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.

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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 multifunctionality 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)](image-url)
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).

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 subcategorization. For instance, Yamaguchi (2004) identifies four spatial functions, namely Source,
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).
<table>
<thead>
<tr>
<th>Domain</th>
<th>Node</th>
<th>Definition</th>
<th>Example²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spatial domain</td>
<td>Location</td>
<td>The place where an action takes place or a state exists.</td>
<td>他在家裡吃飯 ‘He is having dinner at home.’</td>
</tr>
<tr>
<td></td>
<td>Source</td>
<td>The starting point of a motion.</td>
<td>他從電影院走到學校 ‘He walked from the cinema to school.’</td>
</tr>
<tr>
<td></td>
<td>Goal³</td>
<td>The end point of a motion.</td>
<td>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?’</td>
</tr>
<tr>
<td></td>
<td>Path</td>
<td>The route of a motion.</td>
<td>從小路走，不要走大路 ‘Go from the path, do not go from the main road.’</td>
</tr>
<tr>
<td>Non-spatial domain</td>
<td>Target</td>
<td>A person or a thing that an action is aimed at.</td>
<td>我跟他打了招呼 ‘I said hello to him.’</td>
</tr>
<tr>
<td></td>
<td>Recipient</td>
<td>A person or a thing that receives something.</td>
<td>我送了一本書給他 ‘I gave a book to him.’</td>
</tr>
<tr>
<td></td>
<td>Beneficiary</td>
<td>A person for whose benefit some action is performed.</td>
<td>他幫奶奶寫信 ‘He writes a letter for grandma.’</td>
</tr>
<tr>
<td></td>
<td>Maleficiary</td>
<td>A person who suffers from an action.</td>
<td>那本書我給你弄丟了 ‘I lost your book.’</td>
</tr>
<tr>
<td></td>
<td>Companion</td>
<td>A person or a thing in whose company something is done.</td>
<td>我跟他商量商量 ‘I (will) discuss with him.’</td>
</tr>
<tr>
<td></td>
<td>Instrument</td>
<td>The inanimate means by which something is done.</td>
<td>他用毛筆寫字 ‘He writes with a writing brush.’</td>
</tr>
<tr>
<td></td>
<td>Disposal Patient</td>
<td>The patient of an action in disposal constructions.</td>
<td>他把花瓶打破了 ‘He broke the vase.’</td>
</tr>
<tr>
<td></td>
<td>Passive Agent</td>
<td>The agent in passive constructions.</td>
<td>花瓶被他打破了 ‘The vase is broken by him.’</td>
</tr>
<tr>
<td></td>
<td>Causee</td>
<td>The participant who performs an action under the direct influence of the initiator in a causative construction.</td>
<td>他把我嚇了一跳 ‘He had me scared.’</td>
</tr>
</tbody>
</table>

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

Attested prepositions: (1) [tsɔŋ] 從 in Changsha 長沙; (2) [tsiɤ] 走 in Loudi 婁底; (3) [ta] 打 in Suining 綏寧; (4) [tà] 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 凤凰

(1) 把 凤凰 到 吉首 有 好远？ (Source)

Pa  fang xiau dayu jishou tsoa  jishou
‘How far is it from Fenghuang to Jishou?’

(2) 渠 把 井水 過 山 (Path)

Kei pa tsoin suei ko san
‘She went by a well.’

Pattern 2: Location–Goal

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

Changde 常德

(3) 飞机 到 天上 飞 (Location)

Xuei tsoa tsoa tian san yuei
‘The plane is flying in the sky.’

(4) 你 坐 到 椅子 上 (Goal)

Li tso tsoa itse san
‘Please sit down on the chair.’

Pattern 3: Source–Goal

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

Ningyuan 寧遠

(5) 我们 走 電影院 去 (Goal)

Yuman tsou tininyin seng
‘Let us go to the cinema.’

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

Pingjiang 平江

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](image)

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);
(9) 你住得幾樓？——我住得三樓 (Location)
 marginalized

(10) 你跑得哪裡去了囉？(Goal)
 marginalized

(11) 咯本書我送得你 (Recipient)
 marginalized

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 [ɕiɔ̃] 向 in Guiyang Tuhua 桂陽土話, [tei] 對 in Xiangtan 湘潭 and [ɕian] 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) [pɔ] 幫 in Xinhua 新化: Beneficiary–Disposal Patient;
(b) [pɑŋ] 幫 in Jishou 吉首 and [pɔŋ] 幫 in Dongkou 洞口: Beneficiary–Disposal Patient;
(c) [pɔŋ] 幫 in Loudi 娄底 and [kən] 跟 in Dongkou 洞口: Beneficiary–Target;
(d) [ba]/[ma] 把 in Longhui 隆回 and [pa] 把 in Hengshan (Wangfeng) 衡山 (望峰): Beneficiary–Recipient–Disposal Patient;
(e) [pɑŋ] 幫 in Fenghuang 鳳凰 and [pɑŋ] 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 [κən] 跟 with Target, Recipient, Beneficiary, Conjunction and Goal, whereas in Shaoyang 邵陽 Companion shares [κən] 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](image)

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](image)
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) 宁遠 (太平) and [kie] 給 in Hengshan (Wangfeng) 衡山 (望峰) display a syncretism pattern of Passive Agent–Recipient–Beneficiary.

Ningyuan (Taiping) 宁遠 (太平)

(12) □ 一 隻 碗 □ □ □ (Recipient)
\[
\begin{align*}
\text{om} & \quad i \\
\text{tsa} & \\
\text{om} & \quad \text{ŋə}
\end{align*}
\]
give one CL bowl REC 1SG
‘Give a bowl to me.’

(13) □ 家 賣 □ 一 座 □ □ 他 (Recipient)
\[
\begin{align*}
\text{nə} & \quad \text{teiə} \\
\text{mie} & \quad \text{tie} \\
\text{i} & \quad \text{tsu} \\
\text{au} & \\
\text{om} & \quad \text{tsa}
\end{align*}
\]
1SG home sell ASP one CL house REC 3SG
‘My family sold a house to him.’

(14) □ □ 裝 一 碗 飯 (Beneficiary)
\[
\begin{align*}
\text{om} & \quad \text{nə} \\
\text{zay} & \quad i \\
\text{ŋə} & \quad \text{fiæ} \\
\text{nə} & \quad \text{tsa}
\end{align*}
\]
BEN 1SG fill one CL rice
‘Get me a bowl of rice.’
(15) 安 □ 狗 咬 □ 一 □ (Passive Agent)
ηa om kau iau kie i kʰu
1SG PA dog bite ASP one CL
‘I was bitten by the dog.’


(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).

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 [pʂ] 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.
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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;
(c) Conjunction–Companion–Target–Goal: [liɛn] 連 in Gansu Wuwei 甘肅武威;
(d) Conjunction–Companion–Target–Beneficiary–Recipient: [kɛ] 給 in Shandong Linyi 山東臨沂;

Figure 12: Discontinuity between Disposal Patient and Recipient/Target on the map

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.


Chongqing 重慶

(16) 你 幫 我 帶 封 信 回去 (Beneficiary)

\[
\text{ni pəŋ ɲo tai fəŋ ein xuettei}
\]

2SG BEN 1SG bring CL letter back

‘You bring a letter back for me.’

(17) 他 幫 碗 打 爛 了 (Disposal Patient)

\[
\text{ta pəŋ wan ta lan la}
\]

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] 當 in Hong Kong, [kʰuʔ?] 乞 in Guangdong Chao’an 廣東潮安 and [pa te] 把得 in Jiangxi Ji’an 江西吉安. The latter pattern is manifested in [uǎl]/[uâ 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] 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 [ka] 給 in Hubei Zhongxiang 湖北鍾祥, which encodes Causee, Passive Agent, Disposal Patient, Beneficiary and Recipient, and [tà] 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 黃岩. 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](image-url)
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 Causative and Passive Agent markers—are attested, the polygrammaticalization of \textit{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 [sɔŋ] 送 in Hunan Changsha 湖南長沙. This morpheme has no functions other than being a \textit{give} verb\footnote{The most basic verb of giving in Changsha 長沙 is [pɔ] 把. [sɔŋ] 送 means ‘to send’, a specific manner of giving.} and a Passive Agent marker. Recipient in Hunan Changsha 湖南長沙 is encoded by [pɔ] 把 and [tsə] 得.

\footnote{The most basic verb of giving in Changsha 長沙 is [pɔ] 把. [sɔŋ] 送 means ‘to send’, a specific manner of giving.}
(18) 本文書送把你 (verb)
κω แป่ ง แย แย่ แซ่ นิ
this CL book send REC 2SG
‘I give this book to you.’

(19) 碗送我打碎嚟 (Passive Agent)
อ แซ่ ง ง้อ ต้า  seri ต้า
can PA 1SG hit broken ASP
‘The bowl was broken by me.’

Likewise, [uã]/[uã ʔ tʂ] 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 [ʔ oŁ];
(b) Hunan Jishou (Donghe) 湖南吉首 (峒河) [ʂon] 送 (give verb and Recipient marker), the Passive Agent marker is [tʂ hɔ] 着;
(c) Shandong Jiaozhou 山東膠州 [tɕi] 乞 (give verb, Recipient and Beneficiary marker), the Passive Agent marker is [p tɛ] 要, 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 [kʰuʔ] 乞: Recipient and Passive Agent;
(b) Fujian Fuqing 福建福清 [kʰoʔ] 乞: Recipient and Passive Agent;
(c) Jiangxi Ji’an 江西吉安 [pa te] 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)](image)

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
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Figure 17: Multi-layer semantic map centered on follow verb

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

---

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

\[\text{I will go to talk to Laowang.}\]
First, as Sheng (2012) points out, cognates of [tso]/[tsoʔ] 作 in dialects surrounding Shaoxing are able to mark Beneficiary. For example, [tsoʔ]/[tsoʔ] 作 in Yuyao 余姚 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 捕 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 捕 are preserved in a few Wu varieties. Furthermore, a parallel example na 拿 may serve as circumstantial evidence for the hypothesis that zhuo 捕 in history does develop into a verb of giving from a verb of holding. The primary function of na 拿
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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).

\[(36) \text{拿 支 煙 到 我 (Recipient)}\]
\[
\begin{align*}
\text{na} & \quad \text{zhī} & \quad \text{yan} & \quad \text{dao} & \quad \text{wo} \\
\text{take} & & \text{CL} & \text{cigarette} & \text{REC} & \text{me}
\end{align*}
\]

‘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 捕.

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] 捕 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* 捕 is a peripheral *give* verb used in a limited number of Wu varieties. Therefore, as [peʔ] 撥 expanded functionally, some of [tso]/[tsoʔ]’s 捕 functions that overlapped with [peʔ] 撥 were eventually replaced by [peʔ] 撥.

### 3.2.4 [lan] 连 in Northwest Mandarin

[lan] 连 in the Bailongjiang 白龍江 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.

\[(37) \text{你 连 前 头 過， 露 连 後 頭 走 (Path)}\]
\[
\begin{align*}
\text{ni} & \quad \text{lian} & \quad \text{qian tou guo} & \quad \text{biao lian hou tou zou} \\
2SG & & \text{PAT} & \text{front} & \text{pass} & \text{NEG} & \text{PAT} & \text{back} & \text{walk}
\end{align*}
\]

‘You go via the front; do not go via the back.’

\[(38) \text{我 跟 前 沒 這 本 書， 我 连 別 處 給 你 找 (Source)}\]
\[
\begin{align*}
\text{wo} & \quad \text{gen qian mei zhe ben shu} & \quad \text{wo lian biechu gei ni zhao} \\
1SG & & \text{heel front} & \text{NEG} & \text{this CL} & \text{book} & 1SG & \text{SOU} & \text{elsewhere} & \text{BEN} & 2SG & \text{find}
\end{align*}
\]

‘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.
Unlike *gen* 跟, the multifunctional pattern of [lan] 连 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] 连 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] 连 is close to that of related morphemes in neighboring languages, such as [le] in Khams (Tibetan), [ne] in Amdo (Tibetan) and [la] in Monguor12 (Mongolic).

Second, the functional overlap between [lan] 连 and related morphemes in these languages reinforces our hypothesis. The Bailongjiang [lan] 连 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) *tdjq qa 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.
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, [lien] 連 in Wuwei 武威 functions as Goal, Target, Companion and Conjunction marker. In Longnan 隆南, [lien] 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 绍興 and [lan] 连 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

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<th>Dialect variety</th>
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<tr>
<td>Chaling 茶陵</td>
<td>Fieldwork</td>
<td>Ningyuan (Chengguan)</td>
<td>Zhang (2009)</td>
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<tr>
<td>Fieldwork</td>
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<td>Ningyuan (Pinghua) 寧遠平話</td>
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</table>
### Dialect variety | Data source | Dialect variety | Data source
--- | --- | --- | ---
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 凤凰 | Li (2009) Fieldwork | Shaodong (Huochangping) 邵東火廠坪 | Sun (2009)
Guzhang (Chengguan) 古丈城關 | Fieldwork | Xiangtan 湘潭 | Zeng (2001)
Jishou 吉首 | Li (2002) Fieldwork | Yizhang (Tiantang) 宜章天堂 | Fieldwork

### 2. Other dialects of Chinese

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References


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空間域及相關功能的語義地圖研究

王 瑋
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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