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Word Order, Information Structure and Intonation of Discontinuous Nominal Constructions in Cantonese
Ordre des mots, structure de l'information et intonation des phrases nominales discontinues en Cantonais

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Abstract

This paper examines the syntactic, intonational and information structural properties of discontinuous nominal constructions in Cantonese. Four different syntactic constructions are identified which are used to indicate different information status of elements in a noun phrase, all involving two full NPs with either overt or covert heads. Discourse particles play a crucial role, not only for the interpretation of information structure, but also as anchoring points for boundary tones. Otherwise, intonation and prosody are not affected by word order changes, with the exception of optional pauses after or before dislocated constituents.

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Keywords

word order – information structure – discontinuous nominal construction – left-dislocation of NP – right-dislocation of NP – Cantonese

Résumé

Cet article examine la structure de l'information des syntagmes nominaux discontinus en Cantonais, ainsi que leurs propriétés syntaxiques et intonatives. Quatre constructions syntaxiques distinctes ont été identifiées qui servent à exprimer des rôles spécifiques de structure de l'information sur des parties de syntagmes nominaux. Ces rôles impliquent deux syntagmes nominaux complets et indépendants l'un de l'autre, avec des têtes prononcées ou non. Les particules discursives jouent un rôle essentiel, non seulement pour l'interprétation de la structure de l'information, mais aussi pour l'ancrage des tons de frontière. L'intonation et la prosodie ne jouent aucun rôle en dehors des pauses facultatives avant ou après les syntagmes discontinus. L'intonation n'est pas affectée par les changements d'ordre des mots.

Mots-clés

ordre des mots – structure de l'information – phrase nominale discontinue – dislocation à gauche du GN (groupe nominal) – dislocation à droite du GN (groupe nominal) – Cantonais

1 Introduction

Discontinuous nominal constructions (henceforth DNPs) appear in a large number of languages (see Fanselow & Féry 2008; Fanselow & Čavar 2002). Following the terminology introduced by Fanselow & Féry (2008), we distinguish between simple and inverted DNPs. Simple DNPs separate a nominal phrase into two or more parts without affecting the word order of the constituents, as demonstrated by the Ukrainian example in (1). An inverted DNP not only separates parts of a nominal phrase, but also changes the order of the constituents. Languages such as German mainly use inverted DNPs, as for instance in (2). Féry, Paslawska & Fanselow (2007) propose relating the distinction between simple and inverted DNPs to intonational properties. Simple DNPs mostly occur within a single intonation phrase, whereas inverted ones take place across two intonation phrases. In both (1) and (2), the discontinuous constituent is a single constituent with a unique nominal head, called a 'split'

constituent. The term 'canonical' is used here to qualify the most unmarked (or default) word order.

(1) a. Čyja mama čytala knyžku (Ukrainian,
whose:NOM mother read book:ACC:FEM canonical order)
'Whose mother has read a book?'

b. Čyja čytala knyžku mama (Simple split NP)
whose:NOM read book:ACC:FEM mother
'Whose mother has read a book?'
[Taken from Féry, Paslawska & Fanselow (2007)]

(2) a. Peter hat schon viele Schlösser besichtigt (German,
Peter has already many castles visited canonical order)
'Peter has already visited many castles.'

b. Schlösser hat Peter schon viele besichtigt (Inverted split NP)
castles has Peter already many visited
'Castles, Peter has already visited many.'

Cantonese differs from both Ukrainian and German in that the only type of DNP allowed involves two separate full NPs which are thematically related. It is often the case that one of the two NPs has an overt head and that the noun dependents – adjective, numeral, demonstrative – are in a separate NP with a covert head. In other words, there are no split constituents in which two parts of a single nominal phrase appear at two separate positions in the sentence. For instance, the DNP in (3a): [1]

(3) a. 雜誌 (呀), 好 多 都 好 賣得。
[$_{NP1}$ zaap^{L}zi^{M} $_{i}$ (aa^{L})] [$_{NP2}$ hou^{HR} do^{H} $Ø_{i}$] [$_{VP}$ dou^{H} hou^{HR} maai^{L}=dak^{H}]
magazine DSP good many all good sell=PTN
'The magazines, many of them sell very well.'

b. 雜誌 好 多 呀, 個 好 賣得 啦。
[$_{NP}$ zaap^{L}zi^{M} hou^{HR} do^{H} aa^{M}] [$_{VP}$ go^{M} hou^{HR} maai^{L}=dak^{H}] laa^{M}
magazine good many DSP too good sell=PTN DSP
'Many magazines too, they sell very well.'

1 Visit http://www.lshk.org/node/47 for details of the Cantonese Romanization scheme, *Jyutping*. For practical and heuristic reasons, we adopt in this paper the descriptive tonal abbreviations provided in Table 1 (see below) for all Cantonese examples, rather than using the numbers 1 to 6 to refer to historical tonal categories in Middle Chinese. A key to the abbreviations in the glosses for Cantonese examples is provided at the end of the paper.

c. 好 多 雜誌 (呀), 都 好 賣得。
[$_{NP}$ hou^{HR} do^{H} zaap^{L}zi^{M} (aa^{M})] [$_{VP}$ dou^{H} hou^{HR} maai^{L}=dak^{H}]
good many magazine DSP all good sell=PTN
'Many magazines sell very well.'

When a nominal phrase is split into two parts in Cantonese, the two parts may appear side by side, belonging to two coreferenced NPs. The meanings of (3b) and (3c) are essentially identical to that of (3a). These sentences vary only in syntactic and information structure. The simplest among them is (3c), especially given the fact that it can occur without any particle at the end of the NP. In (3a), the DNP has resulted from topicalization, where the fronted head noun *zaap^{L}zi^{M}* 'magazine' is optionally followed by the topic marker *aa^{L}*. The function of this particle, when its pitch is raised, is to emphasize the preceding NP, as shown in (3b). Even though the order of the head noun and the modifier is reversed in this sentence, they nevertheless constitute a single continuous nominal phrase.

In this paper, the prosodic correlates of Cantonese DNPs are investigated. In Féry, Paslawska & Fanselow (2007), it was demonstrated, using Ukrainian as an example, that the presence of both simple and inverted DNPs goes hand in hand with free word order and a flexible intonational structure. In particular, phrasal and boundary tones expressing different kinds of pragmatic meanings, like information structural ones, appear to favor the emergence of DNPs.

The variety of Cantonese studied here, namely the language commonly spoken in Hong Kong, is an extreme kind of tone language. Minor variations in some of the Cantonese tones are found in different descriptions, e.g., Hashimoto (1972: 91–93) and Bauer & Benedict (1997: 118–120). To some extent, these variations are related to dialectal differences. For example, Bauer & Benedict include a falling allotone (pitch value: 53) for the high level tone (55) in the tonal system of Guangzhou Cantonese. This falling allotone has disappeared in modern Hong Kong Cantonese.

We follow here Lin (2002: 20), who performed acoustic measurements of tonal realizations in present-day Hong Kong Cantonese. Every syllable in Cantonese carries one of the six lexical tones listed in Table 1. A large number of syllables in Cantonese are free-standing morphemes and there is no contrast between stressed syllables and reduced syllables, as found in Mandarin. Due to these properties, the syllable has been shown to have a 'highly salient psychological reality' (Wong *et al.* 2005, 274).

The tonal pattern of a sentence is nearly entirely determined by this rich lexical tonal specification, and the space for pragmatic-driven changes in pitch is extremely limited. In a sense, Cantonese presents the opposite properties of

a language with free intonation, as the intonation space, in accommodating lexical tones, may not be fully utilized (Matthews & Yip 1994: 27; Yip 2002; Sybesma & Li 2007).

TABLE 1 *Cantonese lexical tone system*

Basic Pitch Shape	Pitch Value	Traditional Name
High Level (H)	55	Yin Level
High Rising (HR)	25	Yin Drifting
Mid Level (M)	33	Yin Departing
Falling (F)	31	Yang Level
Low Rising (LR)	23	Yang Drifting
Low Level (L)	22	Yang Departing

The past decade has witnessed a growing interest in the study of Cantonese intonation, particularly Lin (2002), Flynn (2003), Wong *et al.* (2005) and Fox *et al.* (2008). According to Flynn, who provides a phonetic analysis of a live radio interview, an overall declination is observed in Cantonese intonation for all sentence types both at the top level and at a lower level of phrasing, in a prosodic domain called the 'intonation group,' or, in our terminology, the 'p-phrase'. A prosodic constituent the size of a p-phrase is usually larger than a word and smaller than a sentence. Typically it corresponds to a syntactic constituent. An intonation phrase (i-phrase) corresponds to a sentence in our data. This study shows that lexical tone contrasts are able to be maintained in spite of intonation-driven declination, because relative pitch differences can still exist within the diminished pitch range of the intonation group. The pitch of a new intonation group is reset at a point higher than the end point of the preceding intonation group, irrespective of the lexical tones on the boundaries.

Lin proposes a bipartite model for Cantonese intonation: sentence-body intonation and sentence-final intonation. Five kinds of contour are recognized for the former, and three for the latter. Lin (2002: 89) points out that intonation on the final syllable does not affect other parts of the utterance, an observation that was corroborated in our data.

Another finding from Lin (2002) confirms the manifestation of pitch range expansion as a result of interaction between intonation and lexical tones in Cantonese, similar to the findings of Y. Xu (1999) for Mandarin. Finally, both Flynn (2003: 45–46) and Lin (2002: 89) note that, while stress does not occur in Cantonese, pragmatic contrast can be achieved through prominence when the

duration of a selected syllable is prolonged (which is often accompanied by expansion of pitch range).

Wong *et al.* (2005) propose a general annotation scheme for Cantonese intonation, and describe the phenomenon of tonal fusion in some detail.

Fox *et al.* (2008) adopt an experimental approach to Cantonese intonation. Their results confirm the division of the intonational pattern of a sentence into body and tail. Utterance-body intonation displays a gradual declination from a mid-high pitch to a low pitch, and four patterns are observed on the utterance-final intonation: neutral, falling, rising, and rising-falling.

Our own investigation was inspired by all these studies, and, at the same time, it has a different aim: to investigate whether changes in syntax and information structure have an effect on the prosody, i.e. the interface between grammatical structure and intonation.

Cantonese has optional boundary tones, which may or may not be associated with discourse particles. Law (1990), Sybesma and Li (2007) and Ding (2013) address this in their studies of tones of sentence-final particles. Apart from these, Cantonese has very few intonational markers of information structure.

As part of a larger research project correlating split constructions and intonation, we are interested in the prosodic correlates of languages which do not present, strictly speaking, any kind of split construction, but which, by contrast, present a number of quasi-DNPs motivated by discourse need and/or speaking styles. Cantonese represents such a language. Using the term DNP in a broad sense, we will simply refer to quasi-DNPs found in Cantonese as DNPs.

2 The Cantonese Data

Data and examples presented in Section 4 were collected in November 2013 from two sources: an online corpus of Hong Kong Cantonese available from the Polytechnic University of Hong Kong, and our own recordings of DNPs from two native speakers of Hong Kong Cantonese.

The PolyU corpus provided approximately 61 minutes of sound clips of Hong Kong Cantonese, in which an interviewer asks an interviewee about one of his/her unforgettable life experiences. Audio data and transcriptions of nine informants talking with the interviewer were available. While the time and dates of these interviews are indicated (between March and April 2012), no biographical information about the interviewees is provided in the transcriptions. We assume that they have all grown up locally in Hong Kong and that, based on the content of the interviews, their ages probably vary from 20s to 50s.

The Topic-Comment construction is a feature of spoken Cantonese. Besides topicalization of an entire NP, we find a number of instances of dislocation in this corpus of spontaneous Cantonese, including four instances of fronting of a VP, three instances of adverbs moved to the clause-final position and one instance of rightward dislocation of an (entire) NP. DNPs, however, do not occur in this corpus.

There are two putative cases, in which the modifying part appears to have been dislocated outside the NP. As shown in (4) and (5), these two cases convey essentially identical meaning, and are used by the interviewer to change the topic of conversation. (Original punctuation used in the source is retained in the Cantonese sentences.)

(4)

由	細	到	大	有	冇			
jau^{F}	sai^{M}	dou^{M}	daai^{L}	jau^{LR}	mou^{LR}			
from	small	to	big	have	not.have			
	一件	事		你	好	難忘		嘅?
[$_{NP}$	jat^{H}gin^{L}	si^{L}		[$_{S}$ nei^{LR}	hou^{HR}	naan^{F}mong^{F}		ge^{M}]]
	one.CLS	matter		2SG	good	hard.to.forget		REL

'Do you have something unforgettable in your whole life?'

(Informant 18, Interviewer.1, 00:07)[2]

(5)

由	細	到	大，	你	有	冇	一件	事，
jau^{F}	sai^{M}	dou^{M}	daai^{L},	[$_{S}$ nei^{LR}	jau^{LR}	mou^{LR}	jat^{H}gin^{L}	si^{L}],
from	small	to	big	2SG	have	not.have	one.CLS	matter
你	覺得	好	難忘	㗎?				
[$_{S}$ nei^{LR}	gok^{M}dak^{H}	hou^{HR}	naan^{F}mong^{F}	gaa^{M}]				
2SG	feel	good	hard.to.forget	DSP				

'Do you think you have something unforgettable in your whole life?'

(Informant 19, Interviewer.1, 00:02)

In (4), the nominal phrase contains a relative clause (marked by the embedded bracketing) that follows the head noun *si*^{L} 'matter' instead of preceding it. While this change of word order necessarily involves movement of some elements, fronting of the head noun has not led to a split of the NP. The nominal phrase still represents a single constituent, not a DNP; no particle or pause can be inserted between the head and the relative clause, for example.

In (5), on the other hand, the relative clause has become an independent clause and the erstwhile head noun is situated in a separate clause. The fact

2 The notation *Informant X*, *Interviewer.n*, *00:0#* reads as follows: in the recording with Informant X, the nth turn of the interviewer's talk, starting at second # into the sound clip.

that these are two clauses is evinced by the punctuation used and by the choice of utterance-final particle, as well as the presence of an identical subject *nei*^{LR} 'you' in each of the clauses. Thus this is not a case of DNP either.

Cantonese DNPs and their non-split counterparts presented in Section 4 are based on our recordings from two female speakers, M (in her 30s) and H (in her 20s). Both of them were born and raised in Hong Kong. Unless otherwise indicated, all examples of Cantonese sentences are extracted from recordings of Speaker H. To facilitate elicitation, targeted sentences were embedded in ten pieces of short constructed dialogue (see Appendix I). The first author took the role of interlocutor during the recording session. His utterances, however, are not included in the corpus of data for this study.

This method of elicitation provides some discourse contexts conducive to the occurrence of certain sentences, but it is far from ideal, as no information on the background of these dialogues was given to the informant, such as the supposed relationship between the interlocutors or the location of conversation. Such details were, however, supplied during elicitation sessions when a consultant showed difficulty in imagining a suitable discourse situation. Overall, this method is useful for obtaining 'naïve' data.

Finally, it is worth mentioning a grammaticality task which was conducted to verify the acceptability of the data used in this study. In late November and early December 2013, volunteers were sought from among undergraduate and M.A. students of linguistics at the University of Hong Kong to rate naturalness and acceptability of the sentences in the ten dialogues. Both groups consisted of young speakers of genders (with an estimated age between 20 and 25), all born in Hong Kong and speaking Cantonese as their first language. None of them were involved in recording of DNPs for this study.

The undergraduate group, working in pairs, made their judgments based on the written dialogues (in Cantonese only) without listening to them. There was no time limit and they could discuss freely with their partner before agreeing on a rating for the utterances. The M.A. group, working as individuals without discussion with others, was given the chance to listen to the recorded dialogues as well as reading transcriptions (in written Cantonese) when judging acceptability of the utterances. A pause was made after playing each dialogue to allow them to rate the sentences just heard.

While it is true that some of the DNP constructions in the recordings are less likely to occur in everyday conservation, they all represent possible structures in Cantonese, as confirmed by more than a dozen native speakers. None of the DNP examples was unanimously rejected by all speakers in the grammaticality task. Details of the results are available in Appendix II.

3 Continuous Nominal Phrases in Cantonese

Cantonese is a classifier language, and noun-dependent functional categories, such as demonstratives, numerals, and classifiers, generally occur in an NP in the order Dem-Num-CLS-N (Law 2003; Matthews & Yip 1994: 88). The simplest NP in Cantonese is a bare noun without a modifier or particle, as in (6a). Discourse particles, if present, are attached at the end of the NP, phrase-finally, as in the second example in (6a). A noun can be modified directly by a quantificational adjective, as in (6b), or by a quasi-adjective (Q-A), which cannot precede the noun it modifies directly, as shown in (6c). The quasi-adjective requires the particle *ge*^{M} to establish a modifying relation between it and the head noun. Without the modification particle *ge*^{M}, monosyllabic quasi-adjectives can often combine with the head noun into a compound, but this option is subject to lexical selection and is unavailable with some quasi-adjectives, as shown in (6d).

(6) a. 雜誌 [zaap^{L}zi^{M}] ; magazine
雜誌 [zaap^{L}zi^{M} aa^{L}] magazine DSP

b. 好 [hou^{HR} good$_{ADV}$ 多 do^{H} many$_{A}$ 雜誌 zaap^{L}zi^{M}] magazine
'many many magazines'

c. 新 [san^{H} new$_{Q\text{-}A}$ 嘅 ge^{M} MDF 雜誌 zaap^{L}zi^{M}] ; magazine
'new magazine(s)'
薄 [bok^{L} thin$_{Q\text{-}A}$ 嘅 ge^{M} MDF 雜誌 zaap^{L}zi^{M}] magazine
'thin magazine(s)'

d. 新雜誌 [san^{H}-zaap^{L}zi^{M}] ; new$_{Q\text{-}A}$-magazine
'new magazine(s)'
* 薄雜誌 [bok^{L}-zaap^{L}zi^{M}] thin$_{Q\text{-}A}$-magazine

Besides the quasi-adjective illustrated in (6c), the syntactic category of the modifier introduced by the modification marker *ge*^{M} can also be an NP, a PP or a VP, as shown in (7a), (7b) and (7c), respectively. Furthermore, the noun-dependent VP may contain an explicit subject in the relative clause; see (7d).[3]

3 Having a wide range of attributive functions is rather common in Sino-Tibetan languages and is usually analyzed as nominalization by linguists outside mainland China (cf. Thurgood & LaPolla 2003; Yap, Grunow-Hårsta & Wrona 2011).

(7) a. 我 嘅 雜誌 ; 琴日 嘅 雜誌
[NP [NP ngo^{LR}] ge^{M} zaap^{L}zi^{M}] ; [NP [NP kam^{F}jat^{L}] ge^{M} zaap^{L}zi^{M}]
1SG MDF magazine yesterday MDF magazine
'my magazine(s)' 'yesterday's magazine(s)'

b. 關於 雀仔 嘅 雜誌
[NP [PP gwaan^{H}jyu^{H} zoek^{M}zai^{HR}] ge^{M} zaap^{L}zi^{M}]
about bird.small MDF magazine
'magazine(s) about birds'

c. 送 畀 人 嘅 雜誌
[NP [VP sung^{M} bei^{HR} jan^{F}] ge^{M} zaap^{L}zi^{M}]
send DAT person MDF magazine
'magazine(s) that will be sent (as gifts) to people'

d. 佢 送 畀 我 嘅 雜誌
[NP [CP [NP keoi^{LR}] [VP sung^{M} bei^{HR} ngo^{LR}]] ge^{M} zaap^{L}zi^{M}]
3SG send DAT 1SG MDF magazine
'(the) magazine(s) that s/he sent (as a gift) to me'

Since Cantonese lacks nominal morphology, nouns may be interpreted as singular or plural depending on context. When the number needs to be made explicit, a numeral-classifier expression is placed before the head noun, as in (8a). A classifier can also appear without a numeral in the deep structure (as opposed to omission of the numeral 'one' in the surface form) to mark definiteness of the head noun, shown in (8b). If there is a demonstrative in the noun phrase, it must be followed by a classifier even if without an intervening numeral, e.g. (8c) and (8d). The final NP in (8d) also contains the generic Cantonese plural classifier *di*^{H}, which primarily expresses plurality of the head noun in the absence of a numeral. This generic classifier is incompatible with numerals.

(8) a. 三 本 新 嘅 雜誌
saam^{H} bun^{HR} san^{H} ge^{M} zaap^{L}zi^{M}
three CLS new MDF magazine
'three new magazines'

b. 本 新 嘅 雜誌
bun^{HR} san^{H} ge^{M} zaap^{L}zi^{M}
CLS new MDF magazine
'the new magazine'

c. 呢 三 本 雜誌
ni^{H} saam^{H} bun^{HR} zaap^{L}zi^{M}
this three CLS magazine
'these three magazines'

d. 呢 本/啲 雜誌
ni^{H} bun^{HR} / di^{H} zaap^{L}zi^{M}
this CLS CLS:PL magazine
'this magazine/these magazines'

The classifier *bun^{HR}* selected by the head noun can replace the modification marker *ge^{M}*. When this occurs, as in (9a) – (9c), the NP is given a definite reading and the alternative interpretation of the head noun as plural is unavailable. To indicate plurality in this case, the generic plural classifier must be used, as shown in (9d).

(9) a. 我 本 雜誌 琴日 本 雜誌
[$_{NP}$[$_{NP}$ ngo^{LR}] bun^{HR} zaap^{L}zi^{M}]; [$_{NP}$ [$_{NP}$ kam^{F}jat^{L}] bun^{HR} zaap^{L}zi^{M}]
1SG CLS magazine yesterday CLS magazine
'the magazine of mine' 'the magazine from yesterday'

b. 關於 雀仔 本 雜誌
[$_{NP}$ [$_{PP}$ gwaan^{H}jyu^{H} zoek^{M}zai^{HR}] bun^{HR} zaap^{L}zi^{M}]
about bird.small CLS magazine
'the magazine about birds'

c. 送 畀 人 本 雜誌
[$_{NP}$ [$_{VP}$ sung^{M} bei^{HR} jan^{F}] bun^{HR} zaap^{L}zi^{M}]
send DAT person CLS magazine
'the magazine that will be sent (as a gift) to someone'

d. 佢 送 畀 我 啲 雜誌
[$_{NP}$ [$_{CP}$ keoi^{LR}] [$_{VP}$ sung^{M} bei^{HR} ngo^{LR}]] di^{H} zaap^{L}zi^{M}]
3SG send DAT 1SG CLS:PL magazine
'the magazines that s/he sent (as gifts) to me'

As shown in the examples in (9), the classifier can introduce a variety of modifiers to the NP, in the same way as the modification particle can. It cannot, however, introduce a quasi-adjective to the NP; see (10a). Furthermore, only one classifier is allowed at the phrasal level of the NP. If the NP already contains a classifier, the modification particle cannot be replaced with a classifier, as shown in (10b). Note that in (10c), the two classifiers *di^{H}* and *zek^{M}* belong to different levels of structure. The former occurs at the phrasal level, whereas the latter is situated within a compound.

(10) a. 新 嘅/*本 雜誌
[NP san^{H} ge^{M} / *bun^{HR} zaap^{L}zi^{M}]
new MDF / CLS magazine
'new magazine'

b. 三 本 琴日 嘅/*本 雜誌
[NP [saam^{H} bun^{HR}] [NP kam^{F}jat^{L}] ge^{M} / *bun^{HR} zaap^{L}zi^{M}]
three CLS yesterday MDF / CLS magazine
'three magazines of yesterday'

c. 啲 細隻 嘅 雀仔
[NP di^{H} sai^{M}zek^{M} ge^{M} zoek^{M}zai^{HR}]
CLS:PL small.CLS MDF bird.small
'the small birds'

In the NP, only discourse particles may follow the head noun. The order of the modifiers may vary marginally, but a switch involving the head noun will typically result in discontinuity. When discontinuity occurs, the result is two NPs, one headed by the original head noun and the other by a zero head (see Law 2003, who also argues for analyzing both parts of a discontinuous NP as full NPs). In the next section, such discontinuous constructions are examined in detail.

4 Discontinuous Nominal Constructions in Cantonese

Cantonese has a number of constructions which can be interpreted as discontinuous NPs. However, and crucially, all examples appearing in this section involve two NPs, related to each other through their semantic and thematic roles. Both parts have a nominal head, although one of them is a zero head, not realized overtly. In this section, four such constructions are discussed as far as their syntactic, information structural and intonational properties are concerned. The first two cases require topicalization or fronting of the head of an NP, or of the dependent part of an NP (plus a zero head), and in the last two cases, the head or the dependent appears at the right edge of a sentence.

There is a strong tradition in the literature on Cantonese to associate syntactic patterns with their discourse structural properties (cf. S. Law 1990; A. Law 2002). The reason is that NPs are subject to minor modifications by additional classifiers and/or discourse particles, which convey meaning sensitive to discourse conditions. A poor choice of discourse particle can easily result in the rejection by native speakers of Cantonese of sentences with split NPs. Furthermore, the triggering factor for discontinuity is the need to express different

information structural roles on the two parts of the NP. In the absence of distinct information structural roles, there is no reason for discontinuous constructions to emerge. Since the discontinuity always responds to some discourse need, it is only natural to explain a syntactic operation in terms of its pragmatic effects. But, obviously, all informational structures found in discontinuous NPs are also possible in other kinds of syntactic structures, involving for instance two entirely independent NPs. For this reason, we choose to base our categorization on the syntactic structures involved, but always discuss in detail the information structural roles taken by the two parts of the DNP.

The information structural roles that we use in the paper are classified rather conventionally as 'focus', 'topic' and 'given'. Occasionally, we also use the term 'accessible,' which is meant to refer to a focused constituent, but one which has been previously introduced into the discourse context, either as a whole or as a superset.

Focus groups a number of subcategories, such as information focus, narrow focus, association with focus, verum focus, selection, contrast and so forth. The following definition generalizes all these categories:

> Focus indicates the presence of alternatives that are relevant for the interpretation of linguistic expressions.
>
> KRIFKA (2007, 19)

This definition leans on Rooth's (1985, 1992) alternative semantics for focus. See Krifka (2008) for an in-depth discussion of the categories used in this paper.

Topic also has several subcategories, the most important ones being aboutness topic and frame setting topic. A general definition is as follows:

> The topic constituent identifies the entity or set of entities under which the information expressed in the comment constituent should be stored in the Common Ground content.
>
> (KRIFKA 2008, 265)

It has been observed that topic often (but not always) represents given information (Gundel 1985) and that it must be anaphoric (Kuno 1973, 39–44), with either temporary registry (for referents given in the present discourse) or permanent registry (for referents which are unique in the universe of discourse). Expressed in Lambrecht's (1994) terminology, Kuno's insight about topic being anaphoric can be interpreted as follows: the topic always holds the status of being accessible in the Topic-Comment construction. In this connection, we

would like to further point out that the comment essentially conveys new information, although certain parts of it may represent shared information. Moreover, the comment is related to the topic through an 'aboutness' relationship, which Huang (2000, 268) upholds as the well-formedness condition on topic constructions.

The third information structural category of importance here is 'givenness'. The notion of givenness has been attributed a formal status by Schwarzschild (1999), who claims that a given constituent is one which is entailed by the preceding discourse. This use of givenness is restricted to text-givenness (previously mentioned in the discourse), as opposed to context-givenness (contextually salient). In frameworks in which the mental status of constituents is definitional for linguistic categories, this notion is sometimes called 'topic.' But we prefer to keep these two notions clearly separated. A definition of givenness is proposed in the following:

> A given constituent has already been introduced into the discourse by a previous utterance or question, or is somehow prominent in the common ground.

4.1 *Type 1: Head Moved to the Left*

Sentences with topicalization of the head of the NP are illustrated in (11) to (13). We first briefly introduce some syntactic properties of these sentences, and then discuss information structure and intonation in the second and third steps.

NP1, the first part of a discontinuous NP, shown in (11a), typically consists of the overt head noun of a continuous NP in the pre-subject position in the sentence, while NP2, comprised of an adjective modifying a zero (covert) head, remains in the original subject position. The two parts are linked through coreference between the zero head in the subject position and the overt head noun at the sentence-initial position. For the sake of brevity in presentation, the zero head will generally be left unmarked in the examples below. In order to show syntactic changes involved in topicalization, the version with canonical order is given in (11b). (11a) can be paraphrased as 'Speaking of magazines, many of them also sell well.'

4 Free translations in English provide only the essential propositional meaning of the Cantonese sentences. Paraphrases of the examples reflecting more details about the information packaging in the original are usually given in the text.

(11) a. 雜誌 (呀), 好 多 都 好 賣得。
[$_{NP1}$ zaap^{L}zi^{M}$_{i}$ (aa^{L})] [$_{NP2}$ hou^{HR} do^{H} *Ø*$_{i}$] [$_{VP}$ dou^{H} hou^{HR} maai^{L}=dak^{H}]
magazine DSP good many all good sell=PTN
'Many magazines also sell well.'

b. 好 多 雜誌 都 好 賣得。 (Canonical)
[$_{NP}$ hou^{HR} do^{H} zaap^{L}zi^{M}] [$_{VP}$ dou^{H} hou^{HR} maai^{L}=dak^{H}]
good many magazine all good sell=PTN
'Many magazines also sell well.'[4]

As illustrated in (12), the topicalized noun *ce*^{H} 'car' may relate to the direct object of an embedded verb. In other words, the main clause may contain more than one predicate. The sentence can be paraphrased as 'Speaking of cars, I think he has bought many.'

(12) 車 (呀), 我 諗 佢 買咗 好 多。
[$_{NP}$ ce^{H} (aa^{L})], [ngo^{LR} lam^{HR} [$_{CP}$ keoi^{LR} maai^{LR}=zo^{HR} [$_{NP}$ hou^{HR} do^{H}]]]
car DSP 1SG think 3SG buy=PRF good many
'I think he has bought many cars.'

As for the information structure, the fronted noun plays the role of a topic and the remainder of the sentence is a focus, or at least contains a focused constituent. In (13), for instance, where *zoek*^{M}*zai*^{HR} 'bird' is a topic, the focus can be the entire following clause, but it can also be only the adjective 'small' or the verb 'know.' The sentence means something like, 'Speaking of birds, he only knows small ones.'

(13) 雀仔 (呀), 佢 淨係 識得 啲 細隻 嘅啫。
zoek^{M}zai^{HR} (aa^{L}), keoi^{LR} zing^{L}hai^{L} sik^{H}dak^{H} di^{H} sai^{M}zek^{M} ge^{M}ze^{M}
bird.small DSP 3SG only know pl:cls small.CLS DSP
'He only knows small birds.'

Discourse particles are typically optional and express subtle pragmatic meaning in Cantonese. Some discourse particles such as *le*^{H} and *aa*^{L} often accompany the topic. After an NP, *le*^{H} signals a contrastive or implicative topic. It can also be used with a clausal topic (i.e., directly after a VP without nominalization), which is not illustrated here. The particle *aa*^{L}, which also marks an NP as a topic, cannot modify clausal topics.

The discourse particle, serving as a topic marker in the examples just discussed, can be omitted, but its omission may also result in a contrastive reading of the topic in certain contexts. A significant contribution of Cantonese

discourse particles is their influence on intonation when utterances are produced with the conventionalized pitch of the particles. When the particle after the topic NP is removed, different intonational patterns may result; see below for examples.

Pitch tracks of the three versions of (14) are examined here.[5] (14a), illustrated in Figure 1, represents the canonical form. Both (14b) and (14c) contain a DNP: the first one, (14b) in Figure 2, without a discourse particle, and the second one, (14c) in Figure 3, with a discourse particle.

(14) a. 佢 買咗 好 多 書。 (Canonical)
keoi^{LR} maai^{LR}=zo^{HR} hou^{HR} do^{H} syu^{H}
3SG buy=PRF good many book
'S/he has bought many books.'

b. 書, 佢 買咗 好 多
syu^{H}, keoi^{LR} maai^{LR}=zo^{HR} hou^{HR} do^{H}
book 3SG buy=PRF good many
'S/he has bought many books.'

c. 書 呀, 佢 買咗 好 多
syu^{H} aa^{L}, keoi^{LR} maai^{LR}=zo^{HR} hou^{HR} do^{H}
book DSP 3SG buy=PRF good many
'S/he has bought many books.'

As is conspicuous in all examples, the word *syu^{H}* 'book' carries a high level lexical tone. In Figures 1 and 2, this high tone triggers a flat level contour which is final in Figure 1 and initial in Figure 2. However, Wong *et al.* (2005) propose that Cantonese has boundary tones which can be added after the last lexical tone of an intonation phrase. These boundary tones elicit pragmatic meaning (Law 1990; Sybesma and Li 2007; Ding 2013). In Figure 1, there is a fall in pitch at the end of *syu^{H}*, which can be attributed to the presence of a boundary tone for the general falling intonation in Cantonese. This low boundary tone is indicated with L% at the end of the sentence in Figure 1.

A solid line in annotated examples in the diagrams indicates a p-phrase boundary; two solid lines may appear in a long pause, at the beginning and ending points. Sometimes pecked lines are used to select elements of interest. They play no role in any analysis.

In its canonical order, the whole sentence is realized in one large intonation unit, here called an 'intonation phrase', and abbreviated as i-phrase. This

5 All diagrams of pitch tracks are generated using Praat 5.3.42 (Boersma & Weenink 2013).

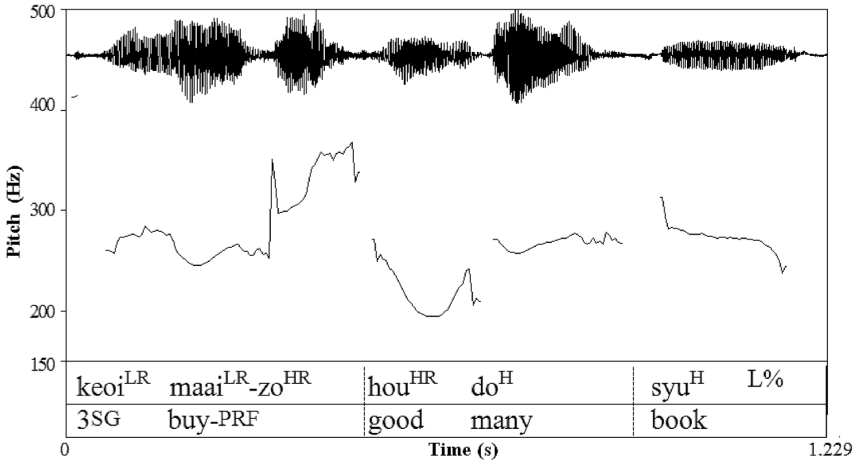

FIGURE 1 *Pitch track of the canonical sentence in (14a)*

unit corresponds to the 'intonational phrase' in Wong *et al.* and to the 'major intonational group' in Flynn (2003). A boundary tone is not mandatory at the end of an i-phrase, however; compare the high tone at the end of the sentences in Figures 2 and 3, where the pitch of the final syllable has basically maintained a level movement. Our recorded data for the set of sentences in (14) from different speakers are consistent in this regard. Figure 4, based on Speaker M's recording of (14c), demonstrates the same pitch shape found in the utterance of Speaker H in Figure 3. The lack of a low boundary tone in the Topic-Comment construction is probably attributable to the fact that the final syllable *do*^{H} 'many' serves as a focus in the DNP.

In the discontinuous versions in Figures 2 and 3, the topicalized word *syu*^{H} forms its own intonation unit, separated from the remainder of the sentence by a long break. Flynn (2003: 103) terms this kind of intonational break a 'highlight pause,' which calls the addressee's attention to what comes after it. It is conspicuous that there is no other tonal change in the discontinuous realizations.

Figures 2 and 3 show the need for a prosodic domain intermediary between the word and the i-phrase. We call this level the 'p-phrase', standing for prosodic phrase. In our data, DNPs are always situated in two different p-phrases. Figure 3 shows the low tone of the particle *aa*^{L} after the topicalized head. As already mentioned, Cantonese particles have their own conventionalized tones. Wong *et al.* (2005) observe that boundary tones and tones of particles

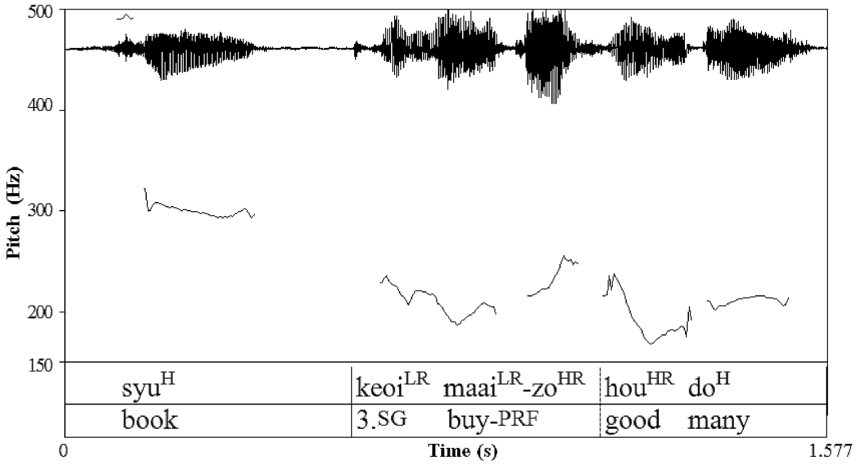

FIGURE 2 *Pitch track of DNP in (14b), without a topic particle*

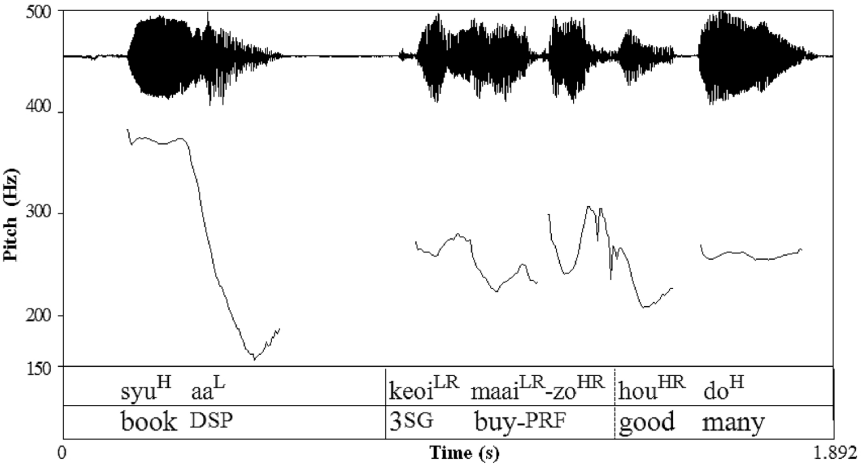

FIGURE 3 *Pitch track of DNP in (14c), with a topic particle*

interact to provide a large number of pragmatic meanings; this has been investigated in Sybesma and Li (2007) and Ding (2013).

4.2 *Type 2: Dependent Moved to the Left*

The dependent part of the NP can also appear without its explicit head sentence-initially, as shown in (15) with a fronted wh-phrase. In this sentence, the initial part of the sentence is an NP with a zero head; its referent appears in the second part of the construction, as suggested by the indexing. It is always

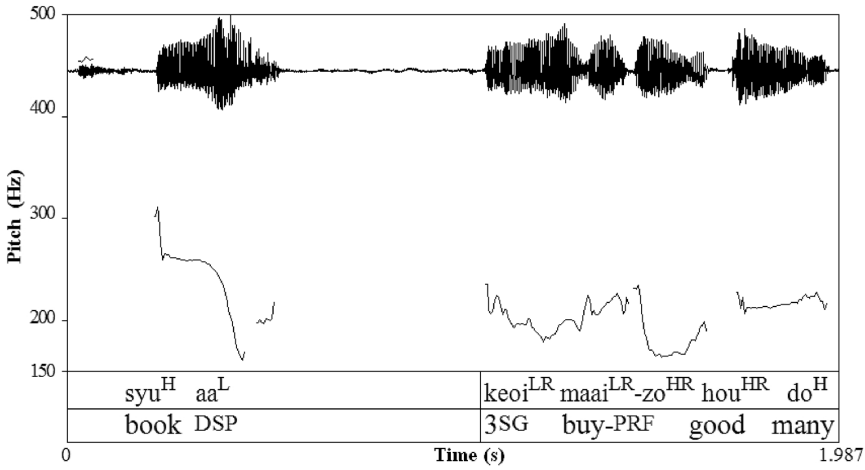

FIGURE 4 *Pitch track of* DNP *in* (14c)*, produced by speaker M*

accompanied by a classifier or a discourse particle.[6] The sentence can be paraphrased as 'Who, did you say? His/her books sell well?' or 'Whose? His/her books sell well?', depending on the use of *waa*^{M} or *gaa*^{M} in the fronted constituent. Since the discontinuous NP is a subject, the wh-phrase appears in its canonical position. The head has the status of givenness, and, thus, does not appear explicitly in the front part.

(15)

邊個		話/㗎，		啲	書	賣得	嘅?
[$_{NP}$ bin^{H}go^{M}	$Ø_i$	waa^{M}/gaa^{M}]	[$_{NP}$	di^{H}	syu$_i^{H}$]	maai^{L}=dak^{H}	ge^{M}
which.CLS		DSP /POS:DSP		CLS:PL	book	sell=PTN	DSP

'Whose books sell well?'

From discourse contexts for the use of the Type 2 DNP (see Dialogues 2, 4 and 8 in Appendix I), it is discernible that such sentences often represent given information in the discourse. By fronting the dependent part of the NP, it is possible to focus on a specific element in the NP which bears given information. Further examples of this can be found in (16) and (18) below.

(16) a.

瑪莉	買咗		三張	椅	呀/啲！	(Canonical)
maa^{LR}lei^{L}	maai^{LR}=zo^{HR}	[$_{NP}$	saam^{H}zoeng^{H}	ji^{HR}	aa^{M}/wo^{M}]	
Mary	buy=PRF		three.CLS	chair	DSP / DSP	

'Mary has bought three chairs.'

6 In many languages, such a construction obligatorily involves a nominalizer. The presence of a classifier or particle can be related to the absence of a nominal head.

b. 三張 啲, 瑪莉 買咗 *(啲/嘅) 椅
saam^{H}zoeng^{H} $Ø_i$ wo^{M} maa^{LR}lei^{L} maai^{LR}=zo^{HR} *(di^{H} / ge^{L}) ji$^{HR}_{i}$
three.CLS DSP Mary buy=PRF PL:CLS/REL chair
'Mary has bought three chairs.'

In transitive sentences, fronting of the dependent in the noun phrase leads to an apposition of the two NPs, with a relative clause modifying the head noun in the second one. Reasons for such a striking syntactic change are unclear, but the occurrence of a relative clause is transparent when compared to the continuous counterpart. In (16b) the use of the plural classifier *di^{H}* to introduce a relative clause to the head noun after the split is compulsory, but it cannot appear anywhere in the canonical form in (16a). Alternatively, the modification particle *ge^{M}* can indicate the relationship between the relative clause and the head noun. Like the classifier *di^{H}*, it is prohibited from the continuous NP. With the discourse particle that calls for the addressee's attention, (16b) means something like, 'It is three pieces – the chairs that Mary bought.'

The apposition structure is always present in transitive sentences, regardless of the semantic role of the head of the split NP. Compare the pair of sentences in (17), paraphrased as 'Of which family (is) the child whom you have seen?' versus 'Of which family (is) the child who has seen you?'

(17) a. 邊 家 人 嘅， 你 見到 *(個) 細路?
[$_{NP}$ bin^{H} gaa^{H} jan^{F} $Ø_i$ gaa^{M}], [$_{NP}$[$_{CP}$ nei^{LR} gin^{M}=dou^{HR} *(go^{M})] sai^{M}lou$^{L}_{i}$]
which family person POS:DSP 2SG see=RES CLS child
'You saw the child of which family?'

b. 邊 家 人 嘅， 見到 你 *(個) 細路?
[$_{NP}$ bin^{H} gaa^{H} jan^{F} $Ø_i$ gaa^{M}], [$_{NP}$[$_{CP}$ gin^{M}=dou^{HR} nei^{LR} *(go^{M})] sai^{M}lou$^{L}_{i}$]
which family person POS:DSP see=RES 2SG CLS child
'The child of which family saw you?'

In ditransitive sentences, a complex syntactic structure does not arise if the sentence-final position is occupied by an ordinary NP, as shown in (18a). The apposition structure is observed when the head of the split NP appears as the final constituent in the sentence, as in (18b). In this case, a relative clause is called for. (18b) could be paraphrased as 'How much did you say – the money that you have given to the child?'

(18) a. 幾多 話， 你 畀咗 錢 個 細路?
[$_{NP}$ gei^{HR}do^{H} $Ø_i$ waa^{R}] [nei^{LR} bei^{HR}=zo^{HR} [$_{NP}$ cin$^{HR}_{i}$] go^{M} sai^{M}lou^{L}]
how.many DSP 2SG give=PRF money CLS child
'How much money have you given to the child?'

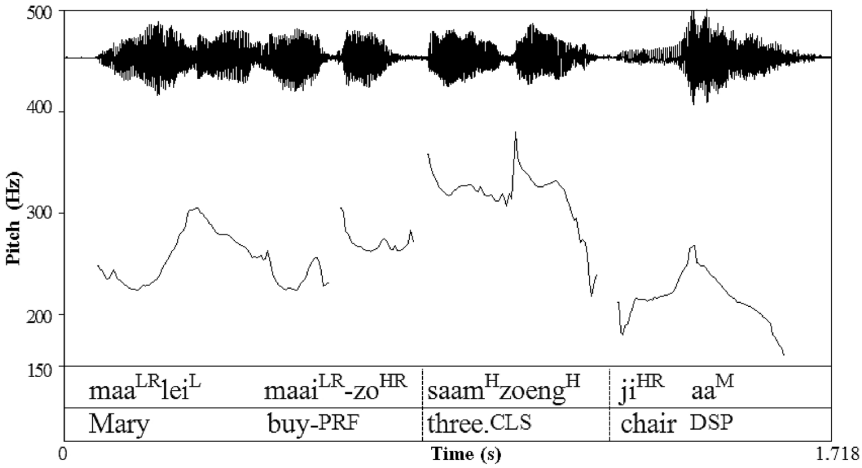

FIGURE 5 *Pitch track of the canonical sentence in* (*16a*)

b. 幾多 話， 你 畀咗 個 細路 啲 錢?
[$_{NP}$ gei^{HR}do^{H} $Ø_i$ waa^{R}] [$_{NP}$[$_{CP}$nei^{LR} bei^{HR}=zo^{HR} go^{M} sai^{M}lou^{L}] di^{H} cin$^{HR}_{i}$]
how.many DSP 2SG give-PRF CLS child CLS:PL money
'How much money have you given to the child?'

Turning now to the information structure of the Type 2 DNP, the first part is often focused, whether it represents new or old information, and the remainder of the sentence is given. As Law (2003) observes, discourse particles are obligatory for the fronted focus part in this type of construction, and on the whole prohibited in the other part, with the possible exception of the final *ge*^{M} in (15).

Cantonese discourse particles such as *aa*^{M} can be considered as providing an extra syllable at the end of an intonation unit with a specific tonal contour. The boundary tone they carry is typically reinterpreted by native speakers as the lexical tone of a particle. Consequently, nearly homophonous pairs/sets of discourse particles emerge in the language (Ding 2013). For instance, the particle *aa* may bear a mid-high pitch, as seen in (3b) above, or a low pitch, as in (3a). A change of the (boundary) tone on the particle gives rise to varied discourse meaning, as noted in Section 1.

The particle *wo*^{M} appears to be insensitive to the word class of its preceding word and the head of the phrase. Luke (1990) identifies its main function as signifying noteworthy information. When a phrase is modified by *wo*^{M}, it receives emphasis and serves as a focus in discourse.

The following pitch tracks compare (16) with canonical word order in Figure 5 and with the DNP in Figure 6, where the numeral expression is highlighted by

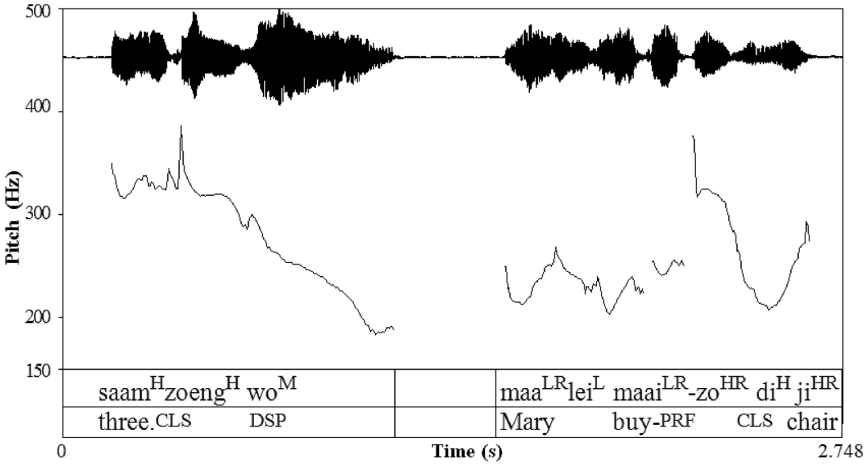

FIGURE 6 *Pitch track of the DNP in (16b)*

special information structure. A conspicuous difference between the two sentences is the lengthy pause between the fronted constituent and the remainder of the sentence, showing an unmistakable boundary between the two p-phrases. Additionally, the presence of the discourse particle *wo*^{M} has a lowering effect on the last syllables of the first p-phrase.

An attributive noun in the NP, when fronted, can also carry the role of a topic, in which case a focus is present in the main clause, as was introduced in Section 4.1. This is shown in (19), and differs from other types of dependents in an NP. A paraphrase for the sentence is, '(Speaking of) Peter, his wife has won the first prize.'

(19) 彼德 (呀)， 個 老婆 贏咗 冠軍 呀。
[$_{NP}$bei^{HR}dak^{H}$_{i}$ (aa^{L})] [$_{NP}$*Ø=pro*$_{i}$ go^{M} lou^{LR}po^{F}] jeng^{F}=zo^{HR} gun^{M}gwan^{H} aa^{M}
Peter DSP CLS wife win=PRF first.prize DSP
'Peter's wife has won the first prize.'

4.3 *Type 3: Head Moved to the Right*

Rightward movement of the head of the NP and of the dependent part of the NP is also possible in Cantonese.

The explicit head noun of a discontinuous NP may appear in a right-dislocated position, while other elements of the NP remain within the VP. See Cheung (1997) and Law (2002, 2003) for extensive discussions of right-dislocation in Cantonese. Both argue for an interpretation of this construction in which the focused part of the sentence, actually the main clause, has moved to the beginning of the sentence, i.e. VP-fronting, rather than true right-disloca-

tion. While it is true that right-dislocation of a whole NP may be difficult to differentiate from fronting of a VP in sentence, fortunately, when only part of an NP is split from the clause, such ambiguity does not arise. In any event, we are not interested in a derivational account of discontinuous NPs in this paper; we will concentrate on the information structure and intonational properties of the DNP.

In the Type 3 DNP, the NP co-refers to an argument of the verb, and the thematic role is passed on to it from the other part of the DNP. For instance, NP1 in (20a) serves as the subject of the sentence, and consequently, NP2 receives the thematic role of Causer through co-reference between the heads.

(20) a.

關於	乜	激親	你	呀，	篇	文章?
[$_{NP1}$ gwaan^{H}jyu^{H}	mat^{H} $Ø_{i}$]	gik^{H}=can^{H}	nei^{LR}	aa^{M},	[$_{NP2}$ pin^{H}	man^{F}zoeng^{H} $_{i}$]
about	what	anger=ASP	2SG	DSP	CLS	article

'What is the article that has angered you about?'

b.

關於	乜	嘅/*篇	文章	激親	你	呀?
[$_{NP}$ gwaan^{H}jyu^{H}	mat^{H}	ge^{M} /*pin^{H}	man^{F}zoeng^{H}]	gik^{H}=can^{H}	nei^{LR}	aa^{M}
about	what	MDF / CLS	article	anger=ASP	2SG	DSP

'What is the article that has angered you about?'

In the canonical form in (20b), it is shown that the two NPs in (20a) cannot be directly joined into one. Also indicated in (20b) is the necessity to change the classifier *pin^{H}* to the modification particle *ge^{M}*, because the definiteness reading induced by the classifier is semantically incompatible with the interrogative meaning of the preceding PP.

Recursion of right-dislocation is feasible with an NP containing a possessor noun, as in (21b), where *bun^{HR} syu^{H}* 'the book' and *ni^{H} go^{M} naam^{F}jan^{HR} ge^{M}* 'of this man' are both right-dislocated. Note that the order of the two right-dislocated constituents cannot be changed; the head noun must precede the possessor. Moreover, the two NPs differ in that only the first one comprises an explicit head.

(21) a.

呢	個	男人	本	書	出咗	啦。	(Canonical)
[$_{NP}$ ni^{H}	go^{M}	naam^{F}jan^{HR}	bun^{HR}	syu^{H}]	ceot^{H}=zo^{HR}	laa^{M}	
this	CLS	man	CLS	book	out=PRF	DSP	

'The book of this man has appeared.'

b.

出咗	啦，	本	書，	呢	個	男人	嘅。
ceot^{H}=zo^{HR}	laa^{M},	[$_{NP1}$ bun^{HR}	syu^{H} $_{i}$],	[$_{NP2}$ ni^{H}	go^{M}	naam^{F}jan^{HR}	ge^{M} $Ø_{i}$]
out=PRF	DSP	CLS	book	this	CLS	man	POS

'The book of this man has appeared.'

The pair of sentences in (21) appears in Dialogue 2 in Appendix I. Used as a reply to confirm the message already expressed by (21a), (21b) highlights the VP as a focus and the extraposed DNP as non-focus. In natural speech, NP2 would be omitted and NP1 is optional. In other words, the discourse status of the two parts of the discontinuous NP differs, suggesting that the closer to the right edge a dislocated phrase is, the farther its information status is in the background. Thus NP2 may be regarded as containing known and uninteresting information, while NP1 represents known but noteworthy information.

Turning now to the intonational properties of right-dislocation, we find that the tonal contour of the pair of sentences in (20) is simply a consequence of the lexical tones. However, the right-dislocated constituent in (20a) is separated from the sentence by a pause, which signals a p-phrase boundary. The same observation holds true for (21), where each dislocation is marked by a brief pause in (21b).

4.4 *Type 4: Dependent Moved to the Right*

In the final type of discontinuous nominal phrase examined in this paper, a noun-dependent is displaced to the right edge of the sentence. In this type of DNP, the main clause is semantically somewhat independent of the extraposed constituent, since it can stand by itself without the extraposed part, albeit at the cost of partial loss of meaning.

Right dislocation of a noun-dependent can lead to different pragmatic reading on the dependent part: either as a focus or as reactivated information. In what follows, we first examine constructions in which a rightward movement induces a focus on the moved constituent itself and then study those in which the dislocated dependent serves to reactivate background information.

4.4.1 Right-Dislocated Dependent as a Focus

The pairs of sentences in (22), (23) and (24) each contain a continuous NP and a DNP counterpart: a right-moved prepositional phrase in (22b), an extraposed wh-phrase in (23b), and a numeral-classifier expression in (24b).

(22) a. 關於 乜 嘅 書 好 賣 呀? (Canonical)
[$_{NP}$ gwaan^{H}jyu^{H} mat^{H} ge^{M} syu^{H}] hou^{HR} maai^{L} aa^{M}
about what MDF book good sell DSP
'What (kind) of books sell well?'

b. 書 好 賣 呀, 關於 乜 㗎?
[[$_{NP}$ syu$^{H}_{i}$] hou^{HR} maai^{L} aa^{M}], [$_{NP}$ gwaan^{H}jyu^{H} mat^{H} gaa^{M} $Ø_{i}$]
book good sell Q about what MDF:DSP
'What (kind) of books sell well?'

(23) a. 邊個 嘅 書 賣得 呀? (Canonical)
[$_{NP}$ bin^{H}go^{M} ge^{M} syu^{H}] maai^{L}=dak^{H} aa^{M}
which.CLS POS book sell=PTN DSP
'Whose books sell well?'

b. 書 賣得 嘅呢， 邊個 㗎?
[[$_{NP}$ syu^{H} $_{i}$] maai^{L}=dak^{H} ge^{M} le^{H}], [$_{NP}$ bin^{H}go^{M} gaa^{M} $Ø_{i}$]
book sell=PTN DSP which.CLS POS:DSP
'Whose books sell well?'

(24) a. 瑪莉 琴日 搵到 三張 椅 啦！ (Canonical)
maa^{LR}lei^{L} kam^{F}jat^{L} wan^{HR}=dou^{HR} [$_{NP}$ saam^{H}zoeng^{H} ji^{HR}] laa^{M}
Mary yesterday find=RES three.CLS chair DSP
'Mary found three chairs yesterday.'

b. 瑪莉 琴日 搵到 椅 啦,
maa^{LR}lei^{L} kam^{F}jat^{L} wan^{HR}=dou^{HR} [$_{NP}$ ji^{HR} $_{i}$] laa^{M},
Mary yesterday find=RES chair DSP
三張 (呀)!
[$_{NP}$ saam^{H}zoeng^{H} $Ø_{i}$ (aa^{M})]
three.CLS DSP
'Mary found three chairs yesterday.'

Regarding the information structure associated with right dislocation of the noun-dependent, the information expressed in the first part may be entirely or partially accessible, while the second part is in focus. Take (24) as an illustration. An appropriate context for (24b) would be a situation in which both the speaker and the addressee knew that Mary was trying to find some chairs (cf. Dialogue 6 in Appendix I). This information is part of their common ground. By using this construction, the speaker highlights the fact that she found three of them, a new piece of information intended for the addressee.

Although discourse particles are often found in the focus constituent, it is sometimes possible to leave them out, as suggested by the parentheses in (24b). On the other hand, discourse particles provide a crucial contribution to the formation of background information. The bisyllabic particle *ge^{M} le^{H}* in (23b) is used when the speaker wishes to remind the interlocutor of something, and *laa^{M}* in (24) calls the interlocutor's attention to some particular detail of an otherwise non-noteworthy situation. These clausal particles (which do not appear in the NP) usually mark off the ending boundary of the background, the given part in the construction.

Figures 7 and 8 illustrate the pair of sentences in (23). Once again, the DNP in (23b), shown in Figure 7, is intonationally divided into two p-phrases. The

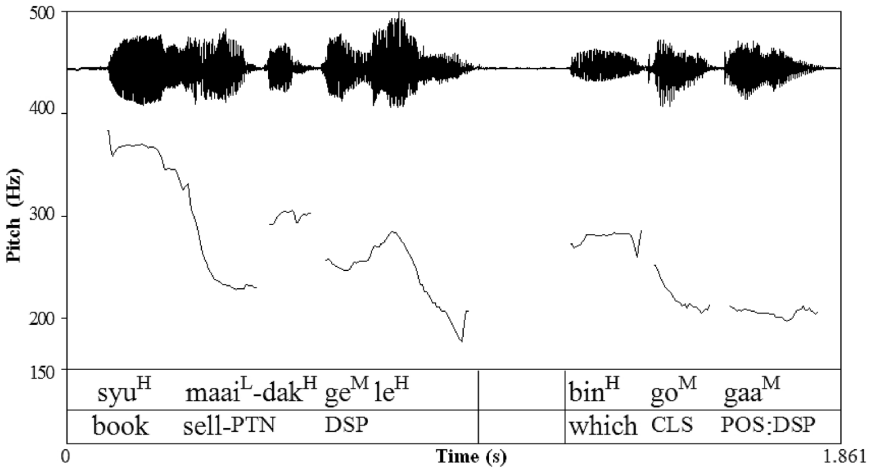

FIGURE 7 *Pitch track of the DNP in* (23b)

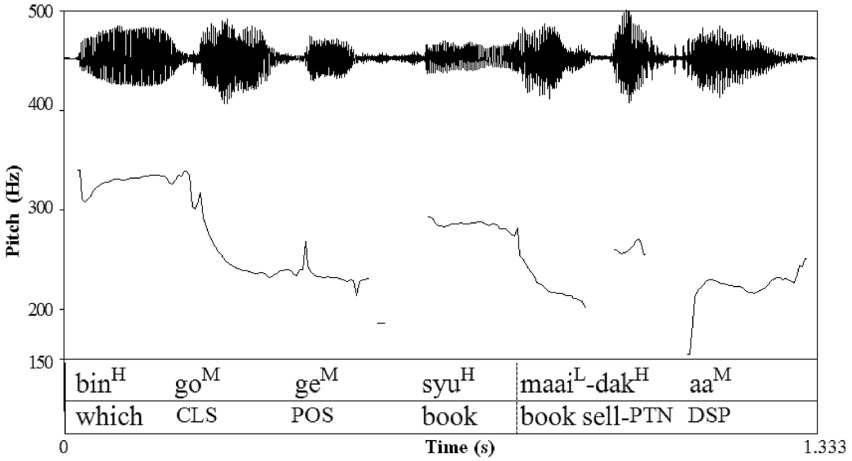

FIGURE 8 *Pitch track of the canonical sentence in* (23a)

intonation boundary between the background part and the focus part is often signaled by a break, regardless of the occurrence or not of a discourse particle.

In this pair of sentences, a phenomenon which has not been commented upon until now is clearly visible, namely downstep. In Figure 7, the high tone on *syu^{H}* 'book', standing at approximately 369 Hz, is the highest of the sentence, and the high tone on *bin^{H}* 'which' is clearly lower, at a pitch level of about 280 Hz. The lowering phenomenon can also be observed in Figure 8 when the occurring positions of these two words are swapped: the sentence-initial *bin^{H}* 'which' has a pitch of about 330 Hz and *syu^{H}* about 286 Hz. Moreover, a further downstep is observable in the second p-phrase of the sentence,

where the high tone on *dak*^{H} 'potential particle' is lowered to about 256 Hz. In other words, there is no reset after a p-phrase boundary.

4.4.2 Right-Dislocated Dependent as Reactivated Information

When a noun-dependent is dislocated to the right edge, it is also possible for it to represent reactivated information. For instance, the possessor noun is displaced at sentence end in (25), cf. its canonical form in (21a) above. The whole sentence, as used in Dialogue 2 (see Appendix I), represents given information. The VP, conveying an iterated message in a reply, serves as the focal part, while the right-dislocated possessor simply bears reactivated information which is typically discarded in spontaneous speech.

(25)

本	書	出咗	啦，	呢	個	男人	嘅。
[$_{NP}$ bun^{HR}	syu^{H}$_{i}$]	ceot^{H}=zo^{HR}	laa^{L},	[$_{NP}$ ni^{H}	go^{M}	naam^{F}jan^{HR}	ge^{M} Ø$_{i}$]
CLS	book	out=PRF	DSP	this	CLS	man	POS

'The book of this man has appeared.'

In some cases, topicalization and extraposition both take place. Such a case is exemplified in (26). The continuous NP in (26a) can be rendered discontinuous as in (26b), where the dependent part *ni*^{H} *go*^{M} *naam*^{F}*jan*^{HR} *ge*^{M} 'of this man' is extraposed to the right; the NP is split into two parts with a minor change on the head noun, now marked as definite by the classifier *go*^{M}. This split part, *go*^{M} *lou*^{LR}*po*^{F} 'wife', is topicalized in (26c) – moved to the front of the sentence – and, as before, the dependent part *ni*^{H} *go*^{M} *naam*^{F}*jan*^{HR} *ge*^{M} 'of this man' is extraposed to the right. In both instances, the right-dislocated constituent represents reactivated information, which can be construed as an afterthought.

(26) a.

你	見過	呢	個	男人	嘅	老婆	㗎！
nei^{LR}	gin^{H}=gwo^{M}	ni^{H}	go^{M}	naam^{F}jan^{HR}	ge^{M}	lou^{LR}po^{F}	gaa^{M}
2SG	see=EXP	this	CLS	man	POS	wife	DSP

'You have seen the wife of this man.'

b.

你	見過	個	老婆	㗎,	呢	個	男人	嘅!
nei^{LR}	gin^{H}=gwo^{M}	go^{M}	lou^{LR}po^{F}	gaa^{M}	ni^{H}	go^{M}	naam^{F}jan^{HR}	ge^{M}
2SG	see=EXP	CLS	wife	DSP	this	CLS	man	POS

'You have seen the wife of this man.'

c.

個	老婆	呀,	你	見過	㗎,	呢	個	男人	嘅。
go^{M}	lou^{LR}po^{F}	aa^{M}	nei^{LR}	gin^{H}=gwo^{M}	gaa^{M}	ni^{H}	go^{M}	naam^{F}jan^{HR}	ge^{M}
CLS	wife	DSP	2SG	see=EXP	DSP	this	CLS	man	POS

'You have seen the wife of this man.'

In (27) the discourse particle *ge*^{M} *le*^{H} has a kind of 'reminder' function which makes reference to old information stored in one's memory. The set of examples, therefore, contains accessible information. This particle occurs after the continuous NP in (27a), after the head noun *sai*^{M}*lou*^{L} 'child' in (27b), and after the dependent *naam*^{F}*jan*^{HR} 'man' in (27c). Paraphrases of these sentences are, 'You have given money to this man's child; don't you remember?', 'You have given money to this man's child; don't you remember the child?', and 'You have given money to this man's child; don't you remember the man?', respectively.

(27) a. 你 畀過 錢 呢 個 男人 個 細路 嘅呢?
nei^{LR} bei^{HR}=gwo^{M} cin^{HR} ni^{H} go^{M} naam^{F}jan^{HR} go^{M} sai^{M}lou^{L} ge^{M} le^{H}
2SG give=EXP money this CLS man CLS child DSP
'You have given money to this man's child.'

b. 你 畀過 錢 個 細路 嘅呢, 呢 個 男人 嘅?
nei^{LR} bei^{HR}=gwo^{M} cin^{HR} go^{M} sai^{M}lou^{L} ge^{M} le^{H}, ni^{H} go^{M} naam^{F}jan^{HR} ge^{M}
2SG give=EXP money CLS child DSP this CLS man POS
'You have given money to this man's child.'

c. 你 畀過 錢 個 細路, 呢 個 男人 嘅呢?
nei^{LR} bei^{HR}=gwo^{M} cin^{HR} go^{M} sai^{M}lou^{L}, ni^{H} go^{M} naam^{F}jan^{HR} ge^{M} le^{H}
2SG give=EXP money CLS child this CLS man DSP
'You have given money to this man's child.'

The particle *ge*^{M} *le*^{H} often promotes the discourse status of the constituent that it modifies through reactivation. Consequently, the right-dislocated parts of the DNPs in (27b) and (27c), the latter modified by the particle and the former not, hold different information status. In (27b), the extraposed possessor serves as an afterthought and is readily omittable. In contrast, in (27c) it is highlighted by the particle much like a focus.

Figures 9 and 10 illustrate the right-dislocation of a dependent as an afterthought in (25), produced by Speaker H and Speaker M respectively. As shown in Figure 9, a pause is inserted between the two p-phrases, rendering a clear boundary between them. On the other hand, several dissimilarities are found in Speaker M's sentence. First of all, the particle *laa*^{M} is uttered using a higher pitch under the condition of a different boundary tone. Secondly, both the particles *laa*^{M} and *ge*^{M} are considerably lengthened, as can be seen in Figure 10. Finally, the boundary of the p-phrases is simply signaled by the particle *laa*^{M} without any break.

Figure 11, which illustrates Speaker H's utterance of (26b), demonstrates an instance of a marginally appreciable break between the p-phrases in the DNP.

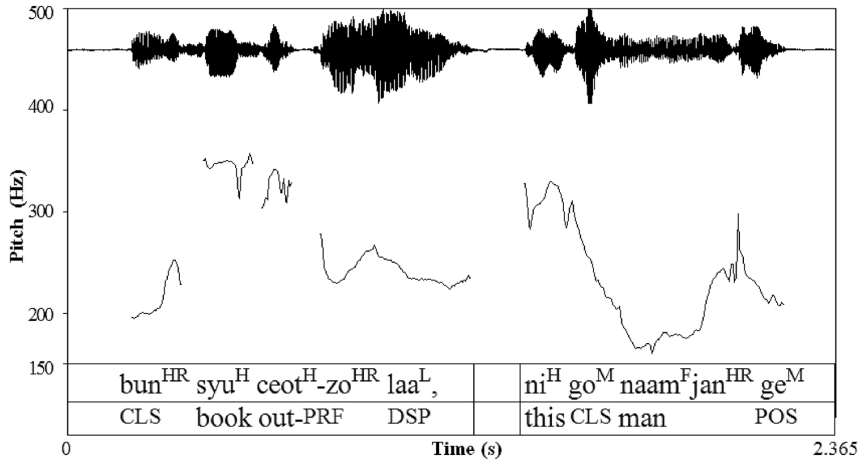

FIGURE 9 *Pitch track of the DNP in (25), produced by speaker H*

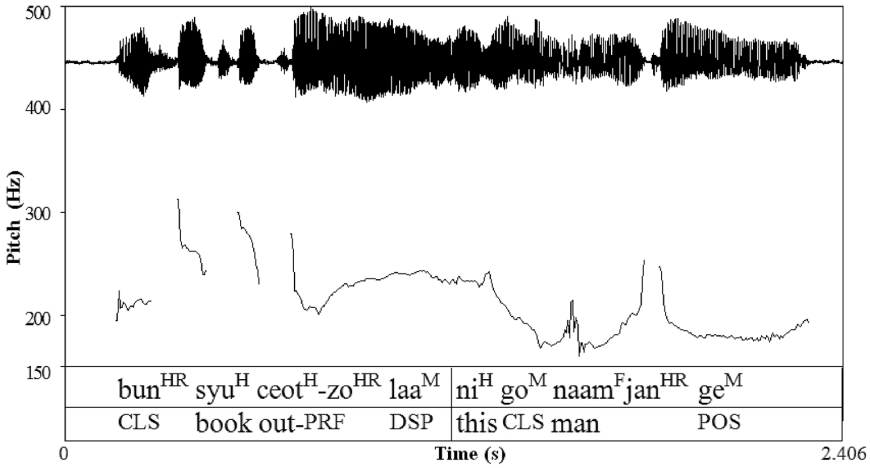

FIGURE 10 *Pitch track of the DNP in (25), produced by speaker M*

The prompt occurrence of the right-dislocated constituent in these sentences can be explained by the essential function of afterthought: in order to settle any uncertainty about a referent intended for omission, the speaker, without hesitation, supplies it as reactivated information before the cessation of the utterance. The boundary pause found in other types of DNP thus becomes optional in Type 4 when the dislocated dependent represents an afterthought.

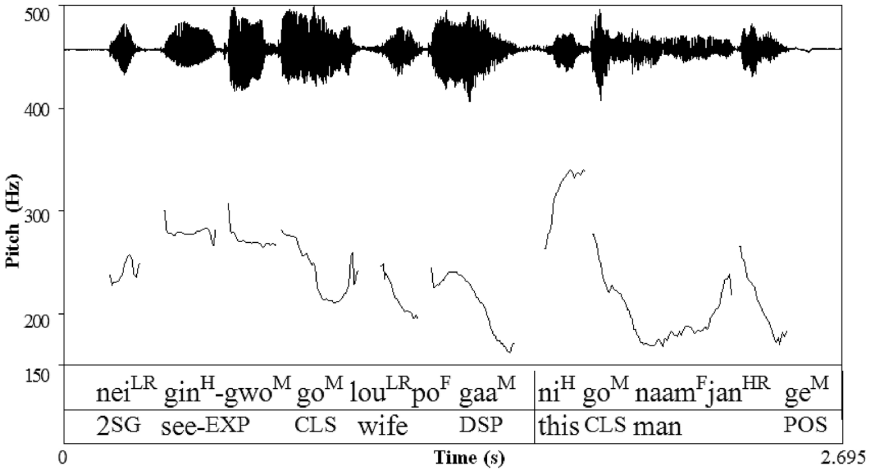

FIGURE 11 *Pitch track of the DNP in (26b), produced by speaker H*

5 Conclusions

This paper has examined discontinuous nominal phrases (DNPs) in Cantonese, an extreme kind of tone language, in which every single syllable carries its own lexical tone. The focus of our study has been the information structure and the intonational properties of these constructions. Four types of DNP have been described in detail: Type 1, topicalization of the nominal head; Type 2, fronting of a noun-dependent constituent; Type 3, right-dislocation of a nominal head; and Type 4, rightward movement of a noun-dependent constituent. In all four cases, two separate nominal phrases must be postulated, one of which has an overt head, and the other a covert head.

As regards to information structure, the two separated parts always differ from each other in terms of discourse status, while the sentence as a whole often involves given information. The motivation for dividing an NP into smaller phrases in Cantonese is precisely to assign them with varied discourse status. The DNP, as discussed above, is not a homogeneous construction in Cantonese; there is no strict one-to-one correspondence between DNP and specific information structure. General distribution of information status of the DNP, however, is observable and this is summarized in Table 2, where italic represents the dislocated part. Note that the focus status is applicable to given information when it is reactivated by the speaker.

TABLE 2 *Information status of discontinuous NP in different types of DNP*

Information status	**Type of DNP**
$[Topic]_{NP1}$ ... $[\text{Focus}]_{\text{NP2}}$	Typical for Type 1, also possible in Type 2.
$[Focus]_{NP1}$ ... $[\text{Given}]_{\text{NP2}}$	Typical for Type 2.
$[\text{Focus}]_{\text{NP1}}$ ... $[Given]_{NP2}$	Typical for Type 3, often found in Type 4.
$[\text{Given}]_{\text{NP1}}$ ... $[Focus]_{NP2}$	Often found in Type 4.

Type 1–Left-dislocated Head Type 2–Left-dislocated Dependent
Type 3–Right-dislocated Head Type 4-–Right-dislocated Dependent

The tonal pattern of a Cantonese sentence is almost exclusively determined by the lexical tones of the words appearing in it. A discourse particle may be added which provides a suitable boundary tone. In those sentences involving a discontinuous NP, discourse particles are sometimes obligatory and sometimes only highly preferred. These particles serve to highlight the discontinuity of the sentence, and are often, but not always, followed by a pause to indicate an intonational boundary. Insertion of a pause is not as predictable in Type 4, where the right-dislocated part serves as an afterthought, as it is in the other types of DNP. In short, prosody in and of itself is not suited to realizing information structure. Instead, this is achieved via syntactic and morphological means, which are then mapped in a general manner into intonation.

There is no special contour for focus or topicalization, no raising of pitch accent to express focus, and no lowering for givenness. Lower level prosodic phrasing is mainly a reflection of syntax. It is only when the clause final position is not occupied by a discourse particle that the boundary tone can interact directly with the lexical tone. Contrary to the general falling intonation pattern found at the end of a declarative sentence, if the final syllable of a lexical item is the focus of the sentence and it carries a level lexical tone, its pitch is not subject to falling. We tentatively conclude that the absence of split nominal constructions in Cantonese, in which two parts of a single nominal phrase appear at two different places in the same clause, correlates with the prosodic properties just described.

Abbreviations

1/2/3	First/Second/Third person	PL	Plural
ACC	Accusative	POS	Possessive
A	Adjective	PRF	Perfective
ADV	Adverb	PTN	Potential
CLS	Classifier	Q	Question particle
DAT	Dative	Q-A	Quasi-Adjective
DSP	Discourse particle	REL	Relative marker
EXP	Experiential	RES	Resultative
FEM	Feminine	SG	Singular
MDF	Modificatory		

Appendices

Appendix I and II can be accessed at http://dx.doi.org/10.1163/19606028-00432P03 (see under 'Supplements' tab).

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