

Enriched Composition
and Inference in the
Argument Structure of
Chinese



Ren Zhang

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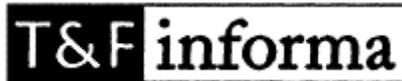
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Preface

This book is a minimally revised version of my doctoral dissertation completed at York University in 2002. The empirical focus of this work is a set of non-canonical argument structure phenomena in Mandarin Chinese in which the external and the direct internal argument bear a non-transparent semantic relation to the eventuality expressed by the verb of a sentence, as with *Xiaowang sile fuqin* ('Xiaowang died (his) father': 'Xiaowang's father died') and *Xiaowang jingchang chi zhejia chuguan* ('Xiaowang often eats this restaurant': 'Xiaowang often has his meal in this restaurant'). Such phenomena pose a challenge to the Projectionist view of the relation between the lexicon and the syntax, according to which the number of syntactic arguments is largely determined by the lexical semantics of the verb. I propose a semantic account of such 'unselected' arguments within the framework of Conceptual Semantics (e.g. Jackendoff 1990) and situate my proposals within a general constructionist perspective of linguistic theory (Jackendoff 2000). Discussing a wide range of data, I show that the 'unselected' internal and external arguments are licensed in terms of an enriched view of conceptual combination and inferences and that no abstract syntactic mechanisms need to be invoked for such phenomena.

Firstly, a schematic conceptual structure of the *eat restaurant* type of examples is proposed, which can be roughly glossed as 'one entity undertakes an event by affecting another entity in some way'. Based on such a general conceptual structure as well as the lexical conceptual structures of the elements in the construction, I propose three conditions governing the semantics of the construction: (1) the event is brought into existence by an *agentive* quale (Pustejovsky 1995) in which some default entity *x* is affected; (2) the unselected complement expresses an entity *m* with a telic quale that caters to the need of the event in (1); and (3) there should be no redundancy between *x* and *m*. Exceptions to such generalizations are treated under a Preference Rule System of defeasible typicality conditions, based on Lascarides and Copestake (1998).

Secondly, three constructions, the Possessum-object construction, the retained-object passive construction and the locative inversion construction, are subsumed under the category of 'unselected' subjects and are given a uniform treatment in term of conceptual inferences and Noteworthiness Condition, drawing on Nunberg's (1995) work on predicate transfer. Both the Possessum-object construction and the locative inversion construction share a conceptual structure in which a Thing or a Place is predicated over by a State as its property, whereas the conceptual structure of a retained-object passive is defined in schematic action-tier terms as one entity *z* *reacting* to an event involving its Possessum, which in turn *affects* *z* lexically or contextually. The conceptual structures of

these constructions are linked to those of their canonical alternations by two types of inference rules involving set inclusion and inferences from a spatial event with a Place adjunct or a Location argument. Constraints on predicate expressions follow from the conceptual structures of the constructions. In particular, the predicator in Possessum-object and locative inversion constructions must express a State. This is made possible via the semantic contributions of particular aspectual particles such as *le* and *guo*.

The study shows that an elaborate semantic theory, embedded within a parallel architecture (as manifested in a version of Construction Grammar, for example), offers a more adequate solution to the non-canonical argument structure phenomena than approaches that adopt a syntactocentric outlook. Thus by virtue of the research reported here a valuable alternative is offered to the syntactic approaches in the formal studies of Mandarin Chinese.

The starting point of this research is a critical reconsideration of work in Chinese syntax that adopts the syntactocentric perspective, and the result comes close to the claims and the insights associated with construction-based cognitive linguistics, while remaining a certain distance from the latter school of theorizing. In retrospect, there are certain claims in this work that could be modified as well, if I went deeper into Cognitive Linguistic frameworks. Nevertheless, I have decided not to make any substantial change in the book version of the dissertation.

I would like to take this opportunity to thank Larry Horn, Diane Massam, Ruth King, Peter Avery and Michael Cummings as well as my editor Mark Henderson at Routledge, without whose patience, suggestion and encouragement this book would never have come out in print. My students at Nanjing University have been very helpful with sundry matters in the course of preparing the book version of this work.

March, 2004

Nanjing University

Nanjing, China

Acknowledgments

As a linguist of Chinese origin, I have followed the footsteps of many predecessors in searching in the 'West' for a theory that could account for the subtleties of the Chinese language. In this long process I have incurred many intellectual and personal debts.

Firstly, I was very lucky to have Professor Robert van Valin, Jr. to serve as my external examiner. I have long admired his erudition in many languages and found his own linguistic theory of great potential in exploring the properties of Sinitic languages. I want to thank him for his encouraging comments, perceptive questions and valuable suggestions.

Throughout the past five years, my academic life in Toronto has been blessed with two mainstays from two institutions. Ruth King first suggested that I broaden the scope of my research interests. Her advice led me into the fascinating areas of syntactic and semantic studies, which I have since found it hard to give up. I owe it to her for the general orientation of this dissertation. As a good example of a linguist straddling different research areas including syntactic theory, sociolinguistics and women's studies, Ruth has activated my own interest in the many areas of sociolinguistics, including language and gender. Most importantly, Ruth has never failed to help me see my own strengths and believe in myself in times of academic and career impasses. I wish I could properly convey my gratitude to her in words.

If Ruth has been an overall director of my academic growth, Diane Massam at the University of Toronto is directly responsible for my coming of age in theoretical linguistics. Diane's courses in Intermediate and Advanced Syntax enabled me to reach a thorough understanding of Chomskyan syntactic theories. The training I enjoyed under Diane's guidance serves as a crucial foundation for me to enter into monostatal linguistic theories and to appreciate larger cognitive science issues. I owe my skills in linguistic analysis and argumentation to Diane, who in the last few years spent countless gratuitous hours going through my every conference paper and offered many valuable suggestions. The final version of the dissertation has again benefited a lot from Diane's constructive criticisms on my argumentation and presentation.

Obviously, this dissertation would not have come into the world without the many thought-provoking works authored by Ray Jackendoff, whose influence should be apparent on practically every page. I would like to thank him for making my trip in 2001 as a visiting scholar to the Linguistics and Cognitive Science Program of Brandeis University a pleasurable and fruitful experience. That trip directly helped clinch the theoretical framework of this research. Subsequent communications with him also clarified some further issues. While Jackendoff may not completely endorse the way I

implement his ideas, I flatter myself to think that some of Jackendovian traits in approaching linguistics, such as non-parochialism, breath of knowledge, clarity and force in style, have rubbed off on me in a modest way.

I am grateful to the linguists who responded to my query on the Linguist List on non-selected complements and pointed me to important literature, including Tom Givón, Paul Hopper, Sabine Bergler, Georges Rebuschi, Kiyoko Takahashi, Ressa Ai and Diane Massam. Asya Pereltsvaig (McGill), Jonah Lin (UC Irvine), Tao Hongyin (UCLA) and Gao Qian (Ohio State) sent me their papers related to the topic, which all served as inspirations to my Chapter 3. The general direction of this research took shape during my attendance at the 1999 LSA Institute held in the University of Illinois at Urbana-Champaign (UIUC). I thank Adele Goldberg for offering a research affiliate position and for spending time having discussions with me. At the risk of unwanted omission, I would also like to express my indebtedness to a wider circle of linguists, including Michael Cummings, Bill Greaves, Jim Benson, Barry Miller, Bob Binnick, Chris Butler, Dick Hudson, Heidi Harley, Bill Croft and Urpo Nikanne.

My life in Toronto, as my first experience in a different culture, would have been harder without the gracious help and support from many warm-hearted people and friends. Prominent on my mind are the following scholars and friends: Michael Cummings, Bill Greaves, Ray Ellenwood, Jan Pearson, Ruth King, Donna Lillian, Ed and Marg Boldt, Dave Kauffman, Seth Blumenthal and Hendrick Tan. Other friends, old and new, and spread in several countries, have showed their support in various ways. They include Meng Zhiyong, Feng Gang, Wang Yongqun, Zhou Guojun, Xiao Li, Wang Feng, Ouyang Jingsong, Chen Jingsong, Xu Maolei, Wu Yuwen, Tang Duoyi, Li Jun, Zhang Zhe, Niu Kangsheng, Peter Au, Chen Shengli, Li Zheng and Denis Yu. A special thanks also goes to Hu Zhuanglin (Peking University) for trust, support and understanding.

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ENRICHED COMPOSITION AND INFERENCE IN THE ARGUMENT STRUCTURE
OF CHINESE
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CHAPTER ONE

Introduction: Variation in Argument Expression

In theory-neutral terms, it is largely agreed that the grammatical form of a sentence expresses a Situation¹, or an eventuality in the sense of Bach (1986), with a number of participants or semantic arguments. Very often it appears that a particular conceptual situation can be expressed in varying syntactic forms, as seen in the semantic relation between a passive construction and its active counterpart, as well as many other cases of verb frame alternations (see Levin 1993). Let us call such linguistic variations in the expression of event structure *argument structure*² phenomena, which lie at the core of any theory of linguistic structure. The empirical focus of this dissertation is a subset of argument structure phenomena in Mandarin Chinese, as illustrated in the following:

- (1) Xiaowang gang sile fuqin
just dieLE father
“Xiaowang has just had his father die (on him).”
- (2) Xiaowang jingchang chi zhejia canguan
often eat thisCL restaurant
“Xiaowang often has is meal in this restaurant.”

In such examples, the external and the direct internal argument bear a non-transparent semantic relation to the eventuality expressed by the verb. The person who died in (1) is not the external argument *Xiaowang*, and the internal argument *zhejia canguan* ‘this restaurant’ in (2) is not what is eaten by *Xiaowang*, as would be expected of these syntactic positions in typical cases. In both cases it is possible to express the same idea more transparently, as shown in the following:

1. The ontological categories of Conceptual Semantics are presented in capital letters.
2. There is a technical sense of the term *argument structure* assumed in a variety of frameworks as an abstract lexical representation separate from lexical semantic representations (see e.g. Williams 1984; Grimshaw 1990; Rappaport, Laughren and Levin 1993; Bresnan 2001). Following Jackendoff (1990), I do not assume such a level but still use the terms *internal/external* arguments for expository purposes.

(1) a. Xiaowang de fuqin gang sile

DE father just dieLE

“Xiaowang’s father has just died.”

(2) a. Xiaowang jingchang zai /dao zhejia canguan chi fan

often LOC./go thisCL restaurant eat meal

“Xiaowang often has his meal in this restaurant/often comes to this restaurant to have his meal.”

Argument structure phenomena raise important issues concerning the relations between grammatical form and meaning. Specifically, what are the mapping relations between the structure of the Situation linguistically construed by a sentence and the particularities of the grammatical form of the sentence? Where are such mapping principles located in the architecture of a theory that accounts for the linguistic knowledge of a speaker? Do the alternative grammatical patterns for expressing a Situation indeed share the same semantic structure? How are the arguments in a construction licensed?

Under traditional verb-centered views of argument structure (see section 1.1), certain non-canonical cases as exemplified in (1) and (2) are especially relevant, as the relations between the verb and arguments in these cases are by no means straightforward and thus pose a challenge to any theory of argument expression and licensing. The specific goal of this dissertation is thus to propose an account of such non-canonical argument structure phenomena in Mandarin Chinese. I argue that the ‘unselected’ arguments in constructions like (1) and (2) are naturally licensed under a theory of enriched semantic composition and a theory of conceptual inferences, and that there is no need to assign an abstract syntactic structure to such cases to account for certain implicit meanings, nor is it desirable to posit syntactic transformations to take care of what turn out to be conceptual inferential relations. The analyses that I propose aim to account for the full range of data. I point out empirical limitations, as well as certain theoretical clumsiness, associated with a number of syntactic proposals.

Thus I intend the study to be an exercise in semantics. Crucially I focus on semantic representations and semantic compositionality as manifested in the apparently simple and formally austere syntactic structures of Mandarin Chinese. The conceptual processes and inferences are explicated on the basis of a system of enriched semantic representations within the framework of Conceptual Semantics as developed by Jackendoff (e.g. 1976, 1983, 1990, 1996a, 2000). Insights from compatible semantic theories will often be referenced and drawn upon as well, especially the Generative Lexicon (Pustejovsky, 1991, 1995 et seq.) as well as works associated with Cognitive Semantics (esp. Langacker 1987, 1990, 1991, etc.).

In addition, this research is situated within a more general conception of linguistic structure, one that is akin to but distinct from much recent construction-based work stemming from different frameworks, including, among others, Construction Grammar (e.g. Goldberg 1995; Michaelis 2000; Croft 2001), Cognitive Grammar (Langacker 1987), Head-Driven Phrase Structure Grammar (HPSG) (Sag 1997; Ginsburg and Sag 2001) as well as certain works within the Chomskyan framework (e.g., Hoekstra 1992; Ghomeshi and Massam 1994; Ritter and Rosen 1998, among others; see Levin and Rappaport Hovav 1996 for an overview). The research results presented here underscore two theoretical points. First, syntactic patterns are often underspecified concerning their

meaning, which is a revised Constructional view advocated by Jackendoff (1996b, 1997, 2000). Second, syntactic machinery can be greatly simplified under a rich system of semantic representations, which is currently being advocated by a number of linguists such as Langacker (1987), Jackendoff (1990), Pustejovsky (1995) and Culicover (1998), as well as many functional linguists. However, in this dissertation, I don't have particular proposals to make with regard to syntactic representations *per se* in a theory of Chinese grammar, and I simply assume a simplest version of phrase structure.

Given the general Constructionist framework which I adopt (see Ch. 2), I wish to achieve a larger methodological goal in this thesis. I wish to demonstrate that certain important semantic issues can only begin to be raised under a parallel architecture of linguistic theory (cf. Sadock 1991), where semantics is taken as an independent generative component on a par with phonology and syntax. The parallel conception contrasts with the Chomskyan framework in which the syntax is the only generative component, an outlook Jackendoff (1997) terms *syntactocentrism*. Furthermore, since argument structure phenomena are central in any language, the approach demonstrated by this dissertation could well apply to other phenomena in Chinese grammar. Thus I wish to advocate a methodological point that the structure of Chinese and its typological properties are best approached within a parallel architecture, in contrast to the majority of theoretical work on Chinese that is conducted from a syntactocentric perspective. In this chapter and the next, I will review certain metatheoretic arguments for the parallel conception of linguistic theory and the role of semantic explanations, especially as pertaining to grammatical phenomena in Chinese, in order to contextualize the proposals of this thesis within a range of contrasting options.³

In the remainder of the chapter, I first present the empirical challenges for mapping theories, in particular, issues that arise from English and Mandarin Chinese data and sketch the possible approaches and directions that could be pursued. Then I discuss the general motivations as to why I focus this dissertation on the conceptual-semantic processes in a theory of argument expression. The chapter concludes with an outline of the thesis.

1. Approaches to Lexical-syntactic Flexibility

1.1. Bottom-up vs. Top-down Perspectives

A fundamental question that all linguistic theories attempt to answer is what the factors are that determine the basic grammatical structure of a sentence, such as the number of constituents that are allowed in a sentence. There are two contrasting views with respect to this question. Taking a bottom-up perspective, many frameworks, ranging from the classic European dependency grammar (Tesnière 1956) to the Government and Binding

3. Note that it is not my goal in this dissertation to provide thorough arguments for semantics and the parallel architecture, which can be found in many of the works referenced in this study (see esp. Jackendoff 1997, 2000). However, to the extent that the actual analyses proposed in this study are at least empirically superior to syntactic options, this work does constitute a substantial argument against the syntactocentric approaches.

framework of Chomsky (1981, 1986), take a verb-centered point of view. Such a position is popular among students of argument structure ('valency') in Chinese, as can be seen from two recent collections of papers (Shen and Zheng (ed.)1995; Yuan and Guo (eds.) 1998). Much recent research stemming from this tradition takes the lexical properties, in particular, the lexical semantics of a verb as determining its syntactic behavior, such as the number of syntactic arguments it can occur with. For instance, if we take the meaning of the verb *sweep* as involving two semantic arguments, a 'sweeper' and a surface to be swept, this would account for the following contrast:

- (3) a. Terry swept the floor.
 b. *Terry swept the mother the floor.

Given the semantic argument structure of the verb *sweep*, the sentence in (3b) is naturally ruled out. On this approach, the meaning of the sentence is also taken to be composed from verbal semantics and the relevant arguments in a syntactically transparent way.

However, an alternative view can be taken with respect to (3). One could argue that the grammatical structure of (3a) instantiates an independent event structure, for example, an idealized cognitive model (Lakoff 1987) of event or a canonical event model in which "one forceful object transfers energy to another through forceful physical contact" (Langacker 1991:286, cf. Talmy 1988; Croft 1998). The event model must be stored in the mind as a conceptual structure template. Under this assumption, (3a) is acceptable because the semantics of its constituents is compatible with the structural elements of the event model embodied in the sentence structure, whereas (3b) is bad because one of its constituents *the mother* cannot be licensed by the event structure of the sentence that only involves two participants.⁴ One might ask why (3b) cannot be licensed by a three-participant event structure in the way the following is:

The problem lies in the fact that verbal semantics of *sweep* clashes with the three-participant event semantics. Thus what distinguishes this approach from the verb-centered view is that supra-lexical meaning and associated syntactic structure are taken as a ready-made resource, in addition to lexical resources. Such an approach focuses on how elements of varying size in a common resource pool (a 'lexicon', if you will) get along with each other in forming the grammatical and semantic structure of a sentence. This kind of top-down perspective characterizes the so-called construction-based or sign-based approaches to argument structure and other phenomena (see references above).⁵

4. Of course there could be numerous accounts of the contrast from different theoretical perspectives, but I only focus on the syntax-semantics interface here and will largely speak in theory-neutral terms at this point

5. Incidentally, the top-down spirit has long been present in Systemic Grammar, a theory much ignored by theoretical linguists (see esp. Davidsen 1991). The term 'top-down' is borrowed from Goldberg (1995).

An important feature of *constructionism* is that semantic structure such as the canonical event model mentioned above is treated as the inherent meaning of particular syntactic patterns. This is clear in the concept of *argument structure construction* used in Construction Grammar (Goldberg 1995), according to which the structure of a situation is directly associated with basic syntactic structure. Goldberg (1995, 1998a) suggests a *scene-encoding hypothesis*, claiming that simple sentence types such as *Subj V Obj1 Obj2, Subj V Obj Obl*, encode basic event types such as “X causes Y to receive Z,” “X causes Y to move Z.” Pushed to an extreme, such an approach implies a biunique connection

(4) John baked Mary a cake.

between semantic structures and syntactic structures. While the works of Goldberg only posit flat syntactic structures employing grammatical functions, the constructionist work associated with the Chomskyan framework has been positing increasingly abstract syntactic structures⁶ involving empty functional and verbal heads that serve to encode the intricacies (e.g. aspectual properties and causation) of event structure (Hale and Keyser 1993; Harley 1995; Ritter and Rosen 1998; Borer 1994, 2000; Travis 2000, among others). In other words, while standard work in Construction Grammar does not seem to have taken a stand as to whether all event-structural meanings correspond to syntactic forms, constructional work within the Chomskian framework does seem to be pushing such a view, stressing a tighter fit between semantics and syntax. This view accords well with the syntactocentric outlook mentioned earlier (cf. Lin 1999 for application of event-syntactic approaches to Chinese data). The work presented in this dissertation will show that the connections between syntactic structures and meaning are more complicated than a biuniqueness view could handle. In fact, the view defended here was stressed at the outset of generative grammar (Chomsky 1957).

1.2. The Challenge of Lexical-Syntactic Flexibility

Let us now bring the two perspectives sketched above to bear on the empirical challenge they are both faced with. Recent works on argument expression have underscored the fact that most verbs are capable of occurring in different syntactic environments, a phenomenon captured by the term *diathesis alternation* (Levin 1993; Jones 1994; Van Hout 1998). Van Hout (1998) has subsumed this sort of argument structure phenomena under the heading of lexical-syntactic flexibility. What follows is a typical set of alternations from English (taken from Rappaport Hovav and Levin 1998):

- (5) a. Terry swept.
 b. Terry swept the floor.
 c. Terry swept the crumbs into the corner.
 d. Terry swept the leaves off the sidewalk.
 e. Terry swept the floor clean.
 f. Terry swept the leaves into a pile.

6. For Hale and Keyser (1993), the event-related syntactic structures are located in the lexicon, which they term *l-syntax*.

As can be seen above, a single verb *sweep* is allowed to occur in numerous syntactic frames involving different number and type of complements, with accompanying variation in meaning, from activity (5a, b), change of location to a Goal or from a Source(5c, 5d)⁷, change of state (5e), to creation of an artifact (5f). As Rappaport Hovav and Levin (1998) point out, it is counterintuitive to posit that these examples involve six different verbs *sweep*. It would be useful to contrast this set of examples with their close equivalents⁸ in Chinese, as presented in (3) below:

- (6) a. Zhangsan hai zai sao
 still Prog. sweep
 “Zhangsan is still sweeping.”
- b. Zhangsan saole zhejian wu
 sweepLE this-CL room
 “Zhangsan has swept this room.”
- c. Zhangsan ba mianbao xie sao-jin dong-li
 BA bread crumb sweep-enter hole-inside
 “Zhangsan swept the (bread) crumbs into the hole.”
- d. Zhangsan ba yezi cong jieyuan sao-zou
 BA leaf from sidewalk sweep-go
 “Zhangsan swept the leaves off the sidewalk.”
- e. Zhangsan sou-ganjingle diban
 sweep-cleanLE floor
 “Zhangsan swept the floor clean.”
- f. Zhangsan ba yezi sao-cheng yi dui
 BA leaf sweep-become one pile
 “Zhangsan swept the leaves into a pile.”

The examples in (6) parallel those in (5) in semantic variation. Thus the Chinese verb for *sweep* is just as flexible in its syntactic behavior as its English counterpart.

This kind of variation is problematic for the bottom-up verb-centered perspective, as pointed out by Rappaport Hovav and Levin (1998), since it means that the verb *sao* or *sweep* must be given multiple lexical-semantic representations that are listed in the lexicon, while in the meantime these separate senses are systematically related to each other. The lexical approach represents a sense-enumerative view of the lexicon that has been discredited by recent work such as Pustejovsky (1995), among others, due to its inability to capture the systematic relations between the multiple senses of a verb and the constraints on sense variation. Rappaport Hovav and Levin (1998) propose an improved

7. Note that (5c) and (5d) appear to have the same syntactic structure, and thus may not illustrate lexical-syntactic flexibility as intended by Rappaport Hovav and Levin (1998). However, I leave them here, as their close Chinese equivalents (6c) and (6d) have different syntactic structure.

8. Direct translation, if possible at all, of these English sentences would not be able to maintain their argument structure properties.