

# ON THE INTERNAL STRUCTURE OF ADVERBS IN CANTONESE AND ENGLISH\*

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This paper examines the internal structure of Cantonese and English adverbs. We argue that the adverbial marker forms part of the extended adjectival projection. Furthermore, we argue for a universal extended adjectival projection in which the adverbial marker can appear in a variety of places. Specifically, we argue for the following hierarchy: AdvP > SuperP > AdvP > CompP > AdvP > DegP > AdjP. Evidence for the variety of projections hosting the adverbial markers comes from the variety of adverbial constructions in Cantonese. Cantonese has two adverbial markers with markedly different syntax.

## 1. Introduction

This paper examines the internal structure of VP-level adverbs in English and Cantonese. Despite the surface differences in form, we argue for a universal underlying structure that forms part of the extended adjectival projection (that is, adverbs are formed syntactically from adjectives). The differences, we show, fall out from the lexical properties of the morphological items in the two languages.

The rest of this paper is organized as follows. Section 2 presents the data on the form of adverbs in Cantonese and English. Section 3 gives the theoretical background for the discussion. Section 4 presents an analysis for adverbial constructions in Cantonese and English. Section 5 is a brief conclusion.

## 2. Cantonese Adverbs

As discussed by Matthews and Yip (1994), there are two ways to form manner adverbial phrases in Cantonese, both of which are illustrated in (1).<sup>1</sup>

- (1) a. ngo5 sik6 dak1 hou2 hoi1sam1  
I eat ADV DEG happy  
'I'm eating happily.'
- b. ngo5 hou2 hoi1sam1 gam2 sik6 je5  
I DEG happy ADV eat stuff  
'I'm eating happily.'

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\* Thanks to Lawrence Cheung for the Cantonese judgments and to the participants at the 2007 CLA in Saskatoon. All errors are my own. This research is partly supported by a Killam Postdoctoral Research Fellowship awarded to the author.

<sup>1</sup> The following abbreviations are used in this paper. ADV = adverbial marker; DEG = degree marker; COMP = comparative; SG = singular; SUPER = superlative.

In (1)a, the adverbial marker *dak1* precedes the adjective and the *dak*-construction follows the verb. In (1)b, the adverbial marker *gam2* follows the adjective and the *gam*-construction precedes the verb. The two forms are synonymous. There is a difference, however, between these two constructions with respect to comparatives and superlatives. The *gam*-construction does not allow comparatives or superlatives:

- (2) a. keoi5 sik6 dak1 hoilsam1 gwo3 ngo5  
 3.SG eat ADV happy COMP 1.SG  
 ‘He is eating more happily than me.’
- b.\* keoi5 hoilsam1 gwo3 ngo5 gam2 sik6 je5  
 3.SG happy comp 1.SG ADV eat stuff  
 (‘He is eating more happily than me.’)
- (3) a. keoi5 sik6 dak1 zeoil hoilsam1  
 3.SG eat ADV SUPER happy  
 ‘He is eating the most happily.’
- b.\* keoi5 zeoil hoilsam1 gam2 sik6 je5  
 3.SG SUPER happy ADV eat stuff  
 (‘He is eating the most happily.’)

By way of contrast, English adverbials exhibit the marker *-ly* that is exclusively post-adjectival, (4). Standard English admits only analytic comparative and superlative forms in adverbs, (5).<sup>2</sup>

- (4) happy → happily  
 quick → quickly
- (5) more quickly, most quickly, \*quicklier, \*quickliest (\* in Standard English)

We propose a uniform analysis of Cantonese and English adverbial constructions, where the differences between the two languages fall out from differences in the where the adverbial marker appears in the extended adjectival projection.

### 3. Theoretical Background

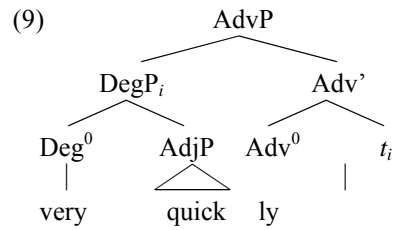
#### 3.1 The Structure of Adverbs

Despite the wealth of previous work on adverbs (Alexiadou, 1997; Cinque, 1999, 2004; Ernst, 2002), very little work exists on their internal structure.

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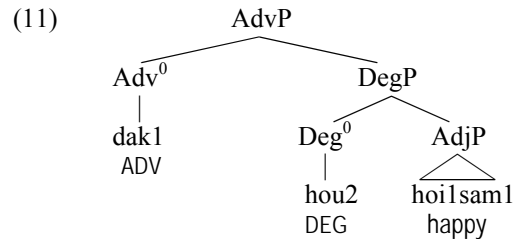
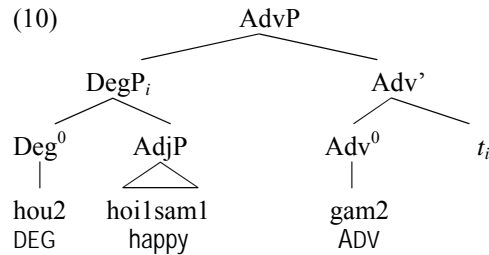
<sup>2</sup> We discuss below some non-standard synthetic constructions such as *quickerly* and *quickliest*.





Thus, another argument in favour of the construction in (6)b is the fact that a DegP is already required on the adjective. It would be less than parsimonious to posit a second DegP above AdvP.

Consider again the Cantonese adverbial phrases in (1), shown below. Note that these structures will be modified as we proceed. At this point, the difference in word order can be explained by the presence or absence of DegP raising.



We turn now to a discussion on degree expressions and how the Cantonese facts fit into the picture.

### 3.2 Degree Expressions

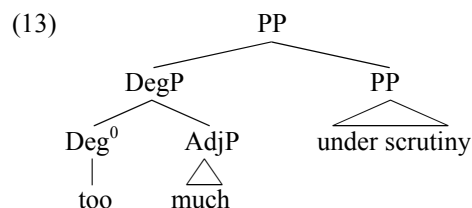
There have been various approaches to the analysis of degree expressions (Neeleman, Van de Koot and Doetjes, 2004; Corver, 1997; Bresnan, 1973). Most studies recognize two classes of degree expressions, which we label Class I degree expressions (*too, very, as, that, how, etc.*) and Class II degree expressions (*more, less, enough, a little, a good deal, etc.*). Class I degree expressions appear with *much* in ellipsis contexts while Class II degree expressions do not (*too \*(much) so* vs. *more \*(much) so*). Class I degree expressions attach directly to adjectives while they must appear with *much* if they attach to non-adjectival phrases (*too famous, too \*(much) under scrutiny,*

etc.) Class II degree expressions, on the other hand, attach directly to any category (*more interesting*, *more (\*much) under scrutiny*, etc.).

It is beyond the scope of this paper to present a comprehensive review of the research in the syntax and semantics of degree expressions, thus, we concentrate on a more recent analysis here (Neeleman, Van de Koot and Doetjes, 2004). Neeleman *et al.* propose that Class I degree expressions head a functional projection that takes AdjP as a complement, as proposed by Abney (1987) and that Class II degree expressions are modifiers that freely adjoin to any semantically compatible category.

There are various problems with this approach, however. First, adjoined material is not expected to alter properties of the host of adjunction. Recall that Cantonese *gam2* adverbs cannot appear with comparative adjectives. This is problematic if comparatives are adjuncts. The selectional properties of higher functional projections should not be sensitive to whatever modifiers may be adjoined to lower projections.<sup>4</sup> Second, if *much* is a dummy adjective as Neeleman *et al.* suggest, then what exactly is *so* in constructions such as *too much so* and why is it needed?<sup>5</sup> Finally, Neeleman *et al.* argue that non-adjectival phrases require *much* (a dummy adjective) in order to be modified by a Class I degree expression to satisfy its selectional restrictions. Consider, now, the following example.

(12) too much under scrutiny



<sup>4</sup> This is not to say, of course, that the division between Class I and Class II degree expressions is invariant across languages. We are merely arguing here that the analysis of Neeleman *et al.* cannot be carried over easily to Cantonese adverbials. This is especially apparent as there is no lexical item corresponding to *much* in Cantonese. Since *much* is essential in distinguishing between Class I and II degree expressions, the distinction clearly breaks down in Cantonese.

<sup>5</sup> It is not exactly clear that *much* is an adjective (dummy or otherwise) either since it doesn't behave like other adjectives. Rather, it behaves like some quantificational elements. Compare:

i. some (of the) water    blue (\*of the) water    much (of the) water

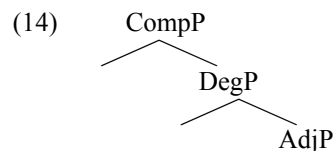
Also, it is well known that many functional DP elements are sensitive to the count/mass distinction, while adjectives are not. Likewise, *much* cannot appear with count nouns. Rather, *many* is used (*much water* vs. *many books*). Although a unified analysis of *much* may not be possible ultimately, any approach that does assume a monosemous account of *much* (in the sense of Cowper, 1995) would likely point to a functional rather than lexical (i.e., not an adjective) identification of this item.

*Too* is a Class I degree expression, and so must take AdjP as a complement to satisfy its selectional restrictions. DegP, then adjoins to PP like a Class II degree expression. We now arrive at a contradiction – DegP is behaving at once like Class I and Class II degree expression. Because of these problems, we seek an alternative explanation of the Cantonese and English facts. The next section proposes our analysis for the structure of adverbial constructions in these two languages.

#### 4. Analysis

##### 4.1 Cantonese Adverbs

We assume that comparatives and superlatives are higher in the adjectival extended projection than the other degree expressions (akin to Corver, 1997). Starting with comparatives, let us consider the following structure, again to be modified.



The *dak1/gam2* asymmetry can be explained in terms of available complement types. Let us assume that *dak1* takes CompP as a complement and that *gam2* takes DegP as a complement.<sup>6</sup> Recall our assumption that DegP in Cantonese raises to a position above the head *gam2*.

Now we bring superlatives into the picture. Consider the following data.

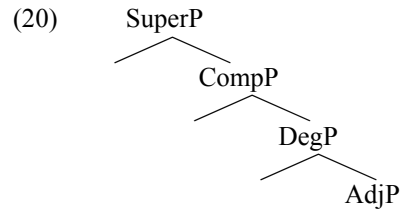
- (15) keoi5 sik6 dak1 zeoi1 hoisam1  
 he eat ADV SUPER happy  
 ‘He’s eating the most happily.’
- (16) keoi5 sik6 dak1 hoisam1 di1  
 he eat ADV happy COMP  
 ‘He’s eating more happily.’
- (17) \*keoi5 zeoi1 hoisam1 gam2 sik6 je5  
 3.SG SUPER happy ADV eat stuff  
 (‘He is eating the most happily.’)
- (18) \*keoi5 hoisam1 di1 gam2 sik6 je5.  
 3.SG happy COMP ADV eat stuff  
 (‘He is eating the most happily.’)

<sup>6</sup> This is akin to restructuring in the verbal domain where different verbal elements take clausal complements of different sizes (Rizzi, 1982; Pittman, 2006).

As noted above, comparatives and superlatives are ungrammatical with *gam2* adverbials. Note also the order of the superlative/comparative morphemes.

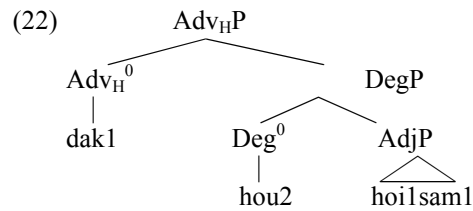
- (19) SUPER – adjective  
 adjective – COMP

Thus, we must assume a more finely articulated structure (see also Kayne, 2005:188).

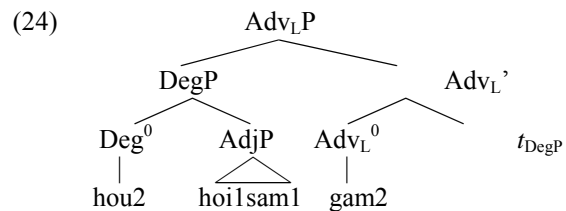


Now, we must assume that DegP raises to SpecCompP, this is shown for both *gam2* and *dak1* adverbials and with comparative and superlative morphology.<sup>7</sup>

- (21) dak1 hou2 hoisam1  
 ADV DEG happy  
 ‘happily.’

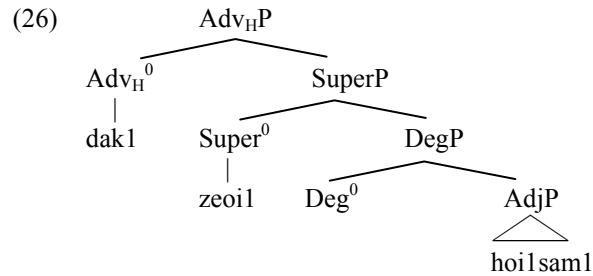


- (23) hou2 hoisam1 gam2  
 DEG happy ADV  
 ‘happily.’

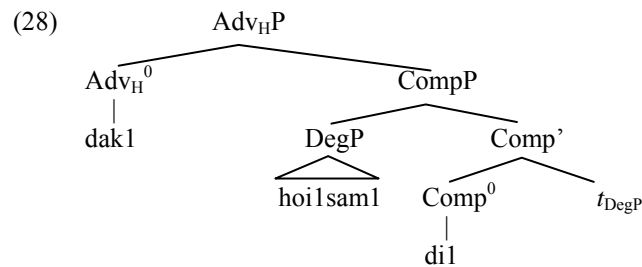


<sup>7</sup> Alternatively, one could posit a functional projection between SuperP and CompP that DegP always raises to regardless of what elements are present; however, it is unclear what this projection could be.

- (25) keoi5 sik6 dak1 zeoi1 hoi1sam1  
 he eat ADV SUPER happy  
 ‘He’s eating the most happily.’

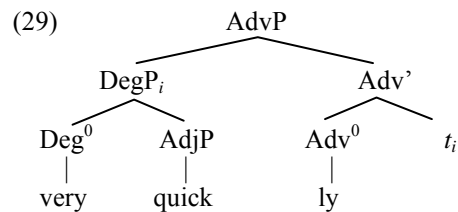


- (27) keoi5 sik6 dak1 hoi1sam1 di1  
 he eat ADV happy COMP  
 ‘He’s eating more happily.’



## 4.2 English Adverbs

There is only one AdvP in English (but see below). Here, the adjectival construction (DegP) raises to SpecAdvP, suggesting we are dealing with a low Adv<sup>0</sup> as with Cantonese *gam2*.



Before addressing the structure of English adverbials further, we consider some speculations with the comparative and superlative in English adverbial constructions.



### 4.3 Quickly, More Quickly, \*Quicklier – some speculations

We offer no account here for following asymmetry (but see Zwicky, 1989).<sup>8</sup>

(30) Quickly, More Quickly, \*Quicklier

On the analysis proposed here, we actually need to account for *\*quickerly*. In reality, it may be that the synthetic forms *quicklier* and *quickerly* may be possible in some dialects or idiolects.<sup>9</sup> The data in Table 1 shows the number of hits for these forms with the search engine Google.<sup>10</sup>

**Table 1 Number of hits on Google for synthetic comparative and superlative adverbials**

		Quick	Slow	Loud	Quiet
Comparative	Adj-ly-er	876	13400	1760	60
	Adj-er-ly	716	1030	1080	3
Superlative	Adj-ly-est	1230	339	577	2
	Adj-est-ly	14	5	6	1

These facts suggest that *-ly* can appear in either high or low position in English. This variability in placement is perhaps due the relatively low frequency of the non-standard forms. Furthermore, while it appears *-ly* can appear either above or below the comparative head, it must appear below the superlative head, suggesting (as for Cantonese above) that SuperP is above CompP.

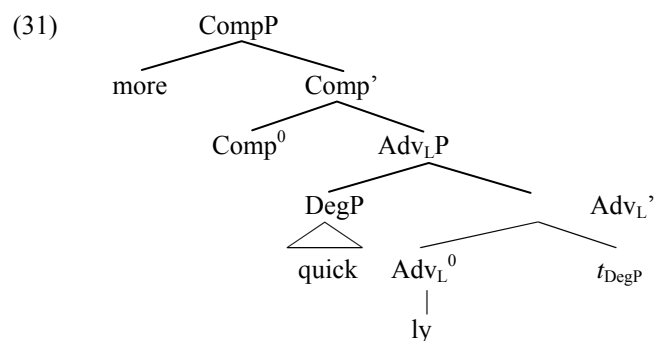
First we consider the “more quickly/quicklier” dialect. These forms arise by a low adverbial phrase, Adv<sub>L</sub>P, which is below CompP. The DegP raises to SpecAdv<sub>L</sub>P. In the analytic form, *more* appears in SpecCompP.<sup>11</sup>

<sup>8</sup> Given the marginality of the synthetic comparative and superlative adverbial forms to be discussed, I hesitate to formulate an analysis that admits these as completely grammatical; however, it is far from clear that the grammar should rule these forms out as ungrammatical, either. As such, we explore an incipient analysis and leave a more detailed treatment for future research.

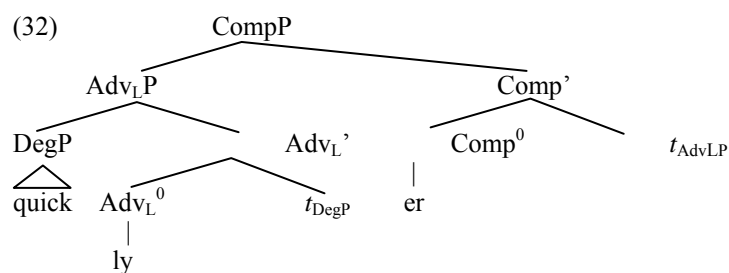
<sup>9</sup> While many if not most speakers reject these forms, a few native English speakers at the 2007 CLA conference felt these constructions were perfectly fine.

<sup>10</sup> Data were taken from Google late May, 2007.

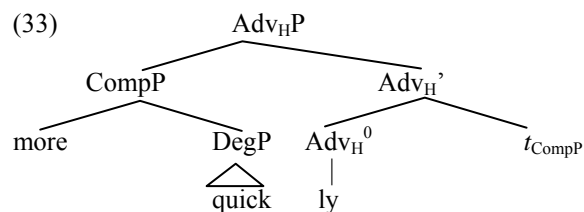
<sup>11</sup> One crucial difference between English and Cantonese that remains unaccounted for here is why the low AdvP can appear with dominating CompP in English, but not in Cantonese. That is, why do we not get the order Adj-*gam*2-Comp in Cantonese?



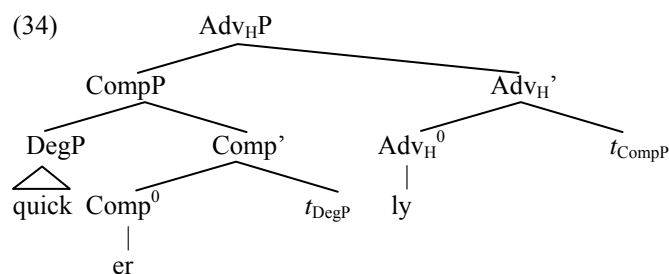
For the synthetic form, *-er* appears in  $\text{Comp}^0$  and  $\text{Adv}_L\text{P}$  raises to  $\text{SpecCompP}$ .<sup>12</sup>



Next for the “more quickly/quickerly dialect” we assume a high adverbial phrase,  $\text{Adv}_H\text{P}$ , that appears above  $\text{CompP}$  but below  $\text{SuperP}$ .



<sup>12</sup> Although the operations proposed here seem to violate anti-locality requirements (Abels, 2003; Matushansky, 2006), there is a large family of research that explores this type of movement as an alternative to head movement (Kahnemuyipour and Massam, 2006; Rackowski and Travis, 2000; Aboh, 2004).



## 5. Conclusion

We have argued for a uniform internal structure of adverbials in Cantonese and English. The difference in Cantonese adverbials (*gam2* vs. *dak1*) is that *gam2* is an Adv<sub>L</sub><sup>0</sup>, which selects a reduced complement, namely DegP, while *dak1* is an Adv<sub>H</sub><sup>0</sup>, which selects a fuller complement, namely a SuperP. As for the English adverbial marker, *-ly* is either high or low, depending on speaker. The low *-ly* selects a DegP while the high *-ly* selects a CompP, but not a SuperP. These results point towards a universal structure for adverbs/adjectives as has been argued for in the clausal and nominal domains. The order of functional projections suggested is shown below.<sup>13</sup>

(35) AdvP > SuperP > AdvP > CompP > AdvP > DegP > AdjP

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<sup>13</sup> This is not meant to be a comprehensive hierarchy. For instance, there is likely an *adjP* (or *aP*) in the sense of Marantz (2001) that identifies that category of the lexical root and/or introduces an argument for predicate adjectives, in addition to other functional projections related to  $\phi$ -features and agreement.

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