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Right Dislocation in Chinese:

Syntax and Information Structure

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1. Introduction

Right dislocated sentences are very common in colloquial Mandarin and Cantonese (Packard & Shi, 1986; Law 2003; Cheung, 2009). A right dislocated (RD) phrase consists of a phrase after the main syntactic clause, which is typically anaphoric to a preceding noun phrase (NP) in the main clause, as in (1). It can be a full noun phrase, or a resumptive or reduplicated pronoun. In English and other Western languages, only RD anaphors coreferential with main clause referents would be grammatical, as those in (1a-c), with a similar Mandarin example in (2).

1a. They spoke to the janitor about that robber yesterday, the cops.
1b. The cops spoke to him about that robbery yesterday, the janitor.
1c. The cops spoke to the janitor about it yesterday, that robbery.
(Ross, 1967:236; Rodman, 1997:47)

2. Dōu zài nár ne, wǒ nèige.
all at where SFP, I-that[1)]
Where is (it), that one of mine?
(Guo, 1999:1111)

However, as will be seen below, Chinese allows for types of RD phrases that would be ungrammatical in English.

RD contrasts with other non-canonical structures on the left periphery, i.e., left dislocation. Normal left dislocation (LD) contains a definite or anaphoric referent, which is a repeated referent or resumptive pronoun from the main clause (e.g., "This poor boy, the duck bit him"). LD serves a topic reshifting function to reintroduce topics to the discourse (Givón, 1983), or sometimes as a turn-initial device, allowing a new speaker to take the floor (Duranti & Ochs, 1979) while performing a topic reshift. Contrastive left dislocation (CLD), also called Y-movement (Givón, 2001), or simply topicalization, serves as a form of discourse level contrastive focus, when a referent is contrasted with a similar referent, and it counters an expected

1) In the glosses, the following abbreviations are used: SFP, sentence final particle; ASP, aspect particle; PERF, perfective particle; Q, question particle; ACC, accusative; MOD, modifier particle. Cantonese tone marks are omitted due to their complexity. Thus, those with tone mark diacritics on the vowels are Mandarin examples, and those without diacritics are Cantonese. Though RD phrases are not pronounced with phrasal boundaries, they are set off with commas in the Chinese examples to distinguish main clauses from RD phrases more clearly in the transcriptions.

response (e.g., "I don't like beef - pork, I like," where both beef and pork have been previously mentioned). The referent in the CLD phrase is topical and anaphoric, and is very relevant and accessible in the immediate context, hence its contrastive effect[2]. While a normal LD phrase forms its own intonational phrase apart from the main clause, the CLD phrase belongs to the same intonational phrase as the main clause (Givón, 2001), and is marked with a continuing or rising intonational contour (Frey, 2004; Givón, 2001), at least in Western languages. In Mandarin, 90% of CLD nouns are definite (Sun & Givón, 1985).

A corpus study by Gregory and Michaelis (2001) found that normal LD involves referents that are new to the discourse but related to previous topics and inferable from the context, while CLD contains old, topical referents. Both serve the purpose of implementing topic shifts. LD thematizes referents for topicalizing new but related items in order to introduce them as new topics to the discourse (Rodman, 1997). Prince (1988) argues that LD is used to introduce new topics, while topicalization (CLD) highlights topical material that is related to the prior discourse - namely, the topicalized item is identical to or a subset of preceding referents or material (i.e., previously mentioned topics, or closely related lexical items). These claims are supported by statistical analysis of linguistic survey data by Christianson and Frazier (2004)[3]. Notably, in Prince's more restrictive analysis, LD phrases introduce

2) The contrasted NP is usually marked as a topic or subject, but in some cases or some languages it is marked as an object, as in French and English: "Moi, je ne sais pas" = "Me, I don't know." The objective case (or the so-called disjunctive in French) for *moi* and *me* is chosen because the object pronoun is consistent with topicality.

3) Another related structure is the so-called hanging topic left dislocation (HTLD) or *freies Thema* ("free theme") in German, consisting of a separate intonational phrase with a falling or non-continuing intonation. If the dislocated item is an NP, it is in the same case as in the main clause, but it is not necessarily a sentence topic, and it does

new topics, while Givón (1983) views LD as a topic resumption device.

While LD and CLD serve topic and discourse management functions, the functions of right dislocation have been less obvious, but are not related to the topic management functions of left periphery structures. In fact, use of the opposite end of the utterance phrase, with its very different prosodic and processing features, would suggest a rather different linguistic function. RD has been analyzed as having afterthought, repair, emphatic, or additive focus functions. These all have some validity, but no single function describes RD generally, especially across languages. Furthermore, the Chinese data (namely, Mandarin and Cantonese here) pose particular problems for any structural analysis of RD. In Western languages, the RD material is coreferential with the main clause, but this does not necessarily hold for Chinese. Chinese shows violations of this coreferentiality constraint, and pose other structural problems, as discussed below. In fact, some Chinese examples seem syntactically malformed, yet they can be acceptable to Chinese speakers. Generative analyses of Chinese RD do not explain all these data easily, and tend to rely on a seemingly unnatural process of leftward movement.

However, a more unified analysis is possible by appealing to information structure as the primary force operative in Chinese. An information structure account can allow for such interface, and can explain the structure of some of the seemingly strange examples in the literature. The RD phrase is similar to a parenthetical expression that makes use of the final lowering in a sentence, i.e., pronounced with reduced intonation, reduced intonational range, and often slightly more quickly (see, e.g., Nespor &

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not serve topic marking functions as LD does (Frey, 2004).

i. Den Hans, jeder mag ihn.
ARTICLE-ACC Hans, everyone likes him-ACC.
Hans, everyone likes him. (Frey, 2004:205)

Vogel, 1986). A phrase bearing information of a secondary nature is mapped onto this prosodic lowering, and while the phrase may follow syntactic constituency constraints in Western languages, it need not do so in other languages; but it nonetheless follows well-formedness constraints of information structure, regardless of the language. The next section will survey previous accounts of RD and the problems posed by the Chinese data. Then an alternative explanation based on information structure will be developed.

2. Previous Accounts of RD

RD referents can be coreferential with main clause subjects or objects, as in (3) below[4]. In their Mandarin data, Packard and Shi (1986) note that 30% of RD referents were topics or subjects. As Rodman (1997) notes, in English, an RD phrase must have an anaphor in the main clause (4a-b), and a coordinate NP structure cannot be right dislocated (4c).

3a. ...so he comes over, John does, and... (RD subject)
3b. ..so we saw him come over, John, and... (RD object)
(Givón, 2001:268)

4a. Dogs, I like Old English and Golden Labs.

4) Also, Ross (1967), Postal (1971), and others have noted that an RD phrase cannot be extracted out of a non-adjacent clause before the final main clause, and thus is subject to the subjacency restrictions on other forms of rightward movement; e.g.:
ii. *The story that he told was interesting, Bill. (if 'Bill' is non-vocative; Grosz & Ziv, 1998:297)

4b. *I like Old English and Golden Labs, dogs.

4c. *They spoke to him about that robber yesterday, the cops and the janitor.

(Rodman, 1977:47)

However, such syntactic constraints seemingly do not apply in Chinese. While Guo (1999) cites the following as ungrammatical, some native Mandarin speakers tell me that they find it acceptable. Law (2003) and others claim this restriction is operative in Cantonese.

5. Tā gàosù wǒ fàng nàr, zhèxiē shípǐn.
he tell I put there these food items
He tells me (that it should be) put over there, these foods.

(Guo, 1999:1109)

A pause is not associated with the boundary between the main clause and the RD phrase, but rather, a minor intonational juncture[5], like a parenthetical juncture. One more curious property of RD phrases in Chinese is that they even follow sentence-final particles (SFPs) in Mandarin (6a-b, from (Guo, 1999) with the question SFP *ma*) and Cantonese (7, from Law, 2003). This shows that they are extrasyntactic, in that they fall outside the main clause constituency, i.e., are not governed by the the main clause (e.g., outside the c-command of the main clause). As extrasyntactic units, they are

5) The difference between an RD phrase and a verb-subject (VS) pattern is neutralized in languages like Spanish (Givón, 2001).

iii. ...luego se murió, Juan, y... (RD)

iv. ...luego se murió Juan, y... (VS)

...then he, Juan, died, and...

prosodically parenthetical (Packard & Shi, 1986).

6a. *Lái le, nǐ gěge, ma.
come PERF, your older-brother, SFP

6b. Lái le ma, nǐ gěge.
come PERF SFP, your older-brother
Has (he) come, your older brother?
(Guo, 1999:1108-1109)

7. Zukkau lo, Billy zinghai zungji tai.
football SFP, Billy only like watch
It is obvious that Billy only likes to watch football. (not cricket).
(Law, 2003:245)

2.1. Afterthought and Repair

Early studies of RD in other languages treated RD as a form of afterthought or repair device (see Givón, 2001, and references therein), in other words, as a performance issue. This happens, e.g., when the referent is accessible and is expressed as anaphoric, but then the speaker decides the referent is not fully accessible and reiterates it as a full NP or another anaphoric reference. For example, the speaker uses a pronoun, realizes the referent may not be clear or known to the audience, and thus appends a short disambiguating clause (Rodman, 1997, Givón, 2001). For Chinese, afterthought and repair have been proposed by Chao (1968), Packard (1986), Tai and Hu (1991), and Hu (1995). Incidentally, Kim (2001) cites a few

examples of Korean RD, treating it as one among other forms of clause-final repair, and claims that such structures involve intersubjectivity and are thus used for interactive repair. Kim notes that Korean RD, as in this example, retroactively elaborates on what was not explicitly expressed in the preceding elliptical sentence.

8. ...ku-ku ke ke iss-cian-ayo, phan-may.
...that, that thing exist-ASSERT-POLITE, sale
That, you know, that thing, the sales (section).
Kim (2001:347)

Ziv and Grosz (1994) distinguish between so-called true afterthoughts, which serve a corrective and repair function, as distinct from right dislocation. True afterthoughts are preceded by an actual pause before the appended phrase, while RD phrases are demarcated by a non-breaking, continuous intonational contour between the main clause and the RD phrase, for English and other languages (Ziv & Grosz, 1994; Freitheim, 1994) and Chinese (Packard & Shi, 1986; Guo, 1999). However, the afterthought or repair analysis alone also does not explain why RD phrases encode old or inferable information, but are infelicitous if they bear wholly new information (Birner & Ward; Ziv & Grosz, 1994). Nor does it explain how RD phrases might be different from other parenthetical, intrasentential repairs, as in (9).

9. I met him, your brother, I mean, two weeks ago.
(Grosz & Ziv, 1998:297)

Packard and Shi (1986) point out some examples from the Chinese data that defy an afterthought (or repair) analysis, such as (10), where it is

unlikely that the interrogative *zenme* ("how") was simply forgotten at first.

10. guāng fàng shuǐ bù fàng chá ne, zěnme.
only put water not put tea SFP how
How come you only put water and didn't put tea?
(Packard & Shi 1986:6)

They also point out that the common occurrence of repetitions of main clause items in RD phrases cannot be attributed to afterthoughts (or repairs, for that matter). Their transcriptions (with commas indicating RD phrases) show a type of RD with repeated items. The speakers seem to have repeated minor information ('all,' 'come,' 'this car is' and 'to him') as a form of emphasis in the conversational context.

11a. Yǐzi dǒu huài le, dōu.
chair all ruin-ASP all
The chairs will all be ruined.

11b. Zhèi biár lái zhù, lái.
this side come live come
Come live over here.

11c. Zhèi chē shì huóde, zhèi chē shì
This care be moveable this care be
This car is moveable.

11d. Wǒ gěi tā bǎozhe, gěi tā.
I give him hold give him
I'll hold it for him. (Packard & Shi 1986:8)

Hence, the prosodic and syntactic properties of RD phrases, especially the reduplications or repetitions in Chinese, rule out afterthought and repair analyses as their primary function or origin; these are not sufficient to account for RD. However, these cannot be dismissed entirely, since they sometimes can be used for these pragmatic functions, and bear prosodic similarities to these functions, as will be discussed below.

2.2. Emphasis

One function of RD claimed by Rodman (1997) is when the speaker wishes to emphasize or contrast the content of a long noun phrase by stressing the main clause pronoun and providing additional information about the stressed item in an RD phrase, as in (12a). Rodman also claims that RD can be used to avoid a heavy and awkward NP in the main clause, as in (12b). This, however, does not explain why alternative structures are not used, such as relative or subordinate clauses.

12a. I told her to leave instantly, the woman that did an obscene imitation of me on the Merv Griffith show. (Rodman, 1997:48)

12b. We elected him president, the most outrageously stupid and dishonest man in the entire country. (Rodman, 1997:48)

Guo (1999) treats RD as emphasis and intensification, but the exact nature of emphasis in a pragmatic or information structure model is not explicated, which is necessary since emphasis can include a wide variety of forms and functions, such as lexical emphasis, explicit contrast, focus markers (König, 1991), and discourse-level topic-shifting structures. Guo merely

describes the RD emphasis as a social-affective "interactive focus" that is non-informational. The emphasis analysis does not explain other data (and since Guo's samples came from children, it is possible that their sentences might have exhibited more emphasis and less of a full adult-like range of RD pragmatic functions). However, Guo's proposal is not entirely without merit. A later section will show how RD could sometimes convey a form of emphasis, albeit a more nuanced type of emphasis.

2.3. Syntactic Explanations

An RD phrase can of course consist of a single nominal constituent (which, as a noun phrase, is referential), or another XP constituent such as an adjective phrase or an adverb phrase. As in other languages, such RD phrases are not problematic. However, some Chinese RD phrases can differ in one key aspect. A curious feature of Chinese RD phrases is that RD phrases can consist of syntactic non-constituents (Packard & Shi, 1986; Law, 2003), such as subject plus verb combinations (13a-b). In fact, Chinese RD phrases can consist of a multitude of constituents: subjects, objects, pronouns, classifiers, questions, adverbial phrases, adverb plus verb combinations, subject plus adverb combinations, and prepositional phrases (Packard & Shi, 1986; Law, 2003; Guo, 1999), and even vocatives (copying a second person pronoun in the main clause (Guo 1999); see footnote (4) above). Incidentally, the RD phrase in (13b) seems long and complex; however, it is not clear what upper limits exist on the number of constituents or length of an RD phrase in Mandarin or Cantonese.

13a. Shǎndǒng de ha, nǐ shì.
Shandong MOD SFP, you are
So you're from Shandong! (Packard, 1986:6)

13b. Zukkau lo, Billy zinghai zungji tai.
football SFP Billy only like watch
It is obvious that Billy only likes to watch football.
(i.e., not cricket) (Law 2003:245)

In these examples, the RD does not consist of a single constituent, but two different juxtaposed constituents. While rightward movement of items to an RD phrase might work for Western languages, it cannot explain how in Chinese two different constituents can move into a final RD phrase, leading to a phrase that is seemingly ill-formed syntactically. Since rightward movement apparently cannot account for a partial constituent as an RD phrase in Chinese, Packard (1986) proposed that the rest of the sentence is actually moved leftward, leaving a whole or partial constituent stranded at the right periphery. The remaining RD phrase is left behind for the purpose of focusing the newer information in the leftward-moved portion. A similar proposal is posited by Law (2003) for Cantonese RD, and by Cheung (2009) for Mandarin and Cantonese. In these proposals, the elements to be moved come under identificational focus, i.e., the main new information focus, and thus move leftward to form the main clause, and items left behind form the RD phrase. Law appeals to the co-presence of focus markers in the focused set (main clause) to support this hypothesis. Hu (1995) similarly proposes a thematizing function for RD movement. Cheung's (2009) analysis treats this movement as a non-prosodic realization or equivalent of the nuclear stress rule, or NSR[6]. Cheung is arguably on the right track by considering focus,

but this analysis does not explain why RD phrases are optional and mainly colloquial, and does not fully explain the role or types of focus involved.

While LD and CLD are driven by topic management functions, leftward movement of the main clause in RD would have to be driven by another cause. Yet these movement based analyses of RD encounter problems in appealing to focus. They are unnatural and complex, particularly in that the main clause is the derived element, and the RD phrase is part of the original form. They also do not fully explain how such movement is pragmatically motivated, or how a putative pragmatic feature optionally interacts with the syntax. In RD examples such as the one below, some items can appear either in the main clause or the RD phrase. These optionally movable items are new, while only one new item must appear in the main clause.

14. What will he buy?
    a. Keoi wi maai jat bou dinnou lo1. (canonical sentence, no RD)
       he will buy one CL computer SFP
       He will buy a computer.

    b. Jat bou dinnou lo1, keoi wui maai. (RD #1)
       one CL computer SFP, he will buy

    c. Maai jat bou dinnou lo1, keoi wui. (RD #2)
       buy one CL computer SFP, he will

6) Chinese has a nuclear stress or sentence stress of sorts, but since Chinese is a tonal language, nuclear stress is indicated by prosodic lengthening rather than by amplitude and pitch changes as in English; however, Chinese does have emphatic stress that is marked with pitch change and amplitude (Feng, 2002).

d. Wui maai jat bou dinnou lo1, keoi. (RD #3)
will buy one CL computer SFP, he (Cheung, 2009:203)

In these examples, 'will' and 'buy' can optionally be in the RD or the main clause; 'he' apparently must appear in all the possible RD phrases; and 'computer' must be in the main clause, as it is the main focus, as the answer to the question being posed. Here we need to distinguish between the new information that comes under primary focus ('computer') and other new items that are not primary. We shall refer to these other new contents as secondary focus - new information, but not the primary focus. That is, among the set of lexical items representing new information in a sentence, one is prominent, the primary focus, and the rest is secondary focus (this construct will be discussed below). Thus, the RD phrase above includes topical items and optionally, secondary focus items. This seems to be a key distinction missing from past movement based analyses - a point to be revisited below.

Rather than informational focus driving RD, a stronger case exists for a role for something other than the main focus driving it, as some have noted (at least for English) that only old or inferable items are allowed in RD phrases, at least in English and related languages (Birner & Ward, 1996; Grosz & Ziv, 1998; Ziv & Grosz, 1994). In some of the Chinese examples, the RD phrases can also include such items, such as 'today' in (15).

15. Hoi saam go wui gwaa3, keoi gamjat.
Open three CL meeting SFP, he today
He had three meetings today. (Cheung, 2009:201)

Here the RD phrase consists of a topical item, and also a general contextual time adverb, 'today.' Such an item is not really new, though not

mentioned. It is implicit or inferable from the context, and falls in the category of items can be new to the discourse, but not new to the speaker or listener (Walker & Prince, 1996).

Another type of focus becomes problematic for the movement hypothesis. In addition to new information focus, another kind of discourse focus comes from contrast and emphasis, which are referred to here together as special focus (contrast and emphasis are arguably manifestations of the same phenomenon, as discussed below). Leftward movement would not adequately explain cases of repetition reported in Packard and Shi (1986), as movement would sometimes move constituents, but sometimes copy or delete them.

16. Zhèi biár lái zhù, lái.
    this side come live, come
    Come live over here. (Packard & Shi, 1986:8)

Special focus is also invoked with focus markers or particles - adverbials such as 'too, even, also, only' that convey emphasis on the word that the particle modifies or has scope over (König, 1991). Often, the sentence stress may appear on the modified word, or even on the focus marker itself (below, underlining indicates sentence stress).

17. He was especially <u>poor</u> as a debater.
    He was <u>especially</u> poor as a debater.

The role of focus markers is not addressed in the movement hypothesis, though a focus marker can occur in the RD phrase, modifying a word in the main clause (e.g., 'only' modifies 'borrow' in (18), Mandarin, and 'likes to

watch' in (19), Cantonese).

18. Nà běn xiǎoshuō ba, Zhāngsān zhǐ jiè-le.
DEM CL novel SFP, Zhangsan only borrow-PERF
(Cheung, 2009:213)

19. Zukkau lo1, Billy zinghai zungji tai.
football SFP Billy only like watch
It is obvious that Billy only likes to watch football (not cricket).
(Law, 2003:245)

The items under special focus ('borrow' and 'likes to watch) appear in the main clause, and so it would seem that special focus might also invoke movement just as the NSR for new information focus (since special focus as well as the NSR can assign sentence stress in English). Yet the movement hypothesis does not explain why the focus marker 'only' would appear in the RD, separated from the word in the main clause over which it has semantic scope, in terms of a rationale based on focus. In fact, a limitation of the NSR here is that the NSR in generative accounts only refers to new information, and cannot account for special focus, i.e., .contrastive focus or emphasis.

Movement based accounts encounter problems with coreferentiality, the aforementioned constituency issue, and coherence. While RD constituents in English and related languages must be coreferential with the main clause, Chinese RD phrases do not need to follow this restriction, and can easily be unconnected referentially with items in the main clause. The following Chinese examples have no anaphoric referent in the main clause; they would be ungrammatical in English, but are acceptable in Chinese.

20a. Guǎn shàng ba, chuānghù.
close up SFP, window
Close the window.

20b. Lái duō nián le ba, Běijīng.
come many year asp SFP, Beijing
So you've been in Beijing a number of years.

20c. Kāishǐ a, xiànzài.
begin SFP, now
(Let's) begin now. (Packard 1986:3)

One might posit that violation of the coreferentiality constraint could be related to how topical (old) or inferable subjects and objects can be omitted from sentences, especially pronouns and previously mentioned full nouns; yet this does not account for violations of syntactic constituency in Mandarin RD.

RDs in Western languages generally consist of a single simple constituent such as a single NP phrase, while Chinese RDs can consist of two constituents, as seen in the previous examples (such as "he today" and "Billy only likes to watch"). Movement does not fully explain why sometimes partial constituents and sometimes whole constituents are shifted. This RD pattern can lead to two partial constituents stranded as an RD phrase, thus consisting of an ill-formed syntactic tree. These are in fact potential problems for any transformational analysis involving leftward or rightward movement. Not only are ill-formed trees possible in Chinese, but also multiple movements would sometimes be necessary for RD phrases that are not full constituents, and Cheung (2009) in fact invokes such a complex transformational analysis for syntactically eccentric RD phrases. In (21a)

below[7], the determiner *na* and the negative particle *bu* would be stranded out of the subject node and preverbal adjunct node, respectively (possibly uttered, e.g., in a context inquiring about and comparing or emphasizing an object in question); and (21b-c) show similar complexity.

21a. Shé le, nà bù?
broken ASP, that not
That will break, won't (it)?

21b. Bá tóufa dōu gěi nóng diáo le, dōu gěi.
ACC hair all cause do away ASP, all cause
(It) made all (his) hair fall out.

21c. Tā chūlái yě shì hěn duō rén bāngmáng, yě shì.
he out-come also be very many person help, also be
His coming out is due to a lot of people helping him.
(Packard & Shi, 1986:4-5)

The potential problem is that a single discourse feature can at times invoke a simple movement, but at other times the same feature can invoke multiple or complex movements, for presumably the same desired result – a main clause ending in a primary focus item, followed by an additive clause.

7) An anonymous reviewer of this article notes that s/he finds example (21a) difficult to accept, as well as those in 11a-c above, in contrast to Packard and Shi's (1986) sources or informants – they transcribed recordings of colloquial Beijing Mandarin, from which all their examples came. This raises the following questions: (1) in what types of contexts are these more unusual RD phrases considered felicitous, and (2) to whom are such phrases felicitous – do such acceptability judgments of Chinese speakers on these RD phrases vary according to sociolinguistic or regional constraints? Further research on sociopragmatic use of such phrases would be needed to address these problems.

A more economical analysis would be one that focuses on the driving force without complex movements, or differing numbers of movements. A final problem is that it does not explain the existence of some relatively long or complex RD phrases that are possible, as in (22). If movement is focus driven, then it is not clear why RD phrases can range from rather short phrases, to rather long phrases, with varying amounts of minor information being possible in the RD phrase.

22. Keoizigei di hoksaang gaa, muigo sinsaang dou gwaansam.
him/herself MOD student SFP, every teacher all care-about
Every teacher cares about his own students. (Law, 2003: 252)

The unique Chinese forms of RD thus raise the question of how coherence is established between the main clause and the RD phrase. In Western languages, the coreferentiality constraint provides coherence, in that the RD phrase is indexed or bound with the main clause by anaphoric reference. The subjacency constraint also enforces syntactic and referential coherence in RD phrases. For Chinese RD phrases that violate this coreferentiality constraint, a suitable means of coherence appears to be lacking. One could appeal to the Gricean principle of relevance, claiming that the RD phrase is understood as semantically relevant to the main clause. While this might work on a purely semantic level, it does not sufficiently account for structural or grammatical cohesion.

One possibility is to propose a filler gap dependency relation between the RD phrase and the position in the main clause where it would originally appear. This might be possible for simple cases of a single constituent forming an RD phrase. But this also would require a means to bind a partial RD constituent with one or more gaps in the main clause for the Chinese data, which becomes complex. For example, in (21a) above, the negative particle *bu* "not" and the determiner *na* "that" would have to be bound with

two different positions of the syntactic tree of the main clause - one subject node for *na*, and a verbal adjunct node for *bu*. Even if the binding and dependency issue are addressed, the pragmatic rationale for sometimes forming such structures is missing. The transformational approach also does not explain the variety of possible RD phrases: non-coreferential items, coreferential items, multiple items and repetitions (such as "come...come" in (11b) above), and a coherent pragmatic motivation for this variety. Finally, if the NSR induces leftward movement as Cheung (2009) claims, it is not clear why some new and topical items are moved leftward, and why others are left behind in the RD.

Packard and Shih (1986) abandoned the leftward movement hypothesis of Packard (1986) in light of the variety of sentence structures and the prevalence of repetitions as above, and these data led them to conclude that leftward movement was not likely. Instead, examination of a larger data set pointed to two types of content in RD phrases: subjects or topics, in about 30% of cases; and items that normally come between subjects and verbs, including adverbs (focal adverbs like *ye* 'also,' *yijing* 'already,' *hai* 'also'), temporal adverbs (*fanzheng* 'anyway,' *jintian* 'today'), modals and auxiliaries (*keneng* 'can,' *dei* 'must'), and words that function as both verbs and prepositions (*zai* '(be) at,' *gei* '(give) to'). The past pragmatic and transformational analyses have overlooked an interesting pattern in the data: many of these Chinese RD phrases seem to follow a topic-comment pattern instead of a syntactic pattern, e.g., "that not," "he today" and "Billy only likes to watch."

2.4. Summary

Movement based analyses lead to some degree of complexity, and ultimately cannot explain the pragmatic motivation or pragmatic functions driving RD. For example, RD sometimes involves repetition, which can be used for contrast and emphasis. This and other discourse functions of RD, need to be addressed, as well as the variety of RD structures in Chinese. The pragmatic and syntactic accounts of RD have not been able to fully account for these structures and functions. The following issues need to be addressed: (1) partial and multiple constituents can form RD phrases; (2) Chinese RD phrases do not follow the coreferentiality constraint as in other languages; (3) structural coherence, at least syntactic coherence, is seemingly lacking; (4) the variety of RD forms that are possible; and (4) the main pragmatic driving force behind RD and the different pragmatic functions of RD, such as repair, afterthought, and emphasis.

Some proposals partially address some of these issues, but none provides a sufficient explanation. A theory of RD needs to not only address its discourse function, but also account for the differences between Chinese and Western languages in terms of syntax and pragmatic functions. Under the transformational approach, different kinds of transformations would be possible for English and Chinese; a fairly simple movement pattern for English, but for Chinese, simple or complex types of movement, all for the same end. The movement proposal for Chinese becomes complex and unnatural, with the main clause derived from movement, and the RD phrase being the remnants of the original underlying sentence. A more unified, cross-linguistic account of RD formation, structural coherence, and function is thus lacking. In the absence of a clear syntactic mechanism to account for

this, another type of structural relation is proposed below, namely, from information structure, which can also contribute toward a pragmatic explanation of RD.

3. An Informational Account of RD

An account based on information structure will be developed here, beginning with the observations that RD phrases bear less important information, and are conditioned by the prosodic properties of the right periphery. Their coherence in Chinese comes not from syntax, but from information structure, as discussed below. The information structure patterns can explain the Chinese data, the RD forms, and their usage.

3.1. The Right Periphery

The prosodic properties of RD phrases are more consistent with forms of less prominent information. The RD phrase itself is produced with a reduced and quickened intonation (Guo, 1999; Cheung, 2009), and Cheung (2009) also notes the lack of a prosodic break between the main clause and the RD, and a falling intonation, in Mandarin and Cantonese. In that respect, RD is prosodically a final parenthetical. Parentheticals are marked by a pitch downstep, a rush-through, and junctural boundaries, and their placement is conditioned by syntactic and prosodic factors of the main clause (Nespor & Vogel, 1986). The RD thus belongs to the same phonological utterance phrase or thought group as the main clause, which provides some degree of pragmatic and prosodic coherence with the main clause.

RD phrases differ from other parentheticals, however, in that being on the right periphery of the clause, they fall into the final lowering zone of utterances. From the beginning of an utterance, sentences begin to undergo a general downdrift or declination in the F0, with a stronger declination, reduced intonational contrasts, and a rush-through at the end of sentences, i.e., a final lowering. These declination effects have been documented cross-linguistically, including in tonal languages like Mandarin (Shih, 2000), and are attributed to a decrease in subglottal pressure as the speaker ends the end of an utterance.

The region of sentence final lowering lends itself for use in linguistic systems for certain kinds of minor informational content. The main focus tends to be at or near the end of sentences in subject-object-verb (SVO) languages like English, and is marked prosodically if the NSR is operative. After the so-called focus, sentential, or nuclear stress, the intonation drops off, and any following syllables or words are subject to final lowering. Various languages exploit this final lowering zone (hereafter, FLZ) for minor types of information. SVO languages like English tend to use the FLZ for discourse markers (*you know*, *I mean*, *I guess*, *I bet*), vocatives (*sir*, *ma'am*), quotatives (*she said*) and afterthoughts. Other languages, e.g., verb-final languages like Korean, exploit the FLZ differently, using it for verb endings (verb morphemes and factive verbs like *hada* 'to make, do') and sentence-final particles. In Chinese, this FLZ is freely used for sentence final particles such as *le* (aspect marker), *ma* (question particle), *ne* (tag question marker), and *ba* (suggestive particle). In various languages, the FLZ can also accommodate an RD phrase. In Chinese, the RD phrase always follows sentence-final particles, indicating that it comes after the syntax of the main clause, and the RD is thus extrasyntactic.

The right periphery cross-linguistically serves as a locus for minor or

secondary forms of information, due partly to its prosodically reduced nature. This is consistent with the observation that RD phrases consist of topical, inferable, or secondary information (these terms are discussed below). RD phrases are related and similar to final parentheticals, but somewhat different because unlike parentheticals elsewhere in the sentence, RD phrases exploit the final lowering zone. So how does the FLZ differ pragmatically from intrasentential parentheticals? An explanation comes from language processing studies, showing that at the end of a sentence, a reader or listener processes the semantic content of the sentence, integrates it into his/her short-term memory and mental understanding. This has been shown in various reading studies and in auditory perception studies of sentence processing (see, e.g., Just & Carpenter, 1980; Hirotani et al., 2006; Ferreira et al., 2006; and citations therein), and such findings have been incorporated in psycholinguistic models of sentence comprehension (e.g., Kintsch, 1998; Gernsbacher, 1990). The final RD phrase coincides with this wrap-up time and follows the primary focus, and these facts distinguish RDs from intrasentential parentheticals, and from this we can deduce a functional difference between right periphery structures versus others. A final parenthetical or RD phrase aids in the overall interpretation of the sentence, and thus indicates how the sentence, particularly the primary focus item in the main clause, is to be interpreted. For this reason, RD phrases are constrained to bearing topical, implicit, or secondary information.

RD phrases are thus final, parenthetical additive phrases that bear upon the interpretation of the whole sentence. The additive function can be construed in various ways, depending on the context and the type of structures involved. Because they co-occur with the sentence-final point of semantic integration, their additive function takes on a particular pragmatic force in the context. RD items that repeat elements from the main clause

serve to intensify the meaning, much like reduplication structures in other languages. Such RD phrases can be used for emphasis and contrast, which might be used mainly for illocutionary emphasis, or they can be used also for purposes of repair and clarification. Similarly, topical items and items that are coreferential with the main clause can be used for clarification or repair functions. The way RD phrases at the integration point function to constrain the interpretation to utterances is similar to how Chinese sentence-final particles also add specific illocutionary force to utterances, as with exclamatory ('ma'), suggestive ('ba') and other final particles. In the various examples above, one can see how these sentences could be used for repair, clarification or emphasis. However, the published studies from which the cited examples in this paper are taken provide little or no details of the natural contexts in which the utterances were spoken. Thus, further investigation of these pragmatic effects in natural conversational corpora is needed.

3.2. Information Structure

For describing the structure of Chinese RDs, then, a more specific characterization of these information types is in order. The types of information in RD phrases will be examined, and a model of different types of focus will be sketched out to account for these types of information patterns. This is mainly done by enhancing existing models of old and new information with a distinction between two types of focus or new information: primary and secondary focus. This distinction fits readily into current models of information, such as the standard model of old and new information (e.g., Gussenhoven, 1999), or the old-new hierarchy within a

Centering Theory framework or related models (Gundel, 1999; Walker & Prince, 1996). A modified informational model will be used to account for the structural coherence of RD phrases.

Sentences generally consist of a flow from old information (subjects and other topical items) to new information, usually in the predicate (see, e.g., Gussenhoven, 1999). Topical refers to old information - items and information previously mentioned in the discourse. Inferable items are minor items that are newly mentioned, but not really new, in that they refer to information readily available from the context, such as discourse markers and general time phrases (e.g., "What are you doing today?"). The sentence leads to new information, or focus. The term focus is generally applied to several different concepts, which we will need to distinguish here: (1) the entire set of new information, or the broad focus - e.g., all the new information encoded in a predicate; and (2) the most salient new item, designated as the primary (new) informational focus (also called presentational focus)[8]. That is, within the new information of a sentence, the most important new item, the primary focus, tends to be at or near the end of the main clause, and in English, bears sentence stress ("I think I'm going to hike the mountain again" in response to "What are you doing today?"). This primary focus is marked with nuclear or sentence stress in English and related languages, and also by word order, in that it tends to occur at or near the end of sentences, as much as the syntax of the language allows. In addition to the primary focus, other new information is often present, which is new but not a candidate for primary focus. We shall designate this as secondary focus. Other new information that is not primary is referred to as secondary focus (e.g., in the

8) The term 'informational focus' is used here to indicate the sentence contents that contribute new information to the discourse. This is not necessarily informational focus in the sense used by Kiss (1998).

previous sentence, 'think...going to hike the...again' represent secondary information - new, but not the speaker's main point). These concepts are to be developed further in another paper, but are sketched out in Lee (in press) in regard to English sentence stress.

This leads to a topic-focus hierarchy of topical, implicit, secondary new, and primary new. This distinction is motivated by the fact that (1) primary focus is treated differently than other new items, by means of word order or stress marking, and (2) that parentheticals in different sentence locations, as well as items in the prosodically reduced right periphery (e.g., quotatives, afterthoughts, contextual time adverbs) often convey implicit or minor information. This is also motivated by other prosodic phenomena such as sentence stress in Western languages; see (Lee, in press). A sentence contains several new items, but one is selected for primary focus and stress, while the rest are the secondary focus. For example, in response to the question, "What did you buy?" the sentence "I bought a used computer" would have sentence stress on 'computer' as the primary focus, while 'a used' are new but less important, and thus, secondary focus. Thus, a diagnostic for focus is that the primary focus (1) can bear sentence stress, e.g., in English, and it answers a putative question (e.g., "What did you buy?" = "computer"). The secondary focus is new, but does not receive sentence stress, and does not form the direct answer to a putative question ("What did you ≠ "a," "used"), but provides supporting semantic content. These distinctions will help explain the structure of RD phrases.

RD phrases bear several types of less important information. These include topical, inferable, and secondary new information (content that is new but not under primary focus and stress), including Chinese topic-comment structures. English RD is more often limited to topical and inferable information, while Chinese is less restricted, especially since more than one

constituent (or parts of more than one constituent) can appear in the RD phrase. A Chinese RD can contain a combination of a topical, inferable, or secondary information item. Of course, the main clause can contain these kinds of items as well, but only the main clause can bear the primary focus of the sentence. An RD phrase with the primary focus would be infelicitous in any known language. Placing an intonational phrase as, say, an afterthought after the main clause, but with a main focus in the following phrase, would essentially chunk the phrase into a separate new prosodic phrase and/or a new clause, and thus, not an RD.

RD phrases in Chinese and other languages may encode new information of a secondary or minor nature, but not information that is wholly new and crucial to the discourse. Genuinely new information in an RD phrase is infelicitous in English (Ward & Birner, 1996), as shown below, though this claim should be qualified by stating that the most crucial, primary focus information is infelicitous here. In the following example, "boulders" would be the prime candidate for primary focus and sentence stress, so it is infelicitous when presented in an RD phrase, while non-new and less important items like "some of" (a quantifier phrase modifying a new item) in the first example, and "pipes" in the second example are possible. The same principle holds for Chinese, since primary focus items do not appear in RD phrases, and thus in movement based analyses they are moved to the main clause (Cheung, 2009).

23. Below the waterfall..., a whole mass of enormous glass pipes were dangling down into the river from somewhere high up in the ceiling!

    *They really were **enormous**, some of the boulders in the river. Nonetheless, they were sucked up into the pipes along with the brownish muddy water. (Ward & Birner, 1996:472)

24. Below the waterfall (and this was the most astonishing sight of all), a whole mass of enormous glass pipes were dangling down into the river from somewhere high up in the ceiling! They were really **enormous**, those pipes. They're must have been a dozen of them at least, and they were sucking up the brownish muddy water from the river and carrying it away to goodness knows where. (Ward & Birner, 1996:471)

Positing RD phrases as additive structures commenting on the main clause, especially on the referent under primary focus, can subsume the various proposed pragmatic functions of RDs. This can explain why RDs can sometimes function as afterthoughts, repairs, additive information (cf. additive focus or identificational focus), and as will be seen later, minor emphasis. Depending on the context, for example, the next examples could fit different functions. Example (25) could likely be additive (in the sense of adding information that is not of primary focus), as it provides secondary, additional information about the verb ('eat-not-fill'), which is the primary focus of the main clause (e.g., in response to a putative question like "What could you not do?"). In (26) it could be an afterthought or repair regarding the subject that is omitted at first.

25. Women chībubào, zài tamen jiā.
we eat-not-fill, at their house
We can't get enough to eat at their house.
(Packard & Shi, 1986:2)

26. Wui maai jat bou dinnou lo, keoi.
will buy one CL computer SFP, he
He will buy a computer. (Cheung, 2009:203)

In (25) the RD contents could be topical, if previously mentioned or known; or they could be secondary focus, if not previously known or mentioned, but simply serving as supporting information to the primary focus[9]. In (26) the RD phrase is topical, since as a pronoun it is previously known or mentioned information. It is possible that RDs with secondary information more likely contribute to interpretation of the main focus, while RDs with topical or implicit content may more likely contribute to other parts of the main clause. For example, in (25) 'at their house' clarifies the verb and primary focus of the main clause, while 'he' in (26) clarifies the subject of the verb of the main clause. Research with conversational corpora is needed to investigate whether secondary information RDs typically pattern as additives to the primary focus, or whether non-new RDs pattern as clarification and repair devices (as many examples of Chinese RDs in the literature are cited without a conversational context).

Furthermore, there exists a level of minor information that can be termed implicit or inferable, which is intermediate between topical and new, and is similar to the distinction between explicit and implicit focus in Grosz (1977). This corresponds to the category of information that can be "old" to the listener, but "new" to the discourse in Centering Theory (Walker & Prince, 1996). Typical implicit items include general time adverbials ("today, now"), discourse markers ("you know"), fillers ("and such, and stuff"), and other parenthetical information. Prosodically reduced parenthetical items can occur sentence-initially, sentence-medially, or sentence-finally, and in various

9) Whether information is previously mentioned or known to listeners is what distinguishes topic from focus or new information, such as RD secondary focus. In the various Chinese RD sentences cited in these various studies, the preceding context is not given, so it is sometimes unclear from those examples whether the RD contents are topical or secondary focus.

languages they generally serve various pragmatic functions such as adding implicit or minor information for clarification, including discourse markers (e.g., 'by the way' in "We're going, by the way, to pick up your car") or afterthoughts (see, e.g., Nespor & Vogel, 1986). As Grosz and Ziv (1998) note, RD phrases may contain new but related information, as well as inferable information. Thus, an RD phrase can serve as a means of delivering minor or implicit information. Specifically, it may add further minor information about an old referent.

27. Hoi saam go wui gwaa, keoi gamjat.
    Open three CL meeting SFP, he today
    He had three meetings today. (Cheung, 2009:201)

This is a seemingly unclear category between old and new, and difficult to distinguish from purely topical and new content. However, a model for old or given versus new information derived from Centering Theory (Walker & Prince, 1996) provides a test for this. In this framework, the information status of a word can be distinguished by whether a word is old or new to the listener or to the discourse. Topical items are of course old to the listener by virtue of being mentioned in the discourse, as well as in the listener's mind. Implicit or inferable items, on the other hand, are items that can be new to the discourse, but already known to the listener. Items like 'today' may be new to a conversation, or to a particular subset of a discourse on a particular discussion topic, but not new to the listener in the context, as s/he can readily interpret items like 'today.'

3.3. Contrast and Emphasis

Chinese RD phrases can include repetition and a sort of minor emphasis. Guo's (1999) proposal that RD phrases do not specify the exact nature of such emphasis was not explained within a theoretical framework. Emphasis and contrast are associated with a contrastive or emphatic sentence stress on the item in question, so at first minor emphasis seems counter-intuitive. However, two levels of emphasis need to be distinguished, which will make possible the notion of minor emphasis as a possible function of RD. Contrast and emphasis belong to the domain of special focus, which is distinguished in information structure models from new information and normal focus (see, e.g., Gundel, 1999). Just as new information can be subdivided into primary and secondary focus, an analogous distinction is proposed here for special focus.

Special focus consists of (1) explicit contrasts, e.g., between two explicitly mentioned items ("I'll have the trout, and you can try the salmon"); and (2) emphasis, where the contrast exists via implicature. For example, "Get out of my chair now!" contrasts with implied alternatives ("not later or whenever"). Just as new informational focus exists at two levels, broad and narrow, special focus likewise exists at two levels. The most important item may receive special stress (sentence or nuclear stress), which constitutes the primary special focus. Other contents are compared but are not the main point of the utterance. In the aforementioned sentences, some words are explicitly stress marked ('trout,' 'salmon,' 'now') as primary special focus, while the other accompanying contents being compared in the utterances are secondary. This distinction between primary and secondary special focus is analogous to van Deemter's (1999) distinction between stronger contrariety and weaker

contrast.

This distinction between the broader, more general domain of contrasted material (secondary special focus) in emphasis and contrasts, versus the primary special focus, is relevant to various pragmatic forms such as repetition and various forms of emphasis and contrast in information structure, special stress, and degrees of emphasis in repetition and in structures like RD and others[10]. Special stress marks the primary special focus items in English, Chinese and many other languages. Secondary special focus is not stressed, and can be expressed in an RD phrase for a so-called minor emphasis, distinguishing it from the new information focus in the main clause. In fact, RD phrases that invoke emphasis or contrast will only involve secondary special focus, and never primary special focus; primary special focus items will appear in main clauses with special prosodic stress marking.

RD emphasis can occur, for example, with constituents that are repeated from the main clause, or at least coreferential, e.g., with a dropped subject in the main clause. In the examples below, repeated from above, a low level of emphasis is placed on *lái* 'come' and *nǐ* 'you', but without overriding, clashing with, or interfering with the normal focus and the normal flow of information.

28. Zhèi biár lái zhù, lái.
    this side come live come
    Come live over here. (Packard & Shi, 1986:8)

10) For example, cleft sentences involve contrast. Thus, the whole cleft constitutes the broad special focus, while the stressed item represents the primary special focus; e.g., "It's not the **chicken** that I like, it's the **duck.**"

29. Yào rè shuǐ ma, nǐ.
want hot water SFP you
Do you want hot water? (Packard, 1986:3)

Here the RD phrase with repetition can serve as minor emphasis, in that it presents secondary special focus material. One reason for invoking minor emphasis might be if the speaker wants to highlight a topic for continuation as the topic in the discourse. For example, in (30) minor information is added in the RD phrase about the referent, which is then continued as the topic of the following sentence.

30. They were really **enormous**, those pipes. They're must have been a dozen of them at least... (Ward & Birner 1996:471)

In repetition and minor emphasis, the RD adds secondary second focus content to the utterance. This minor emphasis could be used for, or overlap with, other pragmatic functions, such as highlighting topic continuation, or for conversational repair. Depending on the context, "ticket price" in (31) could be repeated from the immediately preceding context for clarification or repair purposes.

31. Tā tèshū, piàojià.
it different, ticket price
It's different, (as far as) ticket price (is concerned).
(Packard & Shi, 1986:2)

Emphatic adverbials, or focus markers (König, 1991), in RD phrases can be indicators of secondary special focus. In a canonical sentence, a focus

marker (e.g., 'only, even, too, also') itself can take the primary special focus and special stress; or instead, the word it modifies can come under primary special focus and special stress, allocating the focus marker to the secondary special focus domain. For example, in 'he only borrowed the novel' in a canonical English sentence, primary special focus and special stress could fall on one item - 'only,' 'borrowed' or 'novel' - with the others being secondary. In the Chinese example in (32), only 'novel' could be under special primary focus, if it is stress marked, while 'only' and 'borrowed' are relegated to the RD phrase, because they represent secondary special focus. This distinction can now explain how focus markers can occur in Chinese RD phrases, separated from the word in the main clause over which they have semantic scope.

32. Nà běn xiěoshuō ba, Zhāngsān zhǐ jiè-le.
DEM CL novel SFP, Zhangsan only borrow-PERF
(Cheung, 2009:213)
Zhangsan only borrowed the novel. (and nothing else)

33. Zukkau lo, Billy zinghai zungji tai.
football SFP Billy only like watch
It is obvious that Billy only likes to watch football. (i.e., not cricket) (Law, 2003:245)

In these examples, the focus marker 'only' belongs to the secondary special focus domain, as do other contents following the focus marker in the RD phrase. The primary focus is found in the main clause, and cannot occur in the RD. A primary focused item (new information, or special focus) cannot appear in an RD phrase, as it would be considered infelicitous, because RD

phrases only contain secondary or minor contents. An RD phrase would probably be chosen rather than canonical structures for this reason. The alternatives would be to place the material in a relative or subordinate clause. However, for many items, the semantic content would be insufficient for an entire new clause.

3.4. Structural Coherence

The typology of information structure sketched out here can explain the types of RD phrases in Chinese as well as in English. It describes the kinds of information found in RDs and their functions. This typology, summarized below, represents a modified and extended version of the givenness hierarchy of old and new information (Gundel et al., 1993). This typology can address the problem of structural integrity, since some Chinese RDs seem to lack syntactic integrity. Some can consist of two juxtaposed constituents or partial constituents, which together do not build a well formed syntactic tree. However, such an RD phrase has integrity as an informational phrase, in that it follows the topic-focus hierarchy. RD phrases never include primary content; only main clauses can contain primary contents. RD phrases consist of non-primary content - secondary, implicit, or topical. If an RD phrase consists of two constituents, they follow an order from less to greater prominence on the hierarchy. This pattern of informational prominence is in fact attested in the data, the examples cited above. The hierarchy is summarized as follows.

34. Table 1. Topic-focus hierarchy, or informational hierarchy

1. Topical	
a. Minor topics	
b. Prominent topic	
2. Implicit / inferable information	
3. New information (new focus)	4. Special focus
a. Secondary new focus	a. Secondary special focus
b. Primary new focus	b. Primary special focus

This hierarchy follows from the speaker's mental processing and assessment of the familiarity versus novelty and importance of the information. The details of topicality will not be dealt with here, but essentially, the more prominent topic tends to be the sentence topic, and minor items are other topics and information already mentioned. These are present in the speaker's and listener's memory, and are easy to process and comprehend (Bock, 1982). As such, they can occur as subjects at the start of sentences, entailing minimal processing demands, and can sometimes be omitted from sentences. Items in information structure may be non-contiguous in that they are overridden by syntactic constraints. Topical information can not only appear in the subject, but can also appear in the predicate in the form of object pronouns, mixed in with new material in the predicate (cf. Gussenhoven, 1999; van Deemter, 1999), because the syntax, especially in English, constrains object pronouns to appear in the predicates.

New focus is what the speaker considers new to the discourse and not mentioned, from the speaker's or listener's point of view[11]. This, especially

11) Focus might be related to the construct of foregrounding and backgrounding, which has been used variously, for example, to describe the relative prominence of main clauses versus subordinate clauses (Chu,1998). As Chu notes, notes, however, the

the primary new focus, is marked with extra prosodic prominence or syntactic prominence (at or near the end of the clause). Special focus outweighs new focus in importance and in prominence, e.g., in stress assignment. Sentences tend to follow this hierarchy, as much as the syntax allows, in that older items precede newer, and the most prominent comes after less prominent new information.

Structural coherence and integrity come from the elements of an RD phrase following this hierarchy, in that (1) RD phrases consist of only non-primary items, and (2) if an RD phrase has more than one constituent, they follow the order of this hierarchy, from less to more prominent. Primary focus items may not appear in an RD phrase; only topical, inferable, and secondary information types are possible. While an RD may seem ill-formed syntactically, in Chinese it can still be well-formed in terms of informational domains and information structure. Some examples, including syntactically eccentric constituents, are shown below.

35. Table 2: Informational phrases in Chinese RD phrases.

Info sequence	Example
Topic	Tā tèshu, piàojià. it different, ticket price It's different, (as far as) ticket price (is concerned). (Packard & Shi, 1986:2)
Inferable	Kaīshǐ a, xiànzài. begin SUG, now Let's begin now. (Packard, 1986: 3)

matter of grounding is still not a well defined construct and requires better theoretical elaboration.

Secondary new focus	Tā gàosù wǒ fàng nàr, zhèxiē shípǐn. he tell I put there these food items He tells me (that it should be) put over there, these foods. (Law 2003)
Secondary special focus	Zhèi biár lái zhù, lái. this side come live come Come live over here. (Packard & Shi 1986:8)
Topic + Inferable	Hoi saam go wui gwaa, keoi gamjat. Open three CL meeting SFP, he today He had three meetings today. (Cheung 2009:201)
Topic + Secondary new focus	Shé le, nà bù. broken ASP, that not That will break, won't (it)? (Packard & Shi 1986:4-5)
Topic + Secondary special focus	Nà běn xiǎoshuō ba, Zhāngsān zhǐ jiè-le. DEM CL novel SFP, Zhangsan only borrow-PERF Zhangsan only borrowed the *novel* (and nothing else). (Cheung 2009:213)

The above examples are typical and representative, in that they flow from less to more prominent in terms of topic-focus structure. Chinese RD phrases are thus coherent, and well-formed as information structure phrases, as they fit patterns such as the above that are consistent with the topic-focus hierarchy.

The same applies for English, albeit more imperceptibly, since English RD phrases are more limited to a single well-formed constituent. An English RD phrase (36a-b) can encode, for example, a topic, or a topic plus secondary new item, or such. English has less variety in RD phrases than in Chinese due to the syntactic constraints operative in English that enforce

syntactic well-formedness (constituency) and coreferentiality. The well-formedness constraints would include those that require a complete, intact constituent, from an XP (e.g., a noun phrase, adjective phrase, adverb phrase, prepositional phrase, verb phrase), to a full, well-formed predicate structure and full clause structure[12].

36a. ...so he comes over, John, and... (topic)
36b. ...so we saw him come over, John does, and... (topic + secondary new focus) (Givón, 2001:268)

The RD phrase achieves structural coherence with the main clause, because it is included in the same utterance phrase, forms a legitimate informational constituent, and contributes to the overall informational content. In the information structure, it achieves coherence with the main clause because it immediately follows the primary focus of the main clause. As such, it comments on the primary focus or another element of the main clause, and this interpretation is added as the listener performs sentence-final integration of the semantic content of the whole utterance. An RD phrase consisting of juxtaposed constituents, though syntactically not so well-formed, nonetheless achieves structural coherence within itself, because it consists of a sequence of constituents from lesser to greater informational prominence, but lesser prominence than the main clause predicate that immediately precedes the RD phrase. The RD phrase thus follows the informational hierarchy just as the main clause does, since main clauses follow the informational

12) The relevant syntactic constraints are likely similar between English and Chinese. Relevant syntactic differences between the two languages would primarily entail other kinds of XP-level and predicate structures from the well-known Chinese structures such as aspect markers, sentence-final particles, and preverbal structures like *gěi* datives and *bǎ* constructions.

hierarchy from lesser to greater informational prominence, from sentence subject to the sentence terminus. Thus, these RD phrases are well-formed according to the informational hierarchy, as in (35) above.

We thus have the following constraints operative across languages with RD, with some being more relevant or non-relevant to some languages than in others. Some constraints will naturally conflict, so a given language will accord some a greater role than others, and thus render others inoperative.

37. Constraints on RD across languages
    (1) RD bears only non-primary content (topical, implicit, or secondary content)
    (2) RD bears no primary new or special focus
    (3) RD consists of only one syntactic constituent
    (4) Multiple constituents are ordered according to the information structure hierarchy
    (5) RD (and other final items after the sentential / nuclear stress) adds pragmatically to the interpretation of the main clause
    (6) Coreferentiality: An RD constituent must be coreferential with a constituent of the main clause

Constraints 1, 2 and 5 seem to apply universally across any language with RD. Constraint 3 is operative in Western languages, while Constraint 4 is operative in Chinese. These could be handled in a theory like Optimality Theory (OT) or other constraint-based theories, whereby the constraints potentially exist universally in all languages, but some constraints have such low status in some that they are practically non-operative, or have no apparent effect on the output. Thus, Constraint 3 is lower ranked in Chinese, such that RD phrases may sometimes consist of one constituent, but

sometimes more than one; and Constraint 4 is ranked low in English and other Western languages, where it is trumped by Constraint 3. These constraints could be formalized and cast in a form of OT that allows for pragmatic constraints, or another constraint-based theory of syntax and pragmatics. This would be possible way of providing a cross-linguistic account of RD phenomenon. More research is needed to properly understand and formulate Constraint 5, and to explicate in further detail how RD might be related to other sentence-final phenomena.

The coreferentiality constraint (Constraint 6 above) applies in Western languages, but is largely inoperative in Chinese, such that Chinese RD constituents need not be coreferential. However, they sometimes can be coreferential, and as seen above, in such cases they tend to take on functions related to repair, clarification or emphasis. Thus, Chinese RD phrases do not have to be syntactically derived, related, or coreferential with main clauses. They need only be pragmatically well formed by following Constraints 1, 2, 4 and 5 above. Because they add to or constrain the interpretation of the sentence at the sentence-final integration point, they achieve pragmatic coherence with the main clause.

4. Conclusion

An account of Chinese right dislocation has been provided in this paper by appealing to the prosodic, syntactic and informational properties of the right periphery. The prosodic final lowering is suitable for minor information; its location after the primary focus and more or less concurrent with the point of sentence-final integration (wrap-up) allows it to serve as minor additive

information regarding the content of the main clause. RD phrases function as additive phrases, providing additional minor information regarding the interpretation of the sentence. Speakers can then make use of its additive function near the wrap-up point for various specific pragmatic purposes such as clarification, afterthoughts, repair, minor emphasis, and highlighting a topic in topic-focus chaining.

The roles of syntax and information structure have been considered here, which previous accounts did not address. The analysis of RD here is more parsimonious than forms of the leftward movement hypothesis, as it addresses issues that the transformational approach cannot address or resolve. Movement is not needed to explain their form, as they are not remnants of leftward movement of content to a main clause. They are additional minor information segments that do not require a movement based explanation. They derive their form and coherence as informational phrases, not necessarily as syntactic constituents. Appealing to a model of information structure rather than a transformational model can better explain the Chinese RD data. Though some RD phrases may not qualify as complete syntactic constituents, they do qualify as legitimate informational structures. Their structural integrity and coherence comes not from syntactic structure, but from information structure, in that the RD constituents adhere to an informational hierarchy, proceeding from less to more prominent.

There remains more research on RD phrases, for example, possible correlations between particular focus types (e.g., topical, secondary new, secondary special) and specific pragmatic functions like afterthought, repair, topic highlighting, and minor emphasis, along with other relevant contextual factors. Most studies on RD have only examined isolated sentences apart from context, and as mentioned, more contextual analysis of RD phrases in natural corpora is needed. Studies on the grammaticality of the more unusual

RD phrases are needed to understand what Chinese speakers find grammatical, and thus, sociopragmatic and sociolinguistic constraints and variation in their usage and acceptability. Another topic for further research is in the development and grammaticalization of RD phrases, and how RD relates to other right periphery phenomena, such as final tag questions, fillers, and discourse markers (e.g., 'you know'). Further research with Chinese RD phrases in context from conversational corpora can be conducted for a more detailed pragmatic analysis in the future.

A more detailed model of information structure has been sketched out here, and more work remains to be done. Specific constraints on RD have been suggested, and these constraints and information structure categories could be incorporated into formal linguistic models and fleshed out further, such as formal models of pragmatics or constraint based theories such as Lexical-Functional Grammar (LFG), Centering Theory, Optimality Theory, or Optimality Syntax. In such an analysis, the syntactic constraints would be higher ranked and more operative in Western languages like English, but less so in Chinese languages, yet the constraints on RDs as information structure phrases would be highly ranked and operative in both languages. More about how informational domains and constraints interact with syntax merits further research. Nonetheless, as this paper has proposed, this type of approach makes possible a more unified, cross-linguistic explanation of RD forms and functions.

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Abstract

While forms of left dislocation and topicalization serve topic management functions, the status and function of right dislocation are less clear. Various studies have treated it as afterthought, a repair device, a focus marking device, or a form of illocutionary emphasis. However, the Chinese data (Mandarin and Cantonese) also pose particular problems for structural analysis, as these forms in Chinese exhibit violations of syntactic integrity and coreferentiality. Previous syntactic and pragmatic analyses only partially explain their structure or use, but a more comprehensive explanation of both has been lacking. This paper examines the roles of syntax and information structure, and proposes a more unified pragmatic explanation, with a refined model of information structure. Right dislocation phrases are treated as a form of minor or secondary information, with their coherence deriving from pragmatics. Specifically, these phrases follow constraints of an information structure hierarchy, which accounts for their structural integrity.

Key words: right dislocation; Chinese; information structure; focus; non-canonical sentences

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