Information Encoding, Mandarin Chinese Word Order and CSLA: A Cognitive-Functional Account

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Abstract The present paper provides a comprehensive overview of the role of word order as a linguistic device in information encoding and management in Mandarin Chinese (henceforth Chinese). Specifically, it investigates its functions from a cross-linguistic perspective in order to identify acquisitional difficulties for Chinese L2 learners. The factors that contribute to shaping word order are explored and discussed, providing reference to relevant research conducted over the past decades; evidence from neurolinguistic and corpus-based studies is also provided, along with the results of a preliminary study conducted on MA Italian L1 learners of Chinese as a second language, which contributes to grounding theoretical claims on more solid empirical data. The analysis suggests that word order is a major area of interest in Chinese as a Second Language Acquisition (CSLA) because (1) it encodes functions pertaining to different linguistic domains (semantic, syntactic, discourse-pragmatic, cognitive etc.), thus displaying a high functional load; (2) due to L1 transfer, the complex interplay of all word order functions entails acquisition difficulties, especially for students whose L1 is morpho-syntactically richer (like Italian); and (3) a clear and comprehensive function-to-form mapping, accounting for L1-L2 differences and for positive and negative L1 transfer, can be an effective tool in CSLA practice. Moreover, discourse and conceptual aspects provide interesting insights for Chinese language teaching.

This work aims to contribute to CSLA as a growing area of research, in that it seeks to fill the gap between Chinese linguistic inquiry and teaching practice by showing the applicability of research findings to Chinese pedagogy. Secondly, it provides a comprehensive overview of the key factors that contribute to shaping Chinese linear order, which have often been investigated separately, resulting in partial and less effective accounts of the issue. Lastly, it hopes to be a reference tool both for SLA researchers and teachers, as it highlights possible difficulties in interlanguage development and suggests further research avenues.

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I. Kecskes (ed.), *Explorations into Chinese as a Second Language*, Educational Linguistics 31, DOI 10.1007/978-3-319-54027-6_4

1 Introduction

The present paper provides a comprehensive overview of the functions, factors, and principles that contribute to shaping the linear sequence of words in Chinese[1] utterances in light of the most significant research on Chinese word order (henceforth CWO) over the past decades. Moreover, it explores the interplay of such factors and functions and its impact on Chinese as a Second Language Acquisition (hereafter CSLA), with the aim of identifying potential acquisitional difficulties for Chinese L2 learners. Lastly, it presents results from empirical studies, including a preliminary study conducted on MA Italian L1 learners of Chinese as a second language, which contributes to grounding the analysis in solid empirical evidence.

The role of word order in Chinese is analysed by exploring the correlation between linguistic information (functions) and linguistic expressions (forms): the study examines some of the major Chinese typological features (such as being isolating, syllable-timed, tonal, and discourse-oriented) and explores the impact of such features on the range of available linguistic devices. This allows for a better understanding of why and to what extent Chinese relies "heavily on word order as an underlying marking feature for meaning" (Ho 1993: 138). The crucial role of CWO in information encoding is then discussed, identifying the functions it displays, which include marking semantic roles and event participants, encoding definiteness, focus and information status, contributing to textual cohesion, signalling temporal sequence of events and states, and so forth. An interlinguistic perspective is adopted, which compares students' L1 (with English and Italian taken as reference) with Chinese as their L2 in order to identify specific interlanguage trends and potential difficulties resulting from L1 transfer. Moreover, the discussion of each function is corroborated, when necessary, by recent neurolinguistic or corpus-based studies that "contribute to increased rigor in the examination and reexamination of [linguistic] theoretical claims" (Jing-Schmidt 2013: 2). However, due to practical constraints, this study is unable to present all word order functions and principles in detail and does not engage with on-going debates on theoretical issues.

This analysis highlights the following important aspects of word order within the discipline of CSLA: (1) CWO encodes information pertaining to different linguistic domains (semantic, discourse, pragmatic, cognitive etc.); thus, compared to Indo-European languages, it has a high functional load defined as the degree of reliance of a language on a device (form) to convey one or more types of information (functions); (2) all CWO related functions and principles contribute to shaping the resulting sequence of words by means of a complex interplay, which may be difficult for students to understand and master; and (3) L1 transfer is a key factor in word order

[1] We refer to Chinese as Modern Standard Mandarin Chinese, which is also often referred to as Putonghua.

acquisition in that, compared to other L2 features, L2 word order is more influenced by L1 word order (James 1998). Moreover, students are required to cope with the difficulties of Chinese word order encoding a wide range of functions, whereas other languages (like Italian and English) provide a wider variety of devices (including agreement, tense markers, article system, and so on). Hence, we maintain that a clear and comprehensive function-to-form mapping, which accounts for L1-L2 differences, can be a particularly helpful tool in Chinese language acquisition. Lastly, this analysis emphasizes the importance of factors such as discourse, context and conceptual schemata, which crucially contribute to shaping word order but tend to be underestimated in CWO teaching practice.

This work hopes to contribute to CSLA in several respects. First, despite the increasing demand for Chinese learning and teaching, there remains a paucity of research in Chinese SLA, while the majority of empirical studies have focused on English and other European languages. Moreover, there still exists a considerable gap between the progress made in Chinese linguistic research and the materials and practice of Chinese language teaching. This analysis hopes to address this gap and serve as a reference tool for teachers who want to broaden their knowledge on CWO functions and acquisitional issues. Secondly, this article highlights aspects that have been rarely accounted for in CSLA, in particular discourse factors and conceptual schemata, suggesting further investigation along these lines. Finally, this work is meant to contribute to CSLA studies on Italian L1 students, highlighting differences that result from the natural dissimilarities in interlanguage development, since the majority of studies in Chinese L2 acquisition have focused on English L1 learners.

The paper has been organized in the following way: Section 2 introduces our research question, namely whether and to what extent word order is crucial to Chinese information encoding. Section 3 addresses some assumptions and methodological concerns and sets out the frame of analysis, namely that of function-to-form studies. Section 4 examines Chinese typological traits in relation to the inventory of its linguistic devices and presents a cross-linguistic comparison with English and Italian. Section 5 provides a closer examination of the functions CWO displays, highlighting its association with specific word order patterns. Significant examples are analyzed from a cross-linguistic perspective, providing an overview of potential difficulties for learners. Section 6 addresses the issue of the interplay of different CWO factors by briefly presenting relevant neurolinguistic and corpus-based studies, while Sect. 7 discusses a preliminary study on CWO errors conducted on MA-level Italian L1 learners of Chinese. Section 8 concludes this article by pinpointing some pedagogical implications and suggesting issues for further research.

2 Chinese, Word Order and Second Language Acquisition

Chinese has notably posed a challenge to existing linguistic theories based on the investigation of English and other Indo-European languages and one of the most widely discussed topics is word order. As Huang (2013) states, "the unusual character of word order in Chinese has […] contributed to a continuing debate on the "true" nature of word order in Chinese dating from the 1970s" (p. 84). In the past decades, CWO has been investigated along several lines of research, generating a long and heated debate. Among the linguists who have investigated this issue are Lü (1979), Li and Thompson (1976, 1981), Tai (1985), Li (1990), Tsao (1990), Ho (1993), Huang (1994), LaPolla (1995), Huang and Chui (1994), Chu (1999), Li (2005), Loar (2011), inter alia. It is noteworthy that, prior to this debate, the renowned grammarian Chao Yuen-ren had recognized that: "It is often said that all Chinese grammar is syntax, all Chinese syntax is word order, and therefore all Chinese grammar is word order" (Chao 1968: 260). Does word order play such an important role in Chinese grammar? Were this the case, it should be one of the main focuses of theoretical and empirical CSLA studies. After discussing some theoretical assumptions and the methodology adopted in this research, the following sections aim to systematically clarify why and in which respects Chinese relies on word order as an "underlying marking feature for meaning" (Ho 1993: 138). The role played by word order, as a device for information structuring and encoding, is one of the ways Chinese differs most markedly from inflectional languages like English and Italian. This paper addresses the implication of these differences for the acquisition of Chinese as a second language.

3 Assumptions and Methodological Concerns

Word order can be described as referring to the temporal or linear sequence of words in an utterance/sentence and is the necessary outcome of one of the universal design features of all languages, namely linearity. In order to convey a message, speakers cannot but utter one linguistic element at a time, and each element precedes and follows another. For this reason, word order has a peculiar role in grammar, which Hudson (2000) defines as one of the three essential aspects of syntax. Linearity is one of the most fascinating and crucial aspects of languages: events, perceptions and experiences of the multidimensional world necessarily undergo a cognitive process that allows them to be coded into a linear sequence of elements. Elman et al. (1996), who investigated human cognition in terms of connectionist network models, claims:

> The grammars of natural languages may be thought of as solutions to an even more daunting dimension reduction problem, in which multi-dimensional meanings must be mapped onto a linear (one-dimensional) output channel (the mouth). The fact that these grammars may not always obviously resemble or reflect the underlying content of the message may be irrelevant to the question of where these solutions come from (Elman et al. 1996: 386).

Thus, grammar can be regarded as "a complex mapping function from humans' conceptualization of the multiple-dimensional physical world to the one-dimensional linearity of human speech" (Tai 1999: 140). But what is the role of word order in the Chinese grammar? In fact, as shown by the works of Greenberg (1966) and Hawkins (1983), in every language speakers talk about objects and actions and need to specify the relations among them, and word order is one device that allows them to do this. Nevertheless, as Gershkoff-Stowe and Goldin-Meadow (2002: 2) point out, languages may differ with regard to the extent to which they rely on surface order in the encoding of meaning, as well as to the range of permissible orders they exhibit.

A possible means of establishing to what extent one device (in our case word order) is relevant for information encoding is to examine the related function-to-form mapping, which involves the analysis of all the functions (linguistic meanings) that correspond to a specific form/device (in this case word order and its patterns). The next section presents this frame of analysis and the reasons why it is adopted in the present study.

3.1 Approach and Framework of Analysis

In this analysis, we take a cognitive-functional perspective to language acquisition, holding that the central issue of linguistics is the study of the relationship between form and meaning: "The basic tenet of the functionalist approach is that forms are derived from functions rather than vice versa" (Biq et al. 1996: 97). Specifically, this approach is concerned with the investigation of function-to-form mappings, namely the set of relations connecting linguistic elements and structures (forms) to meanings and concepts (functions). Recent neurolinguistic studies (Bornkessel et al. 2005) also support this view and show that such mappings are central to meaning construction: "this mapping process encompasses both syntactic properties (the "form"), semantic properties (the "meaning") and the interface between the two" (p. 221). Thus, one of the next goals for neural investigations of language consists in understanding the neural basis of the form-to-meaning mappings in the human brain:

> [As language] communicative power is essentially grounded in a flexible mechanism for mapping form onto meaning and vice versa, language comprehension can be characterized as the real-time association of linguistic forms (sounds, letters or gestures) with conceptual representations (Bornkessel et al. 2005: 221).

The frame of analysis we adopt is that of function-to-form studies (Long and Sato 1984), which expressly investigates the inventory of means learners use to express a specific function, as well as the reorganization over time of the balance of these means. One of its basic tenets is that learners already have access to a full range of concepts and meanings (functions) from their L1, but basically lack the means (forms) to express them in their L2.

The reasons why this framework is particularly suitable for our purposes are multiple: first, it is consistent with the multi-level nature displayed by Chinese word order functions, which cut across domains such as semantics, syntax, pragmatics, and discourse organization. As Long and Sato observe, "function-to-form analysis automatically commits one to multi-level analysis, since the entire repertoire of devices and strategies used by learners must be examined" (1984: 271). Secondly, it provides useful constructs for this research, including the notion of *interplay* among forms related to a specific function (and vice-versa), the concept of language transfer (that may be both positive or negative), and the concept of *functional load*, intended as either the degree of reliance of a language on a device to convey one or more types of information or "the relative degree to which an element of language is used, particularly in comparison with other elements" (Chovanec 2014: 20). Finally, this framework allows for an investigation into the correlation between specific function-to-form associations and different acquisitional stages, namely which forms are acquired earlier because they are easier or more intuitive and which are acquired later, because more complex, allowing to design didactic programs accordingly.

4 Chinese Typological Features and Their Impact on Word Order Functions

Chinese presents a number of interesting typological features, which have captivated scholars during the past few decades. Among the various classifications, Chinese is commonly referred as being an isolating, syllable timed, tonal, topic-prominent and discourse-oriented language. This section is devoted to a closer examination of the implications of Chinese typological traits to the inventory of its linguistic means, with reference to their corresponding functions. The following table summarizes the forms Chinese lacks, or relies less upon, if compared to English and Italian (column 1) and specifies the main functions such forms typically help encode (column 2) (Table 1).

Table 1 Form-function associations

Linguistic forms	Linguistic functions
Case/subject-verb agreement	Agentivity and semantic roles/syntactic functions (S, O, etc.)
Tense morphology Grammatical mood inflections (e.g. indicative vs. subjunctive or conditional)	Temporal settings and sequence of events Temporal, conditional, hypotetical relations between events/states Background vs. foreground information
Prosodic stress	Information status Focus
Article system	Definiteness and information status
Unmarked overt conjunctions	Inter-clausal relationships

Agentivity and Semantic Roles In contrast to English, Italian and most Indo-European languages, Chinese is an isolating language without a great number of affixational morphological processes (Chao 1968; Ho 1993; Chen 1995). Thus, Chinese lacks morphosyntactic markers, such as case and subject-verb agreement that overtly mark syntactic functions (subject, object, etc.) and signal semantic roles (agent, patient, etc.).

Temporal Sequence Another implication is that tense and mood are not marked on the verb; Chinese cannot rely on tense markers or verbal inflections to convey the time settings and the *consecutio temporum* of events and states.

Stress and Focus As Chen (1995) points out, Chinese is a syllable-timed language, which means that "stress does not play as important a role in conveying information status as that of stress-timed languages" (p. 218). As a consequence, focal elements (comparative focus, informational focus, etc.) and emphasis are usually not signalled through prosodic stress and need to be encoded by means of other devices.

Definiteness and Information Status Chinese lacks an article system, which usually marks definiteness in nouns through definite and indefinite articles and helps signal the information status of linguistic elements. This also entails the need for another means to encode givenness, definiteness and information status.

Inter-clausal Relationships While English and Italian require making interclausal relationships explicit through the use of conjunctions, in Chinese the use of overt clause connectives need to be "semantically motivated, that is, they are only used when needed to make semantic distinctions clear" (Li 2005: 50).[2] Hence, Chinese also needs to differentiate marked vs. unmarked interclausal relationship, but through a different form.

Chinese needs to rely on other means to encode the functions corresponding to the forms it lacks. The next sections are devoted to discussing how such functions (agentivity and semantic roles, temporal sequence, stress and focus, definiteness and referentiality, and unmarked inter-clausal relationships) are in fact associated with some specific word order forms and patterns. The lack of overt syntactic expressions of tenses in a Chinese verb, agent-patient roles in a Chinese pronoun and subjunctive mood is compensated by word order variations in a sentence for the information structuring of the sentence (Kirkpatrick 1993). This entails that word order has a high functional load, defined as the relative degree to which a linguistic element is used to encode meaning, particularly in comparison with other elements. This is likely to cause potential acquisitional difficulties since (1) learners are used to a wider range of devices and forms to express such functions, and (2) this one-form, multiple-function association can cause confusion, at least at early acquisitional stages.

[2] As Li observes, a fundamental difference between Chinese and other Indo-European languages like English and Italian is "the lack or marking in Chinese to indicate interclausal relationships" (Li 2005: 49).

5 Salience of Chinese Word Order Roles and Functions

Word order has been the focus of several linguistic investigations, which have explored its different aspects and phenomena according to their respective theoretical frameworks. In this section, significant studies are mentioned for reference and, when relevant, corpus-based investigations and neurolinguistic research integrate the description of each function-form association. The intent of this review is not so much to cover in detail all the studies, but to present them within a new integrated perspective as pieces of a puzzle that taken together can help clarify the functional load of word order in Chinese. With the progression of our discussion, it will become clear how a comprehensive account of such functions is crucial to an effective understanding of Chinese word order phenomena. These functions, in fact, are often investigated separately, failing to account for the interplay among all factors and principles and resulting in partial, and therefore less effective, descriptions and pedagogy of word order phenomena.

5.1 Agentivity and Semantic Roles

As highlighted in Sect. 3, the isolating nature of Chinese entails the lack of morpho-syntactic markers, such as case and subject-verb agreement, that overtly signal syntactic functions/semantic roles. In fact, it is word order that mainly provides cues that allow for identification of the roles of event participants. In a simple sentence presenting a transitive verb like (1a), native speakers interpret the pre-verbal NP as the agent (subject) and the post-verbal as the patient (object) (Table 2).[3]

Table 2 Word order and event participants

	Form	Cross-linguistic comparison
(1a) 老虎在吃狮子。 laohu zai chi shizi Tiger ADV eat lion	Word order (agent-verb-patient/SVO)	Basic, unmarked word order No morphological markers
(1b) The tiger is eating the lion	Word order (SVO) + S-V agreement	Rigid SVO order Morpho-syntactic markers (S-V agreement)
(1c) La tigre sta mangiando il leone the tiger eat-3SG the lion	Word order (SVO) + S-V agreement	(More flexible) word order Richer morpho-syntactic system (SV agreement: gender, number, etc.)

[3] There has been a long-standing debate over whether modern Chinese has basic SVO or SOV word order and whether there exist syntactic functions of subject and object. For a better account, see Chappell et al. (2007), Keenan (1976), and LaPolla (1993). Nevertheless, this issue is beyond the scope of the present work, and the notions of subject and object are employed in the following analysis because they are useful in outlining our cross-linguistic comparison.

While in English (1b) and Italian (1c) subject-verb agreement is available (3rd person singular conjugation of the verb) in addition to the surface order of constituents (SVO), in Chinese only the positional cue helps the reader understand who is the agent and who is the patient. This is consistent with the general tenet asserting "word order is one of the primary devices languages offer speakers to express who does what to whom" (Gershkoff-Stowe and Goldin-Meadow 2002: 377). Though, compared to inflectional languages, Chinese word order has a higher functional load with respect to this function (role assignment) because Chinese displays a higher degree of reliance on word order to convey this type of information; however, Italian and English L1 learners are used to more cues to identify and encode agentivity and subjecthood.

The relationship between semantic and syntactic roles is an aspect that is worth exploring further. Depending on the semantic relationship between the subject NP and the verb, Loar (2011: 25–28) for example distinguishes between *agents* (学生们在打扫教室。 "The students are cleaning the classroom."), *external causers* (大水冲毁了桥梁。 "The flood damaged the bridge."), *experiencers* or *affectees* (老奶奶摔倒了。 "The old grandmother fell down."), and *recipients* (篮球队获得了参赛的资格。 "The basketball team got the qualification to enter the competition."). Similarly, depending on the verb valency, the clause element direct object can display various roles. The most common is the *(affected) patient* (both animate or inanimate) (农民在挖地。 "The farmer is digging the ground"), which is different from the *resultant object* (农民在挖个洞。 "The farmer is digging a hole"), while the *locative object* is required by locative verbs (他们去电影院。 "They went to the cinema").

Nevertheless, although word order is the only means available to interpret the participants of events, it is a well-known fact that the linear sequence of constituents in Chinese can differ from that of subject-verb-object (or agent-verb-patient), according to different communicative needs or speaker's intentions. The next section is devoted to discussing these aspects.

5.2 Discourse-Related Aspects

Table 1 shows that, compared to English and Italian, Chinese also usually lacks the means other languages typically use to code functions such as definiteness, information status, focus, and unmarked textual cohesion (in the sense specified in Sect. 4). These functions belong to the discourse-pragmatic domain and are specifically investigated by discourse analysis.

Discourse analysis, as its primary goal, investigates "the decisions a speaker can make regarding what and what not to say, and the mechanisms and patterns that are available to him for implementing the results of those decisions" (Grimes 1975: 30). It looks at the context in which alternative forms occur and determines the different communicative functions they play in discourse, thus accounting for units larger

than the single sentence. Hence, it investigates aspects like information structure and status, communicative functions, and devices creating intra- and inter-sentential cohesion, which play a crucial role in explaining different word order patterns: "it is even impossible to achieve a correct grammatical analysis of a language without accounting for its discourse level conventions" (Pickering 1980: 4).

Studies on discourse analysis of Chinese began to flourish in the 1970s, and one of the most relevant and widely discussed issues was the 'topic-comment' nature of Chinese. Li and Thompson's (1976) new typology distinguished *subject-prominent* languages (like English) from *topic-prominent* languages (like Chinese); accordingly, Chinese sentences could be more adequately described as topic-comment rather than subject-predicate structures. Tsao (1990) later pointed out that topic and subject belong to different levels of grammatical organization: subject is a syntactic notion at the sentence level, while topic belongs to the level of discourse. Hence, he considers Chinese a discourse-oriented language where topic chains rather than sentences are recognized as basic functional units. A considerable amount of subsequent literature investigated topics and topic-related phenomena, suggesting that topic-comment structures should be considered the basic, unmarked sentence structure.[4] Unlike in English and Italian, topics can be base-generated and not extracted or moved from other loci[5]. Among the main features of the topic found in the literature, it represents the point of departure for discourse (Dik 1978), the centre of attention (Li and Thompson 1976), and the speakers' perspective (Grimes 1975); it also limits the applicability of the main predication to a restricted domain, setting its temporal, spatial, or individual frame (Chafe 1976: 50). The topic is generally agreed to be the NP occupying the first position in a sentence.[6] It tends to be definite (or generic) and conveys given information. These two features make it a convenient introduction to the main point of a message, which conveys new information and resides in the comment. Such features contribute to determining other important function-form associations related to specific positions in the sentence, which encode functions such as definiteness, focus, and information status (Table 3).

In (2a), the preverbal NP 客人 (*keren*) is interpreted as definite ("the guests"), whereas the same NP occurring after the verb in (2a') is perceived as being indefinite ("some guests"). While English conveys this function by means of articles and

[4] According to Ho (1993: 26), the relevance of the topic is such that "even in structures that would not be recognized as thematic because of obvious selectional relations between the sentence-initial element and the predication, there is a deliberate effort made by the speakers of Chinese to divorce the two parts" (i.e. topic and comment) (Ho 1993: 26).

[5] There is no unified consensus as to whether all topics are base-generated; however, most linguists agree that structures such as the so-called "hanging topics" cannot be derived through movement.

[6] There is no unified consensus as to whether all first NPs in sentences are to be analysed as topics. For a more detailed description of topic properties with reference to discourse analysis, see Li (2005).

adjectives, in (2a') definiteness is related to a specific position in the sentence.[7] Italian, on the other hand, uses both forms, displaying a more pragmatic word order than English. Definiteness tends to be correlated to another discourse property, namely information status, which is also often signalled through different word order patterns (Table 4).

Table 3 Word order and definiteness

	Form	Cross-linguistic comparison
(2a) 客人来了。 keren lai le guest arrive-MOD (2a') 来了客人了。 Lai le keren le arrive guests MOD	Word order (NP-V) NP is definite versus (V-NP) NP is indefinite	Word order (Pre- vs. post-verbal position helps encode definiteness and referentiality[a])
(2b) The guests have arrived. (2b') Some guests have arrived.	Definite article Indefinite adjective	Rigid SV order Definite/indefinite articles and adjectives
(2c) Gli ospiti sono arrivati. DEF.ART guests have arrived (2c') Sono arrivati (degli) ospiti. Have arrived (PART.ART) guests	Definite article + SV Versus Partitive article + VS	Pragmatic word order Definite/indefinite articles and adjectives

[a]For a more detailed account of definiteness and referentiality with respect to topics, see Chafe (1976)

Table 4 Word order and information status

	Form	Cross-linguistic comparison
(3a) 圣马可广场, 我已经去过。 Sheng Make guangchang, wo yijing qu guo. St. Marks' sq., I already visit ASP	Word order (OSV)	Word order Topic (first NP) encodes given information
(3b) I have already been to St. Marks' Square.	Prosodic stress	Rigid SVO order Prosodic stress
(3c) Piazza S. Marco, l'ho già visitata. St. Marks' sq., (I) PROCL. have already visited	Word order (OSV) Prosodic stress	Pragmatic word order Topic (first NP) encodes given information Prosodic stress

[7] Please note that this pattern is restricted to specific classes of verbs such as verbs of existence, appearance, etc. However, due to practical constraints, this paper cannot provide a complete discussion of the issue. Another means of allowing subjects to be interpreted as indefinite is provided by the verb 有 "to exist," when it occurs in the sentence-initial position. This form is very common at the beginning of a text/discourse, as for example with: 有一个学生,他的名字叫许仙, […]。 Lit. "There was a student, his name was Xu Xian, […]" (Ho 1993: 195).

In (3a), the first NP 圣马可广场 (*Sheng Make guangchang,* "Saint Mark's Square") is the locative object, but represents, in the specific context in which such a sentence can occur, old information (e.g. because it is already mentioned in the previous context). In such circumstances, it is natural for Chinese native speakers to place it in the sentence-initial, topical position, anchoring the utterance to the previous discourse. This is not the case in English, which has a more rigid syntactic order. Italian, inversely, adopts a similar order, with left dislocation of the object, and a coreferential proclitic pronoun is used in the following part (*l'*).

Furthermore, word order also signals the focus of an utterance (information that is new to the hearer and is of high information value), which is associated with the end of the sentence (Table 5). In this example by Hu (1995: 83), 学校 (*xuexiao,* 'the school') in (4a) is the topic, whereas the postverbal NP 新老师 (*xin laoshi*) is interpreted as the informational focus and as new information (a new teacher). Inversely, in (4a') 新老师 (*xin laoshi*) becomes the topic, while 到了学校 (*dao le xuexiao,* 'came to the school') is the focal message. While the referent of the initial NP is known to the listener, as it is co-textually or contextually accessible, elements in the sentence-final position have the highest communicative dynamism (CD) and increase the addressee's knowledge of the referent. English, on the other hand, displays a more rigid order, regardless of the focal element (4b vs. 4b'). Italian, conversely, has a more pragmatic word order and, like Chinese, it encodes the informational focus in (4c) and (4c') through the sentence-final position; however, other cues are also provided such as articles or stress, which also play an important role in focus marking.

Table 5 Word order and focus

	Form	Cross-linguistic comparison
(4a) 学校到了新老师。 xuexiao dao le xin laoshi school arrive-ASP new teacher (4a') 新老师到了学校。 xin laoshi daole xuexiao new teacher arrive-ASP school	Word order (SV) - Subject is definite versus (VS) - Subject is indefinite	Word order (Informational focus occurs in sentence-final position)
(4b) A new teacher came to the school.	Indefinite article vs.	Rigid SVO order
(4b') The new teacher came to the school.	Definite article	Articles and adjectives
(4c) A scuola è arrivata una nuova maestra. at school arrived INDF. ART. new teacher	Definite article + SV	Pragmatic word order (Informational focus also tends to occurs in sentence-final position) Articles and adjectives
(4c') La nuova maestra è arrivata a scuola. DEF.ART. new teacher arrived at school	Indefinite article + VS	Stress and prosody

Table 6 Word order and textual cohesion

	Form	Cross-linguistic comparison
(5a) 那辆车$_i$,Ø$_i$ 价钱太贵, na liang che $_i$ Ø$_i$ jiage tai gui that-CL car$_i$, Ø$_i$ price too high, Ø$_i$颜色也不好, Ø$_i$yanse ye bu hao Ø$_i$ colour also not good, 我$_j$不喜欢Ø$_i$, Ø$_j$不想买Ø$_i$ wo$_j$ bu xihuan Ø$_i$ Ø$_j$ bu xiang mai Ø$_i$ I $_j$ not like Ø$_i$,Ø$_j$ not want buy Ø$_i$.	Topic chain (Juxtaposed sentences linked by co-referent zero NPs); adverbs	First NP (topic) as a linking cue, through subsequent non specification of coreferential NPs Topics as interclausal connectives
(5b) That car is too expensive, and its colour is not good either, so I don't like it and don't want to buy it.	Overt conjunctions	Overt interclausal connectives Coreference: pronouns
(5c) Quella macchina è troppo costosa e pure il colore non è bello, quindi non mi piace, non la voglio comprare.	Overt conjunctions	Overt interclausal connectives Omission of coreferential subjects

From an SLA perspective, it is noteworthy that Italian adopts the same word order changes as Chinese in all three examples (2c, 3c, and 4c) and tends to place old information toward the beginning of the sentence and new information toward its end, regardless of its syntactic function. Italian has proved to be more sensitive to topichood and discourse needs than English and often displays a more discourse-oriented word order. This might predict that Italian L1 learners would find the acquisition of information status and other discourse related functions less challenging than English L1 learners; however, Italian tends to mark the same function through more than one form and provides more explicit cues.

Another important goal of discourse analysis is to describe how languages combine clauses to form larger units of text. This is particularly important in SLA because a correct description of linking patterns "is crucial to the production of natural discourse" (Li 2005: 1) (Table 6).

Clause linking is manifested differently in the three languages: in English (5b) and Italian (5c) the four clauses are connected through overt conjunctions, resulting in coordination and subordination linking. Conversely, no overt connectives are used in the Chinese counterpart (5a). Instead, what ties the sentence together is the topic shared by the clauses, creating a topic chain (for a detailed account, cf. Chu 1999; Li 2005): 那辆车 (*na liang che*, "that car") is placed at the beginning of the sentence and is then left unspecified (encoded by zero anaphoras, Ø[8]) in the following clauses where it is coreferential with one of the arguments/NPs of each clause's predications. In Chinese, topic chains abound: statistical data show approximately one third of clauses in narrative text involve the use of topic chains (Li 2005: 3). Again, it is a word order related phenomenon (i.e. the choice of the first NP/topic,

[8] In this example, there is actually a second topic chain: the topic 我 (*wo*, "I") is coreferential with the subject of the last predication 也不想买 (*bu xiang mai,* "don't want to buy") and is therefore omitted.

regardless of its syntactic relationships within the following clauses) that encodes the function of textual cohesiveness. Again, from a CSLA perspective, this might involve difficulties for Italian L1 students who are used to more explicit means that express the relationship between clauses.

5.3 Cognitive Principles: Temporal and Spatial Sequence

In the last section, word order was described as an important device elucidating discourse- and information status-related functions. This section presents studies on word order conducted from a cognitive-iconic perspective "as a function of the perception of real-world events" (Ho 1993: 137). Such studies suggest that Chinese relies on word order also to convey other kinds of information such as, for example, the temporal sequence of events and states, and in this way compensates for the lack of forms such as verbal tense and grammatical mood.

As Huang (2005) observes, "[i]n recent years there has been growing awareness of the importance of studying language and cognition in its context of use. […] On this view, the mind is not a formal system, but is an embodied system, and language is not independent of the rest of cognition" (p. 1). This view has been corroborated by neurolinguistic findings since it is "consistent with the evolutionary view that neural circuits evolved to regulate order and reiteration in motor control, and have an important role in speech production and syntax" (Lieberman 2007). In this sense, neurolinguistic studies suggest that the mechanism underlying linguistic structures is an "action–perception simulation" in which language is grounded via simulation or reactivation of brain states associated with motor, perceptual, and internal experience. Moreover, according to Glenberg and Gallese (2012), "syntax emerges from modifying [cognitive] hierarchical control of action to produce hierarchical control of speech" (p. 914). In fact, observations of Chinese language patterns have led to the hypothesis that certain syntactic phenomena are controlled by universal and culture-specific conceptual schemata. This hypothesis has been widely investigated by Tai (1985, 1989, 1993, inter alia), who holds that "syntactic forms reflect human conceptualization of reality in different physical and cultural environments" (Tai 2005: 12). Tai (1985, 1989, 1993) identified six word order principles governing Chinese word order: Principle of Temporal Sequence, Principle of Temporal Scope, Whole-Before-Part, Container-Before-Contained, Trajector-Landmark, and Modifier-Before-Head.[9] One of the principles found to play a major role in shaping word order is the Principle of Temporal Sequence (PTS):

> The relative word order between syntactic units is determined by the temporal order of the states that they represent in the conceptual world (Tai 1985: 50).

[9] Following Tai, other linguists, such as Hu (1995), Ho (1993), and Loar (2011) investigated this issue further and elaborated a more comprehensive taxonomy of word order principles. Due to space constraints, such taxonomies and principles cannot be discussed in detail here.

Table 7 Word order and temporal sequence

	Form	Cross-linguistic comparison
(6a) 他坐车 (V1) 到这里 (V2)。 Ta zuo che dao zheli He sit bus arrive here (6a') 他到这里(V1) 坐车 (V2)。 Ta dao zheli zuo che He arrive here sit bus	Pred1<Pred2 => Time(event1)<time(event2)	Word order Principle of Temporal Sequence
(6b) He came here by bus. (6b') He came here to take a bus.	Consecutio temp. + Conjunctions + Subordinate clauses	Verbal tense system, Consecutio-temporum and conjunctions
(6c) È venuto qui in autobus. (6c') È venuto qui a prendere l'autobus.		

In other words, what is perceived to happen earlier in the time sequence of events and what exists earlier in the conceptual and cognitive experience tends to be mentioned earlier in the sentence. This allows for an explanation of another function-to-form association related to word order (Table 7). Sentences (6a) and (6a') comprise exactly the same constituents and only differ in the sequence of the two predicates. PTS helps explain their remarkable differences in meaning as shown in the English translations. In (6a), 坐车 (*zuo che* "take a bus") precedes 到这里 (*dao zheli* "arrive here"), which indicates that the action of "taking a bus" occurs before the action of "arriving here." The inverse sequence in sentence (6a') indicates the reverse temporal order. This is a remarkable L1-L2 difference: in English and Italian, temporal relations are systematically indicated by tense, *consecutio temporum*, or temporal/final subordinates and not by the linear sequence of words; in Chinese, on the other hand, the order of elements iconically and straightforwardly reflects the order in which the events occur.

Another crucial principle is that of Whole Before Part (WBP) or General Preceding Particular:

> Constituents representing a global scope (general or whole) should precede those that represent a smaller scope (particular or specific) (Ho 1993: 165).

The principle of General Preceding Particular governs the order of several linguistic elements, including temporal expressions (e.g. 2002 年 11 月 25 日下午 4 点) and locative expressions (e.g. 北京市海淀区颐和园路5号), which both in English and Italian are expressed in the opposite order (At 4.00 p.m. on 25 November 2003) and (5 Yi He Yuan Lu, Haidian, Beijing, China).

Actually, Tai observes how such cognitive principles "subsume under one general principle a large number of word order rules hitherto regarded as unrelated" (1985: 63). Because of space constraints, we cannot cover all the rules that, according to some scholars, they could help describe and learn, which include among others serial verb constructions, pre-verbal occurrence of temporal and locative adverbials, post-verbal occurrence of complements, *ba* and *bei* constructions,

comparative structures, and the order of clauses in the complex sentence, among others.[10] From a CSLA perspective, Jiang observes how such principles have contributed greatly to explaining errors as they can easily account not only for "word order errors due to ungrammaticality but also those due to inappropriateness" (2009: 81). Moreover, as Loar (2011) claims, rules governing different constructions appear to be "arbitrary and hard to remember," but if those rules are understood as manifestations of logical cognitive principles, "some of the arbitrariness disappears" and word order teaching becomes easier and more effective (xix). It is noteworthy to mention that this claim is supported by the corpus-analysis of error rates conducted by Jiang, who noticed how, among other word order principles, PTS "has been found to have the widest application range in explaining Chinese L2 word order errors since 249 (62%) out of a total of 404 categorized word order errors violate PTS" (2009: 200).

From an acquisitional viewpoint, this domain highlights significant cross-linguistic differences. As Jiang (2009) summarizes,

> Chinese word order is likely to be governed by underlying principles, such as the Whole-Before-Part Principle (WBP) in expressing spatial and temporal relationships and the Principle of Temporal Sequence (PTS) in arranging word order of relevant events and situations. In contrast, English follows Part-Before-Whole Principle in expressing spatial and temporal relationships and does not strictly observe PTS in arranging word order of relevant events and situations (p. 56).

Italian is more similar to English in this sense as it also follows Part-Before-Whole Principle (temporal and locative expressions present this pattern as well) and does not follow PTS either. Hence, unless explicitly made aware of these differences, Italian L1 learners might transfer L1 order patterns, such as part-before-whole, when producing Chinese sentences (in this case, an example of negative transfer).

6 The Interplay of Factors and Its Implications for CSLA

As we have seen, word order presents a one-form, multiple-function association with regard to sentence-initial, preverbal, and postverbal positions. This entails that functions sometimes compete with each other for the same position in the sentence. Below, an interesting case is reported that displays conflict between semantic and pragmatic functions with respect to the sentence-initial position. A possible analysis is proposed that makes reference to research based on the analysis of corpora and on neurophysiological findings.

As seen, the sentence-initial/preverbal position is associated with agentivity and subjecthood. However, a number of linguists share the view that, due to the

[10] For a more detailed introduction to cognition-based principles underlying Chinese word order and its implications for CSLA, please see Jiang (2009). For a comprehensive account of the applicability of cognitive principles to the explanation of syntactic rules and constructs, please see Loar (2011).

Table 8 Word order, animacy, and pragmatic inference

Basic propositional content	7. He ate an apple.	8. The tiger ate the rabbit.	9. The tiger ate the lion.
AVP – SVO	7a. 他吃了苹果。 He eat-ASP apple	8a. 老虎吃了兔子。 Tiger eat-ASP rabbit	9a. 老虎吃了狮子。 Tiger eat-ASP lion
PAV – OSV	7b. 苹果他吃了。 Apple he eat-ASP	8b. 兔子老虎吃了。 Rabbit tiger eat-ASP	9b. 狮子老虎吃了。 Lion tiger eat-ASP
APV – SOV	7c. 他苹果吃了。 He apple eat-ASP	8c. ? 老虎兔子吃了。 Tiger rabbit eat-ASP	9c. * 老虎狮子吃了。 Tiger lion eat-ASP
VPA – VOS	7d. 吃了苹果,他。 Eat-ASP apple he	8d. 吃了兔子,老虎。 Eat-ASP rabbit tiger	9d. 吃了狮子, 老虎。 Eat-ASP lion tiger
PVA – OVS	7e. 苹果吃了,他。 Apple eat-ASP he	8e. ? 兔子吃了, 老虎。 Rabbit eat-ASP tiger	9e.? 狮子吃了,老虎。 Lion eat-ASP tiger
VAP – VSO	7f. * 吃了他,苹果。 Eat-ASP he apple	8f. * 吃了老虎,兔子。 Eat-ASP tiger rabbit	9f. * 吃了老虎,狮子。 Eat-ASP tiger lion

discourse-oriented nature of Chinese, the preverbal position is more associated with discourse functions (new information, high referentiality, definiteness, and topichood). Is word order then more immediately associated with semantic, role-related constraints or with discourse functions (such as information status) and reference-related aspects? This issue has created quite a heated debate, but it is beyond the scope of this analysis to address each position or to try to persuade the reader towards any particular theory. However, the findings of three significant studies will be mentioned that shed light on the interplay of multiple functions related to the same word order form.

The first study was conducted by Tai (2008) who considered three sets of allosentences, namely sentences with the same propositional content (the same agent, verb, and patient) but with different informational content (different word order patterns which correspond to different context or communication needs[11]) and asked native speakers of Beijing Mandarin to evaluate their acceptability (Tai 2008: 32–34) (Table 8).

The first set (7a-f) presents an animate agent and an inanimate patient, and all possible orders are accepted (except VAP-VSO) by Beijing native speakers since no ambiguity of interpretation is displayed regarding who eats what. In sentences (8a-f) and (9a-f), both NPs are animate; however, in (8) world knowledge predicts it is unlikely that the rabbit eats the tiger; thus, sentences displaying all word orders (except VAP-VSO) are expected to be acceptable as in (7) because participants can be correctly disambiguated through pragmatic inference. Still, native speakers feel uncomfortable with (8c) (APV-SOV word order) with the intended meaning as "the tiger ate the rabbit" because of this agentivity conflict. In the third set, both NPs are

[11] Marked word order patterns like SOV or VOS are possible and acceptable in specific contexts and with specific communication purposes.

likely to be either the agent or the patient, and thus (9c) is ungrammatical when the intended meaning is "the tiger ate the lion." Sentences (7c), (8c), and (9c) taken together show that the functional role of word order arises to meet the need to avoid ambiguity in semantic functions (such as agent versus patient), in that disambiguation processes are sensitive to semantic traits such as animacy; only subsequently can word order encode information status and discourse functions.

A corpus based study (Huang and Chui 1994) that statistically examines a corpus of oral conversations and narratives supports this analysis: "word order in Chinese is […] more sensitive to valency roles than to discourse pragmatics, though both factors are highly predictive of word order" (p. 165). Pre- versus post-verbal positions of nominal arguments are indeed strongly associated with their information status. However, this study proves that such an association is much weaker than that between word order and valency roles: statistical data show that 100% of A (agents) and 93.4% of S (subjects intended as the sole argument of intransitive verbs) occurred preverbally compared to "only" 88% given NPs. They also claim that, when there is a conflict between semantic and pragmatic functions, inflectional languages typically resolve the conflict "by availing themselves of a syntactic role changing process (e.g. passive), while Chinese relies on a complex interplay between semantics and pragmatics for its resolution" (p. 166). Neurolinguistic findings also corroborate this analysis: Bisang et al. (2013) used the method of ERP (Event-Related Potentials)[12] to investigate the neuropsychological signature of Chinese sentence interpretation with regards to agents/subjects. They found that, despite the weak status of subjecthood in Chinese, agent/subject interpretation of sentence-initial NPs is also favored in which the processing system assigns an agent/subject interpretation to the first ambiguous argument. In other words, the first NP is preferentially analyzed as agent and only afterwards re-analyzed in terms of given-new information. These studies suggest that there is a strong form-function association between word order and argument roles, and subsequently, between word order and information status. From a pedagogical perspective, this can imply that the former function-form association should be taught before the latter.

In other cases, the principles discussed in the present study often do cooperate and actually converge, as many scholars have noticed. For example, the Principle of Temporal Sequence is actually found to be statistically and intuitively a valid explanation of the canonical word order in Chinese (SVO) since the subject usually occurs before the object in that "S is earlier in conceptualization than O" (Ho 1993: 143); in other words, the subject initiates an action or an experience and therefore is conceptualized before the object, which is usually "the target of the action or the entity experienced and processed by S" (Ibid.). The same considerations are valid for given-new information order, since given info is also earlier in conceptualization

[12] Event-related potentials (ERPs) are very small voltages generated in brain structures in response to specific events or stimuli (in this case linguistic input). Recording event-related brain potentials (ERPs) is a psycholinguistic technique that allows for a good understanding of the stages involved in language processing and their timing since it has very good temporal resolution. For further information, see for example Kaan (2007).

than new information. Moreover, conceptual considerations can help explain certain constraints concerning word order movements, such as patient/object preposing. This is exemplified by the following pair of sentences:

(10a) 他把黑板上的字擦了。
He *ba* blackboard on *de* character erase MOD
He erased the characters on the blackboard.

(10b) *他把黑板上的字写了。
He *ba* blackboard on *de* character write MOD
He wrote the characters on the blackboard.

Only patients that already existed before the onset of the action denoted by the verb takes place can occur before the verb. For example, 黑板上的字 (heiban shang de zi, "characters on the blackboard") in (10a) can occur preverbally with the BA construction, while resultant objects (such as the same constituent in 10b) cannot since, according to the PTS, the expression denoting the action must always precede the expression denoting its result. Considerations of this kind can serve as a valid integration of the presentation and explanation of some grammatical topics, both in Chinese teaching practice and material design, in that they can help students understand and remember grammatical rules and patterns, which otherwise would need to be learnt by heart.

7 Italian L1 Learners of Chinese: A Preliminary Study

In what follows, a preliminary study conducted on Italian L1 learners of Chinese as a second language will be briefly presented. The test was partly designed based on Jiang's (2009) study of CWO errors committed by English L1 students of Chinese as a second language. One of the main goals of the study was to test whether there is a correlation between L1-L2 differences with respect to form-function mappings and the percentage of the related word order errors in L2 production/comprehension due to L1 transfer. Specifically, with respect to the present analysis, the test aimed to gather some empirical evidence to verify the following four hypotheses, based on the analysis in Sect. 5:

(i) Just as in Chinese, in sentences such as (2c') Italian tends to place indefinite subjects after the verb. Thus, with sentences of the type in examples (2a–a'), Italian L1 learners might find it easier to choose the correct order for definite/indefinite subjects in Chinese.
(ii) Along the same line, both Italian and Chinese tend to associate the preverbal position with given information and the postverbal position with new information. Thus, Italian L1 learners might perform relatively well in encoding information status (given-new transition) in sentences of the type in examples (3a–3c).
(iii) Unlike Chinese, Italian follows the part-before-whole order. Thus, Italian L1 learners that have not been made aware of this difference might not order time/space expressions in Chinese according to the Whole-Before-Part principle.

(iv) Italian L1 learners are used to overt connectives and might have difficulties in understanding sentences of the type in examples (6a–a'), where the inter-clausal relationship needs to be inferred from the relative order between the two clauses.

Hypotheses (i) and (ii) involve positive L1 transfer, and thus a relatively lower percentage of word order errors is expected in related translation tasks, whereas hypotheses (i) and (iv) involve negative L1 transfer, and a higher percentage of word order errors is expected in related translation tasks.

7.1 Participants, Data Collection and Analysis

Participants in this study were students enrolled in the MA degree course in Editorial Interpreting and Translation at the University of Venice, Italy. The sample comprised 24 students who gained their BA in Chinese studies (or related) in 12 different Universities in Italy and constituted an interesting and diverse sample, representative of BA-level Italian L1 students of Chinese. For each of the three BA years, students were provided every week with an average of six to twelve hours of Chinese lessons (including both grammar and language practice lessons); 16 out of 24 students had attended a language course in a Chinese University. The test consisted of a translation task comprising 40 sentences that were translated mainly from Italian to Chinese. Sentences were designed according to the word order error taxonomy developed by Jiang (2009) and aimed to test grammar-domain, discourse/functional-domain, conceptual-domain and sociocultural-domain word order errors (see Jiang [2009] for a detailed description). The test was anonymous to prevent students from feeling the pressure of making mistakes.

7.2 Results and Discussion

The study only aimed at testing word order errors; thus, other types of mistakes were not considered. Moreover, this section does not engage in providing a complete account of the errors; only data that verified the above-mentioned hypotheses is discussed.

(i) Definiteness: in sentences of the type in examples (2a'-c'), 66.6% of students correctly placed the indefinite subject postverbally (e.g. translating the sentence 'E' arrivato qualcuno' (Someone has arrived) with '有人来了' or similar).
(ii) Information status: in sentences of the type in example (3), 79.1% of students correctly placed the informatively given object before the verb (e.g. translating the sentence 'Quel libro l'ho già restituito' (I have alredy returned that book)

with sentences like '那本书, 我已经还回去了'; four of them anticipated the object with a BA construction).

(iii) When ordering locative expressions, 41.6% of students correctly followed the Whole-Before-Part order, whereas the remaining 58.4% still followed the Italian reverse order (e.g. when translating 'Il mio indirizzo è Via Verdi 5, Milano - Italia' with '我的地址是: Verdi路, 5号, 米兰, 意大利').

(iv) When asked to translate the minimal pair of sentences: '我进去买票' (lit. I enter-go buy-ticket, 'I will go inside to buy the ticket') vs. '我买票进去' (lit. I buy-ticket enter-go, 'I'll buy the entrance ticket'), both presenting an opposite causal relationship between the clauses expressed only through the different order of words (cf. example 6), 54.1% of the students failed to perceive a difference between the meaning of the two sentences and provided the same Italian translation for both of them.

Overall, with sentences involving a positive L1 transfer, students performed relatively better (error rates 33.3% and 20.9%), while with sentences involving a negative L1 transfer error rates were higher (58.4% and 54.1%). This confirms the hypotheses (i-iv) and highlights how positive transfer has a relatively higher impact than negative transfer. As a preliminary study, the sample of participants was very limited as well as the number of tested sentences; thus the results have limited generalization power. However, it still constitutes an interesting starting point to be further developed in future research.

8 Conclusions

This study has confirmed that word order as a linguistic device plays a fundamental role in information encoding and management in Chinese, in that Chinese compensates for the lack of morphosyntactic markers, prosodic stress, and other linguistic forms by relying heavily on a common device, namely the linear order of sentence elements, as well as on a variety of word order related phenomena. Different word order patterns are used to encode a number of functions pertaining to various domains, including semantics, syntax, discourse, pragmatics, and conceptualization-related processes. Analysis of such functions has provided a number of interesting insights, which are summarized below:

1. The sequence of linguistic elements in a Chinese utterance is the result of a complex interplay of factors: rearrangement of word order marks functions such as agentivity, definiteness, information status, focus and cohesiveness in discourse, as well as temporal and conceptualization sequences of events and states.
2. CWO presents a one-form, multiple-function association with regard to different word order patterns and positions in the sentence.
3. As a result, word order in Chinese has a high functional load, both intended as degree of reliance of a language on a device to convey one or more types of

information and as the relative degree to which a language device is used, particularly in comparison with other devices.
4. It is often claimed that Chinese word order is freer than in other languages like English; however, such a claim can be quite misleading, in that it is subject to constraints. Rather than free, CWO should be described as flexible, in the sense that it encodes different functions and meanings, but at the same time it seeks to preserve the clarity of the message, as shown in Sect. 6.

These insights have a significant impact on CSLA, both in terms of teaching theory and practice. We therefore conclude with some remarks and suggestions for further research:

1. Both Italian and English L1 students are used to having many devices to convey different functions in their L1. However, in developing their interlanguage, they need to cope with the lack of such forms in Chinese (i.e. inflections, article systems, etc.).
2. Students also need to cope with the difficulty of mastering the different functions CWO displays and need to understand how the interplay of such functions works, which is rather complex and not easy to acquire if not properly taught. This entails acquisitional difficulties for students because compared to other L2 linguistic features, L2 word order is influenced more by L1 word order (James 1998).
3. Instruction should be organized by taking into account both L1 - L2 similarities and differences, which can help single out potential difficulties learners are likely to encounter in their function-to-form mapping development, due to L1 transfer. Moreover, instructions should be organized into different stages according to potential acquisitional difficulties, and learners' awareness of the different information CWO encodes should be gradually raised. This would allow learners to develop their inventory of linguistic means and rebalance their interlanguage devices.
4. A comprehensive function-to-form mapping, clarifying what forms and patterns encode what functions and meanings, can be a crucial tool for effective teaching and learning. Empirical studies have shown that making learners explicitly "aware of positional cues to constructional forms, or cues to correspondence between these forms and their meanings" has been found to be more effective in construction learning "compared to implicit learning conditions where such awareness is not promoted or demonstrated by learners" (Robinson and Ellis 2008: 14–15).
5. In this sense, CSLA requires one to commit to a multi-level analysis, as the development of the whole repertoire of devices and strategies used by learners must be examined, including the interplay of ways to express meaning. According to research in SLA, this interplay is very likely to be closer to L1 at the beginning and then slightly move towards that of L2 in later stages of acquisition. The high functional load of word order is a feature that requires particular consideration when investigating this development.
6. Lastly, CSLA needs to address more thoroughly discourse- and cognition-related issues. The difference between the syntactic level and the discourse level

are also often not clear, thus both aspects should be addressed in Chinese teaching practice. Moreover, cognitive word order principles such as PTS and WBP may constitute powerful tools in CSLA. Pitkin (1993) observes how "it is of most serious interest to note the regularities and systematicalness with which the Chinese language observes pragmatic principles of discourse organization" (i–ii). Such aspects allow an innovative and effective analysis of phenomena connected with linear order in Chinese, and should be further investigated and taken advantage of in Chinese teaching practice.

Chinese word order acquisition is a crucial research issue. In Tomlin's words, "the new second language learner often is intrigued by […] word order differences in the new language [though it] remains a tantalizing problem, both to describe the pertinent facts of word order variability and to provide some explanation for the great diversity one can see cross-linguistically" (Tomlin 1986: 1). This article hopes contribute to an innovative, integrated approach accounting for all different functions and domains, which can be of great help for an effective understanding and teaching of Chinese word order phenomena.

Acknowledgments The author would like to acknowledge the support of the China Studies Centre at the University of Sydney through the provision of the 2017 CSC Research Students Support Grant.

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