *tɕi*　 *ləu*　　 *ŋo*　 *tɕy*　 *tə*　 *san*　 *ləu*
　　 2SG　 live　 LOC　 which　 floor　　 1SG　 live　 LOC　 three　 floor
　　 'Which floor do you live on? I live on the third floor.'

(10) 你　　跑　　**得**　　哪裡　　去　　了　　囉？(Goal)
　　 ŋi　 *pʰau*　 *tə*　 *nali*　 *kə*　 *la*　 *lo*
　　 2SG　 run　 GOA　 where　 go　 PT　 PT
　　 'Where did you go?'

(11) 咯　　本　　書　　我　　送　　**得**　　你 (Recipient)
　　 kɔ　 *pən*　 *ɕy*　 *ŋo*　 *sɔŋ*　 *tə*　 *ŋi*
　　 this　 CL　 book　 1SG　 send　 REC　 2SG
　　 'Let me give this book to you.'

One similarity that the three patterns share is that Recipient co-occurs with Goal. This fact indicates a strong conceptual correlation between Recipient and Goal, which leads to the conclusion that Recipient should be placed next to Goal on the semantic map.

Similarly, Target is found to have a close relation with Goal. This can be exemplified by [ɕið] 向 in Guiyang Tuhua 桂陽土話, [tei] 對 in Xiangtan 湘潭 and [ɕiaŋ] 向 in Yongzhou 永州, all of which exhibit Target–Goal syncretism. Moreover, [dəu] in Dongkou 洞口 displays a Target–Goal–Source–Path pattern. Seeing the cases above, it is sound to claim that Target should be linked to Goal.

Next, we come to functions that are not directly linked to the spatial domain. In order to locate a function node on the map, it is necessary to examine its concomitant functions and identify the one/ones sharing the same morpheme exclusively with it.

Take Beneficiary, for example. The most frequent functions co-occurring with Beneficiary are Recipient, Target and Disposal Patient.

(a)　 [põ] 幫 in Xinhua 新化: Beneficiary–Disposal Patient;
(b)　 [paŋ] 幫 in Jishou 吉首 and [pɔŋ] 幫 in Dongkou 洞口: Beneficiary–Disposal Patient;
(c)　 [paŋ] 幫 in Loudi 婁底 and [kən] 跟 in Dongkou 洞口: Beneficiary–Target;
(d)　 [bɑ]/[mɑ] 把 in Longhui 隆回 and [pa] 把 in Hengshan (Wangfeng) 衡山 (望峰): Beneficiary–Recipient–Disposal Patient;
(e)　 [paŋ] 幫 in Fenghuang 鳳凰 and [paŋ] 幫 in Guzhang 古丈: Beneficiary–Target–Disposal Patient, etc.

The syncretism patterns above suggest that Beneficiary ought to be linked to Recipient, Target and Disposal Patient.

Another function node closely related to Beneficiary is Maleficiary. In the limited cases involving Maleficiary in Hunan data, this function shares the same form with Beneficiary. Theoretically,

a function without a distinctive form should be subsumed under another function node. However, as will be discussed in §3.2.3, there are dialects in which Maleficiary is coded differently from Beneficiary. Thus, it is advisable to leave Maleficiary as a separate node linking to Beneficiary, allowing for modification when more data is taken into consideration.

Companion is found concomitant with Target in all the cases observed. For example, in Jinshi 津市, Companion shares [kən] 跟 with Target, Recipient, Beneficiary, Conjunction and Goal, whereas in Shaoyang 邵陽 Companion shares [kən] 跟 with Target only. In total, we find 32 cases where Companion co-occurs with Target in Hunan dialects. Therefore, undoubtedly Companion should be connected to Target.

As for the remaining functions, such as Conjunction, Instrumental, Passive Agent and Disposal Patient, the data of Hunan dialects are not sufficient to determine their location, so more data from other dialects are expected to complete the map. So far, we have established the following map (Figure 8):
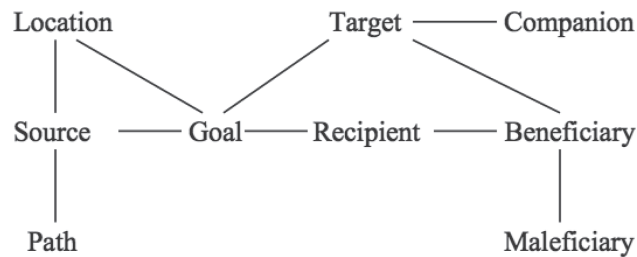

Figure 8: Initial semantic map based on Hunan dialects

Theoretically, all the functions that are marked by the same preposition can be mapped onto a connected area. If a preposition encodes two discontinuous functions on the map, then the function/functions between them must also be coded by the same preposition. Examples from Changsha 長沙 and Longhui 隆回 are provided in Figures 9 and 10.
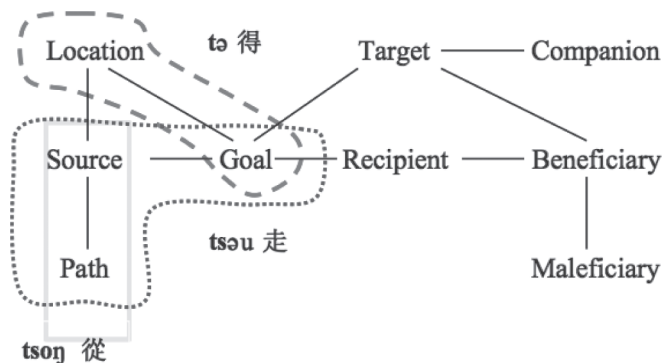

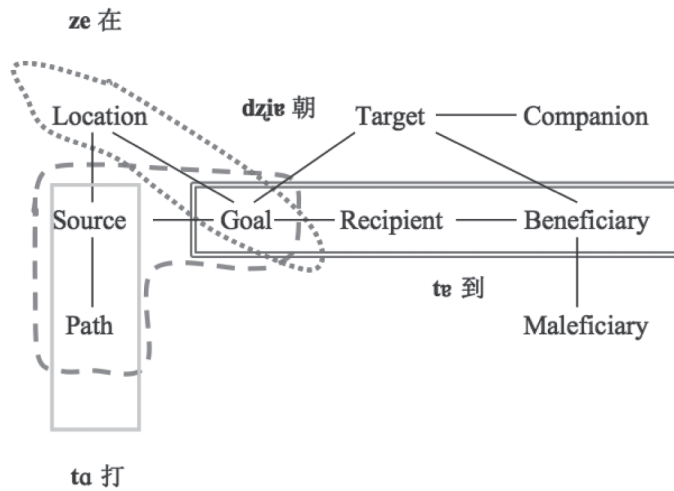**Figure 9:** Some prepositions in Changsha dialect on the semantic map

Figure 10: Some prepositions in Longhui dialect on the semantic map

2.3 Discussion

While most morphemes in Hunan dialects are in accord with the established semantic map, there are a number of cases where the functions of a single morpheme do not occupy a continuous region on the map. These exceptions fall roughly into three groups.

The forms in the first group involve functions like Passive Agent and Recipient, and, sometimes, Beneficiary. For example, [tə] 得 in Chaling 茶陵 encodes Passive Agent and Recipient. Cases such as [sɿ] 賜 in Loudi 婁底, [bɑ]/[mɑ] 把 in Longhui 隆回, [om] in Ningyuan (Taiping) 寧遠 (太平) and [kiɛ] 給 in Hengshan (Wangfeng) 衡山 (望峰) display a syncretism pattern of Passive Agent–Recipient–Beneficiary.

Ningyuan (Taiping) 寧遠 (太平)

(12)　□　一　隻　碗　□　□ (Recipient)
　　　om　*i*　*tsa*　*oŋ*　*om*　*ŋa*
　　　give　one　CL　bowl　REC　1SG
　　　'Give a bowl to me.'

(13)　□　家　賣　□　一　座　□　□　他 (Recipient)
　　　ŋa　*tɕia*　*miɛ*　*tɕiɛ*　*i*　*tsu*　*au*　*om*　*tsa*
　　　1SG　home　sell　ASP　one　CL　house　REC　3SG
　　　'My family sold a house to him.'

(14)　□　□　裝　一　碗　飯 (Beneficiary)
　　　om　*ŋa*　*zaŋ*　*i*　*oŋ*　*fiɛ̃*
　　　BEN　1SG　fill　one　CL　rice
　　　'Get me a bowl of rice.'

(15) 安　　□　　狗　　咬　　□　　一　　□ (Passive Agent)
　　　ŋa　　*om*　　*kau*　　*iau*　　*tɕiɛ*　　*i*　　*kʰəu*
　　　1SG　　PA　　dog　　bite　　ASP　　one　　CL
　　　'I was bitten by the dog.'

Chappell & Peyraube (2006) propose two grammaticalization chains of *give* verbs.

(1)　V [+give] > V [+causative] > passive marker
(2)　V [+give] > dative marker

If viewed from the end of each route, dative markers and passive markers do not have, nor should they have, a direct semantic relation. The syncretism of Passive Agent and Recipient is due to polygrammaticalization, which will be discussed at length in §3.2.1. Therefore, Passive Agent and Recipient are not connected on the map (Figure 11).
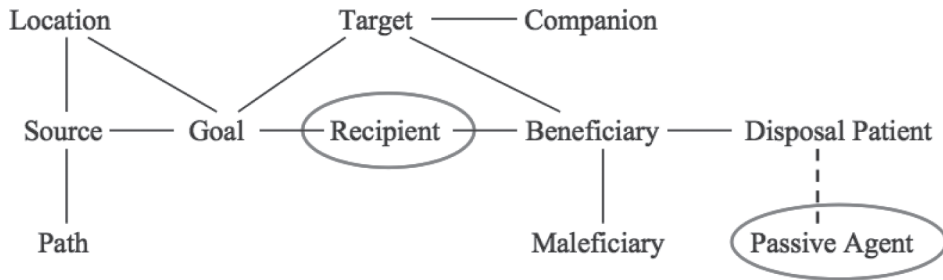

Figure 11: Discontinuity between Recipient and Passive Agent[6]

The second group seems to violate the map because of the discontinuity between Disposal Patient and Recipient/Target (Figure 12). Some morphemes are found to encode Disposal Patient and Recipient, such as [pɔ] 把 in Changsha 長沙 and [pa] 把 in Yiyang 益陽. Disposal Patient is not adjacent to Recipient on the semantic map, but why are they so repeatedly attested in Hunan dialects? We believe that it is due to the influence of Standard Mandarin, in which *ba* 把 functions as a Disposal Patient marker only. In some dialects of Hunan, especially Xiang dialect, *ba* 把 is primarily a *give* verb and it naturally develops the function of marking Recipient and sometimes Target, or even Beneficiary. Through the intense contact between Standard Mandarin and local dialects in recent decades, [pa] 把 gradually acquires the function of marking Disposal Patient in local dialects. Evidence can be found in the two distinctive ways of encoding disposal constructions in Suining 綏寧, for example. The local form marking disposal constructions is [tan] 擔, which is heavily used by senior residents. Meanwhile, there is a new form [pa] 把, which is preferred by

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[6] Disposal Patient and Passive Agent are not yet located on the map, but they are definitely away from Recipient. We refer to some data in other dialects to tentatively determine their rough position. Detailed discussion of the two nodes will be provided in the next section.
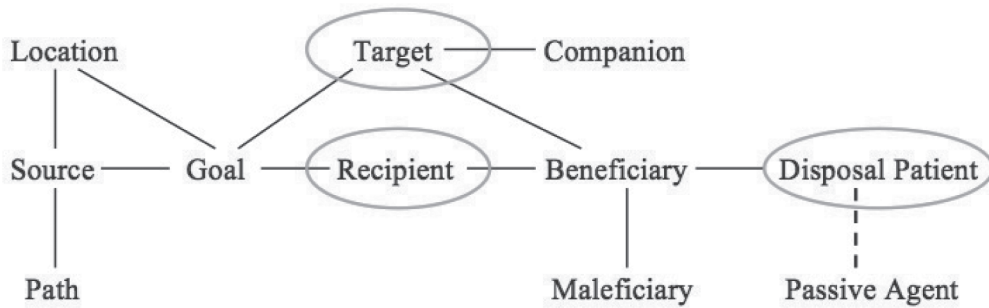
Figure 12: Discontinuity between Disposal Patient and Recipient/Target on the map

the younger generation. This contrast perfectly illustrates the different strata of Disposal Patient markers in some Xiang dialects and thus proves that such a syncretism pattern involves no dialect-internal semantic factors.

The third group revolves around *gen* 跟. The problem with this morpheme is that in some dialects the spatial functions of a morpheme are disconnected to its non-spatial functions, such as the Fenghuang 鳳凰 [kən] 跟 encoding Source, Path, Beneficiary, Target, Companion, Conjunction and Disposal Patient. [kən] 跟 in Jishou 吉首 marks Source, Path, Beneficiary and Target, and [kai] 跟 in Guzhang 古丈 signals Source, Path, Recipient, Beneficiary, Target, Companion, Conjunction and Disposal Patient. Such exception is caused by the polygrammaticalization of the *follow* verb *gen* 跟. There will be a detailed discussion on the mechanism of polygrammaticalization of *follow* verbs and the solution to the problem caused by polygrammaticalization in §3.2.2.

3. Modification of the semantic map with more dialect data

3.1 Locating more function nodes

In this section, the scope will be extended from Hunan dialects to other dialects of Chinese. The rest of the function nodes, namely Instrument, Conjunction, Causee, Passive Agent and Disposal Patient, will be pinned down on the semantic map based on the new data.

First, let us take a look at Conjunction. Several syncretism patterns involving this function are attested:

(a) Conjunction–Companion: such as [kən] 跟 in Inner Mongolia Wuyuan 内蒙古五原;
(b) Conjunction–Companion–Target: such as [kɛ̃] 跟 in Jiangxi Jiujiang 江西九江 [kɛŋ] 跟 in Shanxi Yangquan 山西陽泉, [hɑŋ] in Shandong Jiaozhou 山東膠州, [kən] 跟 in Shaanxi Xingping 陝西興平, [xuə] 和 in Ningxia Tongxin 寧夏同心 and [kən] 跟 in Hubei Zhongxiang 湖北鍾祥;
(c) Conjunction–Companion–Target–Goal: [liɛn] 連 in Gansu Wuwei 甘肅武威;
(d) Conjunction–Companion–Target–Beneficiary–Recipient: [kɛ̃] 給 in Shandong Linyi 山東臨沂;

(e)   Conjunction–Companion–Target–Beneficiary–Maleficiary: [kaʔ] 甲 in Guangdong Chao'an 廣東潮安 and [køŋ] 共 in Fujian Fuqing 福建福清.

Since Conjunction appears concomitant with Companion in all the patterns observed, it should be connected to Companion.

Second, according to the two-function syncretism patterns involving Disposal Patient, namely Disposal Patient–Beneficiary and Disposal Patient–Instrument, it is certain that this node should be connected to both Beneficiary and Instrument.

(a)   Disposal Patient–Beneficiary: [paŋ] 幫 in Chongqing 重慶, [pau] 幫 in Hunan Chenxi 湖南辰溪, [po] 把 in Anhui Jixi 安徽績溪;

(b)   Disposal Patient–Instrument: [naŋ] in Hunan Shaoyang 湖南邵陽;[7] [nõ tɤ] 拿者 in Hunan Loudi 湖南婁底; [lau] in Hunan Hengyang 湖南衡陽; [tan] 擔 in Hunan Fenghuang 湖南鳳凰.

Chongqing 重慶

(16)   你   **幫**   我   帶   封   信   回去 (Beneficiary)
       ni   *paŋ*   *ŋo*   *tai*   *fəŋ*   *ɕin*   *xueitɕi*
       2SG   BEN   1SG   bring   CL   letter   back
       'You bring a letter back for me.'

(17)   他   **幫**   碗   打   爛   了 (Disposal Patient)
       ta   *paŋ*   *wan*   *ta*   *lan*   *la*
       3SG   DP   bowl   hit   broken   ASP
       'He broke the bowl.'

Third, as for Passive Agent, it exhibits direct relation with Recipient and Causee. Evidence can be found in the Passive Agent–Recipient pattern and Passive Agent–Causee pattern. The former pattern is illustrated by [pei] 畀 in Hong Kong, [kʰɯʔ] 乞 in Guangdong Chao'an 廣東潮安 and [pa tɛ] 把得 in Jiangxi Ji'an 江西吉安. The latter pattern is manifested in [uã]/[uã tsɿ] in Guiyang Tuhua 桂陽土話, which encodes Passive Agent and Causee only. It has been discussed in §2.3 that due to polygrammaticalization, the syncretism found in *give* verbs is not considered as evidence to connect Passive Agent and Recipient. Therefore, we only link Passive Agent to Causee.

Next, we come to Causee. It has been shown that Causee is connected to Passive Agent; Causee also has connection with other function nodes. [pa] 把 in Guangxi Liuzhou 廣西柳州 provides a clue to determine the location of Causee on the semantic map. This [pa] 把 marks Causee, Disposal Patient, Source, Path and Goal. Such a multifunctional pattern is quite unusual in that its spatial function cohort is far away from the non-spatial cohort. Similar to *gen* 跟 and *gei* 給, it is

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[7]   Shaoyang 邵陽 here refers to Shaoyang County 邵陽縣 rather than Shaoyang City 邵陽市, which is composed of many counties including Shaoyang County.

the result of polygrammaticalization. That is to say, Source–Path–Goal is conceptually unrelated to Disposal Patient–Causee. This syncretism suggests that Causee is directly correlated with Disposal Patient. This conclusion can be further supported by many other cases, such as [kə] 給 in Hubei Zhongxiang 湖北鍾祥, which encodes Causee, Passive Agent, Disposal Patient, Beneficiary and Recipient, and [tã] 擔 in Hunan Shaodong 湖南邵東 marking Causee, Disposal Patient, Instrument, Beneficiary and Maleficiary. These multifunctional patterns cannot be justified unless Causee and Disposal Patient are connected.

Finally, there are two unsettled cases from the last section, namely the Path–Goal syncretism and Maleficiary being a separate node on the map. The evidence supporting the direct connection between Path and Goal can be found in [tʰɑŋ] in Guangdong Raoping 廣東饒平 and [uɑŋ] 往 in Henan Xinxiang 河南新鄉, both of which encode Path and Goal only. [tui] 對 in Fujiang Xiamen 福建廈門 signals Path, Goal and Target. Based on the three cases, Path and Goal should be linked on the semantic map.

As for Maleficiary, although in the absolute majority of the dialects investigated this function is encoded by the same morpheme as Beneficiary, there is one exception. In Zhejiang Shaoxing (Keqiao) 浙江紹興 (柯橋), Maleficiary is encoded by [tso]/[tsoʔ] 作, whereas Beneficiary is signaled by [peʔ] 撥. Sheng (2012) reports that many local varieties around Shaoxing 紹興 also show distinctive markings of Beneficiary and Maleficiary, such as Shangyu 上虞 and Huangyan 黄岩. This fact makes it necessary to set Maleficiary as a separate node on the semantic map.

The following map (Figure 13) summarizes the connections that have been established so far. Below are a few examples from Chinese dialects being mapped onto a connected area (Figures 14 and 15).

3.2 Discussion

3.2.1 Polygrammaticalization of *give* verbs

Chappell & Peyraube (2006) have an extensive discussion on the grammaticalization of *give* verbs and propose that verbs of giving grammaticalized in two directions: one to dative markers and the other to Passive Agent markers through causative verbs. The argument is based on both
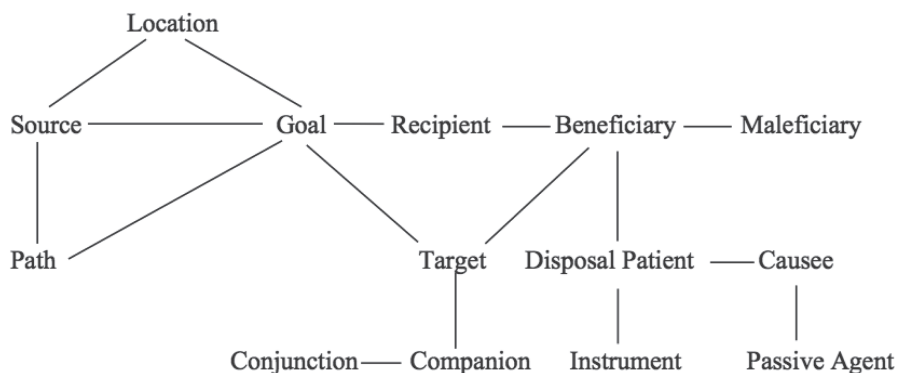

Figure 13: The modified semantic map of spatial domain and its related functions
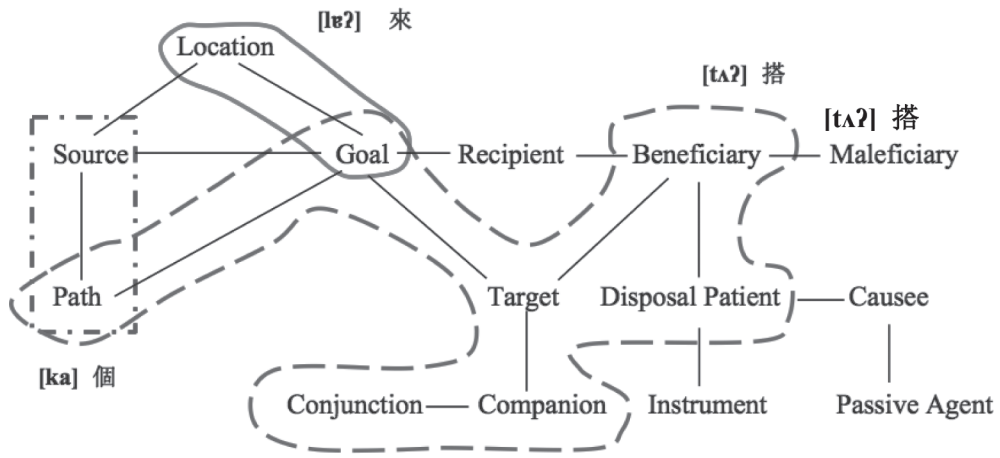
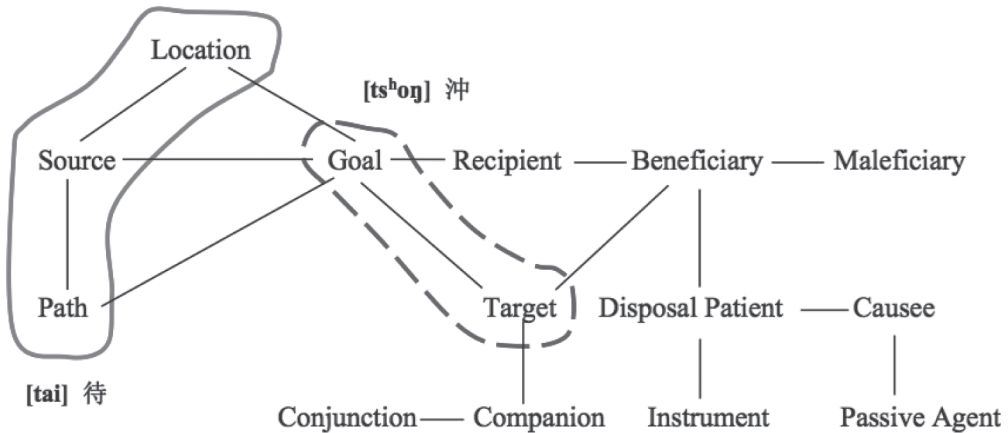**Figure 14:** Some morphemes in Zhejiang Ningbo on the map

Figure 15: Some morphemes in Hebei Xianxian on the map

semantic analysis and diachronic data. We would like to strengthen this argument with dialect data. The reasoning here is straightforward: as long as the two independent grammaticalization chains—verbs of giving to dative markers and verbs of giving to Causee and Passive Agent markers—are attested, the polygrammaticalization of *give* verbs can be confirmed.

In the theory of grammaticalization, diachronic change can be mapped to synchronic linguistic facts. In other words, we may infer grammaticalization chains from synchronic dialect data. In light of this, we have identified several cases where the verb of giving only serves as Passive Agent marker, namely [soŋ] 送 in Hunan Changsha 湖南長沙. This morpheme has no functions other than being a *give* verb[8] and a Passive Agent marker. Recipient in Hunan Changsha 湖南長沙 is encoded by [pɔ] 把 and [tə] 得.

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[8] The most basic verb of giving in Changsha 長沙 is [pɔ] 把. [soŋ] 送 means 'to send', a specific manner of giving.

(18)　咯　　本　　書　　**送**　　把　　你 (verb)
　　　 kɔ　 *pən*　 *ɕy*　 *sɔŋ*　 *pɔ*　 *ŋi*
　　　 this　 CL　 book　 send　 REC　 2SG
　　　 'I give this book to you.'

(19)　碗　　**送**　　我　　打　　碎　　　嗟 (Passive Agent)
　　　 õ　 *sɔŋ*　 *ŋo*　 *ta*　 *sei*　 *ta*
　　　 bowl　 PA　 1SG　 hit　 broken　 ASP
　　　 'The bowl was broken by me.'

Likewise, [uã]/[uã tsɿ] 彎/彎志, the verb of giving in Hunan Guiyang Tuhua 湖南桂陽土話, is also the Causee and Passive Agent marker, but not the Recipient marker. On the other hand, there are a few *give* verbs that encode Recipient or sometimes Beneficiary but never Passive Agent or Causee. Examples can be found in the following cases:

(a)　Hunan Pingjiang 湖南平江 [pa] 把 (*give* verb and Recipient marker), the Passive Agent marker is [loʔ] 落;
(b)　Hunan Jishou (Donghe) 湖南吉首 (峒河) [soŋ] 送 (*give* verb and Recipient marker), the Passive Agent marker is [tsʰo] 着;
(c)　Shandong Jiaozhou 山東膠州 [tɕʰi] 乞 (*give* verb, Recipient and Beneficiary marker), the Passive Agent marker is 叫, etc.

Furthermore, verbs of giving that encode both Passive Agent and Recipient are also attested in Chinese dialects, proving that the two grammaticalization chains can be projected onto one and the same morpheme. Such patterns are repeatedly observed in our data.

(a)　Guangdong Chao'an 廣東潮安 [kʰɯʔ] 乞: Recipient and Passive Agent;
(b)　Fujian Fuqing 福建福清 [kʰøʔ] 乞: Recipient and Passive Agent;
(c)　Jiangxi Ji'an 江西吉安 [pa tɛ] 把得: Recipient and Passive Agent.

Therefore, we conclude that verbs of giving, on the one hand, evolve into Recipient/ Beneficiary markers, and, on the other, grammaticalize into Causee and Passive Agent markers. The polygrammaticalization of *give* verbs gives rise to the discontinuity of Passive Agent and Recipient on the semantic map, since there is no direct conceptual relation between the two function nodes.

3.2.2　Polygrammaticalization of *follow* verbs

Another typical case of polygrammaticalization in our study is *follow* verbs. *Gen* 跟 is the most widely used verb of following in Chinese dialects, triggering different function extension in different areas. Generally speaking, the grammaticalized *gen* 跟 has three major function cohorts: (1) Companion and its close associates, mainly Conjunction, Target and Beneficiary; (2) spatial

function cohort including Source, Path and, sometimes, Location; (3) Recipient. Among them, the Companion cohort is the most widespread one, which is attested in almost all Mandarin varieties and gradually permeates into southern dialects such as Xiang and Gan. The spatial functions of *gen* 跟 are found mainly in southwestern regions like Hunan and Chongqing, and northern provinces like Shanxi, Heilongjiang and Beijing. In contrast, the distribution of Recipient is relatively restricted: only several dialects in Hunan, Hubei, Chongqing and Shaanxi are reported to employ *gen* 跟 as a Recipient marker. Interestingly, the combinations of the three function cohorts do not always form a connected area on the semantic map. Here are a few examples:

(a)   [kən] 跟 in Guangxi Liuzhou 廣西柳州: Source, Path, Target, Companion and Conjunction;

(b)   [kən] 跟 in Shanxi Datong 山西大同: Source and Target;

(c)   [kən] 跟 in Heilongjiang 黑龍江: Source, Location and Target.

The discontinuity between the spatial and the non-spatial cohorts poses an interesting question: why is the 'abnormal' syncretism pattern repeatedly attested? Empirically, verbs of following in world languages generally go into two directions when they grammaticalize. One is from the lexical verb to spatial functions such as Source and Path, while the other is from the lexical verb to social functions like Companion, Target, and so on. The bipartite grammaticalization route makes sense conceptually. On the one hand, the action of following must take place in a certain space like a street or a corridor. In conducting this action, one has to go along a course. The course can thus be conceptualized as the Path of the action; the point where this action of following starts is construed as the Source of the action. On the other hand, the action of following happens most likely among human beings. It is usually the case that this action is closely followed by another action. In such cases, following becomes a secondary action rather than the main one and then verbs of following are demoted to prepositions and develop the function of encoding Companion. This marks the first step of the grammaticalization of *follow* verbs. Since *follow* verbs originally concern human interaction, it is natural that once they grammaticalize they can readily develop other functions related to Companion.

Semantic analysis alone is not convincing enough to argue for the polygrammaticalization of *follow* verbs; we shall show evidence in world languages to support the claim. The morpheme [aba'] in Mualang serves as a good example, illustrating the grammaticalization chain from *follow* verbs to Companion and Conjunction. It should be noted that in Mualang spatial functions come from sources other than verbs of following.

(20)   *Ngapa   naday   **aba**'? (verb)*
        why   NEG   follow
        'Why did you not follow (them)?'

(21)   *Ia   diaw   **aba**'   ini'   ia? (Companion)*
        3SG   stay   COM   grandmother   3SG
        'She stayed with her grandmother.'

(22) *Udah   temu   cara   **aba**'   akal* . . . (Conjunction)
      after   find   way   CONJ   trick
      'After having found some method and trick . . .' (Tjia 2007:105–106)

A contrasting example can be found in Bislama, where the verb of following (*folem*) functions as Path marker but not Companion or other social function marker.

(23) *Bae mi **folem** yu from se yu yu save rod.*[9] (verb)
      'I will follow you because you know the way.'

(24) *Mi wokbaot **folem** rod nomo.* (Path)
      'I just walked along the road.' (Crowley 2004:135–136)

Polygrammaticalization has already been noticed by scholars. Craig (1991) reports the polygrammaticalization chains of the motion verb *Ba(ng)* 'go' in Rama: (1) from postposition to preverb; (2) from postposition to subordinating markers; (3) from verb to tense/aspect/modality markers. The above chains are summarized in Figure 16.
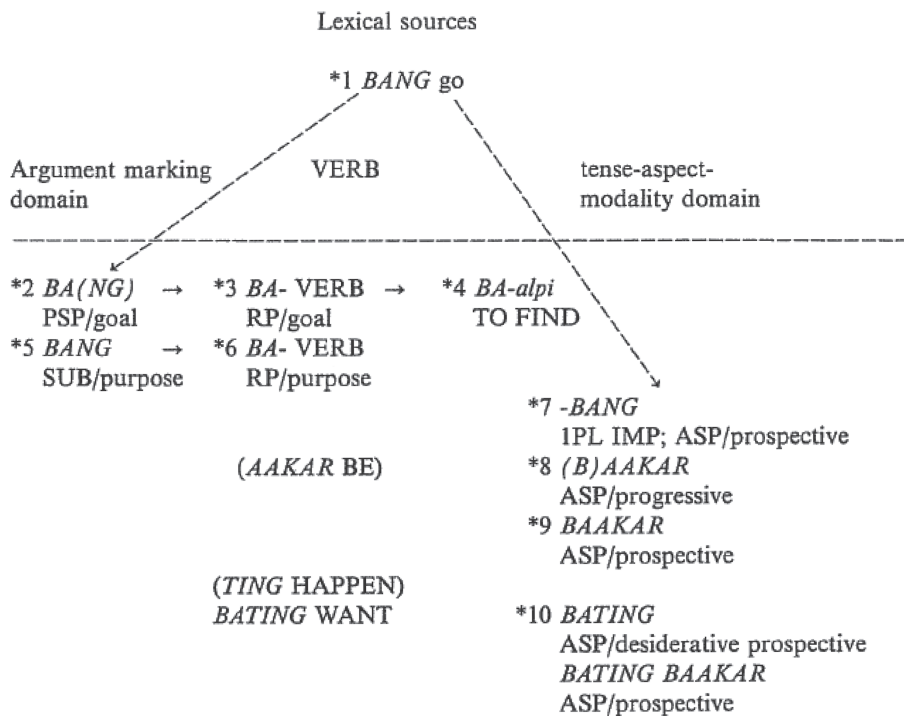

Figure 16: Polygrammaticalization of *ba(ng)* 'go' in Rama (Craig 1991:487)

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[9] Word-for-word glossing is not provided in this reference grammar.

Klamer (2010) discusses the grammaticalization of motion verbs in the Papuan languages Teiwa and Kaera. What is interesting is that these motion verbs are gradually developing the uses of marking oblique case functions including Goal and Instrument at the current stage.

(25) *Hala   ta   gi   er-an   gula'   ma   haraba   **ma**   gad* (Goal)
     people   TOP go do-MOD finish CONJ stable GOA put
     'The people went to do (that) then put (it) in a stable.'

(26) *Uy   nuk   ped   **ma**   tei   taxar* (Instrument)
     person one machete INS wood cut
     'Someone cuts wood with a machete.'

According to Haspelmath (2003), Goal and Instrument are not connected on the semantic map. However, the approach taken by Klamer in handling the counterexample is to argue that the functions of *ma* are different contextual uses of the motion verb, and, in this way, such cases are excluded when constructing a semantic map. Malchukov (2010) adopts a similar approach when dealing with contradicting cases to the semantic map caused by polygrammaticalization.

Facing the challenge of polygrammaticalization, we could of course exclude such cases from our data by arguing that functions resulting from polygrammaticalization do not have direct conceptual correlation. However, is it possible to design a model that can not only accommodate the regular patterns but also be compatible with the irregular ones? Wälchli (2010) expresses his reservation for Malchukov's (2010) approach. He suggests that it would be better to control noise than to exclude it. In other words, a more robust model is needed to accommodate the systematic exceptions.

Therefore, we propose a Multi-layer Semantic Map Model (Figure 17), which separates the spatial and the non-spatial domains and places them in a three-dimensional space as two different layers. What is more, a lexical domain is added to this model so as to offer an origin of all the grammaticalization chains. The three domains are arranged according to their level of abstractness. The lexical domain is placed at the bottom, the non-spatial domain is located at the top and the spatial domain comes in between the two.

The spatial domain is more concrete than the non-spatial domain. Thus, the grammaticalization process goes from the former to the latter. If the two domains are placed on the same plane, it would definitely result in linking lines crossing, especially when more function nodes are taken into consideration. The advantage of the multi-layer semantic map lies in its ability to illustrate the grammaticalization hierarchy and avoid crossing lines on each layer.

If we map the cases of Guangxi Liuzhou 廣西柳州 and Heilongjiang 黑龍江 onto this multi-layer model, there will not be any disconnected area on each plane (see Figure 18). The Multi-layer Semantic Map Model successfully solves the problem caused by the polygrammaticalization of *gen*. Predictably, this model would also be able to accommodate other cases involving polygrammaticalization in the spatial domain and the non-spatial domain. However, it would be problematic to apply the current multi-layer map into cases of polygrammaticalization not related to the spatial domain, such as *give* verbs. For instance, the functions of [pa tɛ] 把得 in Jiangxi Ji'an
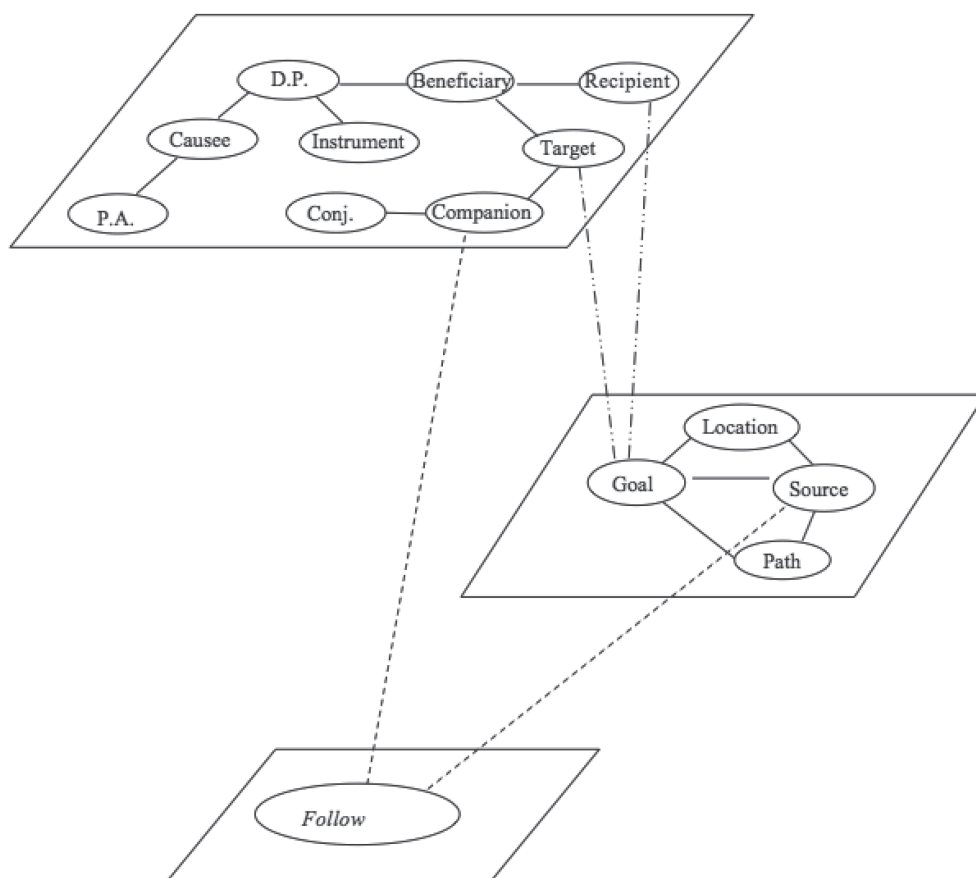
Figure 17: Multi-layer semantic map centered on *follow* verb[10]

江西吉安, namely Recipient and Passive Agent, still do not form a connected area on the map. This does not discount the value of the multi-layer model. The idea of such a model is to separate different domains and identify the interface between two domains. This study is a preliminary attempt to separate the spatial and the non-spatial domains. In fact, the non-spatial domain can be further divided into more specific domains. Recipient and Passive Agent might belong to different domains. Since the research on conceptual domains is inadequate, it is difficult to stratify the non-spatial domain at the moment. As long as the domain issue is demystified, the multi-layer model would be largely reinforced. Under this model, individual multi-layer maps tailored to different research foci can be established, such as *follow* verbs linking the spatial and the non-spatial domain, *give* verbs linking the Recipient-centered domain and the Passive Agent-centered domain. In short, the Multi-layer Semantic Map Model provides a controlled three-dimensional representation of

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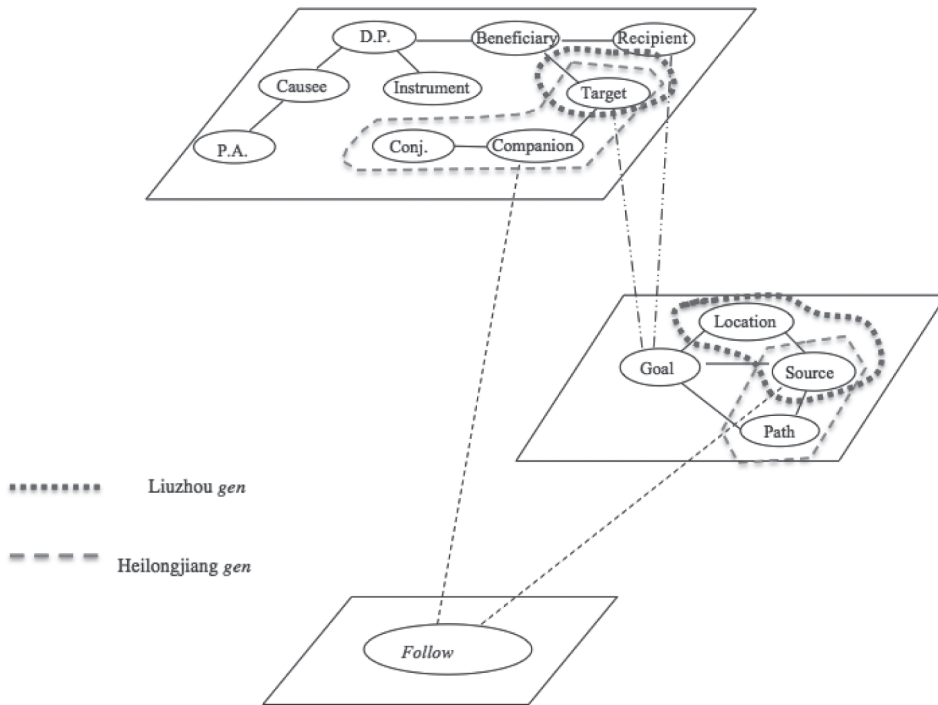[10] Conj. = Conjunction; D.P. = Disposal Patient; P.A. = Passive Agent.

Figure 18: Two polygrammaticalization cases on the multi-layer map

semantic functions. It not only resolves the potential challenging cases posed by polygrammaticalization, but also proceeds along the approximation of human conception.

3.2.3　[tso]/[tsoʔ] in Zhejiang Shaoxing (Keqiao) 浙江紹興 (柯橋)

[tso]/[tsoʔ] 作 in Zhejiang Shaoxing (Keqiao) 浙江紹興 (柯橋) shows an extraordinary syncretism pattern of Target, Companion, Conjunction, Maleficiary, Disposal Patient and Causee. The unusual point is that Maleficiary is encoded differently from Beneficiary. Such a phenomenon is only attested in Shaoxing 紹興 and areas close to it such as Xiaoshan 蕭山 and Shangyu 上虞. The absence of Beneficiary causes the discontinuity of [tso]/[tsoʔ] 作 on the semantic map (Figure 19). Interestingly, another preposition, [peʔ] 撥, marks Beneficiary, Recipient and Passive Agent, cutting off the bridge between Maleficiary and the rest of the functions of [tso]/[tsoʔ] 作. Sheng (2012) suspects that it is the semantic expansion of [peʔ] 撥 that intruded on [tso]/[tsoʔ] 作 and finally replaced [tso]/[tsoʔ] 作 when marking Beneficiary. We are in favor of this hypothesis for two reasons.

(27)　我　　去　　**作**　　老王　　商量　　商量 (Companion)
　　　ŋo　*tɕhi*　*tsoʔ*　*lʋhuʋŋ*　*saŋliaŋ*　*saŋliaŋ*
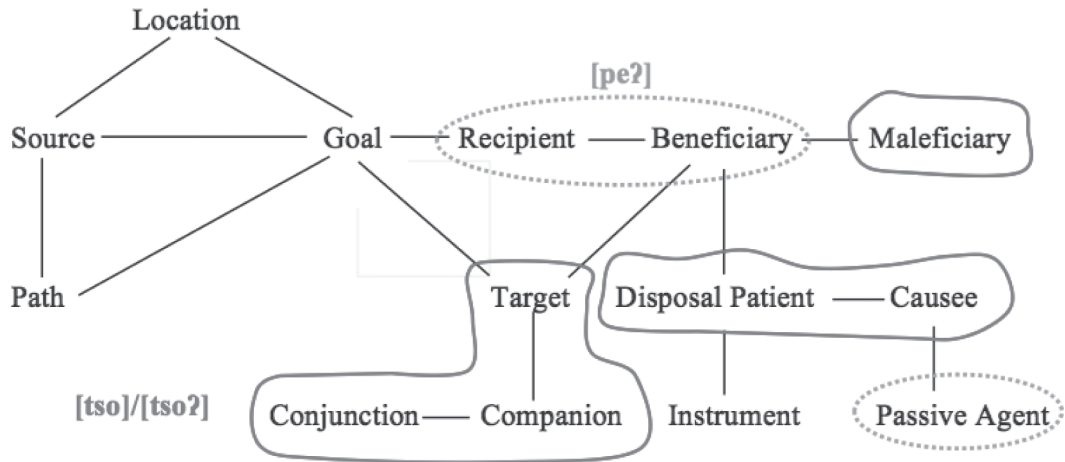　　　1SG　go　　COM　Laowang　discuss　discuss
　　　'I will go to talk to Laowang.'

Figure 19: The semantic map of two morphemes in Shaoxing (Keqiao)

(28)　渠　　頭卯　　**作**　　諾　　招　　得　　招　　手 (Target)
　　　hi　　*dʑɤmɐ*　*tsoʔ*　*noʔ*　*tsɐ*　*teʔ*　*tsɐ*　*sɤ*
　　　3SG　ADV　　TAR　2SG　wave　PT　wave　hand
　　　'He was saying hello to you.'

(29)　本　　書　　我　　**作**　　諾　　無　　還　　哉 (Maleficiary)
　　　pen　*ɕy*　*ŋo*　*tsoʔ*　*noʔ*　*ŋ*　*huæ̃*　*tse*
　　　CL　book　1SG　MAL　2SG　NEG　drop　PT
　　　'I lost this book (for you).'

(30)　隻　　狗　　**作**　　張三　　咬　　得　　口 (Passive Agent)
　　　tseʔ　*kiɤ*　*tsoʔ*　*tsaŋsæ̃*　*ŋɐ*　*teʔ*　*kiɤ*
　　　CL　dog　PA　Zhangsan　bite　ASP　CL
　　　'This dog bit Zhangsan.'

(31)　屋　　裡頭　無　　有　　鈔票　　**作**　渠　書　無　　得　　　讀　　哉 (Causee)
　　　uoʔ　*lidɤ*　*ŋ*　*ȵiɤ*　*tsʰɐpiɐ*　*tsoʔ*　*hi*　*ɕy*　*ŋ*　*teʔ*　*doʔ*　*tse*
　　　house　LOZ　NEG　have　money　CAE　3SG　book　NEG　acquire　read　PT
　　　'The family did not have money and thus caused him to quit school.'

(32)　渠　　頂尖　　歡喜　吃　　個　　水果　是　　香蕉　　**作**　蘋果 (Conjunction)
　　　hi　*tenkæ̃*　*huɜ̃ɕi*　*tɕʰieʔ*　*gəʔ*　*sɿku*　*zeʔ*　*ɕiaŋtɕiɐ*　*tsoʔ*　*benku*
　　　3SG　ADV　　like　　eat　　DE　fruit　COP　banana　CONJ　apple
　　　'His favorite fruits are bananas and apples.'

First, as Sheng (2012) points out, cognates of [tso]/[tsoʔ] 作 in dialects surrounding Shaoxing 紹興 are able to mark Beneficiary. For example, [tsoʔ]/[tsəʔ] 作 in Yuyao 餘姚 serves as a *give*

verb, as well as a Disposal Patient, Passive Agent, Target, Companion and Beneficiary marker (Lü & Xiao 2012). According to Sheng's (2012) investigation, this morpheme in Yuyao also functions as a Conjunction and a Causee marker.

It should be noted that neither 作 nor 則 is the original character of [tso]/[tsoʔ]/[tsəʔ]; they are simply homophones. According to our investigation, the corresponding character should be *zhuo* 捉 'to catch'. This morpheme was originally only a verb of holding and grammaticalized as a Disposal Patient and Instrument marker. That is why it is frequently documented as a pervasive Disposal Patient and Instrument marker in colloquial historical texts.

(33)　天　　地　　**捉**　　秤　　量，　　鬼　　神　　用　　斗　　斛 (Instrument)
　　　tian　*di*　*zhuo*　*cheng*　*liang*　*gui*　*shen*　*yong*　*dou*　*hu*
　　　sky　earth　INS　scales　measure　ghost　god　INS　bucket　measure
　　　'Heaven and earth are measured with the steelyard; ghosts and gods are measured with the bucket.' (王梵志：生時不須歌 Wang Fanzhi: *Sheng shi bu xu ge*)

(34)　向　　吾　　宅　　裡　　坐，　　卻　　**捉**　　主人　　欺騙 (Disposal Patient)
　　　xiang　*wu*　*zhai*　*li*　*zuo*　*que*　*zhuo*　*zhuren*　*qipian*
　　　toward　1SG　house　LOZ　sit　but　DP　host　cheat
　　　'(You) sit in my house and cheat on the host.' (敦煌變文集，燕子賦 *Dun Huang Bian Wen Ji, Yan zi fu*)

In the Ming dynasty, *zhuo* 捉 prevailed in Wu dialect. Below is an example from *Mingqing Minge Shidiaoji, Shan'ge* 明清民歌時調集・山歌. In this volume, *zhuo* 捉 was employed repeatedly as a Disposal Patient marker and Instrument marker. Here is an example from Jiang (2003).

(35)　新　　作　　頭巾　　插　　朵　　花，　　姐兒　看見　就　　**捉**　手　來　　拿
　　　xin　*zuo*　*toujin*　*cha*　*duo*　*hua*　*jieer*　*kanjian*　*jiu*　*zhuo*　*shou*　*lai*　*na*
　　　new　made　headband　insert　CL　flower　sister　see　ADV　INS　hand　come　take
　　　'A flower is inserted into the newly made headband; sister took it with her hand when she saw it.' (Instrument) (山歌・貪花 *Shan Ge, Tan hua*)

Zhuo 捉 in some Wu varieties today, for example [tso]/[tsoʔ] in Yuyao 餘姚, has many functions, including marking Beneficiary, Target, Companion, Conjunction, Passive Agent and Causee if compared with *zhuo* 捉 historically. It is not difficult to explain the discrepancy. The current multifunctionality of *zhuo* 捉 is, to a large extent, the result of the grammaticalization of the verb of giving. Zhang (2011) persuasively proves that verbs of holding can easily develop into verbs of giving. This strategy can be observed in contemporary Xiang and Gan dialects, where the absence of *give* verbs triggers the shift from *hold* verbs to *give* verbs. Likewise, we may hypothesize that *zhuo* 捉 in Wu dialect turn into a *give* verb historically and consequently the verb of giving grammaticalize into a polysemous preposition signaling Beneficiary, Companion, Target, and so on. Fortunately, the oblique functions of *zhuo* 捉 are preserved in a few Wu varieties. Furthermore, a parallel example *na* 拿 may serve as circumstantial evidence for the hypothesis that *zhuo* 捉 in history does develop into a verb of giving from a verb of holding. The primary function of *na* 拿

is a verb of holding. However, in some dialects like Xiang and Gan, this morpheme becomes a *give* verb at some point because the original *give* verb is lost. Thus, *na* 拿, together with a preposition marking Goal, is used to signal *give* constructions (Zhang 2011). Following is an example from Jiangxi Anyi Ganyu 江西安義贛語 (Wan 1997).

(36) **拿** 支 煙 **到** 我 (Recipient)
na *zhi* *yan* *dao* *wo*
take CL cigarette REC me
'Give a cigarette to me.'

Since we have demonstrated that *zhuo* 捉 did have the possibility to function as a verb of giving at one time, this conclusion supports the identification that the original character of [tso]/[tsoʔ]/[tsəʔ] in Wu dialect is 捉.

The second reason why we agree with Sheng's (2012) solution is that the author identifies the functional shift of [peʔ] 撥, a verb of giving, from transitive verb to ditransitive verb and makes it powerful evidence to substantiate that the Beneficiary function of [tso]/[tsoʔ] 捉 in Shaoxing Keqiao 紹興柯橋 is lost because of the function expansion of [peʔ] 撥. In old Keqiao dialect, [peʔ] 撥 is a transitive verb, which could not appear alone in ditransitive constructions. However, as Sheng (2012) reports, in new Keqiao dialect, [peʔ] 撥 is able to signal a ditransitive construction independently without the company of [le] 來, the typical Recipient marker in Keqiao 柯橋. As a full-fledged ditransitive verb of giving, [peʔ] 撥 is thus able to develop oblique functions such as marking Recipient, Beneficiary, Causee and Passive Agent. Note that, in a general sense, the dominant verb of giving in Wu dialect is *bo* 撥; *zhuo* 捉 is a peripheral *give* verb used in a limited number of Wu varieties. Therefore, as [peʔ] 撥 expanded functionally, some of [tso]/[tsoʔ]'s 捉 functions that overlapped with [peʔ] 撥 were eventually replaced by [peʔ] 撥.

3.2.4 [lan] 連 in Northwest Mandarin

[lan] 連 in the Bailongjiang 白龍江[11] valley not only encodes spatial functions like Source and Path, but also marks Target, Companion, Conjunction and Instrument. The spatial and the non-spatial cohorts are not connected on the semantic map.

(37) 你 **連** 前 頭 過， 甭 **連** 後 頭 走 (Path)
ni *lian* *qian* *tou* *guo* *biao* *lian* *hou* *tou* *zou*
2SG PAT front pass NEG PAT back walk
'You go via the front; do not go via the back.'

(38) 我 跟 前 沒 這 本 書， 我 **連** 別處 給 你 找 (Source)
wo *gen* *qian* *mei* *zhe* *ben* *shu* *wo* *lian* *biechu* *gei* *ni* *zhao*
1SG heel front NEG this CL book 1SG SOU elsewhere BEN 2SG find
'I do not have the book with me; I will look for it for you from somewhere else.'

---

[11] Bailongjiang runs through Gansu and Sichuan provinces.

(39) 你　　甭　　**連**　他　　計較 (Target)
ni　*biao*　*lian*　*ta*　*jijiao*
2SG　NEG　TAR　3SG　mind
'Please do not mind him.'

(40) 你　　**連**　　伢　打　官司　　沒　　指望 (Companion)
ni　*lian*　*ya*　*da*　*guansi*　*mei*　*zhiwang*
2SG　COM　3SG　hit　lawsuit　NEG　hope
'There is no hope to sue him.'

(41) 吃　　**連**　　住　是　　一輩子　　的　　大　　事情 (Conjunction)
chi　*lian*　*zhu*　*shi*　*yibeizi*　*de*　*da*　*shiqing*
eat　CONJ　live　COP　one life　DE　big　thing
'Food and shelter are the most important things in one's life.' (Literally, eating and living are the most important things in one's life.)

(42) 你　　**連**　　鉛筆　寫 (Instrument)
ni　*lian*　*qianbi*　*xie*
2SG　INS　pencil　write
'Please write with a pencil.'

Unlike *gen* 跟, the multifunctional pattern of [lan] 連 cannot be explained by polygrammaticalization because the latter does not have the cognitive foundation to derive spatial functions as *gen* 跟 does. Considering the geographic adjacency of Bailongjiang to Tibetan and other minority groups, we hypothesize that the multifunction of [lan] 連 is the result of language contact.

First, the phonetic resemblance provides an importance piece of evidence. It is common for a morpheme to borrow the functions of a phonetically similar form in another language through frequent contact. The sound of [lan] 連 is close to that of related morphemes in neighboring languages, such as [le] in Khams (Tibetan), [ne] in Amdo (Tibetan) and [la] in Monguor[12] (Mongolic).

Second, the functional overlap between [lan] 連 and related morphemes in these languages reinforces our hypothesis. The Bailongjiang [lan] 連 marks Source, Path, Target, Companion, Conjunction and Instrument. The Khams [le] and Amdo [ne] have only spatial functions, whereas the Monguor [la] only marks non-spatial functions. Examples (45) and (46) are from one variety of Khams; (47)–(49) are from Monguor.

Khams (Mo 2004a:35)

(43) *tɕio*　*qe*　***le***　*wu*　*le* (Source)
2SG　where　SOU　come　PT
'Where are you from?'

---

[12] Monguor, known as 土族語 in Chinese, is a Mongolic language spoken in Qinghai and Gansu provinces in China.

(44) *je·e   de   lo no   **le**   e* (Source)
　　book   this   market   SOU   buy
　　'This book is bought from the market.'

Monguor (Du 1995:59)

(45) *tɕə   ndaa-**la**   vaaldəgun   i(i)uu?* (Target)
　　2SG   1SG-TAR   wrestle   PT
　　'Would you wrestle with me?'

(46) *ʂdaaGunə   bu   ɕdzun-**la**-naa   rguaa   reva* (Companion)
　　firewood   1SG   girl-COM   carry   come
　　'I carried the firewood back with my daughter.'

(47) *moodənə   sgo-**la**   tɕabdzə* (Instrument)
　　wood   axe-INS   cut
　　'Cut the wood with the axe.'

　　Seeing the evidence above, it is convincing to argue that the spatial functions of the Bailongjiang [lan] are influenced by Tibetan languages, whereas the non-spatial functions mainly result from contact with Monguor.

　　Moreover, we have found circumstantial evidence to strengthen this conclusion. The first case is the Shaanxi Xingping 陝西興平 [la], which functions as a Passive Agent, Instrument and Causee marker. Instead of borrowing the functions from a phonetically similar morpheme, the Xingping [la] borrowed the pronunciation and part of the functions of the Monguor [la]. The second example is the Xi'ning 西寧 [lia]. Phonetically, it is very close to the Monguor [la]. Syntactically, it is a postposition located after noun phrases headed by it, just like the Monguor [la]. More importantly, [lia], marking Target, Companion and Instrument, has considerable functional overlap with [la]. All these similarities point to the conclusion that the Xi'ning [lia] has been influenced by Monguor or related Mongolic languages in terms of sound, function and syntactic position. Thus, we can infer from these cases that the Bailongjiang [lan], which shares phonetic and functional resemblance with morphemes in Tibetan and Monguor, has also been influenced by these languages.

　　In addition, many other dialects in Gansu also use *lian* 連, though in different ways. However, they have one thing in common: they are prepositions rather than postpositions. Since Mongolic languages are primarily Subject–Object–Verb (SOV) languages, where postpositions, rather than prepositions, exist. This syntactic difference restrains the large-scale borrowing of functions from Mongolic languages. Instead, only a small number of functions were transferred to Gansu dialects through language contact. The tendency is that the further a dialect is away from these SOV languages, the fewer functions that *lian* 連 has. For instance, [liɛn] 連 in Wuwei 武威 functions as Goal, Target, Companion and Conjunction marker. In Longnan 隴南, [liɛn] 連 encodes Companion, Conjunction and Instrument. In contrast, [liɛ̃] 連 in Qingyang 慶陽, which is even farther away, shows simpler multifunctionality, only Companion and Conjunction.

4. Summary

This study has built the semantic map of the spatial domain and related non-spatial functions based primarily on Hunan dialects and the preliminary map has been modified according to other dialects of Chinese (see Figure 13). The semantic map is employed to study a few linguistic phenomena, including polygrammaticalization and language/dialect contact.

Two cases of polygrammaticalization were discussed, that is, *give* verbs and *follow* verbs. It is highly crucial to identify the phenomenon of polygrammaticalization because it would obscure the actual picture of grammaticalization if two different grammaticalization chains were treated as one. This paper proposes the Multi-layer Semantic Map Model to accommodate polygrammaticalization, on the one hand to maintain the connectivity principle, and, on the other hand, to visualize the relationship between the lexical forms and different domains.

This paper also looked at [tso]/[tsoʔ] in Shaoxing 紹興 and [lan] 連 in Northwest Mandarin, which seem to contradict the semantic map. According to our investigation, dialect/language contact is the major cause of disconnected functions on the map.

Admittedly, there do exist exceptions that do not form a continuous area on the semantic map, such as the Liuzhou 柳州 [pa], which marks Causee, Disposal Patient, Source, Path and Goal. The Source and Path functions are not connected with Goal. Another example is *shang* 上 in several Shandong dialects marking Goal and Instrument. Two reasons might explain the exceptions. First, part of our data comes from reference grammars and research papers. It is possible that the authors do not exhaust all the functions of a form. This would not create a serious problem. When the dataset is large enough, these statistically insignificant patterns would be ruled out. Second, non-conceptual factors, such as polygrammaticalization and language/dialect contact, are sometimes intertwined in the development of linguistic forms. The Multi-layer Semantic Map Model is able to resolve the challenges posed by polygrammaticalization. Such challenges of conflicting cases in turn reveal that language/dialect contact can be identified with the help of semantic map.

In short, this paper has provided a case study based on Chinese dialects under the Semantic Map Model and explored new representations of this model. Yet, as a new typological research tool, the Semantic Map Model needs more scholarly efforts to refine and reinforce itself.

Appendix: Data source

1. Hunan dialects

Dialect variety	Data source	Dialect variety	Data source
Chaling 茶陵	Fieldwork	Ningyuan (Chengguan) 寧遠城關	Zhang (2009) Fieldwork
Changde 常德	Zheng (1999, 2009) Li (1989) Yi (2007) Fieldwork	Ningyuan (Pinghua) 寧遠平話	Zhang (1999)

Dialect variety	Data source	Dialect variety	Data source
Changning 常寧	Q. Wu (1998, 2009)	Ningyuan (Taiping) 寧遠太平	Fieldwork
Changsha 長沙	Zhang (2002) Bao et al. (1999) Fieldwork	Pingjiang (Chengguan) 平江城關	Wang (2009) Fieldwork
Chenxi 辰溪	B. Xie (2009)	Pingjiang (Nanjiang) 平江南江	Fieldwork
Dongkou 洞口	Hu (2010) Fieldwork	Shaodong (Chengguan) 邵東城關	Fieldwork
Fenghuang 鳳凰	Li (2009) Fieldwork	Shaodong (Huochangping) 邵東火廠坪	Sun (2009)
Guiyang Tuhua 桂陽土話	Deng (2007, 2009)	Shaoyang 邵陽	Fieldwork
Guzhang Waxianghua 古丈瓦鄉話	Wu & Shen (2010)	Suining 綏寧	Zeng & Li (2009)
Guzhang (Chengguan) 古丈城關	Fieldwork	Xiangtan 湘潭	Zeng (2001)
Hengshan 衡山	Mao (2009) Peng (1999) Fieldwork	Xinhua 新化	Luo (1998) Luo & Zou (2009)
Hengyang 衡陽	L. Peng (2005, 2009)	Xintian 新田	Q. Xie (2009)
Jinshi 津市	Hua (2008) Fieldwork	Yiyang 益陽	Cui (1998, 2009) Xu (2001) Nie (2005) Fieldwork
Jishou 吉首	Li (2002) Fieldwork	Yizhang (Tiantang) 宜章天堂	Fieldwork
Liuyang 瀏陽	Bei & Xiang (2009) Xia (1998)	Yizhang Tuhua 宜章土話	Shen (1999)
Longhui 隆回	Ding (2009) Fieldwork	Yueyang 岳陽	Fang (1998) Fieldwork
Loudi 婁底	Liu (2001) Yan & Liu (1994) F. Peng (2009)		

2. Other dialects of Chinese

Dialect variety	Data source	Dialect variety	Data source
Bailongjiang 白龍江	Mo (2004a, 2004b)	Shaoxing (Keqiao) 紹興（柯橋）	Sheng (2012)

Dialect variety	Data source	Dialect variety	Data source
Chaozhou (Chao'an) 潮州潮安	Fieldwork	Tongxin 同心	Zhang (2000) Fieldwork
Chaozhou (Raoping) 潮州饒平	Fieldwork	Wuwei 武威	Fieldwork
Chongqing 重慶	Fieldwork	Wuyuan 五原	Fieldwork
Fuqing 福清	Feng (1993) Fieldwork	Xiamen 廈門	Zhou (1998) Zhou & Ouyang (1998)
Ji'an 吉安	Fieldwork	Xianxian 獻縣	Fieldwork
Jiaozhou 膠州	Fieldwork	Xingping 興平	Fieldwork
Jiujiang 九江	Fieldwork	Xinxiang 新鄉	Fieldwork
Jixi 績溪	Zhao (2000, 2003)	Yangquan 陽泉	Fieldwork
Linyi 臨沂	Fieldwork	Yuyao 餘姚	Lü & Xiao (2012)
Liuzhou 柳州	Liu (1995)	Zhongxiang 鍾祥	Fieldwork
Ningbo 寧波	Tang et al. (1997) Fieldwork		

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空間域及相關功能的語義地圖研究

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　　本文利用語義地圖這一新興的類型學工具，研究空間域和相關域的功能。本文採用自下而上的研究方法，從湖南境內的方言，逐步擴展到其他漢語方言，通過比對不同語法形式的功能交疊，進而建立起以空間域功能節點為中心的語義地圖。這一語義地圖可以解釋漢語語料中諸多多功能語法模式。本文的一個重點是提出了多維語義地圖模型，幫助解決了多重語法化帶來的問題。

關鍵詞：語義地圖，空間域，多維語義地圖模型，多重語法化