

Discourse Topic Continuity and Syntactic Reduction

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## DISCOURSE TOPIC CONTINUITY AND SYNTACTIC REDUCTION

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An important aspect of current syntax theory is to define environments in which certain grammatical processes are prevented from taking place. Within the generative grammar framework, for example, the structure preserving hypothesis (e.g. Emonds 1976), the lexical integrity hypothesis (e.g. Chomsky 1970, Selkirk 1982), the Condition on Extraction Domain (e.g. Huang 1982, Chomsky 1986) and the Empty category principle (e.g. Chomsky 1986, Baltin 1991) are all designed to restrict syntactic movements in such a way.

These constraints are usually assumed to be universals. Problems arise when examples are discovered that do not fit the general patterns which form the basis of these constraints. The common practice is to look for explanations for the exceptions instead of abandoning the constraints. This is also the approach adopted in this paper in an attempt to account for a unique reduction process at the sentence level.

### 1. A Peculiar Reduction Process

It is generally agreed that many Chinese syntactic processes, such as passivization, relativization and topicalization, are similar to corresponding processes in other languages since they operate in comparable ways and are subject to the same constraints. It is also widely acknowledged that certain processes at the sentence level in Chinese behave so unusual that they cannot be easily classified as any commonly assumed syntactic operation. The most often cited example is a reduction process represented by the contrast between (1a) and (1b), first pointed out by Chao (1968). The sentence (1a) is taken from field work notes of actual conversation and is meant to be understood as 'my maid is a Japanese woman', but its surface form can hardly be interpreted as such. The only transparent reading for (1a) is 'I am a Japanese woman'. In order to obtain the intended reading directly from the surface form, the sentence would have to assume the form of (1b).

(1) a. *Wo shi Riben nüren.*  
I be Japan woman  
'(literally) I am a Japanese woman.'

b. *Wo de yongren shi Riben nüren.*  
I Poss. maid be Japan woman  
'My maid is a Japanese woman.'

The intended reading of (1a) is available, however, when (1a) appears as part of a conversation about the maid in every participant's home. If the first speaker utters a sentence like (2a), the second speaker can express his opinion about the same subject matter with a sentence like (2b), which has a structure similar to (2a) but has a reduced subject NP. When the third speaker repeats the same proposition, he can

choose (1a) as his turn, with the subject NP further reduced. In this context, (1a) will produce the same interpretation as (1b) does.

(2) a. *Wo de yongren shi Zhongguo nüren.*  
I Poss. maid be China woman  
'My maid is a Chinese woman.'

b. *Wo de shi Feilübin nüren.*  
I Poss. be Philippines woman  
'Mine is a Filipino woman.'

Given the fact that (1a) can produce the same interpretation as (1b) does but (1a) has less constituents, it can be assumed that (1a) is derived from (1b) via some type of reduction process. The same line of analysis can be applied to the contrast between (3a) and (3b). The intended reading for (3a) is 'I donate one hundred and fifty catty of wheat', but it is impossible to get this reading from (3a) without any context. As a matter of fact, most native speakers consider (3a) unacceptable. There are a few who accept (3a), but they interpret it as 'I weigh one hundred and fifty catty.' A sentence like (3b) is needed in order to produce the intended reading.

(3) a. *Wo yibai wushi jin.*  
I one hundred fifty catty (half-kilo)

b. *Wo juan yibai wushi jin maizi.*  
I donate one hundred fifty catty wheat  
'I donate one hundred and fifty catty (half-kilo) of wheat.'

The most fascinating feature of (3a) is that it is an excerpt from a short story by an author well-known for his colloquial style (Haoran 1965), and no one has complained about unacceptable sentences or discrepancies in the flow of thought when people are asked to read the story. Apparently, (3a) is acceptable in the context of the short story. The story describes a community meeting on the funding for a public project. After two participants of the meeting have pledged certain amount of wheat (as fund for the project) by saying (4a) and (4b), the hero of the story utters the statement in (3a) to make his pledge of donating a larger amount of wheat.

(4) a. *Wo juan bashi jin maizi.*  
I donate eighty catty wheat  
'I donate eighty catty (half-kilo) of wheat.'

b. *Wo juan yibai jin.*  
I donate one hundred catty  
'I donate one hundred catty (half-kilo).'

The speakers of (4a), (4b) and (3a) are discussing the same subject matter and expressing the same idea even though (4b) only contains some of the constituents of (4a) and (3a) has even less constituents. Given the fact that the propositions in these three sentences are the same and what is not overtly mentioned in (4b) and (3a) is clearly understood, it is reasonable to assume that these speakers choose the same sentence structure to make their pledge. In other words, (4b) has the same

structure as (4a) does and its surface form is produced by a reduction process. The same process is also responsible for the derivation of the surface form of (3a) but the reduction is more thorough in this case.

The contrast between (5a) and (5b) can also be attributed to this type of reduction. (5a) is taken from a comedy talk show about misunderstanding in restaurants. A waitress is taking orders from her customers. When she summarizes the orders, she says (5a) to one of the customers to mean 'the dish you ordered is stir-fried pork-liver'. The customer interprets the sentence literally according to its surface form and is offended. The waitress then apologizes by claiming that the sentence she intended to say is (5b).

- (5) a. *Ni shi chao zhugan.*  
       you be stir-fry pork-liver  
       '(literally) you are stir-fried pork liver.'
- b. *Ni dian de cai shi chao zhugan.*  
       you order Comp. dish be stir-fry pork-liver  
       'The dish which you ordered is stir-fried pork-liver.'

The incident is actually not the waitress's fault. In summing up the orders, she says (6a) first and then (6b). The sequence of (6a), (6b) and (5a) sounds very natural to the native ears. The misunderstanding occurs because this particular customer is not paying attention to the context and the surface form of (5a) happens to allow a literal reading that is offensive.

- (6) a. *Ni dian de cai shi Gongbao jiding.*  
       you order Comp. dish be Kungpao chicken-cube  
       'The dish which you ordered is Kungpao chicken.'
- b. *Ni dian de shi tangcu yu.*  
       you order Comp. be sugar-vinegar fish  
       'The one you ordered is sweet-sour fish.'

Apparently, (6a), (6b) and (5a) have the same sentence structure and are about the same subject matter. What is not said in (6b) and (5a) is the portion which is identical the corresponding part of (6a) and is clearly recoverable from the context. The surface form differences among these sentences are due to the reduction process under discussion here.

A very important characteristic of this reduction process is its power. In (3a), the process cuts across constituent boundaries and operates on the verb and part of its complement. In (1a), the reduction invades a single noun phrase and takes away the head of the subject NP as well as the morpheme *de* which is usually needed to signify the head-specifier relation within an NP. In (5a), the operation invades an island and strips the complex NP of most of its components. This reduction is obviously more powerful than most syntactic processes.

Another characteristic of this reduction process is its context dependency. This type of reduction does not apply randomly. It takes place only when there exists a sequence of sentences that have identical structure and are about the same subject

matter. Only the terminal sentences in the sequence are reducible and only the repetitive part of the sentences can be reduced. The context is a necessary condition for the reduction. The interpretation of the reduced sentences depends on the context as well. The surface form of these reduced sentences may or may not have a literal reading and their full interpretation is seldom directly detectable from their surface form. Only when the deleted parts can be recovered, namely, when there is a clear context to indicate what has been deleted, can the complete interpretation of the reduced sentences be inferred from their surface form.

Since the interpretation of this type of reduced sentences depends on the context, such reduced sentences are always ambiguous in isolation. Sentence (1a), for example, has the literal reading 'I am a Japanese woman' and numerous possible interpretations. Given an appropriate context, the sentence can mean 'My maid is a Japanese woman', 'My friend is a Japanese woman', 'My teacher is a Japanese woman' and many others. The surface form of (3a) does not have a literal interpretation, but it allows almost infinite number of readings when contexts are provided. The reading 'I weigh one hundred and fifty catty' is the easiest to get because the most common connection between a person and a weight measurement is perhaps the person's own weight. Given a context of any other connection between a person and the weight of anything, (3a) will yield a relevant reading.

Note that these reduced sentences are ambiguous only when they appear in isolation. If there is a well defined context, there is usually only one possible reading for each of such sentences. The potential ambiguity of these sentences thus does not hamper proper communication.

## 2. The Nature of the Reduction

The reduction under discussion here seems to have so many unusual properties that its classification and analysis is inevitably problematical. An easy solution to this problem is to simply refute the acceptability of these reduced sentences. Tsao (1979), for example, claims that sentences like (1a) are syntactically ill-formed and semantically anomalous. Anyone who utters such a sentence is said to be subject to ridicule. If all the reduced sentences are ill-formed, the reduction process itself must be illegitimate and there would be no need to account for it.

This line of analysis, though simple and straightforward, is not built on a solid data base. These reduced sentences are not made-up examples from some armchair linguists, but are all cited from field work notes or quoted from works of well known authors. Given the appropriate context, people accept all of them and do not complain about anomaly. These sentences cannot be simply brushed aside and there should be an account for their derivation and properties. Tsao's argument that these reduced sentences are ill-formed syntactically is partially correct, though. Given the fact that the reduced elements in these sentences are not directly recoverable from within the sentences themselves, the reduction is not a pure syntactic process and may not be licit in the syntax. An account for the properties of these reduced sentences has to be found in the interface between syntax and other components of the grammar.

Another line of analysis is to eliminate the process of reduction altogether and

appeal to direct generation of all these sentences. This is in essence the approach of Chao (1968). Within his framework, 'the grammatical meaning of subject and predicate in a Chinese sentence is topic and comment, rather than actor and action' (Chao 1968:69). For him, 'the subject is literally the subject matter to talk about, and the predicate is what the speaker comments on when a subject is presented to be talked about' (Chao 1968:70). A sentence is acceptable 'so long as there is some general relationship of topic and comment between subject and predicate' (Chao 1968:70). Given this loose aboutness relation between a topic and its comment, Chao can treat sentences like (1a), (3a) and (5a) all as legitimate topic comment constructions without further stipulation.

An obvious problem for Chao's analysis is that the so-called aboutness relation is not a well defined notion. It is too vague to have any significant impact on any meaningful analysis. According to his analysis, the NP *yibai wushi jin* 'one hundred and fifty half-kilo' in (3a) should be the comment of the topic pronoun *wo* 'I', but it is really hard to imagine how a weight measurement is about a person when there is no verb to signify the actual relationship. The surface form of (3a) allows numerous types of relationship to be established between the two NPs. To classify all these relationships as aboutness will have little theoretic significance, since any relation would qualify as that of aboutness. Such a classification does not have much practical value either, because it does not solve any existing problem. Even if (3a) is analyzed as denoting an aboutness relation between two NPs, the actual nature of this relation is still almost impossible to infer from its surface form.

The only advantage of this line of analysis is the correct prediction it makes that all the reduced sentences discussed here are acceptable. However, this analysis does not distinguish sentences which depend on the context for clues of interpretation from those which are independent of the context. Sentences like (1a), (3a) and (5a) are thus considered the same as simple subject predicate sentences like (7) and ordinary topic comment constructions like (8). The context dependency properties of the reduced sentences (1a), (3a) and (5a) become an unexpected pattern under this analysis and remain unexplained.

(7) *Wo de gou paodiaole.*  
 I Poss. dog run-away Asp.  
 'My dog has run away.'

(8) *Zheben shu wo bu yao.*  
 this Cl. book I not want  
 'This book, I do not want.'

To account for the context dependency properties of sentences like (9) and (10) is the main goal of an analysis proposed by Chen (1989). Assuming that these sentences are derived via reduction processes, he treats the reduced parts in these sentences as so-called zero anaphors, namely, phonetically null anaphoric forms which depend on antecedents for reference. Within his framework, the antecedent of a zero anaphor occurs in the previous discourse. A sentence with a zero anaphor inside will become uninterpretable if it appears in isolation, because there is no discourse context to provide an antecedent for the zero anaphor. On the other hand, such a sentence allows a wide range of interpretations when there is a previous discourse. The zero anaphor will assume whatever reference the antecedent

provides and the sentence will have a relevant interpretation. The subject of sentence (9), for example, can be any person, persons or any animate entities as long as there is a context in which the persons or entities have been mentioned. For the same reason, the object of (10) can be anything or things so long as they have appeared in the discourse. Either 'I didn't take the money' or 'I didn't take the chickens' will be a possible interpretation for (10) if the money or the chickens are the things being discussed.

(9) *Chao menwai yi kan.*  
toward door-outside one look  
'(the person/persons) look outside the door.'

(10) *Wo mei na.*  
I not take  
'I did not take (it/them).'

Chen's analysis provides a plausible explanation for the context dependency of the reduction process under discussion here, but its application is severely limited by the postulation of a zero anaphor. By definition, a zero anaphor is a phonetically null NP. Although the reduced part of (9) or (10) fits this category very well, the reduced part of (1a), (3a) and (5a) cannot be classified as a null NP. What has been reduced in (1a) is the head of a noun phrase and the nominal modifier particle *de*. The two are usually not considered as a single constituent. The reduced part in (3a) consists of the verb and the head of the verb's complement NP. These two constituents definitely do not form one NP. In (5a), the head of a complex NP, the complementizer of its relative clause and the VP of the relative clause have been reduced. It is obviously impossible to argue that these three parts can be treated as one NP.

Apparently, the explanatory power of Chen's analysis is weakened tremendously by the postulation of zero anaphors. Any explanation for the context dependency of this reduction process has to go beyond the boundary of a single constituent. This is the approach of this paper as presented in the next section.

### 3. Beyond Syntax

Any analysis of this reduction process has to address two issues. One is that the interpretation of the reduced sentences depends on an appropriate discourse context; and the other is that elements from different constituents may be affected at the same time. The proposal made here is to account for the two properties by assuming that the reduction process in question is triggered by discourse topic continuity.

In the recent literature, two phenomena have been analyzed as involving discourse topic continuity. The first type of continuity concerns only single NPs. When a sequence of topic comment constructions share the same topic, as in the case of (11a), the usual trend is for the topic to appear in its full NP form only in the first occurrence, i.e., in the initial position of the first topic comment construction. The shared topic is reduced to a null form in all the other occurrences, as in case of (11b). Since each topic usually binds an empty category inside its comment clause, a topic comment construction with a null topic will have the appearance of a simple sentence having an empty NP (EC) inside. The second and

third topic comment constructions in (11b) fall into this category.

- (11) a. *Zheke shu, hua tai xiao, zheke shu<sub>i</sub> EC<sub>i</sub> yezi tai da,*  
 this Cl. tree flower too small this Cl. tree leave too big

*zheke shu<sub>i</sub> wo bu xiang mai EC<sub>i</sub>.*  
 this Cl. tree I not want buy

'This tree, (its) flowers are too small; this tree, (its) leaves are too big; this tree, I do not want to buy.'

- b. *Zheke shu, hua tai xiao, Null-Topic<sub>i</sub> EC<sub>i</sub> yezi tai da,*  
 this Cl. tree flower too small leave too big

*Null-Topic<sub>i</sub> wo bu xiang mai EC<sub>i</sub>.*  
 I not want buy

'This tree, (its) flowers are too small; (its) leaves are too big; (and) I do not want to buy (it).'

The empty NP (EC) inside the sequence of topic comment constructions is eventually co-referential with the shared topic that occurs in full form at the beginning of the sequence. Since the antecedent of the empty NP is beyond the commonly assumed boundary of its own sentence, it is plausible to analyze the reduction process as a discourse phenomenon. The crucial assumption of this line of analysis is that the topic NP at the beginning of a sequence of topic comment constructions is a discourse topic, which licenses the reduction of identical topic NPs in the sequence (e.g. Tsao 1979, Huang 1984). In essence, Chen's (1989) analysis also follows this line.

It is not consequential to the analysis proposed in this paper whether the topic NP at the initial position of a sequence of topic comment constructions is indeed a discourse topic. Our main concern is that the single NP discourse topic analysis does not apply to the phenomenon under consideration here. The reduction patterns displayed in (1a), (3a) and (5a) cannot be attributed to discourse topic continuity if the discourse topic is assumed to be a single NP, as indicated in the discussion on Chen's (1989) analysis.

The concept of discourse topic can be defined in another way. Keenan and Schieffelin (1976) suggest that a discourse topic is a proposition that has been established during the evolution of a piece of discourse. When all the participants in a conversation have accepted the proposition as the topic of the discourse, each of them will substitute certain part of the proposition for new information to make a similar proposition. Given Keenan and Schieffelin's theory of discourse topic, the reduction process operating in (1a), (3a) and (5a) can be considered a result of discourse topic continuity. The discourse topic is assumed to be a proposition that has the structure of a full sentence, with all the necessary elements like modality, tense and aspect. Some positions in the structure are filled with variables at the relevant stage and the other positions are filled with constants, i.e., ordinary lexical items. A typical proposition has the form in (12).

(12) X does Y (in Z location) (at T time) (for P purpose).

Any position in the proposition structure can be filled with a variable so that the variables can be arguments, verbs or some other elements. The proposition structure for (1a) is (13) at some stage. The proposition structures for (3a) and (5a) are (14) and (15) respectively.

(13) *X de yongren shi Y-guo nüren.*  
X Poss. maid be Y-country woman  
'X's maid is a woman from Y country.'

(14) *X juan Y jin maizi.*  
X donate Y catty wheat  
'X donates Y catty (half-kilo) of wheat.'

(15) *X dian de cai shi Y.*  
X order Comp. dish be Y  
'The dish which X ordered is Y.'

The variables are assigned different values in each occurrence of the discourse topic, namely, replaced by appropriate lexical items, to produce a proper interpretation for the proposition structure. All the constants are present in the first appearance of the discourse topic to produce a full form of the proposition. The constants can be omitted, either individually or altogether, in the subsequential occurrences of the discourse topic and a reduced form of the proposition is created. When all the constants are dropped from the structure, the proposition becomes a 'skeleton sentence' with only the lexical items that have replaced the variables but probably without any functional words to signify the relationship between these lexical items, as in the case of (3a).

The skeleton sentence is understood as an occurrence of the discourse topic, namely, as a realization of the proposition structure even though only the variables are visible in this case. It will yield the reading of the complete proposition with all the invisible constants fully interpreted. The same applies to the reduced sentence. The omitted constants are fully interpreted so that the reduced sentence will yield the reading of the full form.

The reduced sentences and skeleton sentences are interpretable only when they are understood as realizations of the discourse topic, i.e., only when there is a clear context to indicate what the full form of the proposition structure is. The context dependency of the reduction process discussed so far is thus the expected pattern.

The variables in the proposition structure of a discourse topic represent the new information each sentence provides. The constants represent the old information provided by the context. The context is usually the actual discourse but it can be the real world situation as well. The skeleton sentence in (3a), for example, is acceptable and interpretable if it is uttered by someone stepping down from the scales in a physical check-up. The discourse topic in this case is the proposition 'X weighs Y catty (half-kilo)', which is appropriate and understandable without overt utterance in this particular setting, and (3a) will yield the interpretation 'I weigh 150

catty'.

Since there is no overt marking to indicate the nature of invisible constants in the reduced sentences and skeleton sentences, the proper interpretation of these sentences depends on the co-operation among all participants of a conversation (c.f. Grice 1975, 1978). They must all accept the same proposition as the discourse topic. Otherwise the conversation cannot continue smoothly. The misunderstanding with regard to (5a) arises simply because one of the customers does not accept, for reasons of absent-mindedness, the discourse topic assumed by all the other parties in the conversation.

The same principle of co-operation applies to the proper interpretation of written genres as well. Reduced and skeleton sentences are common in written Chinese. These sentences must be interpreted within the discourse where they are located, namely, according to the discourse topic designated to them by the author. A common tactic in Chinese rhetoric is *duanzhang quyi* 'dismantling the passage to distort the meaning', in which a sentence is taken out of context and assigned to it an interpretation different from the one intended by the author. This tactic is possible partly because a sentence reduced under discourse topic continuity may allow a literal reading and can always be given many readings if different discourse topics are assumed.

#### 4. Concluding Remarks

The phenomenon discussed in this paper is observed at the sentence level, but it is determined mainly by discourse factors. A comprehensive analysis of this reduction process must be built on the interface of syntax and discourse analysis. An appropriate account for this phenomenon is not to posit a set of obligatory rules, which are common in formal syntax, but to provide a framework within which the reduction will operate if the speakers choose to simplify their language production. How the final production looks like depends on the balance of several factors.

A very prominent feature of Chinese, in both the spoken and the written registers, is to avoid repetition (e.g. LH 1988). The reduction process triggered by discourse topic continuity is actual a means to implement this general tendency. If all the constants in the proposition structure of a discourse topic are kept intact in all its occurrences, the discourse will become repetitive and boring to native ears. People usually drop repetitive elements whenever it is possible to do so. On the other hand, since certain reduced sentences allow offensive or misleading literal readings, people may not use these particular reduced forms and opt to use fuller forms to avoid misunderstanding, especially in written genres or carefully planned speeches. How to keep an appropriate balance between the two tendencies, namely, how to make the contribution as informative as is required for the current purpose of exchange but not more informative than is required (Grice 1975, 1978), depends on how formal the occasion is, how familiar the participants are with the general situation, and above all, how a particular piece of discourse is perceived by all the participants. In order to understand the relationship between these factors, further studies, not necessarily limited to syntax and discourse analysis, are needed (cf. Horn 1989).

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