Negation in Cantonese as a Lexical Rule

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This paper argues that two phenomena widely perceived as syntactic, negation and A-not-A question formation, are performed in the lexicon in Cantonese. Specifically, the negative morpheme *m* 唔 is prefixed in the lexicon, not in the syntax.

Evidence that *m* 唔 is a prefix includes the following. It never appears in isolation, not even as a response to questions. Certain verbs, like *yau*, 有 'have', show special suppletive forms in the negative. Some lexical items, like the quantifier *dou*, 都 all, are exceptions to the general rules. Lastly, in certain uses it is clearly a lexical prefix like the English *un-*.

However, it has always been thought to be inserted by syntactic rule, and to negate the phrasal category VP. I argue that it negates not phrasal but lexical categories, including all those with the feature [+V]: verbs, adjectives, prepositions, and some adverbs. I also argue that A-not-A questions must be formed by a lexical reduplication rule, not in the syntax at all.

This proposal will offer a way of dealing with the interaction between negation and aspect in Cantonese.

I have drawn heavily on Yau (1973), a very comprehensive and insightful work on negation in Cantonese.

I. Syntactic Negation

1.1 Overview of Cantonese Syntax

The basic syntax of Cantonese is SVO, as typified by the sentence in (1). [1]

1 Unless otherwise stated all the data in this paper comes from Yau (1973). The dialect described by Yau is Standard Cantonese as spoken in Hong Kong and Guangzhou. Examples will not be marked for tone, but the reader should be aware that Cantonese has six (or seven) underlying tones, with ten surface reflexes. For further details see Yip (1980). The romanization is the Yale system, minus tones.

(1) Keui cheng ngo
He invite me
He invites me

Within the VP all adjunct material such as adverbs and PP's is usually preverbal, whereas complements are post-verbal. In addition sentences usually include a final particle which I shall assume is a constituent of S'' since it is normally restricted to the matrix sentence. The NP is strictly head-final, and usually includes a classifier in addition to the more familiar constituents of the English NP.

The lexical categories of Cantonese include V, N, Adv, but probably not Adj or Prep. For arguments that Cantonese does not include a category Adj see Yip, V. (1985). She shows that if one assumes that adjectives are (usually intransitive) stative verbs, all the observed facts are accounted for. Similar arguments can be advanced to show that Cantonese does not include a category Prep.

Nouns and verbs are not marked for person, number, gender, case or tense. There is however an aspectual system that will play a role in our discussion. Although the language has effectively no inflectional morphology, and very little derivational morphology, there is very productive compounding, as we will see. To all intents and purposes all morphemes are monosyllabic in Cantonese, so polysyllabic forms are (almost) always complex. Unlike English, compounds and phrases cannot be distinguished by stress, nor are there special tonal changes within compounds. Apart from arguments based on semantic non-compositionality, only the syntax allows one to distinguish between compounds and phrases, and sometimes conclusive arguments are hard to find. This will become important below. I now turn to a summary of the negation facts.

1.2 Negation with m

The most common negative particle in Cantonese is a syllabic *m*, which appears immediately in front of the first verb, as shown in (2):

(2) Keui m cheng ngo
He NEG invite me
He doesn't invite me.

If there is pre-verbal material, *m* may sometimes precede the entire VP, and sometimes directly precede the main verb. The options depend on the nature of pre-verbal material, and the scope rquired and I shall argue that *m* may only directly precede [+verbal] lexical items (henceforth [+V]). This fact follows if *m* is prefixed in the lexicon, but not if it is syntactically introduced at the start of VP.

Auxiliary verb First, if the sentence includes an auxiliary verb the negation usually precedes the auxiliary, as in (3), but may precede the main verb, as in (4), or both. The scope is different in the two cases, as shown by the glosses of (3a) versus (4a).

(3) a. Keui m seung cheng ngo
He NEG want invite me
He doesn't want to invite me.
b. Keui m wui yau-seui
He NEG can swim
He can't swim.

(4) a. Keui seung m cheng ngo
He wants NEG invite me
He wants to *not* invite me
b. Keui m seung m jou saangyi
He NEG want NEG do business
He doesn't want to not do business.

Prepositions If the sentence includes a pre-verbal PP, the negation

immediately precedes the preposition:[2]

(5) Keuidei m hai daaisigun fugan siwai
They NEG at embassy near show
They didn't turn up near the embassy

However, there is reason to believe that prepositions are a sub-class of verbs. I will use *hai* as an example: the argument extends to all other prepositions. Note first that the preposition *hai* is also a main verb meaning 'to be in/at a place'. (6) is a perfectly good Cantonese sentence:

(6) Keuidei (m) hai daaisigun fugan
They (NEG) are embassy near
They are (not) near the embassy.

This main verb *hai* must be followed by a placeword just as it must be when used as a preposition, and it can be negated by *m*. I shall assume, then, that *m* is used identically in both (5) and (6), immediately preceding a [+V] element.

Adjectives So far we have seen that verbs and prepositions are negatable by *m*. Adjectives can also be negated by *m*:

(7) Ni go neuijai m leng
This CL girl NEG beautiful
This girl isn't beautiful.

Notice that there is no verb *to be* in (7). Adjectives appear as predicates without any other verb, and this is one of the reasons for assuming that they are indeed verbs, and not a separate category.

Nouns Nouns cannot be negated directly by *m*. Instead an empty verb, either *hai* 'to be', or *yau* 'have, exists' must be supplied. Consider (8 a, b):

2 The structure of locative PP's has a place nominal as head of the embedded NP, in this case *fugan*, meaning 'neighborhood', modified by 'embassy'. The literal translation is thus roughly 'at the embassy's neighborhood'. So to say on the table' one says 'at the table's top' and so on. The place word is obligatory unless the noun itself is intrinsically a place word, as in the case of proper names.

(8) a. Keui loupo (hai) gwongdungyan
His wife (be) Cantonese-person
His wife is a Cantonese
b. Keui loupo m *ø/hai gwongdungyan
His wife NEG is Cantonese-person
His wife isn't (a) Cantonese

In (8a) the copula, *hai* is optionally absent, even though the predicate is a noun, not an adjective. In the negative version in (8b), however, the copula is obligatory. Yau concludes, and I agree, that NP's cannot be directly negated by *m*, which requires a verbal base of some sort. In the absence of such a base one is supplied, a phenomenon reminiscent of Do-support in English. I will return to this below.

Adverbs There are two kinds of adverbs in Cantonese(see Yau, p. 61ff). One kind has a fixed position between the subject NP and the verb, and it is generally assumed that such adverbs are within VP. This class of adverbs includes manner and frequency adverbs.

VP adverbs can be directly preceded by *m*. Note that the adverbs in (9-10) cannot precede the subject NP, whether negated or not.

(9) Keui m yingjan yingau
he NEG seriously do-research
He doesn't do research seriously
(10) keui m joi wan ngo
he NEG more look-for me
He isn't looking for me any more

In certain circumstances *m* may also follow the adverb, in which case the scope of negation does not include the adverb. For example, (11) a, b have a different meaning:

(11) a. keui go sam m maanmaangam tiu
his CL heart NEG slowly beat
His heart doesn't beat slowly

b. keui go sam maanmaangam m tiu la
his CL heart slowly NEG beat SP
Little by little his heart stopped beating

(*la* is a sentence-final particle denoting change of state)

Now contrast this with the other type of adverb, which has greater freedom and can occur either before or after the subject NP. Such adverbs are usually assumed to be direct constituents of S. Most time adverbs are of this class. These adverbs, by contrast with the VP adverbs, cannot be directly negated by *m* even if they appear in preverbal position:

(12) Keui (*m) ngauyingan faatyin go go chak
He (*NEG) by chance discover that CL thief
He (*didn't) discover the burglar by chance

(13) (*m) ngauyingan keui faatyin go go chak
(*NEG) by chance he discover that CL thief
(*not) by chance he discovered that thief

(12-13) show that *either* (i) Adverbs are never directly negatable by *m*. Instead *m* negates VP, and the pre-verbal adverb in (11a) is part of the VP, whereas the-verbal adverb in (12) is not

or (ii) of the two types of adverbs only one, the VP-internal class, is negatable by *m*. I will argue below that (ii) is correct.

To summarize:

(1) *m* precedes the negated material

(2) It may immediately precede:
Verbs, including auxiliaries
Adjectives, which are stative verbs
Prepositions, which are also verbs
VP adverbs

(3) It may NOT precede:
NP's
S adverbs

Adverbs aside, then, *m* always negates [+V] elements, and cannot negate [-V] elements. One might ask whether adverbs can be subsumed under the same generalization, so that VP adverbs are [+V] whereas S adverbs are [-V, +N]. There is some suggestive evidence that this is so from the morphology: one large class of VP adverbs, manner adverbs, are formed by adjective reduplication, so they have a verbal origin. *Maanmaandei* 'slowly' is a typical example, formed from *maan* 'slow'. Many sentence adverbs, on the other hand, particularly time words, are clearly nominal in character and can be used as NP's in other contexts. *Gamyat* 'today', from *yat* 'day' is one simple example.

I shall assume, then, that the general statement of the distribution of *m* is that it directly prcedes [+V] elements only. Since verbs are lexical categories this introduces the possibility that *m* is introduced not in the syntax at all, but in the lexicon, and I will argue in this paper that that is correct. There will be two strands to my argument. In the rest of section 1 I will show that the negation of *yau* and the interaction of aspect and negation present problems for a syntactic source for *m* that can be avoided if it is a lexical prefix. And in section 2 I will argue that *m* must be a lexical affix in compounds, potential verbs, and A-not-A questions, so that the burden of proof lies on the side of the syntactic analysis since it is clearly simpler to attribute all uses of *m* to a single source, the lexicon. Finally in section 3 I will argue that the failure of *m* to precede certain kinds of VP, and the occurrence of *m* inside other VP's create further problems for a VP negation account, but follow simply if *m* is analyzed as V (ie lexical) negation instead. Section 4 gives formal statements of the lexical rules for negation and question formation.

In section 1.4 below I will discuss the syntax of *m* in more detail.

1.3 Negation of yau

The verb *yau* means 'have', but it is also (a) the existential verb (b) a

sort of indefinite marker (c) the comparative verb and (d) the emphatic marker. When negated in any of these four uses it does not take *m* in the ordinary way, to give **m yau*, but suppletes to *mou*. Some examples are given in (14):

(14) a. Keui yau pangyau
He has friend
He has friends

b. Keui mou pangyau
He hasn't friend
He doesn't have any friends

(15) a. Yau yan wan nei
there-are man look-for you
Someone is looking for you

b. Mou yan wan nei
There aren't man look-for you
No-one is looking for you

(16) a. Nei yau keui gam gwai
You are him so wise
You are (nearly) as wise as him

b. Nei mou keui gam gwai
You aren't him so wise
You aren't as wise as him

(17) a. Keui yau sik yeuk
He EMP eat medicine
He is taking medication (ie He is under treatment)

b. Keui mou sik yeuk
He NEG-EMP eat medicine
He isn't taking medication

These suppletion facts are somewhat unexpected given a syntactic source for *m*. There would be two ways of dealing with the facts, neither

very satisfactory. One possibility would be to assume a sort of special contraction rule reducing *m yau* to *mou*. It is clear that there is no regular synchronic phonological rule in Cantonese that would reduce the sequence *m yau* to *mou*: the form is obviously suppletive, although historically it may have come from *m yau*. For example, the words in (18) below are all negatable directly by *m*, showing that phonologically identical items fail to supplete in this way. (a-b) are monomorphemic, and differ from *yau*^{24} 'have', only in tone. (c) is bi-morphemic, but the first morpheme is homophonous with 'have' in all respects including tone.

(18) a. yau22 'again'
b. yau22 'right (not left)'
c. yau24-ngoi33 'be affectionate with each other (like brother and sister)'

The alternative is to make the introdution of *m* context-sensitive so that precisely when *yau* 'have' (or *mou*) follows it is not inserted. [3]

On the other hand under a lexical account the treatment would be precisely equivalent to the derivation of a word like *atypical* in English. The regular rules for forming the antonyms of English adjectives insert *un*, giving *unnatural, unaware, untidy*. But a few lexical items take *a-*, and this usually blocks *un-* prefixation. (See Kiparsky 1982 on blocking). In Cantonese *yau* forms the atypical *mou*, and this blocks the regular *m-* prefixation.

1.4 Negation and Aspect

In all the examples given so far the verb has no overt aspect marker. The negation facts change when aspect markers are present. *m* is no longer

3 Jane Grimshaw (p.c.) has pointed out that in English the possessive 's is clearly syntactic, since it can follow phrases and any lexical category, and yet in the pronouns there is suppletion: *my*, not **I's*, *me's*. This suppletion only occurs when the possessive directly follows the head: *the girl who loves me's*, not **the girl who loves my*. Some kind of blocking effect may be at work, in which case a similar account can be used for *yau/mou*, and the argument in this section is weakened.

acceptable, and instead *mei*, *mou*, or *m hai* is used.[4] *Mei* has perfective force, *mou* has emphatic sense, and *m hai* is a simple denial. The choice is thus semantically determined. Some typical examples are given below.

(19) a. Keui sik gwo chaaufaan
He eat ASP fried rice
He has eaten fried rice before.

b. Keui mei sik gwo chaaufaan
He NEG eat ASP fried rice
He has never eaten fried rice

(20) a. Keui sik gan faan
He eat ASP rice
He is (in the middle of) eating

b. Keui m hai sik gan faan (hai..)
He NEG be eat ASP rice (be..)
He is not eating, (he's...)

(21) a. Keui tai hoi bouji
He read-ASP newspaper
He is reading the newspaper

b. Keui m hai tai hoi bouji
He NEG be read ASP newspaper
He's not reading the newspaper (right now)

(22) a. Keui leng-yat-leng
She beautiful-ASP-beautiful
She is extremely beautiful

b. Keui m hai leng-yat-leng
She NEG be beautiful-ASP-beautiful

4 Yau points out that there is one exception to this. The aspect marker *jyu*, meaning incomplete duractive action (p21) can be be negated by *m*. There are other incomplete aspect markers, but they cannot co-occur with *m*. It therefore seems unlikely to be a strictly semantic problem: presumably the syntax of this aspect marker is in some way different.

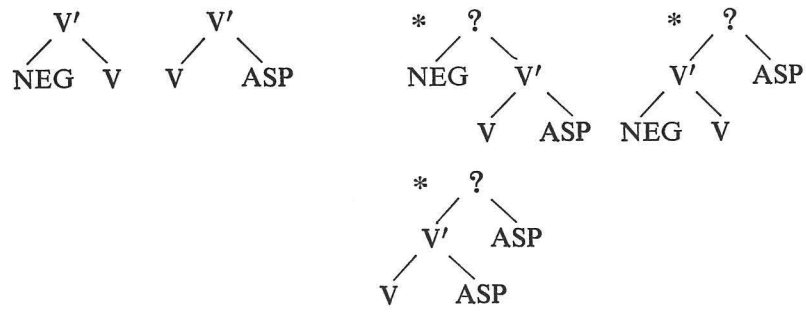
She is not extremely beautiful

Mou is the negative of the emphatic marker *yau* (see section 1.3 above), and may be used with any of the above aspectual suffixes.

We see that *m* is incompatible with aspect markers, and that a verbal element like *hai* must be introduced. Syntactically this fact is hard to deal with: either the PS rules must be context-sensitive, or a system of filters must rule out the unacceptable variants, or negation and aspect must be generated as a continuous constituent in INFL, so that the dependency can be stated locally, and then one or the other must move in the syntax. (See Wang 1965 for an analysis of Mandarin along these lines).

In the lexicon, however, the facts can be dealt with straightforwardly as a result of the affixation rules for negation and aspect. Each apparently attaches to verbs, or V^0, and I shall assume that the attachment of an aspectual affix creates a V′. The failure of *m* to attach directly to the resulting V′ complex is precisely parallel to the failure of a second or subsequent aspectual affix to attach to the same complex: both need a V^0, but the V^0 is no longer accessible after the first affixation.[5] (Note that there is no semantic reason why more than one aspectual affix cannot not co-exist.) The configurations would be as follows:

(23)



5 Huang (1986, 1988) makes use of a closely related idea for Mandarin. He assumes that *bu* is Chomsky-adjoined to V^0, and that perfective affixation to a negated verb is semantically absurd. As in Cantonese, if negation is prefixed to a supporting verb like *shi* 'be' then the main verb is free to take an aspect marker.

In order to introduce negation when the verb has an aspectual suffix it is therefore necessary to supply another verbal element for it to attach to. The three choices are *hai* (*m hai*), *yau* (*mou*), or *mei*.[6]

II. Lexical Negation

In this section I will show that there are clearly lexical uses of *m*, and that it is subject to the same restrictions as it is in its apparently syntactic uses: i.e. it cannot co-occur with *yau*, and the suppletive form *mou* is used instead. Then I will examine two particular uses of *m*: the potential infix *m*, and the use of *m* to form questions of the A-not-A form. I will argue that both these can only be dealt with lexically.

2.1 Negation in Compounds

Just as English has negative prefixes *in*, *un*, and others, Cantonese uses *m*. It is subject to exactly the same restrictions as in the syntax, in that it can only attach to [+V] categories such as verbs and adjectives. The only difference is that whereas the output of *m* prefixation of the kind discussed

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6 If the affirmative sentence has the perfective aspect marker *jo* the negative sentence has *mei* and no aspect marker at all.

(21) a. Ngo sik jo faan
I eat ASP rice
I have eaten

b. Ngo mei sik faan
I NEG-PERF eat rice
I haven't eaten

What is not yet explained is why *mei* and the perfective aspect *jo* cannot co-exist. It is clear that they are redundant, since *mei* carries perfective force, but that does not really explain their failure to co-occur. Huang (1986) does not explain similar facts in Mandarin either. Other unresolved problems include the fact that in hypothetical uses (see Yau 1973 pp 137ff) some of these aspects (*gwo*, *jan*, *lok* only) CAN co-occur with *m*, and that in the same contexts expressions that are usually obligatorily negative can occur without *m* (Yau p140ff).

earlier is V′, the output of this *m* prefixation is V^0, presumably as a result of reanalysis. There are two arguments to show that the strings *m*+*V* discussed in this section are indeed lexical compounds, not phrases. The first argument comes from the behavior of adjectives (i.e. stative verbs) with the negative prefix *m*.

In general, adjectival verbs can be preceded by degree modifiers like *hou* 'very', *jeui* 'most', *tai* 'too'. The negative *m* cannot co-occur with these modifiers: instead one of two strategies must be followed. Either *m hai* must be used, or the adjective must be replaced by its antonym. The facts are shown in (24):

(24) a. Ni go neuijai hou leng
This CL girl very beautiful
This girl is very beautiful[7]

b. *ni go neuijai m hou leng
This CL girl NEG very beautiful
This girl is not very beautiful

c. *Ni go neuijai hou m leng
This CL girl very NEG beautiful
This girl is not very beautiful/very ugly

d. Ni go neuijai m hai hou leng
This CL girl NEG be very beautiful
This girl is not very beautiful

e. Ni go neuijai hou chauyeung
This CL girl very ugly
This girl is very ugly

Notice in particular that both (24) b and c are ungrammatical, so that

7 *Hou* carries the full sense of 'very' in sentences like (24)a only if stressed. It is obligatorily present in such sentences unless they form the first half of a conjunct of the form 'X (is) beautiful, Y is not beautiful'. So 'X *hou* beautiful' with unstressed *hou* means simply 'X is beautiful'.

negation may not follow the degree modifier either.[8]

With this background, I turn to the evidence for the lexical use of *m*. If an adjective's only antonym includes the negative *m*, sentences like (24c) in which *m* is preceded by a degree modifier turn out to be grammatical. Look at (25):

(25) a. Keuih jeui haakhei
He most polite
He is the most polite
b. Keuih jeui m haakhei
He most NEG polite
He is the most impolite

The only lexical item meaning 'impolite' is *mhaakhei*, so (25b) is in fact parallel to (24e), not the ungrammatical (24c). Not only are adjectives like *mhaakhei* clearly lexical items (i.e. V^0), but they follow the major principle of *m* prefixation that is starting to emerge from this paper: *m* is always affixed to verbs (in the broad sense) so there are no compounds of the form *m*+*N*.

The second argument comes from the existence of compounds which do not occur in their affirmative form. One such example is *msai* 'must not'. There is no simple form *sai*, instead the simple form is *yiu* 'must, want', and this, in turn, does not exist in the negative. In other words the negative of *yiu* is *m sai*. (Yau, p217). Two other compounds with no positive forms are given in (27).

(26) a. Keui yiu (*sai) heui
He must go
b. Keui m (*yiu) sai heui

8 One account of the distribution of *hou* that is in the spirit of this paper would be to assume that, like *m*, degree modifiers must attach to V^0, and are thus mutually exclusive. I have not explored the consequences of this idea.

He NEG must go

He mustn't go.

(27) m dak dim 'will be in trouble' *dak dim

m dak liu 'in for it' *dak liu

Not only does *m* appear in compounds, but so does *mou* - more frequently, in fact. In contrast to *m*, *mou* precedes nouns and creates adjectives, and these adjectives have all the properties of the *m*+*V* adjectives discussed above. The affirmative form of the adjectives is usually *yau*+*N*, but in some cases the affirmative does not exist. Note also that the *mou* compound may undergo further compounding, as in the second example here:

(28) a. yau-chin mou-chin

have-money

rich poor

b. yau-gwai-din- che mou-gwai-din-che

have-rail-electric-vehicle

tramway trolleybus

c. mou- seung jung

not-have top type

mono-kini

The fact that in compounds, as in the syntax, the negative of *yau* is not *m yau* but *mou* is further evidence for the advantages of treating both as a unified, and therefore lexical, process.

2.2 Potential Infixation

There is a class of verbs usually known as resultative verbs (Thompson 1973, Huang 1979) that undergo an infixation rule to produce the so-called potential form. The verbs are compound verbs in which the second half of the compound roughly describes the result of the action of the first half. The result may be predicated of either agent or patient, as exemplified by the mimimal pair *sik-baau* 'eat-full' and *sik-yun* 'eat-finish up'. The

meaning of many of these compounds is not fully compositional, and for this and other reasons I will accept the arguments of Huang (1979) and Thompson (1973) that resultative compounds must be formed in the lexicon, not in the syntax.

The potential form of these verbs has the infix *dak* 'can' in between the two halves of the compound. The meaning is "can V". In the negative, there are two possibilties in Cantonese (Mandarin is somewhat different: see Huang for details). Either the entire complex can be negated by *m* in the usual way, or *m* can be infixed alongside *dak*. (Yau: 89) The two possibilities are shown in (29):

(29) a. Keui m yeung dak fei ni jek jyu
He NEG feed can fat this CL pig
He can't manage to fatten this pig

b. Keui yeung m dak fei ni jek jyu
He feed NEG can fat this CL pig
He can't manage to fatten this pig

The meaning of these two sentences is identical, according to Yau, and the scope of negation is only the second part of the compound.

The important point here is that only resultative verbs can take this infix. If resultative verbs are formed in the lexicon, the infixed verb must also be formed in the lexicon, since the only way it could be created in the syntax is for the syntax to have some way of recognizing a resultative verb, as opposed to all other verbs, simple or complex.

2.3 Question Formation

One method of asking questions in Cantonese is called the A-not-A question. There are several variants, but the most common uses the verb followed by its negated form followed by any complements. (Yau: 126ff) An example is given in (30):

(30) Tai m tai sou a?

Shave NEG shave beard PART

Do you shave?

(A second person subject is frequently omitted, as here.) The usual account of the formation of these questions assumes a bi-sentential source that consists of a positive sentence followed by a negative sentence, with deletion of some material from one conjunct. The source for (30) would thus be (31), which is grammatical but rare, and which yields (30) after deletion of the first object (or any post-verbal material)

(31) Tai sou m tai sou a?

Shave beard NEG shave beard PART?

Do you shave?

It is also possible to delete the second object, giving (32):

(32) Tai sou m tai a?

Shave beard NEG shave PART

Do you shave?

For some speakers the whole second conjunct can be omitted, giving (33):[9]

(33) Tai sou m a?

Shave beard NEG PART

Do you shave?

(This is the only circumstance of which I am aware in which *m* can occur in isolation. Yau explicitly states that the sequence *m a* is distinct from the question particle *ma*.)

There are several problems with assuming that deletion under identity is the origin of these questions. First, it is ungrammatical to reverse the order of the conjuncts so that the negative conjunct comes first. For full

9 Jane Grimshaw has suggested to me that a strictly phonological deletion rule might be at work in this case, so that the V^0 is still present for *m* to attach to. The problem is that in general *m* requires an overt verb, and an empty verb like *hai* or *yau* is supplied if necessary.

sentences this order is odd but marginally grammatical, but the versions with some material deleted are completely out:

(34) ?M tai sou tai sou a
NEG shave beard shave beard
*M tai sou tai a
?*M tai sou a
**Mtai tai sou a

This is somewhat hard to deal with in any deletion analysis.[10]

Secondly, there is at least one instance where one of the putative underlying conjuncts is ungrammatical. Recall from section 2.1 that the auxiliary verb *yiu* 'want, must' does not occur in the negative, but rather we find *m sai* 'not want, must not'. The question formed by conjoining the affirmative sentence with *yiu* and the negative sentence with *msai* should thus be (35)a, but in fact we find (35b):

(35a) *Keui yiu m sai heui a?
He must NEG must go PART
Does he have to go?

(35b) Keui yiu m yiu heui a
He must NEG must go PART
Does he have to go?

Thirdly, in ordinary colloquial speech the deletion rule does not in fact delete all but the first verb, but all but the first syllable, so that a bisyllabic verb like *chungming* 'intelligent' shows up in the form 〔*chung-m-chungming*〕, even if the first syllable is not an independent morpheme. This looks much more like a morphological rule than a syntactic rule, and in fact it would be quite hard to formulate the appropriate syntactic rule because of an asymmetry I will now describe.

Remember that it is usually possible to delete all but the first verb

10 An entirely different hypothesis would be that *m* here is behaving like a conjunction, and must occur between the two verbs.

from either conjunct. We have now seen that the deletion rule must be reformulated to delete all but the first syllable, but it turns out that in this form it can only apply in the first conjunct. If it applied to the second conjunct we would get the totally ungrammatical (36):

(36) **Keuih chungming m chung a?
He intelligent NEG int- PART
Is he intelligent?

Finally, there are a few tri-syllabic verbs in Cantonese that are not V-O compounds. An account which says delete up to the first syllable would wrongly predict all of (37a-c) to be grammatical. In fact, only (37a-b) are grammatical:

(37) a. haiklaasi m haiklaasi a?
high class NEG high class PART?
Is he high class?
b. hai m haiklaasi a?
c. *haiklaa m haiklaassi a?

The alternative to a syntactic analysis is to posit a lexical rule forming interrogative verbs. This lexical rule is a rule of syllable reduplication and *m* infixation, and the resulting interrogative verb is then inserted normally into the sentence. This cannot fully replace syntactic question formation because of the existence of questions like (31), with two full sentences, and (32), with deletion from the second conjunct. I propose that an ordinary and very general rule of forward deletion is responsible for these last forms, and that the traditional analysis still explains their occurrence. [11]

To conclude, I have argued that *m* is used in a variety of ways in the lexicon in Cantonese. This raises the question of whether it is really necessary to assume that it is both syntactic and lexical, or whether it can be attributed to a single lexical domain in all its uses. In the next section I shall argue for a unified lexical analysis.

11 See Huang 1982:282 for a similar account of Mandarin question formation.

3. Evidence against VP Negation

If negation is lexical, it can only negate lexical categories. This runs directly counter to the usual assumption that *m* negates either VP or S, so it is necessary to examine whether there is clear evidence for VP negation. I will leave S negation till later.

The main argument for VP negation as opposed to V^0 negation starts from the observation that *m* may precede anything which can begin a VP, and that this fact follows directly from the assumption that *m* negates the VP rather than the immediately following constituent or lexical item. I will show that this argument does not stand up to a closer examination of the data.

It is generally accepted that a Chinese sentence consists of a maximum of three constituents at the S level, with the additional option of a sentence particle (PART) at the S″ level. This is shown in (38):[12]

(38) S⟶(Adv) NP VP
S′⟶COMP S
S″⟶(Topic) S′ PART
V″⟶(X″) V′
V′⟶V (X″)

Within the VP (V″) the lowest level is head-initial, but all other levels are head-final. The result is that a wide variety of material can precede the verb within VP. Prominent among these are auxiliary verbs, most adverbs, PP's, and quantifiers. I am assuming that all material that intervenes between the subject NP and the verb is within the VP (except for sentence adverbs, see section 1.2, and below).

If *m* negates VP, the first prediction is that anything that can be in VP

12 I am following Huang (1982: 85-6) on Mandarin, and assuming that Cantonese also has clause-initial COMP. Huang does not discuss sentence adverbs, but they must be adjuncts that are immediate constituents of S.

should be able to appear after *m*. This is false. There are several kinds of element which can begin the VP, but which cannot be preceded by *m*. First, degree modifiers like *hou* 'very', *tai* 'too'. Notice the ungrammatical (24b), repeated here as (39):

(39) *Ni go neuijai m hou leng
This CL girl NEG very beautiful
This girl is not very beautiful

Second, the quantifier *dou* 'all, also' cannot be preceded by *m*:

(40) *Keuidei m dou heui
They NEG all go
They aren't (all) going[13]

Third, there is one 'preposition' that cannot take *m*. This is the passive agent, marked by *bei* 'by'. Look at (41):[14]

(41) *Ngo m bei keui da
I NEG by him hit
I am not hit by him

In a lexical prefixation account of *m* we may say that *bei* is acting here as a case-marking prefix, so that *bei keui* is in fact an NP, and therefore not negatable by *m*. On the other hand if *m* negates VP's in the syntax, the behavior of *bei* can only be explained by claiming that it is outside the VP, a claim which is not supported by other facts about *bei* phrases.

Even if VP negation could be restricted so as to avoid these cases, it

13 *dou* presents interesting problems. Yau (p65) considers that it is not part of VP despite its fixed position because its scope is leftward instead of rightward. In Mandarin there is some evidence that it is not in VP: in general the *ba*-construction is well-formed if the VP branches, so that one would expect *dou*+*V* to be sufficient for *ba*. In fact it is not, suggesting that *dou* may not be in the VP at all.

14 Note that this sentence is all right if *bei* has its full verbal meaning of 'let, allow', so that (41) means 'I do not let him hit me'.

would not be sufficient to explain another fact. Negation must be allowed to negate smaller units within the VP, since it is frequently possible to find *m* after one or more constituents of VP but before the main verb. This alternative position is associated with a difference in scope, as has often been noted. (Teng 1973). Further, it is possible to have more than one negative within the VP. Consider the triads of sentences below:

(42) a. Keui m wui jou saangyi
He NEG could do business
He couldn't do business

b. Keui wui m jou saangyi
He could NEG do business
He could not do business

c. Keui m wui m jou saangyi
He NEG could NOT do business
He couldn't not do business

(43) a. Keui m yatding lai
He NEG certainly come
He isn't definitely coming

b. Keui yatding m lai
He certainly NEG come
He certainly isn't coming

c. Keui m yatding m lai
He NEG certainly NEG come
He isn't definitely not coming

If the (a) examples, and the first *m* in the (c) examples, are VP negation, then the (b) examples and the second of the (c) negatives must be something else, presumably V′ or V negation. (These last two are very hard to separate, since V′ is head initial.) The alternative is to assume that what is negated is the element immediately following *m*, be that main verb, auxiliary, or adverb. This fits neatly with the scope facts, as originally

pointed out by Teng (1973) for Mandarin. In (43a) what is denied is *yatding* 'definitely, ' not the rest of the predicate. Teng, working in a generative semantics framework, argues from these facts that since the adverb is negated, it is a higher predicate. Current theory does not force us to this conclusion. I shall say simply that VP adverbs can be negated because their categorial features mean that they form a natural class with verbs rather than nouns, being [+V], and that all [+V] lexical categories can be negated in Chinese.

One caveat: I have already pointed out that sentence adverbs cannot be negated. Neither can they occur in the VP, so the PS rules must be able to distinguish between these two groups of adverbs. In section 1.2 I suggested that VP adverbs are [+V] but sentence adverbs are [+N]. Two statements will then cover the facts. (1) Only [+V] elements can be negated. (2) The PS rules have the form:

$S \longrightarrow ([+adv, +N]')\ N''\ V''$

$V'' \longrightarrow ([+V]')\ V'$

$V' \longrightarrow V\ X''$

All the pre-head material in V'' can now be viewed as verbal, in contrast to the post-head material, which is not so restricted.

4. Lexical Rule for Negation

I have argued here that there are clear cases of *m* being used in the lexicon, and that the instances traditionally analysed as syntactic *m* not only can, but must, also involve negation of a lexical category not a phrasal one. All uses of *m* can thus be dealt with in the lexicon. In this section I will set out my proposal more precisely.

There are three productive lexical rules involving *m*: negation, question formation, and potential negation. In each case *m* is affixed to categories with the feature [+V], which includes verbs, adjectives, prepositions and VP adverbs. The output of the rule is the same category, but with the

addition of one bar level. I give the rules informally here; note that V is a shorthand for the categories which have the feature [+V]:

Negation $[m+V]_{V'}$

Question 1. $[V+m+V]_{V'}$

or 2. $[\$_1+m+[\$_1\ (\$_2)]_V]_{V'}$

Potential Negation $[V_1+m+dak+V_2]_{V'}$

The question rule has two alternatives, reduplicating either the entire verb or the first syllable only. Notice that it can apply to adverbs as well as the expected verbs and adjectives:

(44) Keui yat m yatding lai a
He definitely-Q come PART
Is he definitely coming?

The scope of negation percolates to the head of the V', i. e. the V'', so the scope effects will be comparable with those predicted by a syntactic V'' negation account.

These rules interact with aspect as discussed in section 1.4. The affixation of either *m* or aspect adds a bar level, changing V to V'. Since the input requires V they are mutually exclusive, just as more than one aspectual suffix is impossible, or more than one negative. [15, 16] There is

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15 Note that if this is right the VP must in fact be V''', since the complements of the verb must be in V'', and the pre-verbal modifiers are in V'''.

16 Problem: If the main verb has an aspectual suffix but is preceded by a PP (which will never have aspect) it should be possible to negate the PP with *m*, and have the aspect present on the main verb. This is not true:

(i) *Keui m hai ngukkei sik jo faan
He NEG at home eat ASP rice
He didn't eat at home

(ii) Keui mou hai ngukkei sik faan
He NEG at home eat rice
He didn't eat at home.

One possibility is that there is some sort of filter requiring aspect agreement.

one circumstance in which the output of these rules is X^0, not X′, and that is for the fixed prefixed outputs such as the adjective *mhakhei* 'impolite', which are apparently reanalyzed as X^0. Unlike the output of the productive rules they can be modified by degree modifiers, which must thus be assumed to modify X^0, not X′. See section 2.1 for discussion.

As expected with a lexical rule there are exceptions, notably the quantifier *dou* (but see fn. 13). Also not suprisingly for a lexical rule there are suppletive forms. The main one is *m yau*⟶*mou*, but there are others like *m yiu*⟶*m sai*.

Lexical rules apply to lexical items. There is thus no way for them to apply to empty categories, which explains the failure of *m* to appear independently. (but see fn 9). In those circumstances where no lexical item is available for affixation, either because the V node is unfilled, or because it is already affixed and thus inside a V′, a semantically empty (or at least impoverished) verb must be supplied as a base. The usual choices are *hai* 'be', or *yau*, 'have, there is'. Consider (8a-b), given again as (45a-b):

(45) a. Keui loupo gwongdungyan
His wife Cantonese-person
His wife is (a) Cantonese

b. Keui loupo m hai gwongdungyan
His wife ENG is Cantonese-person
His wife isn't (a) Cantonese

In the affirmative the V node is empty, but in the negative it is obligatorily filled. A second occasion of this kind arises if double negation is used. Semantically this is quite acceptable, but syntactically the outer (i.e. first) negative must be supplied with the pro-verb *hai* to attach to (Yau: 133):

(46) Nei m hai m teng loupo wa
You NEG NEG listen wife words
It's not that you don't follow your wife's advice.

(47) M hai mou neuiyan jokfaan
NEG NEG women revolt
It's not that there aren't women who revolt(?gloss)

This is strongly reminiscent of Do-support in English, where the negative must also attach to a lexical item, specifically an auxiliary verb.[17] (See Huang 1988 for a treatment of Mandarin negation within recent theories of V-movement to INFL. Also Roberts (1985) for an analysis of English Do-support.)

5. Conclusion

I have argued that the negative morpheme *m* is affixed in the lexicon, not in the syntax in Cantonese. This accounts attributes a much more active role to the morphological component than has usually been considered likely in a so-called isolating language.

I should add that it might also be possible to develop a hybrid analysis of the Cantonese facts, in which *m* is generated in the syntax but affixed in the morphology. What is clear, however, is that the morphological requirements of *m* play a major role in explaining its behavior.

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17 Interestingly, Amoy (see Lin 1975: 179) is intermediate between English and Cantonese in that only auxiliaries and three other high frequency verbs meaning 'know', 'good' and 'right' can appear in A-not-A questions.

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廣東話中的否定規則是詞滙規則

否定結構和“A不A”疑問式普遍被看作是句法現像。但是在廣東方言中，這兩種結構卻是在詞滙中形成的，因爲否定前綴詞素m“唔”不是在句法中，而是在詞滙中附加子動詞之前的。

m的前綴性質可以由下述事實證明：一、m從來不單獨出現，甚至不能單獨用來回答問題。二、某些動詞（諸如yau“有”）的肯定形式和否定式是由不同的詞根派生出來的。三、一些詞項（比如dou“都”）對一般性規則而言是例外現像。四、m的某些用法顯然像英語中的un-一樣，是詞滙前綴。

但是，語言學界一直認爲m是由句法規則插入句中，用來否定動詞詞組的。本文試圖證明m所否定的不是詞組，而是全部帶有〔+V〕成份的詞，包括動詞，形容詞，前置詞，以及一些副詞。本文還證明，“A不A”問句的形成只能來自詞滙重叠規則，根本不可能是句法現像。