

Meaning Prototype: A Study of ‘110’ in Chinese*

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The prototype view of word meaning is widely held in cognitive linguistics. However, it is generally a fixed and static view. This paper attempts to propose a dynamic prototype view of meaning and explicates it through a corpus analysis of ‘110’ in China. It tentatively argues that meaning prototype is dynamic, functional, and developmental in nature, conceptually accommodating the different syntactic and semantic values of a word with ease, its dynamic relying heavily on central knowledge, which moves and develops through metonymy and metaphor in the use of a word. Meaning prototype develops in the uses of the word, and meaning develops in accordance with meaning prototype. In a different period or scenario, a different meaning prototype is likely to attain the forefront as the figure, and the previous meaning prototype fades to become the ground, although it may sometimes be ushered back to the figure position in a particular scenario.

Key words: ‘110’, central knowledge, meaning prototype, metaphor, metonymy, prototypical meaning

1. Meaning from the perspective of cognition

Meaning, especially word meaning, has been a focus of research in philosophy, psychology, linguistics, and artificial intelligence. Meaning is the real value of the existence of a word. The point that ‘language is all about meaning’ is foundational (Geeraerts 2006:3). Cognitive linguistics holds that the structure of language reflects the conceptual system of the human mind (Evans & Green 2006; Geeraerts 1997; Lakoff & Johnson 1980), but it is meaning that bridges and unites language and thought. Verbal thought takes word meaning as its unit, which reflects a generalized mental reality; meaning as an act of thought and an inalienable part of a word is in the realm of language as much as in the realm of thought (Vygotsky 1986). Cognition develops and advances through meaning in words and language. Meaning is essentially conceptual, and is motivated by cognitive processes. The most fruitful approach to meaning is to regard it as conceptual in nature (Cruse 1999). Thus the study of meaning in language, and the function of cognitive processes such as metaphor and metonymy (see e.g. Cuyckens & Zawada 2001; Nerlich et al. 2003; Traugott & Dasher 2002) are ‘the only legitimate and scientific goal in the study of language’ (Kövecses 2005).

A word gains more meanings through historical development, and those meanings are motivated and somehow related. When we say a word is polysemous, we are viewing the meanings of a word synchronically at the present date; that is, as we look at it from a height, the historical developments accumulate. Polysemy hence is actually the ‘synchronic reflection of diachronic-semantic change’ (Geeraerts 1997), and treated as common at various levels of language such as

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lexicon, morphology, and syntax. Polysemy in the cognitive view is thus considered as ‘a fundamental feature of human language’ (Evans & Green 2006). Although it views meanings synchronic-diachronically, the polysemy view has yet to explicate meaning initiation and meaning development, as well as meaning structure, in a reasonable way.

This paper first examines typical approaches to word meaning within the polysemy view, focusing on meaning development. It then looks at views of meaning organization, succeeded by a review of the determinants of word meaning. After this, it explores the idea of meaning prototype, followed by a detailed case study of ‘110’ in China, and finally a conclusion.

2. Literature review

2.1 Approaches to meaning development

In the scholarship of polysemy, how meaning develops has been discussed and proposed at some length. Typical approaches worth mentioning are the lexicon-based and usage-based approaches. The lexicon-based approach suggests that a word has many well-established meanings, and that meaning in language use is selected from the mental lexicon (see e.g. Aitchison 2003; Evans 2009; Gorfein 2001; Nerlich & Clarke 2003; Taylor 2006). This approach also advocates a dynamic mental lexicon in terms of links between new and existing words and knowledge expansion (Aitchison 2003). The lexicon-based approach seems to rely, to a large extent, on the build-up of a mental lexicon. Questions arising from this approach to meaning development are likely to be how the meanings of a word come into the mental lexicon and how these word meanings are organized in that mental lexicon. Specifically, how to make sense of a combination of common words appears not to be covered.¹

The usage-based approach underlines the idea that the meanings of a word originate from its use in context. It holds that words are just clues to the meaning to be constructed in the context (Blakemore 1992; Croft & Cruse 2004), or to the prompts used for constructing meaningful conceptual representations (Radden et al. 2007). This approach suggests that words do not really have meaning (Croft & Cruse 2004), rather that they have only ‘meaning potential’ (Allwood 2003) or ‘semantic potential’ (Evans 2006). Their meanings are constructed in the mind of the language user on the spot. According to this approach, words carry information regarding their linguistic features and functions: namely linguistic knowledge and encyclopedic knowledge. Meaning is therefore the result of integrating these kinds of knowledge and the specific context in which the word or word-group concerned occurs. Take, for example, Clark & Gerrig’s example: *Please do a Napoleon for the camera*. In order to understand the meaning of *do a Napoleon* as ‘posing with one hand tucked inside one’s jacket à la Napoleon’, one must first refer to Napoleon Bonaparte, search for information about him relating to the specific act fitting the request in this context, and then construct a meaning around it; this interpretation is built entirely around elements from our knowledge of Napoleon’s life, which are not entries in one’s mental lexicon (Clark & Gerrig 1983). According to Clark & Gerrig (1983), eponymous expressions such as this come in many forms (e.g. verbs,

¹ For example ‘All Whites’ in *The All Whites overcame a shaky start to score a deserved 1–1 draw with China at Wuhan Sports Center Stadium in Hubei Province on Friday* (The Dominion Post, 26 March 2011).

adjectives, common nouns) and we cannot select a meaning straightaway from the well-established lexicon; we must create a proper meaning for these kinds of expression on the spot.

In terms of word meaning development, the lexicon-based approach rests heavily on the build-up of a mental lexicon. It indicates that the development of a mental lexicon must precede word meaning development. The expansion of the mental lexicon is therefore crucial in this approach. The usage-based approach treats words as clues or prompts with linguistic and encyclopedic information, which is employed to construct new meanings in the specific setting. The dynamic nature of word meaning is thus manifest in both approaches. But how is this linguistic and encyclopedic knowledge organized? Or rather, how are the meanings of a word organized in the dynamic process? The following section is devoted to this discussion.

2.2 Meaning organization

Given that a word accumulates many meanings in the history of its development, how are these meanings connected to each other? How are they conceptually accommodated? There are cases of radiation as well as concatenation: that is, one particular word meaning may be taken as the center and other meanings develop around it, or the first or earliest meaning word meaning may be taken as the start and other meanings develop from it gradually in sequence.

The traditional view of word meaning holds that every word has a basic/core meaning (often the literal or the assumed primary meaning of the word), which is shared by all other meanings that are derived or generated through mechanisms of meaning extension such as metaphor and metonymy (see e.g. Cuyckens & Zawada 2001; Nerlich et al. 2003; Traugott & Dasher 2002). This meaning accommodation view sees the basic meaning as context-independent and as taking effect everywhere the word is used. But how to determine which meaning is assumed to be the basic one or which is assumed to be the primary or literal one? This is a rather tricky problem to tackle, especially as it relates to the argument about literal versus figurative meanings (Glucksberg 2001; Katz et al. 1998; Ortony 1993). The idea is even proposed that there is no literal meaning, since language is figurative in nature (Gentner & Goldin-Meadow 2003; Gibbs 1994; Lakoff & Johnson 1980).

The abstractivist view holds that there is an abstract meaning for each polysemous word and that all other meanings of this word are derived from it through context (see e.g. Nerlich & Clarke 2003; Gibbs 1994: Chapter 2; Cruse 1999: Chapter 7). This view, which assumes that there is a single very general and abstract concept of the word that can act as an umbrella for all other meanings in use, has also been rebutted, because words are 'slippery customers' with 'vague boundaries and fuzzy edges' (Aitchison 2003). For instance, Gibbs (1994) points out that, in the following sentences, *climb* can hardly be said to have any common abstract meaning or semantic feature:

The boy climbed the tree.

The locomotive climbed the mountainside.

The plane climbed to 30,000 feet.

The temperature climbed into the 90s.

The boy climbed down the tree.

We climbed along the wall.

(For details, see Gibbs 1994.) Another example of this point is ‘fast’ in the following sentences (for details, see Evans 2009; Pustejovsky 1998).

A fast car

A fast game

A fast book

A fast typist

A fast decision

A fast driver

The fast lane (of the motorway)

We need a fast garage for our car, as we leave the day after tomorrow.

Since a common abstract meaning cannot be reached, the term ‘prototype’ is borrowed from psychology to be used in word meaning analysis. Opposite to the two views of meaning organization described above, the prototype view, based on family resemblance, argues that there is no feature/concept that is necessarily shared by all the meanings of a word; the meanings are accommodated around the prototype, which is regarded as the best example or the most representative, in terms of degrees of similarity to it (see Tsohatzidis 1990b; Nerlich & Clarke 2003). In Nerlich & Clarke (2003), almost every word is considered polysemous, and the meanings of a word are viewed as related to a prototype with flexibility through metaphoric and metonymic associations. This prototype view takes degree of similarity into account and, like the two approaches described above, establishes a core, namely the prototype, as the reference point for a comparison of similarity in deciding which meaning is more representative and which is less so. It indicates that this prototype is well established and utterly static in any situation. Family resemblance implies that there is something inherited in this generation and maybe lost in the next generation, and that something new will be gained and inherited in a new generation, and so on and so forth. It stresses a continuation of inheritance and a development continuum. So a static prototype meaning view appears unlikely to provide a satisfactory theory for a dynamic meaning development and organization process.

Within linguistics, the prototype approach is first of all applied to the study of word meaning (Tsohatzidis 1990a). Prototype theory and its application in cognitive semantics are fruitfully explicated in Geeraerts (1988, 1989, 1990, 1997) and Taylor (1995, 2003). In lexical semantics, prototype is generally assumed to be static; the dynamic of prototype, however, is in fact mentioned in cognitive semantics. For example, in talking about prototypicality as an efficiency principle, Geeraerts (1997:114) points out that it is ‘the *dynamic* nature of the synchronous notion of a prototypical conceptual organization’ (emphasis in original) that most likely provides ‘the most profound reason for the adequacy of prototype theory for specifying the characteristics of semantic change’. This dynamic nature of prototype is, however, based on ‘the centralizing action of a conceptual kernel’ upon a number of nuances. Geeraerts (1997:114) says, ‘The multiple actualizability of a prototypical concept into variously deviant nuances marks it as an inherently flexible, dynamic structure.’ Therefore, in Geeraerts’s view, the reason why prototype is dynamic is that the peripheral cases are not static but rather are extensive, and all these deviant cases are centered around a single core, namely the prototype; it is the expanding of these peripheral cases that determines the dynamic of prototype.

In his analysis of *vergrijpen*, Geeraerts (1997:61) indeed finds out that this word ‘contains two separate prototypes . . . of which the most important one is itself made up of three smaller prototypical centers’, and that ‘saying that the diachronic structure of *vergrijpen* is prototypical does not imply that there is one and only one prototypical concept that holds together the different chronological developments’. Unfortunately, Geeraerts (1997:62) still maintains that ‘all the readings [i.e. senses] mentioned in the separate clusters can be considered variations of a single central meaning’. He emphasizes that, while the analysis of *legging* shows a category with a single prototypical center, and the analysis of *vergrijpen* shows that a prototypical cluster may itself contain several salient subconcepts, these additional subprototypical centers can be analyzed in a similar way to the prototypical analysis of *legging*. So Geeraerts’s dynamic of prototype is basically that the prototype has a fixed center and its dynamic relies on the indeterminate peripheral cases or members of the category that are mostly expanding.

As will be argued later, it is possible that the peripheral cases expand because the center of the prototype is changing and developing, and a new center/prototype will have a different category range. In the development of word meaning, new centers will emerge and will determine new prototypes, which will stand out as the figure, whereas the previous prototype center will stand back and become the ground, although it may be evoked and brought to the center again in a certain context.

This prototype view, held by Geeraerts and others, which seems to prevail in current meaning analysis, assumes the existence of a prototypical meaning (a prototype in sense), which is supposed to be a fixed center and to be a context-independent, thus non-developmental, abstract ideal representation of the meanings of a word. This view sees word meaning in a synchronic way; it takes a word’s meanings all together as a group and then analyzes how these meanings are built together. The problem with the prototype view is how to see the prototype, and how to distinguish it from the assumed primary meaning as advocated in the traditional view, or from the assumed abstract sense as claimed in the abstractivist view, if there is any relation. Besides, although the prototype view of word meaning might explain the organization of a word’s meanings to a certain extent, it does not explain word meaning formation and development: that is, how word meanings are derived and develop, or how the prototypical meaning comes into being. Is it derived in the very beginning or during the course of development of word meaning? The most important thing is how to identify the prototypical meaning empirically.

2.3 Meaning, word class, and central knowledge

The traditional study of word meanings usually focuses on the word as belonging to a certain word class such as noun, adjective, or verb, excluding the word with several parts of speech. When the meanings of a word can be associated with different parts of speech, the word is determined to be homonymous rather than polysemous (see e.g. Allwood 2003). In Conceptual Metaphor Theory, the parts of speech of the words in the source domain are not taken into account. For example, the list of sentences under ARGUMENT IS WAR in Lakoff & Johnson (1980) involves adjective, verb (phrase), preposition (phrase), noun, etc. Perhaps partly because this theory is presented from the conceptual perspective of semantics, the relation between a word’s different parts of speech is not considered necessary. Deignan (2006), through a large corpus study, points out that

metaphorical uses of words show differences in their grammatical behavior, or even word class; for example it is quite common for the literal and metaphorical meanings of a word to belong to different word classes. She also suggests that individual word forms are metaphorically mapped. This implies that word meaning can conceptually embrace the different word classes to which a word belongs, as will be illustrated later in the analysis of ‘110’ in China, in which ‘110’ is seen to be used as noun, adjective, and adverb; conceptually, these word classes can be subsumed into a meaning prototype through the metonymic process.

While Conceptual Metaphor Theory specifically studies metaphors with a target domain characterized by a number of source domains, for example ARGUMENT IS JOURNEY/BUILDING/CONTAINER/WAR, HAPPINESS IS UP/LIGHT/VITALITY/OPPONENT/INSANITY (see e.g. Kövecses 2008; Lakoff & Johnson 1980)—Kövecses (2000) proposes a study of metaphors in which a single source concept can characterize many distinct target domains. For instance, BUILDING can be used to characterize different target domains such as THEORIES, RELATIONSHIPS, CAREER, SYSTEMS, LIFE, and GROUPS; that is, THEORIES ARE BUILDINGS, RELATIONSHIPS ARE BUILDINGS, A CAREER IS A BUILDING, A COMPANY IS A BUILDING, ECONOMIC SYSTEMS ARE BUILDINGS, A LIFE IS A BUILDING, SOCIAL GROUPS ARE BUILDINGS.

This proposal is significant. If we say that the reason why we have a single target concept understood or interpreted via several source concepts is that the target has a number of distinct aspects to be addressed (Lakoff & Johnson 1980), then this reason also applies to the case in which a source concept is used to characterize different targets, because every concept, whether it acts as the source or the target, is a multidimensional entity with different aspects when viewed from different perspectives. The proposal presents the reverse of the Conceptual Metaphor Theory and gives a successful explanation of these two phenomena at the conceptual level. The question here is what guides this source-to-target mapping, or what makes an entity or event a source characterizing different targets or vice versa. Whether it is mapping from one source to many targets, or from many sources to one target, there must be underlying reasons for the domain mappings—that is, mapping principles for conceptual metaphors—to take place (Ahrens 2002, 2010; Gong et al. 2008). Different mapping pairings, especially many sources for a single target, select and thus highlight different aspects of the domain knowledge, which is generally the presupposition of the mapping pairing. For instance:

LOVE IS FIRE: love is understood as fire because fire involves burning with physical light and warmth, and love involves giving emotional light and warmth.

ANGER IS FIRE: anger is understood as fire because fire involves physical burns and anger involves emotional burns (see Ahrens 2002).

IDEA IS BUILDING: idea is understood as a building because buildings involve a (physical) structure and ideas involve an (abstract) structure.

IDEA IS FOOD: idea is understood as food because food involves being eaten and digested (by the body), and ideas involve being taken in and processed (by the mind) (see Ahrens 2002).

But exactly what makes the mapping happen between domains? Kövecses (2000) suggests it is a particular meaning focus (or foci) that play(s) the role, and this meaning focus (or foci) is (are) constituted by the central knowledge of the source shared by a speech community, and is inherited by the target as well. Following Langacker (1987), Kövecses considers central knowledge as knowledge

(about an entity or event) that is conventional, generic, intrinsic, and characteristic. Of these four criteria for central knowledge, *conventional* concerns whether the knowledge is general knowledge in the community; *generic* concerns whether the knowledge applies to all entities in the category; *intrinsic* means the knowledge applies only to the entity itself; and *characteristic* means the knowledge only applies to the entities in the category. In this defining notion of central knowledge, these four criteria are used to measure the centrality of knowledge. But it is inevitably hard to manipulate owing to the abstractness, generalness, and fuzziness of the criteria (e.g. see Croft 2002; Ruiz de Mendoza Ibáñez 2000; Ruiz de Mendoza Ibáñez & Otal Campo 2002). Ahrens (2002, 2010) advocates three aspects of real world knowledge of the domains in analyzing domain mapping pairings: namely entities (What entities do they have?), qualities (What qualities do they or the entities in the domain have?), and function (What do they do, or what can they do to or in the domains?). These three aspects are more viable for experimental manipulation, namely linguistic analysis, because they are not only related to real world knowledge, but also closely related to language use, that is, the established usage patterns and their associated practices (Taylor 2006), and because both conceptual knowledge and lexico-grammatical constructions (e.g. lexical collocation) account for the language use (Gibbs & Matlock 2001). Due to experimental manipulation of these three aspects and the corresponding relationships between nouns/subjects/objects and entities, adjectives/adverbs/modifiers and qualities, and verbs/predicates and functions, we shall employ *entity*, *quality*, and *function* as aspects in deciding meaning prototype, but add a third point for *function*: that is, function indicates what they do, or what they can do to or in the domain, or *what can be done to them in the domain*.

I shall suggest that it is this central knowledge, checked on *entity*, *quality*, and *function*, that probabilizes the metaphorical and metonymic meaning extensions of a word and the extensions between different parts of speech of the word. This central knowledge is not invariable. Kövecses's (2000) point is presented from the synchronic perspective, which appears to ignore the diachronic development of central knowledge, just like the abstractivist view and the static prototype view. I would propose that this central knowledge, which establishes the meaning prototype, originates from the use of a word, but that it develops in more situated uses while staying comparatively stable, just like family resemblance and family inheritance, as mentioned earlier. In the development process, different aspects of central knowledge will stand out as dominant through the metonymic process in actual use and thus establish a new meaning prototype, with this dominant part as the central knowledge relating to it. That is the reason why some words lose their original prototypical schemata and even take on some new meaning prototypes, as evidenced and supported by historical semantics and lexical semantics; for example, 'tea' in {*Tea was a large meal for the Wicksteeds.*}, which develops from originally denoting a plant to denoting the product (the leaves), from the leaves to a drink, then further, to the occasion when the drink is consumed, and finally to a meal (Dirven 2002).

3. Dynamic meaning prototype

In contrast to the center-fixed prototype view and the non-meaning (potential) view, this research, drawing on Geeraerts's view of prototype and concurring with Ungerer & Schmid (2006), holds a developmental prototype view of word meaning. Ungerer & Schmid illustrate prototype shift and

prototype split by analyzing the categories COACH and IDEA, respectively, in diachronic contexts. In prototype shift, the central attributes of a category are replaced, usually due to extra-linguistic changes. The category prototype of COACH in the 17th century is STATE CARRIAGE, which is shifted to STAGECOACH in the 19th century and to MOTOR COACH in the 20th century. Prototype split involves obtaining specific prototypes from a global prototype, which is shown in IDEA from CONCEPT, to CONCEPT and BELIEF, to CONCEPT, BELIEF, AIM, and INSPIRATION (see Ungerer & Schmid 2006 for details). In Ungerer & Schmid's view, the social and cultural context has a crucial impact upon the whole internal structure of a category; extra-linguistic changes result in the shift of central attributes or replacement of a category. Their insight into and analysis of prototype shift and prototype split is suggestive and far-reaching. For instance, diachronic analysis and syntactic environment can be taken as ways of identifying meaning prototypes. Nevertheless, the shift and split of prototype are not totally the result of changes in extra-linguistic context. The internal structure of information or semantic values cannot be neglected. It is, in fact, the impact of both internal and external factors that is important, with the internal carrying more weight. It is just like conceiving a baby, where a woman producing eggs is a precondition. It is a sort of 'conceptual integration' (Fauconnier & Turner 1999). Furthermore, central attributes cannot shoulder the burden of representing the category on their own; they are just qualia structures, to use Pustejovsky's (1998) term. There is still functional, eventual, relational information, or knowledge of entities, qualities, and functions, in Ahrens' (2002, 2010) terms. I would like to opt for central knowledge including all these aspects, as argued below. Moreover, it is the knowledge a word accumulates that probabilizes an active and developmental meaning prototype.

Meaning as a prototypical concept can accommodate the different parts of speech of a word in use. Studies in historical semantics, cognitive semantics, and corpus linguistics have demonstrated that a word's meanings, when used in a different word class, are conceptually related and connected by cognitive processes such as metonymy and metaphor. In actual language use, we employ a lot of denominal verbs, that is, there are many situations where 'nouns surface as verbs' (Clark & Clark 1979), and vice versa. For example, we *bing* or *baidu* (the largest Chinese search engine) information on the internet; a football player 'heads' the ball into the goal. Language users, both consciously and unconsciously, are very creative and innovative in using words and assign their functions for maximum effect in real utterances, depending on the perspective the users take in their conceptualization of the situation (Janssen 2003). For instance, the English genitive, possessive pronouns, and the preposition *of* can be used to express inexhaustible relationship, that is, factual usership, element-set, and mental property (Janssen 2003). Thus the meaning of a word can be taken conceptually through some cognitive process to express a process or an action, an entity or event, and a relation—namely entities, qualities, and functions—which constitute a certain cognitive scenario.

The reason why word meaning changes is that the meaning prototype develops in word use. Word meaning emerges in the shape of a concept; concepts are formed and represented in prototypes (Rosch 1975); prototypes originate from experienced reality through the function of cognitive principles such as metonymy and metaphor (see also Geeraerts 1988, 1989). With the accumulation and enrichment of our experience, we develop and specify our internalized and generalized reflections of the experience of reality, and this enriched experience may well be employed to represent its outstanding component or to map on to other embodied experience with similar features. We hence develop the meaning prototype in use of a word. Meaning prototype is hereby dynamic and

functional. A word may develop different meaning prototypes in the cognitive processes of metonymy and metaphor.

Since the appearance of prototype theory, it has been generally supposed (with the exception of Ungerer & Schmid 2006, as discussed earlier) that there is only one prototype in a category (i.e. a category contains a member which best represents the category, and this can be illustrated by the above analysis of the prototype view of word meaning). However, recent studies show that it is possible to have two or multiple prototypes in a category; for example the Tsonga color term *rihlaza* refers to a green–blue continuum but appears to have two prototypes, a focal blue and a focal green.² Geeraerts (1997) also mentions the point, in his lexical semantic analysis of *vergrijpen*, that there are several (sub)prototypical centers in its meanings, as shown above. Prototype itself is functional, and it develops in the use of a word, which is best represented in word meaning. When encountering a new entity or word in a situation, even a very concrete entity such as a desk, we form a concept of it in the situation by generalization and abstraction through metonymy and/or metaphor. However, because it originates from only one particular entity, this (generalized) concept is rather primitive and global; and we then form specific and concrete concepts after our experience with this category (and its members) increases. Yet the general and global concept usually remains and becomes ‘first-in last-out’ in memory, even in memory breakdown (see e.g. Mandler 1993, 1998, 2004, 2008; Vygotsky 1986). In this sense, our concept develops from global and abstract to specific and concrete, at least at the very beginning; while the concept is enriched to some extent and becomes stable, it will possibly be operational to represent its component elements. In this development of the concept, prototype surely develops as well. Both prototype split and prototype shift belong to this process. Meaning changes as a result of meaning prototype development and different combinations of categories, or, rather, re-categorization. Categorization is an internal feature of our cognitive process. We humans have an insatiable appetite for categorization (Trenholm & Jensen 2004). The capacity to categorize is the most fundamental of human capacities (Lakoff 1987). Nevertheless, categorization is a dynamic process which keeps (re-)categorizing all the way; so does prototype.

This process of conceptualization from general and global to specific and concrete, and later on in the opposite direction, seems contradictory to the widely held intuitive opinion that conceptualization progresses from concrete to abstract. Research results in cognitive psychology and developmental psychology evidence the global-to-specific conceptual formation and development that take place from infancy and throughout our life (see Mandler 1993, 1998, 2004, 2008). Grammaticalization, in which certain content words become function words, might immediately be thought to work against this cognitive process. However, we need to note that content and function words are viewed simply from the perspective of grammatical function, not from a conceptual perspective. In the conceptual view, the fact that content words become function words is itself evidence of the dynamic meaning prototype, for example the development of *go* from a lexical verb to a functional auxiliary expressing the future tense. Motion events are basically first conceived and conceptualized in image schemas of AGENCY and SOURCE–PATH–GOAL (Johnson 2005, 2007; Lakoff 1987; Mandler 2004, 2006), not specific actions. Even the first concepts of objects and

² Concept formation. (2008, June 18). New World Encyclopedia, retrieved on 25 March 2010, from http://www.newworldencyclopedia.org/entry/Concept_formation?oldid=736189.

artifacts tend to be general and global, and organized around paths of motion (Mandler 1992, 2004, 2006). As a verb of motion, *go* is goal-oriented and involves path-changing, agency-moving, and source-leaving. This general concept of *go* contains much that needs to be specified. Goal-oriented means that a purpose is carried out; thus *go* can be used with a range of meanings from goal-oriented movement to intended action. Changing path means a constant changing of state of the agency; thus the intended action can be used to express a predicted state, namely the future tense (for details, see Ungerer & Schmid 2006). The conceptualization of motion is rather general and global in terms of image schema. This generality will be specified in actual use. To take another example, this time from Chinese: *you*, in the construction *you* + *verb* (*phrase*) in Min and Yue dialects, is said to be an adverb, that is, the grammaticalization of the verb *you* (Shi 2006; Shi & Li 2004). If so, it is also a process that passes from general and global to specific and concrete. A diachronic corpus survey of *you* in ancient and modern Chinese literature shows that *you* was used rather generally, involving the general concepts of ‘possession’ and, later, ‘existence’ with varied word classes (Fu 2006, 2007). The grammaticalization of *you* is a process of development from the primitive prototype of POSSESSION, which contains knowledge of existing, to the specific prototype of EXISTENCE, and then to a pragmatic marker indicating that some action has already happened, nominalizing the following verb phrase (VP), which in turn weakens the motion property of *you*. The peripheral knowledge in the primitive prototype is brought to a focal position in use for some purpose or goal, thus developing a new prototype with the peripheral becoming the central knowledge and with a new category extension. This dynamic meaning prototype is not determined once and for all; it develops from generation to generation, in terms of family resemblance. Therefore, from the conceptual perspective, grammaticalization is a process with at least the following characteristics: (1) from general and global to specific and concrete, (2) it undergoes a metonymic process. Since verbs are used to express function conceptually (Ahrens 2002, 2010), function is indispensable to the verb category. That function stands to the fore in development is obviously motivated by the metonymic process; the process of grammaticalization hence argues for the general-to-specific theory of cognition.

Prototype per se is a functional and prototypical concept which arises and develops in use, and the developmental prototype determines the range of scenarios in which a word can apply, even with different syntactic representation, such as part of speech. This is because every event scenario is a usage-based event consisting of things and situations, and situations can be temporal units involving aspect, tense, and modality, or relational units involving event schemas and spatial extensions (Radden & Dirven 2007). The reason why we hold this prototype view of word meaning from the conceptual perspective is also that, conceptually, the meaning prototype of a word accommodates all the uses in different syntactic environments and different contexts through certain underlying cognitive processes such as metonymy and metaphor.

4. The case of ‘110’ in China

As mentioned earlier in this paper, words are, by nature, conceptual generalizations of the experience of reality; they are concepts, which change or develop together with human experience. Therefore, meaning is constructed at the conceptual level, and ‘meaning construction is conceptualization’ (Evans et al. 2007). Conceptualization takes place in actual event scenarios. Different

event scenarios may result in different conceptualizations of the same word. Some scenarios happen to everyone in a community, while others may just occur individually; thus we have concepts common to a speech community, and concepts particular to an individual. By the same token, similar scenarios may bring about different conceptualizations in individual minds. Concepts take the shape of prototypes (Rosch 1975), prototype per se develops, and concepts are themselves developing; meaning is accordingly dynamic and changing. Words exist in terms of meaning, namely concepts; meaning prototype is hence not static and established once for all. But for most words, it is very difficult to track the development of their meanings. In the next section, we shall take ‘110’ in China as a case study to showcase the development of meaning prototype so that we can have a better understanding of meaning prototype and its dynamic. The reasons for choosing ‘110’ are: (1) the meaning development of ‘110’ is retrievable in the memory reach; (2) it has been used pervasively across the board in China in the past few years and has become a particular social feature; (3) as a symbol, ‘110’ came into use just like other linguistic symbols with arbitrariness (if we say language is an arbitrary system for human communication), or with motivation (in the sense that language did not come into existence for no reason); and (4) a dynamic study of its extensive use in Chinese society can uncover the underlying conceptual process(es) that motivate(s) its pervasiveness.

4.1 ‘110’ as an emergency telephone number in China

Emergency telephone numbers are adopted all over the world; they are typically a three-digit number, such as 111, 999, 911, and 112. Some countries employ only one national emergency number for police, fire, and medical, such as 111 in New Zealand, 911 in the United States, 000 in Australia, and 112 in most member states of the European Union. Other countries employ different national emergency numbers for police, fire, and medical, respectively; these include Egypt (122, 180, and 123), Vietnam (113, 114, and 115), and Brazil (190, 193, and 192). In China, 110, 119, and 120 are employed as the emergency numbers for police, fire, and medical, respectively. The number ‘110’ for police emergencies is also used in Taiwan, Indonesia, Iran, Japan, Guatemala, and Bolivia.³

In China, ‘110’ was first adopted as a number for reporting *enemies and spies* in 1973 in place of the previous confusing ‘00’ and then ‘01’. The reason was that it provided the shortest dialing time in that period.⁴ In 1982 it was used as the criminal report number in Guangzhou City.⁵ In the next few years, ‘110’ was used only for *criminal cases*, such as murder or burglary. With social development, in 1986, the first ‘110’ police service center was established in Guangzhou; gradually, ‘110’ came into use as the *emergency number* for police assistance and services relating to criminal cases and public security, as well as other emergency situations. The ‘110’ police service

³ See http://en.wikipedia.org/wiki/Emergency_telephone_number, retrieved on 11 November 2009.

⁴ See <http://www.thebeijingnews.com/news/reform30/2009/01-10/042@100949.htm>, retrieved on 10 December 2009.

⁵ Please note here, there have been some changes in the development of the Public Security department since the founding of the People’s Republic of China in terms of function (reduction and/or expansion in function). The years mentioned in the paper reflect these changes, as do the categories.

center handles criminal reports, emergency assistance, and public reports and complaints against police officers and officials. With its function expanded from purely criminal cases to other emergency situations, ‘110’ has now become the established emergency phone number for police assistance in China and is likely to become the umbrella number for police, fire, and medical emergency in the future, according to reports.⁶

4.2 ‘110’ in corpus: Metonymical extension

The above shows, in brief, the historical development of ‘110’ in China. In order to know exactly how ‘110’ is currently used in China, I carried out a search of corpus Internet-ZH in Sketch Engine.⁷ The concordance of ‘110’ as the query is 4,674, but the hits for ‘110’ as a numeral involving the emergency service total only 1,344. I then sorted those hits according to the syntactic value of ‘110’ as used in the corpus. My findings show that ‘110’ functions syntactically as noun, adjective, and adverb; there is an overwhelming number of instances—1,017—where it is used as a noun, with 324 as adjective, and three as adverb.

My analysis also shows that, with the syntactic value of the noun, ‘110’ represents different semantic values, namely meanings. It functions semantically to represent different entities, as shown in Table 1, such as the emergency phone number per se, the service center, the service working system, the police station, the individual police officers, the police team, the police vehicle, the notice/call given by the service center, and events involving the ‘110’ service. Below are some examples with the original Chinese first, followed by Chinese Pinyin transcription, and English translation:

- (1) 自行車不見了。張先生於是撥打了 110 報警電話。(Noun, emergency police phone number)
Zì xíng chē bú jiàn le. Zhāng xiān shēng yú shì bō dǎ le 110 bào jǐng diàn huà.
With the bicycle gone, Mr. Zhang dialled ‘110’ to report to the Police.
- (2) 你們不要亂來，我要報 110 了。(Noun, 110 service center)
Nǐ men bú yào luàn lái, wǒ yào bào 110 le.
Don’t act foolishly, or I shall report to ‘110’.

⁶ See <http://news.sohu.com/20110125/n279064370.shtml?>, retrieved on 11 May 2015.

⁷ See http://ca.sketchengine.co.uk/auth/preloaded_corpus/i-zh/ske/first_form, retrieved on 15 November 2009. Internet-ZH is a Chinese web corpus with 90 million words collected by Serge Sharoff, who believes that internet-based corpora from search engines are better than balanced/representative corpora such as the British National Corpus (BNC) in terms of authorship, mode, audience, aim, and domain. Such internet corpora are generally established in four steps: word selection, query generation, downloading, and post-processing (see Sharoff 2006, 2007). Internet-ZH, one of Sharoff’s internet-based corpora, was established in this way in 2005. It was tokenized and tagged for part of speech using tools from North Eastern University, China. The following examples are taken from this corpus with Sharoff’s kind permission. The corpus is also available on his site at Leeds University, UK.

- (3) 臨下班時接到的 110，一處住宅區有人跳樓自殺。(Noun, notice/call from '110' service center)
Lín xià bān shí jiē dào de 110, yí chù zhù zhái qū yǒu rén tiào lóu zì shā.
Almost at the end of the working day, I got a call from '110', saying someone had jumped to his death in a residential area.
- (4) 大家不要怕，我已經通知 120 了，110 也馬上就到。(Noun, individual police officers)
Dà jiā bú yào pà, wǒ yǐ jīng tōng zhī 120 le, 110 yě mǎ shàng jiù dào.
Don't panic, I've already reported it to 120, and '110' (i.e. police officers) will be here very soon.
- (5) 大小車輛還是絡繹不絕，警方 110 已經管制了急診門口。(Noun, police team)
Dà xiǎo chē liàng hái shì luò yì bù jué, jǐng fāng 110 yǐ jīng guǎn zhì le jí zhěn mén kǒu.
With vehicles coming and going without stop, '110' (the '110' police) had controlled the doorway to the Emergency Room.
- (6) (他)只顧自己講電話，連 110 的事沒敢提。(Noun, event involving '110' service)
(Tā) zhǐ gù zì jǐ jiǎng diàn huà, lián 110 de shì méi gǎn tí.
He kept talking on the phone and did not mention the '110' (event) any more.
- (7) 其中一個小偷抓住了，並送往了 110。(Noun, police station)
Qí zhōng yí ge xiǎo tōu zhuā zhù le, bìng sòng wǎng le 110.
One of the thieves was caught and sent to '110'.
- (8) 我們有監視和報警系統，跟 110 聯網，派出所還派出 2 名治安員來 …… (Noun, '110' service working system)
Wǒ men yǒu jiān shì hé bào jǐng xì tǒng, gēn 110 lián wǎng, pài chū suǒ hái pài chū 2 míng zhì ān yuán lái ……
We already have monitoring and alarm systems, which are connected with '110', and the local police station will send us two security personnel …
- (9) 男子與售票員大打出手，並驚動了 110。警察很快呼嘯而來。(Noun, police)
Nán zǐ yǔ shòu piào yuán dà dǎ chū shǒu, bìng jīng dòng le 110. Jǐng chá hěn kuài hū xiào ér lái.
The man started fighting with the conductor, which alerted '110' (the police). A police car immediately came screeching to the scene.
- (10) 一輛 110 開了過來，把我們抓住了。(Noun, '110' vehicle)
Yí liàng 110 kāi le guò lái, bǎ wǒ men zhuā zhù le.
A '110' (car) came and we were caught.

Table 1 shows what was revealed in terms of the semantic value of ‘110’, as used as a noun in the corpus.

The table shows that, when ‘110’ is used as a noun, the emergency phone number is represented most frequently in real discourse; the second most common use is the service center, followed by police team, individual police officers, service system and police station, police vehicle, and finally event and notice/call given by the center.

However, the semantic value of ‘110’ as an adjective—i.e. conveying a quality—is not as wide-ranging as the noun’s. The semantic functions involved include an indication of service system, service center, police team, individual police officer, ‘110’ report, and spot (case location). For example:

- (11) 開車的女士隨後被趕來的 110 警察帶走 …… (Adjective, police team)
 Kāi chē de nǚ shì suí hòu bèi gǎn lái de 110 jǐng chá dài zǒu ...
 The lady driver was taken away by the ‘110’ police officers who came soon after the accident ...
- (12) 值班人員必須接收，市局 ‘110’ 平台上的電腦才會顯示對方 …… (Adjective, service system)
 Zhí bān rén yuán bì xū jiē shōu, shì jú ‘110’ píng tái shàng de diàn nǎo cái huì xiǎn shì duì fāng ...
 The operator on duty must allow the caller’s number to be shown in the computer of the bureau’s 110 system platform ...
- (13) 民警小王曾經創造了一天出十八次 110 現場的記錄。(Adjective, ‘110’ case location)
 Mǐn jǐng xiǎo wáng céng jīng chuàng zào le yì tiān chū shí bā cì 110 xiàn chǎng de jì lù.
 Policeman Xiao Wang has even set a record of showing up at 18 ‘110’ scenes a day.
- (14) 實驗分析案情時，再度接到分局 110 指令：在長虹公園角落的草地上 …… (Adjective, ‘110’ service center)
 Shí yàn fēn xī àn qíng shí, zài dù jiē dào fēn jú 110 zhǐ lìng: zài cháng hóng gōng yuán jiǎo luò de cǎo dì shàng ...
 When analyzing the case, they received another 110 order from the branch bureau: on the grassland at the corner of Changhong Park ...
- (15) 在被抬上救護車的時候，110 同志和藹的詢問我為什麼會被打成 …… (Adjective, individual policeman)
 Zài bèi tái shàng jiù hù chē de shí hòu, 110 tóng zhì hé ǎi de xún wèn wǒ wèi shé me huì bèi dǎ chéng ...
 While I was lifted into the ambulance, the 110 policeman asked me kindly why I was beaten like this ...
- (16) …… 擠壓犯罪空間。通過加強對 110 警情高發地區的研究分析 …… (Adjective, ‘110’ report)

... jǐ yā fàn zuì kōng jiān. Tōng guò jiā qiáng duì 110 jǐng qíng gāo fā dì qū de yán jiù fēn xī ...

... lower down the probabilities of crime. Through intensive research analysis of the area where 110 reports frequently occur ...

Table 1 shows this point in detail.

In terms of semantic value, however, ‘110’ as an adverb modifying ‘reporting’ verbs (thus still retaining the aspect of quality) only involves the representation of the emergency phone number, indicating reporting to the police ‘by dialling “110”’. For example:

- (17) 像這種問題是不是可以 110 報警當侵犯私人財產來處理呀？
 Xiàng zhè zhǒng wèn tí shì bú shì kě yǐ 110 bào jǐng dāng qīn fàn sī rén cái chǎn lái chǔ lǐ ya?
 Can I report such incidents to ‘110’ in terms of personal property torts?⁸
- (18) 於是找物業開證明，110 報案，保險公司報案 ……
 Yú shì zhǎo wù yè kāi zhèng míng, 110 bào àn, bǎo xiǎn gōng sī bào àn ...
 Then I went to the Property Management Office for confirmation, reported to ‘110’ and the insurance company ...
- (19) 於是我立刻 110 報案，……
 Yú shì wǒ lì kè bào àn, ...
 Then I reported to ‘110’ right away, ...

Within the noun category, we can still separate ‘110’ as a numeral, that is, the emergency number per se, from the rest. The number of instances of ‘110’ used as the emergency police phone number is 603, and it overwhelmingly functions as the object of such verbs as *bō* ‘make’ and *dǎ* ‘dial’. The number of instances of ‘110’ used as a noun rather than a numeral is 414; that of ‘110’ as an adjective/modifier is 324; and that of ‘110’ as an adverb is only three. Table 1 provides an analysis diagram.

The table shows that when the NUMBER category of ‘110’ and the PHONE category, and further, the POLICE category, combine, a new meaning prototype emerges: POLICE EMERGENCY. This meaning prototype is constituted by phone number, emergency service center, emergency service police, emergency service system, emergency service vehicle, emergency service report, emergency service location, emergency service report, and police station. All these meanings are accommodated around the emergency service through the emergency phone number ‘110’ by a metonymic cognitive process. Thus it is very natural in real discourse that ‘110’ functions semantically as phone

⁸ Due to the numeric nature of ‘110’, I can hardly translate these examples into English in the same way (as an adverb) as it is used in the original utterance. Thus I just adopt free translation here by saying either ‘reporting to 110’ or ‘reporting to the police by dialling 110’; the latter is too awkward as a translation, though it conveys the full meaning indicated.

Table 1: Numbers and percentages of ‘110’ as different parts of speech

Word class		Semantic representation	Quantity (1344)		Percentage (%)	
Noun 1017	Numeral	Emergency phone number	603	603	45.54	
	Other	Service center	414	188	45.41	31.27
		Service system		6	1.45	
		Police station		6	1.45	
		Police team		106	25.60	
		Police vehicle		4	0.97	
		Police individual		102	24.64	
		Events involving 110 service		1	0.24	
		Notice/report/call given by the center		1	0.24	
Adjective	Service center	324	153	47.22	24.47	
	Police team		143	44.14		
	Service system		12	3.70		
	Report		8	2.47		
	Police individual		7	2.16		
	Case location		1	0.31		
Adverb	Numeral	3	3	0.22		

number, system, station, police (police officers), police vehicle, events, and notice/report/call, and syntactically as noun (numeral), adjective, and even adverb.

This synchronic situation of ‘110’ used as different parts of speech in real discourse can be interpreted from a diachronic perspective. Usage of ‘110’ as a numeral, namely the emergency phone number, is the highest in terms of quantity, as it was used initially as an emergency phone number in its number category, whether this was motivated or not. Usage of ‘110’ as a noun representing different entities is the second highest in terms of quantity, as the emergency number was later used as a platform system and for an established service center specifically for the police. As well as the noun use, ‘110’ can be found as an adjective, to talk about the center, the system, the police, etc. This diachronic sequence accords with language use in terms of cognition development. In the corpus, I did not find any instances of ‘110’ used as a verb. The reason might be that numerals are, by nature, easily used to stand for the things they conventionally represent, such as entity and quality, so the meaning prototype of such numerals is essentially nominal. However, due to the collocation of ‘110’ as a phone number with certain verbs such as ‘make’ and ‘dial’, it can finally be used as an adverb in front of verbs indicating the making of a report to the police in real discourse. My analysis shows that the extension of the syntactic value of ‘110’ is centered on its use as a noun, that is, both its adjectival use and its adverbial use stem from its use as a noun.

From noun to adjective and from noun to adverb, ‘110’ is motivated by a metonymic cognitive process. That is, metonymy underlies the syntactic extensions of ‘110’ both from noun to adjective

and from noun to adverb, and motivates its semantic extensions from phone number to service center, police station, police (police officer), service police vehicle, service case location, and report/call/notice. Meaning development is related through metonymy, as shown clearly in Table 1, that is, ‘110’ as the police emergency number is metonymically extended to represent police-related entities (and their quality) such as team, person, system, station, report, vehicle, case location, etc. This finding is different from that of Deignan (2006), which shows that metaphor dominates a word’s different parts of speech.

In this case, can we say that the primary meaning—namely an enemy and spy reporting number—is the prototypical meaning, as announced by the classic prototype view? Or is it the central meaning, as claimed by the abstractivist view? Internalized categories do not exist alone, but rather they combine and extend in actual use. In this sense, categorization is, in fact, endless re-categorization. Different categorizations result in different concepts and prototypes. Concepts do not stand alone, but are instead related to each other; one concept can be established from other concepts (see also Carroll 1964), and one concept develops into another concept. If we say, based on the current uses of ‘110’ in the corpus, that police emergency is the central meaning and the prototype, then we may ask: Is this prototype the same as the initial use of ‘110’ as a number for reporting enemies and spies, and for reporting criminals? The answer is definitely not. From the above analysis, we cannot support any of these views. Because these meanings of ‘110’ are obtained from actual uses in authentic discourse, and the meanings are developing with the social use of ‘110’ in different situations and contexts, we are not even aware of these meaning changes in actual language use; the meanings are beyond our scrutiny in the actual contextual utterances. Meaning change takes place on the conceptual level and results from language use, which is, most of the time, unconscious. In this sense, meaning change cannot be predicted; it can only be described, synchronically, and if possible, diachronically. Nonetheless, meaning change is motivated by cognitive processes.

4.3 ‘110’ in China: Metaphorical projection

From the above analysis, we can see that metonymy as a cognitive process motivates the extension, in terms of both syntactic value and semantic value, of ‘110’ as the police emergency phone number. This analysis also shows that police emergency is closely related in the cases I examine, whether syntactically as noun, adjective, and adverb, or semantically as police team, police vehicle, service center, and service system. If it can be said that this takes place within the same domain of police emergency, from the cognitive domain view,⁹ we also find the inter-domain mapping of ‘110’ between police emergency and other domains. This is another interesting phenomenon involving ‘110’ in the corpus, that is, its extended use in fields other than police emergency-related situations. This inter-domain mapping is done by placing before ‘110’ other nouns usually indicating a walk of life such as economy, education, or agriculture, for example Power 110, Water 110, Metropolis 110, Maladministration 110. Sometimes nouns indicating ‘being composed of’, such as

⁹ The term ‘domain’ is not an accurate term and invites much criticism, but in order to elaborate the metonymic and metaphoric uses of ‘110’ in the society of the People’s Republic of China, and for the convenience of comparison analysis, ‘domain’, ‘inter-domain’ (metaphor), and ‘intra-domain’ (metonymy) are still employed here.

Party members 110, Volunteers 110, are also found; or sometimes nouns indicate ‘in the way of’, for instance Texting 110, to fulfill a modification function and thus project it to other fields relating to the ‘vehicle’, ‘team’, ‘system’, ‘center’, ‘phone number’, and ‘service’ involved. This implies that police emergency is the default for ‘110’; other instances are all extended or marked cases. The following are examples from the Internet-ZH corpus:

- (20) 黑夜裡，風雨中，電力 110 風馳電掣於大街小巷、鄉村田野。(vehicle of the electric power company)
Hēi yè lǐ, fēng yǔ zhōng, diàn lì 110 fēng chí diàn chè yú dà jiē xiǎo xiàng, xiāng cūn tián yě.
In the wet and windy night, the Electric Power 110 raced through the streets and lanes, across the fields in the countryside.
- (21) 老百姓感激地稱讚：‘你們電力 110 真是太神速了，我們才剛剛起床。’(working team of the electric power company)
Lǎo bǎi xìng gǎn jī dì chēng zàn: ‘Nǐ men diàn lì 110 zhēn shì tài shén sù le, wǒ men cái gāng gāng qǐ chuáng.’
Folks expressed a grateful compliment: you Electric Power 110 are amazingly quick, we are just up.
- (22) 廣州將開通短信 110 平臺市民發短信也可捉賊。(mobile texting system)
Guǎng zhōu jiāng kāi tōng duǎn xìn 110 píng tái shì mǐn fā duǎn xìn yě kě zhuō zéi.
In Guangzhou a Texting 110 system will be established and residents can report thefts to the police by texting.
- (23) 後電視台做了一台《東方 110》節目。(police (team) program)
Hòu diàn shì tái zuò le yì tái ‘dōng fāng 110’ jié mù.
Later the TV station made a program called ‘Oriental 110’.
- (24) 可以打 0797 * * * * *，這是我們和諧 110 的電話，24 小時有人值班。(center)
Kě yǐ dǎ 0797 . . . , zhè shì wǒ men hé xié 110 de diàn huà, 24 xiǎo shí yǒu rén zhí bān.
You can dial 0797 . . . ; this is the telephone number of Harmony 110, and it is staffed 24 hours a day.
- (25) 情急之下，李勤撥打了校園 110 讓請求調查。(phone number)
Qíng jí zhī xià, Lǐ Qín bō dǎ le xiào yuán 110 ràng qǐng qiú diào chá.
In desperation, Li Qin dialed the phone number of the Campus 110 and asked for an investigation.
- (26) 到學校公安處各校園 110 執勤點或就近的地方公安機關報案。(service)
Dào xué xiào gōng ān chù gè xiào yuán 110 zhí qín diǎn huò jiù jìn de dì fāng gōng ān jī guān bào àn.
Report to the service areas of the Campus 110 established by the public security department of the university or report to the nearest local public security bodies.

In the Internet-ZH corpus, we found 45 hits for such instances of ‘110’ modified by other nouns, of which 27 are related to the ‘police’ domain indicating police, police service, or police reporting system. For example:

- (27) 各級公安經偵部門充分發揮經偵‘110’協作機制的的作用，在元旦春節…… (system)
 Gè jí gōng ān jīng zhēn bù mén chōng fèn fā huī jīng zhēn ‘110’ xié zuò jī zhì de zuò yòng, zài yuán dàn chūn jiē ...
 The economic investigation sections of the public security bodies at all levels should bring into full play the Economic Investigation 110 as the coordination mechanism, during the New Year and the Spring Festival ...
- (28) …… 實離我們很近網上‘110’…… (police)
 ... shí lí wǒ men hěn jìn wǎng shàng ‘110’ ...
 ... Actually very close to us the Internet 110 ...
- (29) 先後成立了‘反家庭暴力 110 報案中心’和…… (service)
 Xiān hòu chéng lì le ‘fǎn jiā tíng bào lì 110 bào àn zhōng xīn’ hé ...
 Anti-family violence 110 reporting center and ... were established in succession

Having recorded these examples, we searched the *People* website for news headlines containing ‘110’,¹⁰ and found many more instances of this extended use, involving almost every aspect of life, such as Municipal Administration and Development, Environment, Charity, Agriculture, Tourism, Education, Science, Seniors Care, Law (Lawyer 110), Weather, Vehicle/Transport, Foodstuffs, Telecommunication, Politics, Economy, Banking, Medical, Examination, Psychology, etc. (please see the Appendix for a detailed list).

The cases found in the *People* website data can be roughly divided into three classes. The first is a police-related service/team, not necessarily involving emergency situations, or even the number ‘110’, for example 海路 110 (Sea and Land 110 (sea and land police)), 海上 110 (Sea 110 (sea police)), 的士 110 (Taxi 110) (the taxi drivers act as providers of clues and assistance to the police). Excepting the last one, all these have the same function as in the default police emergency situation, the difference being that they apply only to the relevant specified aspects. The second is governmental service excluding the police-related field, such as 銅都鹽業 110 (Copper City Salt 110), 食品安全 110 (Food Safe 110). The last category is non-governmental, including both commercial and non-commercial services, for instance 電信 110 (Telecom 110), 文化強國 110 (Cultural Power 110), 證券 110 (Stock Market 110), etc. The last two categories were in fact the most dominant in China in the past few years. However, ‘110’ in all these cases is merely a label; the emergency phone numbers for the services do not even contain the three digits ‘110’, and sometimes an emergency is not even involved. Most of the extended usage of ‘110’ is positive and the service

¹⁰ http://search.people.com.cn/rmw/GB/rmwsearch/gj_search_pd.jsp, retrieved on 20 November 2009. This website is an official government news site for China, run by the *People’s Daily* and *People’s Daily Online* since 1997. The corresponding English-language website is <http://english.peopledaily.com.cn/>

provided is free of charge, especially the government services. However, there are also some examples that are negative and even illegal, charging fees for the service provided. For example, 地下 110 (Underground 110) charges fees for helping one side settle disputes illegally by fighting and frightening the other; 民間 110 (Non-government 110) also charges for maintaining order in stores, enterprises, and places of entertainment, and for solving related problems and patrolling premises.

The police-related class accepts police-related (emergency) reports and provides timely police help in emergency situations. The second governmental class both provides assistance in cases of need and accepts reports of maladministration or illegal activity in the government services. The last class both accepts informative or fault reporting, such as News 110 and Telecom 110, and provides help or information in cases of need such as Mahjong 110, Automobile Fitting 110, and Stock Market 110. For instance, nowadays in the cities, Mahjong is played on electronic Mahjong tables, which allow automatic resetting after each round and therefore waste much less time; if the electronic Mahjong table does not work properly, you can dial the 'Mahjong 110' service number (nothing to do with '110'), and someone will come to help fix it for a service charge.

From the police-related class to governmental (excluding police) and non-governmental classes, '110' is motivated by metaphoric cognitive processes. The meaning prototype is also developed. The meaning prototype of POLICE EMERGENCY in the police-related field develops into TIMELY ASSISTANCE and INFORMATION REPORTING, which are actually part of the central knowledge in the POLICE EMERGENCY category. In the POLICE EMERGENCY scenario, we can easily figure out that it involves reporting the emergency situation by dialing the police emergency number '110'; the police then immediately come to the spot to offer help because it is a police emergency, and police emergency thus becomes the prominent figure of the central knowledge, with timely assistance and information reporting fading away to become the ground. It is POLICE that limits both the use and extension of police emergency. Because the function of '110' as the police emergency number was gradually intensified in actual social use, as mentioned in §4.1, other aspects of POLICE EMERGENCY, such as INFORMATION REPORTING and TIMELY ASSISTANCE, are promoted to dominant positions and become two kinds of central knowledge and thus two meaning prototypes, so paving the way for the metaphoric projection of '110' to other fields. This is probably what Kövecses (2000) means by saying that only a small part of the community-shared central knowledge of the source is inherited by the target in metaphor. So it is obvious that it is in essence the metonymic process of INFORMATION REPORTING FOR '110' and TIMELY ASSISTANCE FOR '110' that provides a conceptual prerequisite for metaphoric projection of '110' to the governmental (with police excluded) and the non-governmental classes, respectively.

The findings from the Internet-ZH corpus and *People* website show that '110' has been in use far beyond the previous police emergency situation, not to mention the initial situation of reporting enemies and spies. The numeral '110' has also developed from the initial enemy and spy reporting phone number to the criminal reporting number, the police emergency number, special labels of emergency service, as well as special labels of service for those in need. In the latter two situations, '110' does not even appear in the service phone number; it functions only as a symbol. The meanings of '110' in actual contexts are far from exhaustive, as shown in the corpus; it goes from actual number to superficial label, developing from its original numerical sense to variable meanings related to different situations.

We can hence say that the development of '110' in use has undergone several 'generations', and the meaning prototype of '110' is functionally dynamic. We may say that the original category of '110' is the category of number; when it is used as a special phone number, it moves to special categories. For example, it moves to the military category when it is used as the enemy and spy reporting phone number (which reflected the situation in those days); it moves to the police category when it is used as the criminal and police emergency phone number; and it moves to other variant categories when it is extended to fields other than the police. When '110' is used as a special phone number, we (re-)conceptualize and (re-)categorize it within the specific scenario with a different meaning prototype. For example, as the enemy and spy reporting phone number, '110' is conceptualized as a hostility-related entity (quality, function, hereafter); as the police emergency phone number, '110' is conceptualized as a police-related entity; as the information reporting number, '110' is conceptualized as an information-related entity; and as the assistance phone number, '110' is conceptualized as an assistance-related entity. Thus, in different scenarios of use, '110' bears different meaning prototypes. The meaning prototype of NUMBER, the meaning prototype of ENEMY, the meaning prototype of POLICE, the meaning prototype of EMERGENCY, the meaning prototype of INFORMATION, and the meaning prototype of ASSISTANCE represent the dynamic development of '110' in terms of meaning prototype. All these can be encompassed in the conception of '110' and internalized in the conceptualization of '110'. The public today, who do not know the development of '110', conceptualize '110' only as the police emergency phone number and generate the meaning prototype of POLICE, but with the extensive use of '110' in other fields or scenarios, they will gradually (re)conceptualize '110' as the assistance phone number, generating the meaning prototype of ASSISTANCE which has nothing to do with the police or even with emergency situations.

It is obvious in the corpus and on the *People* website that '110' has been extended from its originally adopted usages as the special enemy and spy reporting and criminal reporting phone numbers to the current police emergency phone number and the simple symbol of emergency and assistance. It embraces the category of NUMBER, the category of PHONE, the category of POLICE, the category of EMERGENCY, the category of INFORMATION, and the category of ASSISTANCE. Each category forms its own central knowledge of the meaning prototype. It covers noun, adjective, and adverb in terms of syntactic value and includes phone number, service system, team, individual, vehicle, service center, notice/call from the service center, etc. in terms of semantic value. It is hard to declare that there is a basic/core/primary meaning shared by all these uses; it is also impossible to state that there is a prototypical meaning among these uses, as we have analyzed here. In fact, the initial use of '110' as an enemy and spy reporting phone number has already covered the knowledge of PHONE, EMERGENCY, ENEMY or HOSTILITY, POLICE, INFORMATION, ASSISTANCE, TIMELY, etc.; among these components, only one, namely ENEMY or HOSTILITY, is focused on the enemy and spy situation, bringing in the meaning prototype of ENEMY. All other component knowledge is in the background. However, when settings are changed, those previous background components become the focus, resulting in a different meaning prototype. For instance, when '110' is employed in the police category, the ENEMY or HOSTILITY component is dropped and POLICE, ASSISTANCE, and TIMELY come to center-stage, whereas EMERGENCY and INFORMATION retreat away to become the ground. It is most likely ASSISTANCE and TIMELY that empower the metaphoric mapping of '110' to other non-police categories. In the case

of non-police categories, INFORMATION, ASSISTANCE, and TIMELY come to constitute the central knowledge while other components fade to become the ground. This may be an indication of how meaning prototype and hereby meaning develop. From this case study, it seems that meaning prototype comes from background knowledge that a word frames in use.

In the dynamic development of word meaning, both the structure of meaning and its psychological nature change; 'it is not merely the content of a word that changes, but the way in which reality is generalized and reflected in a word' (Vygotsky 1986). Meaning prototype is dynamic and developmental, for concept formation itself is a dynamic and developmental process. Concept as such is functional; it derives from 'attentive analysis' (Mandler 1996), which brings, in the union of meaning and form, the first concepts (Mandler 1998).

5. Conclusion

Meaning is the value of a word for its existence and development. Word meaning originates from our functional generalization of the experience of reality, and is an internalized reflection of that experience. Meaning is thus in essence conceptual. It is borne in words as forms. Word meaning therefore belongs simultaneously to both language and thought, and to both linguistics and psychology. Language is part of the human cognitive faculty; it derives from human cognitive activities. Word meaning can therefore be viewed and weighed from the perspective of cognition.

A word does not come into use with many meanings in the first instance, but rather it comes into use with a conceptually global meaning that involves floating knowledge, part of which will become the central knowledge in certain situations and thus become the meaning prototype. A word gathers more meanings in actual use. Meaning is in itself developmental and is a prototypical concept. Meaning change and meaning development derive from the dynamic nature of meaning prototype. Developmental meaning prototype evidences that it is not correct to propose only one prototype for a word with many meanings. Prototype itself is a prototypical concept, which means that it develops. Prototype is hence not static and established once and for all, as the classic prototype view of word meaning claims.

Meaning as a prototypical concept can embrace different word classes and different word forms through cognitive processes such as metonymy and metaphor. Meaning prototype is formed out of central knowledge. Knowledge grows with experience, but it is the central knowledge of meaning prototype which develops in actual uses and changes with different categories in different contexts, and that determines the meaning prototype and the range the meaning prototype can cover.

The dynamic of meaning prototype can only be noticed by looking at the development process. The Chinese case of '110' might be a good example to illustrate this point. From enemy and spy reporting phone number to criminal reporting number, police emergency number, information reporting symbol, and assistance symbol, the meaning prototype of '110' has developed. The prototype proceeded from pure number to phone number and to symbol, and developed from NUMBER category to PHONE category, POLICE category, EMERGENCY category, INFORMATION category, and ASSISTANCE category. Different category usage results in different central knowledge and hence different meaning prototype. This category combination extends the range of use of '110' as a result of central knowledge development, which brings in the continuation and

breadth of its use. The central knowledge of ‘110’ as a police number for reporting emergencies and for timely assistance makes it amenable to use in different word classes and with different semantic values. Use of ‘110’ with different syntactic and semantic values in the corpus is motivated by the metonymic process, which involves relating to the central knowledge of the meaning prototype. The extensive use of ‘110’ in fields other than the police-related one is motivated by metaphor, which entails projecting some central knowledge of the meaning prototype to other categories.

Realizing the dynamic nature of meaning prototype, however, also raises some questions. From the perspective of cognitive development and conceptualization, we understand that prototype is established without any conscious awareness. The question that then remains is how to identify the meaning prototype since it is dynamic. Even though it is suggested that meaning prototype comes from the background knowledge that a word is framed in, ‘110’ is far from a typical lexical word. More work is needed to bring clarity to the idea. A second question is how or to what extent the global-to-specific conceptualization theory obtained from experiments in developmental psychology and cognitive psychology can be employed to describe and interpret word semantic change or other linguistic phenomena. A third question is whether the dynamic theory of meaning prototype can cover non-number symbols in description and interpretation in terms of meaning development and meaning organization, since this paper mainly discusses the number symbol ‘110’. A further question that may arise from this paper is why an emergency number like ‘110’ can be metaphorically extended so pervasively in China when there is no such phenomenon in other countries which nonetheless all have emergency numbers. All these are matters for future research.

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Appendix: Metaphoric Extension of ‘110’

(All from *People* website: www.people.com.cn)

- | | |
|---|---|
| IP 110 (IP 110) | 港口 110 (Harbour 110 (harbour police)) |
| 幫扶 110 (Assistance and Support 110) | 高考 110 (University Entrance Examination 110) |
| 暴政 110 (Maladministration 110) | 工廠 110 (Factory 110) |
| 本科教學質量 110 (Undergraduate Teaching Quality 110) | 公務 110 (Public Service 110) |
| 邊境 110 (Border 110 (armed force on the border)) | 供水／自來水 110 (Water 110) |
| 草原 110 (Grassland 110) | 廣告 110 (Ads 110) |
| 城管 110 (Municipal Administration 110) | 規劃 110 (Urban Planning 110) |
| 城建 110 (Urban Construction 110) | 海關 110 (Customs 110) |
| 儲蓄 110 (Deposit 110) | 海路 110 (Sea and Land 110 (sea and land police)) |
| 畜牧 110 (Animal Husbandry 110) | 海上 110 (Sea 110 (sea police)) |
| 春運 110 (Spring Festival Transportation 110) | 行政 110 (Government Administration 110) |
| 打炒 110 (Anti-speculation 110) | 和諧 110 (Harmoniousness 110) |
| 黨員 110 (Party Members 110) | 環保 110 (Environmental Protection 110) |
| 的士 110 (Taxi 110) (taxi drivers act as providers of clues and assistance to the police) | 火車 110 (Train 110) |
| 地下 110 (Underground 110) | 機車 110 (Locomotive 110) |
| 電力 110 (Power 110) | 機關效能 110 (Institutional Efficiency 110) |
| 電信 110 (Telecom 110) | 加油計量 110 (Fueling Measure 110) |
| 都市 110 (Metropolis 110) | 經濟 110 (Economy 110) |
| 短信 110 (Texting 110) | 糾風 110 小分隊 (Picketing 110) |
| 反偽 110 (Anti-fake 110) | 炕頭 110 (Kang-bed 110) |
| 房產 110 (House Property 110) | 科技 110 (Science and Technology 110) |
| | 科普 110 (Science Popularization 110) |
| | 口腔 110 (Stomatology 110) |

- 勞務 110 (Labour Service 110)
糧食 110 (Grain 110)
論文 110 (Paper 110)
旅遊 110 (Tourism 110)
麻將 110 (Mahjong 110)
馬背 110 (Horse 110 (mounted police))
煤氣 110 (Gas 110)
民間 110 (Non-government 110)
民生 110 (People's Livelihood 110)
民聲 110 (Civilian Voice 110)
民事 110 (Civil Affairs 110)
民政 110 (Civil Administration 110)
農技 110 (Agrotechnical 110)
農事 110 (Farm Work 110)
撲克 110 (Poker 110)
氣象 110 (Weather 110)
汽配 110 (Automobile Fitting 110)
人大 110 (People's Congress 110)
人大換屆選舉 110 (Election 110 of People's
Representatives)
人大監督 110 (People's Representative Intendance 110)
森林 110 (Forestry 110 (forestry police))
殺毒 110 (Virus killing 110)
沙漠 110 (Desert 110 (desert police patrol))
- 社區 110 (Community 110)
生存智慧 110 (Survival Wisdom 110)
食品安全 110 (Food Safe 110)
書記 110 (Party Secretary 110)
數學 110 (Maths 110)
水上 110 (River 110 (river police patrol))
訴訟 110 (Legal Action 110)
颱風 110 (Typhoon 110)
通關 110 (Customs Declaration 110)
銅都鹽業 110 (Copper City Salt 110)
玩家 110 (Player 110)
網絡 110 (Internet 110)
網上 110 (Internet police 110)
為民服務 110 (Serving-the-People 110)
文化強國 110 (Cultural Power 110)
物管 110 (Property Management 110)
心理 110 (Psychotherapy 110)
新聞 110 (News 110)
養老 110 (Support 110 for the Aged)
義務 110 (Volunteering 110)
娛樂 110 (Entertainment 110)
遠(程)教(育) 110 (Distance Learning 110)
證券 110 (Stock Market 110)
志願者 110 (Volunteers 110)

語義原型：以漢語 110 為例

傅習濤

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詞語意義的原型觀在認知語言學中比較普遍，該原型觀實質上是基於一種靜態的固定的原型之上的。本文嘗試提出詞語意義的動態原型觀，並通過對漢語 110 的個案分析對其進行解釋說明，認為語義原型本身具有動態、功能、和發展的特性。在概念層次上，動態語義原型含有詞語的句法與語義特徵，其動態性在於詞語的核心知識。該核心知識在詞語的使用過程中主要通過轉喻和隱喻認知機制而發展。語義原型也因其核心知識的發展變化而變化，在不同時期或不同的場景，可能會有不同的語義原型佔據突顯地位，先前的語義原型因而隱退，但在適當的時候也可能重新佔據突顯地位而成為該詞語的新的語義原型。

關鍵詞：原型語義，語義原型，核心知識，轉喻，隱喻，110