TWO NEGATIVE MARKERS IN TAIWANESE

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The purpose of this paper is to explore the syntactic and semantic differences as well as similarities between the negative markers \underline{bo} 'not (have)' and \underline{m} 'not (want)' in Taiwanese, one of the Chinese "dialects" spoken in Taiwan.

Most of the other negative markers can be shown to be similar to either of the two. 1 So I shall limit myself to discussing only these two and touch on the others when they are relevant.

Such a study has a bearing on language universals because the phenomenon of this particular language is shared by other languages, genetically unrelated as well as related to Taiwanese. On the basis of evidence from Taiwanese, we will be better justified in formulating some universal base rules.

Syntactically, the Taiwanese affirmative and negative are more regular than Mandarin. For example, \underline{u} 'have' is an exact counterpart of \underline{bo} in Taiwanese, but not in Mandarin. But the base rules of Mandarin

^{*} I am indebted to Professors Stanley Starosta and Robert Cheng of the University of Hawaii for suggestions and comments on my first draft. Some of their ideas have been incorporated in this paper, but I alone remain responsible for the interpretations. I have also been profited from Messrs. Michael Sawer, Pang-hsin Ting, and Tsai-fa Cheng's valuable suggestions for improvement. Tones in Taiwanese are not marked in this paper. The basis of analysis in this paper is the I Lan dialect of Taiwanese.

^{1.} Later we shall see that there are two types of \underline{m} (\underline{m} -1 and \underline{m} -2), so we are actually doing an analysis of three negative markers. Roughly speaking, the other negative markers such as \underline{be} 'not able' and \underline{bue} 'not yet'are syntactically similar to \underline{bo} and \underline{m} -1, but not \underline{m} -2 (the difference between \underline{m} -1 and \underline{m} -2 will be explained later.)

^{2.} This can be illustrated by the following perfectly regular and grammatical sentences in Taiwanese:

² i. i u sui. 'she has beauty = she is pretty'
ii. i bo sui. 'she not-have beauty = she isn't pretty'

can be simplified and some generality gained by comparing these two "dialects".3

As Bodman (1954:18-19) has pointed out, bo is the most usual way to form a negative sentence. Both bo and m can often negate the same verb but with different meanings. But Bodman did not make it explicit what differences there are between the two negative markers. More often, there are cases where one is used to the exclusion of the other.

Examples of the two Taiwanese negative markers in sentences are:

- 1. i bo lai. 'he bo come = he did not come'
- 2. i m lai. 'he m come = he does/did not want to come'
- 3. *bin-a-cai i bo lai. 'tomorrow he bo come'
- 4. min-a-cai i m lai. 'tomorrow he m come =

tomorrow he will not come'

But the affirmative marker you cannot be present in Mandarin: l' i. *tā you chē yú. 'he ate the fish'

ii. $t\bar{a}$ méi-you chē yú. 'he did not eat the fish' 2. i. * $t\bar{a}$ you piau-liang. 'she is pretty'

ii. *ta méi-you piau-liang. 'she is not pretty' iii. tā bū piau-liang. 'she is not pretty'

Cf. Professor Wang's (1965) treating Mandarin you and le as two suppletive alternants of the same morpheme "aspect marker". He cited as one of his supporting evidences from Taiwanese, in which u can precede the verb as an "aspect marker". He has observed an interesting generality. However, I shall treat u as a verb rather than an aspect marker as Professor Wang did. He claims that since in Mandarin the negative form of (1) is (2),

⁽¹⁾ tā mǎi le shū. 'he bought the book'

⁽²⁾ tā méi you mái shū. 'he did not buy the book' in order to negate the verb of the affirmative sentence, the aspect marker le of (1) is transformed to -you and transposed to precede the main verb in (2). His statement is not acceptable for two reasons. One is that a sentence like (1) is incomplete and so ungrammatical to many native speakers of Mandarin. A complete and grammatical sentence should be (1) followed by a sentence-final particle le or something else. That is to say, to negate the sentence would involve the deletion of not only the aspect marker le but also the final particle le. The second reason is that the negative form does not necessarily take you, which can be omitted in (2). It is, therefore, questionable that le and you could be identified as the "same" aspect marker.

These examples show that both <u>bo</u> and <u>m</u> can precede the verb and function as negative markers. They differ, however, in at least a semantic feature [completive] or [volition]:

5. i m bat khua: 'he <u>m</u> ever see = he has never seen it' Apparently there are two types of <u>m</u>: [+volition] or [-volition]. We shall show that <u>m</u> is derived synchronically from two different sources: $m-1 \leftarrow \text{Neg} + \text{bue}(?)$ 'want' and $m-2 \leftarrow \text{Neg} + \emptyset$.

The justification for separating two types of \underline{m} is not only the difference in the semantic feature but also supported by the affirmative-negative correspondences: {u lai {e lai {bue(?) lai {*bue(?) cai {*bue(?) ka} {*bue(?) si {bo lai {be lai {m lai {m si.}}}}}

One \underline{m} syntactically corresponds to $\underline{bue(?)}$, while as in the last three cases it does not.

The feature [completive] can account for the deviance of 3, which is ungrammatical because <u>bo</u> has to do with an actual fact or completed event. The time expression <u>bin-a-cai</u> 'tomorrow' is incongruous with <u>bo</u> in the sentence. The term <u>bo</u> may be used to refer to a future event provided that it is understood as future perfective. For example, 6 is ungrammatical for the same reason as 3, whereas 7 is grammatical because it has the pre-verb adverb <u>to</u> 'by then' and/or the sentence-final particle <u>a</u> to make the sentences understood as future perfective:

^{4.} Some people may prefer to use the term [actuality], as suggested by Robert Cheng, rather than [completive] for the reason that bo does not necessarily refer to a completed action or event; in fact, it may refer to something going on at the moment of speaking. for example,

i bo ti cia. 'he \underline{bo} Asp eat = he is not eating' I have decided on the term "completive" merely because it is better understood as a grammatical term.

- 6. *me ni i bo ci. 'next year he has-no money'
- 7. i. me ni i to bo $\widetilde{\text{ci}}$. 'by next year he will have had no money' ii. me ni i to bo $\widetilde{\text{ci}}$ a.

iii. me ni i bo ci a.

Similarly, if bo takes an embedded sentence:

- 6'. *me ni i bo lai. 'next year he didn't come'
- 7' i. me ni i to bo lai. 'next year he wouldn't have come then' ii. me ni i to bo lai a.

iii. me ni i bo lai a.

All these (1, 3, 6, & 7) show that <u>bo</u> is really a perfective, i.e. completive, aspect marker, and so is its affirmative counterpart <u>u</u>. On the other hand, neither <u>m</u>-1 nor <u>m</u>-2 has such a semantic constraint.

The corresponding affirmative markers for <u>bo</u> and <u>m</u>-l are <u>u</u> 'have' and <u>bue(?)</u> 'want' respectively. Substituting these affirmative markers for negative markers in the examples above, the acceptable sentences are still acceptable, and the unacceptable are still unacceptable. The <u>bo</u> <u>u</u>, \underline{m} -l $\underline{bue(?)}$ correspondences are fairly regular in Taiwanese, but the former is not in Mandarin.

Since these negative markers are used in the sentence final position as question markers, their tones may be reduced to neutral, particularly when the alternative conjunctive <u>a</u> 'or' is omitted:

1' in u lai bo ? 'have they come?'

3. in <u>bue(?)</u> lai <u>bo</u>? 'they want come not-have = do/did they want to come ?'

^{5.} That <u>u-bo</u> and <u>bue-m-l</u> are counterparts show up in the alternative type of question construction; they correspond fairly well:

^{1.} in \underline{u} lai a \underline{bo} ? 'they have come or not-have = have they come?'

^{2.} in bue(?) lai a m? 'they want come or not-want = do they want to come?'

^{2&#}x27; in bue(?) lai m? 'do/did they want to come?'
As a matter of fact, there is a tendency for bo to supersede the other negative markers in the sentence final position, particularly when the alternative conjunctive is omitted:

 ^{4.} in e lai bo? 'they able come not-have = can/could they come ?'
 5. in ka lai bo? 'they dare come not-have = do/did they dare to come?'

An important syntactic difference between \underline{bo} , \underline{m} -1 and \underline{m} -2 is that \underline{m} -2 cannot function as a verb. A difference between \underline{bo} and \underline{m} -1 is tha \underline{m} -1 cannot precede an NP.

- 8. i bo bi. 'he bo rice = he has no rice'
- 9 i. *i m-l bi. 'he m rice = he does not want rice'
 - ii. *i m-2 bi. 'he m rice = he not rice'

Other syntactic differences are revealed in 10 & 11. Only bo can precede an AUXILIARY VERB (e.g. ai 'would like' as in ai lai 'would like to come'⁶) and VERBAL MODIFIER (e.g. cin 'very' as in cin ho 'very good', while m cannot. These seem to show that bo can precede a verb phrase (VP) and function as a verb itself, whereas m (particularly m-2) can only fill in the same slot as a VERBAL MODIFER (VM):

- 10 i. i bo ai lai. 'he bo would-like-to come = he would not like to come'
 - ii. *i m ai lai. 6 'he m would-like to-come'
- 11 i. i bo cin ho. 'he bo very good = he isn't very good'
 - ii. *i m cin ho. 'he m very good'

Another syntactic difference is revealed in 12 & 13, i.e. \underline{bo} cannot precede a copula or the verb cai-ia 'to know':

- 12. i. *i bo si hak-seng. 'he bo is student = he isn't a student'
 - ii. i m si hak-seng. 'he \underline{m} is student = he isn't a student'

^{6.} Sentence 10 ii would be grammatical in the southern dialect of Taiwanese. In that case, ai would not be an auxiliary; it would be a main verb. Considering the dialect variation, we should probably treat ai as a main verb and gain generality. The term "Auxiliary Verb (Aux)" is not well defined in this paper. What is commonly understood as Aux such as e 'able', ka 'dare' have been treated as verbs. Perhaps Aux should be omitted from PSR-2. Cf. Ross's (1969) treating auxiliaries as main verbs.

- 13 i. *i bo cai-ia. 'he bo know'
 - ii. i m cai-ia. 'he m know = he does/did not know'

The verb copula and 'to know' share the same feature [-transition] as they are both a timeless state. 7

On the other hand, neither \underline{m} -1 nor \underline{m} -2 can precede an NP. Only \underline{m} -1, not \underline{m} -2, can precede an adjective and prepositional phrase (PP). Compare the following sentences:

- 14 i. i bo chu. 'he bo house = he has-no house'
 - ii. *i m chu. 'he m-l house = he not-want house'
 - iii. *i m chu. 'he m-2 house = he not house'
- 15 i. i bo lau-sit. 'he bo honest' = he isn't honest'
 - ii. i m lau-sit. 'he m-l honest' = he doesn't-want to-be-honest'
 - iii. *i m lau-sit. 'he m-2 honest = he isn't honest'
- 16 i. i bo ti chan e. 'he <u>bo</u> prep farm Prt. = he isn't on the farm'
 - ii. i m ti chan e. 'he m-l prep farm Prt. = he does not

 want to be on the farm'
 - iii. *i m ti chan e. 'he \underline{m} -2 prep farm Prt. = he is not on the farm'

Sentences 14--16 show the same difference between <u>bo</u> and <u>m</u> (<u>m</u>-1 and <u>m</u>-2) as indicated in sentences 8 & 9; that is, <u>bo</u> is a verb and takes an NP or S, whereas <u>m</u>-1 can only take an S and <u>m</u>-2 functions like an auxiliary and must have a verb to yield correct sentences. The ungrammaticalness of 14 ii can be explained by the fact that the affirmative of the sentence is also ungrammatical:

15'. *i bue? chu. 'he wants a house'

^{7.} This feature is suggested by Professor Starosta, who has also reminded me of the generality of the same feature shared by both verb 'to know' and copula.

^{8.} The sentence: ciu i m 'wine he doesn't-want = as for wine, he doesn't want.' can be interpreted as having a following verb deleted.

The point is that we have to keep apart the two types of m, with or without the feature [volition]. As we stated above, m has come from two different sources. This is to assume that it is "derived". To investigate the derivation will lead us to an interesting hypothesis that all negative markers are derived. We have also stated that the affirmative and negative markers are perfectly regular in Taiwanese. We may say that all the negative markers are derived from their corresponding affirmatives. There are several justifications for doing this: (1) all the negative markers share the same feature [neg], (2) the affirmative and negative sentence constructions are regular, (3) we can gain great generality in treating A-not-A or alternative question constructions. To regard [neg] as a Grammatical Formative, we will need the following morphophonemic rules to derive the negative markers from the affirmative:

17 i. Neg + u 'have'
$$\Longrightarrow$$
 bo 'not-have' (MR 54)

ii. Neg + e 'able' \Longrightarrow be 'unable' (MR 55)

iii. Neg + bue? 'want' \Longrightarrow m 'not-want' m-1 (MR 56)

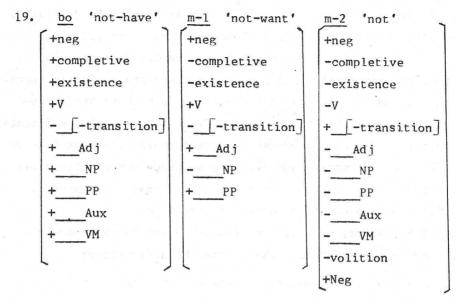
iv. Neg + $\emptyset \Longrightarrow$ m 'not' / si 'is, ka 'dare'... m-2 (MR 57)

Examples of alternative question constructions:

This seems to indicate that while m-2 is a pure negative marker, all the other negative markers are verbs derived from their corresponding affirmatives. 9

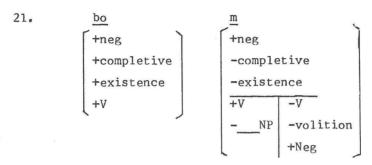
^{9.} The same regularity could also be shown, as pointed but by Dr. Starosta, with the following lexical entries:

As a summary of the discussion so far, semantic features and strict subcategorization for \underline{bo} and \underline{m} include the following:



We do not need to specify all these features if we have redundancy rules and contrive our phrase structure rules in the following way:

With these rules, since <u>bo</u> and <u>m-1</u> have the feature [+V], naturally they function as verbs and precede an Adj, NP, or PP, whereas <u>m-2</u> is [-V] and will never occur immediately before an Adj, NP, or PP. We can, therefore, eliminate most of the features of the three items in 19 as 21. That <u>bue?</u> 'want' and <u>m-1</u> 'not want' do not occur before an NP is a contextual restriction to be specified in the lexical entry:

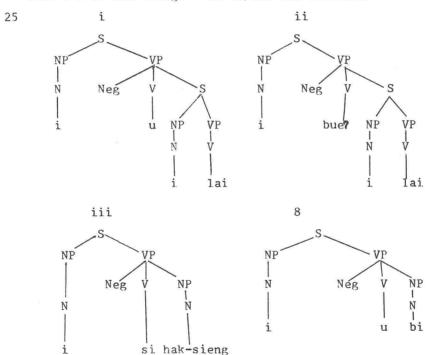


Since 21 is derived from 22, 21 can be dispensed with, if we have 23 which is a revision of 17:

As a matter of fact, \underline{m} -2 is simply a grammatical FORMATIVE; it is simply a Negative, phonologically realized as \underline{m} , so its only feature is [+neg] preceding verbs like \underline{si} 'be', $\underline{k}\widetilde{a}$ 'dare', and cai-ia 'know'.

As an illustration, the underlying structures of 24 are 25 as represented by the trees below (with the base rules of 20 and morphophonemic rules of 23):

24 i. i bo lai. 'he didn't come'
 ii. i m lai. 'he did/does not want to come'
 iii. i m si hak-sieng. 'he is/was not a student'



24 i &ii are complex sentences, the identical NP's of the embedded strings get deleted, while 24 iii is a simple sentence. After the application of the morphophonemic rules, we get 24.

I would like to note in passing that I have treated the <u>bo</u> in 24 i as the same verb, i.e. it functions syntactically in the same manner, as that in 8: i bo bi. The only minor difference is that

in the former \underline{bo} takes an S while in the latter \underline{bo} takes an NP. Cf. the tree diagram of 25 i and 8'.

We have observed an idiosyncratic feature of \underline{m} -1; that is, it cannot immediately precede an NP in a string. On the other hand, bo also has an idiosyncratic feature; that is, it can positively occur in the sentence-initial position. This is "abnormal" in an SVO language like Taiwanese. An example is given in 26:

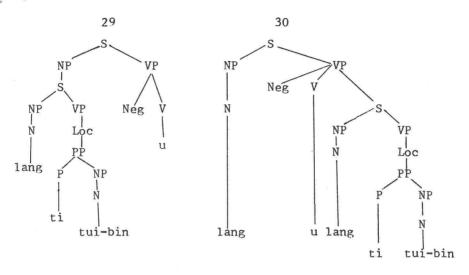
- 26. bo lang ti tui-bin. 'bo man Prep opposite = nobody is over there'
- 27. tui-bin bo lang. 'opposite bo man = over there there's nobody'
- 28. lang bo ti tui-bin. 'man bo Prep opposite = the man is not over there'

In both 26 & 27, <u>bo</u> functions as the negative-existential verb, and <u>ti</u> is a preposition (Prep). According to Fillmore's case theory, the underlying structure of both sentences is the same. When the locative prepositional phrase (L-case) is topicalized or used as a subject, the preposition has to be deleted as in 27. This is true not only in Taiwanese, but also in Mandarin and many other genetically unrelated languages such as English.

The fact that the existence verbs <u>u</u> and <u>bo</u> have an idiosyncratic feature, i.e. they can occur sentence-initially, makes them behave differently from all the other verbs. Sentences with verbs other than existence verbs require that the subject precede the verb. Suppose this is Rule-19, then both <u>bo</u> and <u>u</u> have Rule-19 operate optionally rather than obligatorily, as it would be for any other verb. There is nothing philosophical or mysterious about the existence verbs. We can provide explanations on purely syntactic grounds.

In 26--28, they all seem to have the "same" verb bo, an L-case

(ti) tui-bin, and an A-case lang, 10 how come 28 is different in meaning from the other two sentences? It is not clear how Fillmore would explain the difference. 11 But we have no problem of giving an explanation by the two underlying structures in our system. The underlying structure of 26 & 27 is 29, while that of 28 is 30:



10. I can see no particular reason for calling the NP <u>lang</u> an agentive (A) or dative (D) case. Lacking a good justification for calling it either, I tentatively use A to label it. In the sentence <u>lang</u> bo chu 'the man has no house; no house belongs to him' seems to suggest that <u>lang</u> is a D case. On the other hand, in the utterance <u>lang</u> bo <u>cau</u> 'the man did not run', the NP seems to be the A case, for the <u>embedded</u> string <u>lang</u> cau 'the man ran', the <u>lang</u> is the A case. Case is normally marked in the overt forms by preposition in Taiwanese. The following examples are to show some typical "prepositions" used for each case:

Agentive: li ho i phien khi. 'you by him cheat go = you were cheated by him'

Locative: li \underline{ti} sua-tieng pha-la. 'you p mountain-top hunt = you hunt in the mountain'

Objective: i ka gua pha. 'he give me beat = he beat me'
i pha gua. 'he beat me'

Beneficial: gua \underline{ka} i co \widetilde{sa} . 'I give him make clothes = I make clothes for him'

gua co sa ho i. I make clothes for him =

I make clothes for him'

11. Perhaps the difference could be explained, as suggested by Michael Sawer, in terms of [+Def], in which case 27 would have [+Loc, +Def], but 26 and 28 [+Loc, -Def] for tui bin, and 28 would have [+Def] but 27 and 29 [-Def] for lang.

We can get 28 by deleting the second NP in 30. Because of the idiosyncratic feature of the existence verbs, the two transformation rules have to apply to 29 to get 26 and 27:

31 SD: NP--P--NP--(Neg) V

1 2 3 4

SC:
$$\{(1), \emptyset, 1, 2, 3, 4 \Longrightarrow 4, 1, 2, 3, \emptyset\}$$
 $\{(26), (2), 1, 2, 3, 4, \emptyset \Longrightarrow \emptyset, \emptyset, 3, 4, 1\}$
(26)

This is saying that the existence verbs can never occur in the sentence-final position. When such an occasion arises, the (31) T-rules are triggered. So Rule-31 has to be added to L-51 in 22. TR 31 (1) & (2) are disjunctively ordered.

Grammarians have been puzzled by the existence verbs and treated bo in 1, 8, 10, 11, etc. as "different" items. 12 They have apparently missed a great generality. By treating bo as a verb derived from the verb u as we have proposed, we can say that bo is really the "same" lexical item in all these sentences. Furthermore, bo is the "same" as u; m-l is the "same" as bue?; be is the "same" as e, and so forth. All the negative markers bo, m-l, be, etc. are verbs that function syntactically in a similar way to the corresponding non-negative verbs. Each pair may have its own idiosyncratic feature to be marked in the lexicon.

It is interesting to see a parallel case of the existence verbs in an entirely unrelated language. In Kusaiean, a Micronesian language, oasr 'have' and wängin 'not-have' are also verbs and behave in a similar way as those in Taiwanese. 13 For example.

^{12.} Very little syntactic analysis has been done on Taiwanese. To my knowledge, the only short accounts of Taiwanese syntax on the taxonomic model are given in Yuan (1960:270-88), Wu (1958), and Bodman (1955, 1958). Several works in Japanese are not available to me.

^{13.} The information about Kusaiean structure is based on my field work in Ponape, June-August, 1969.

- 32. Oasr sop lom? 'have soap your = do you have any soap?'
- 33. Wangin sop luk. 'not-have soap my = I have no soap'
- Cf. 34. Mwet se tive mongo mos. 'person that not eat bread-fruit = that person does/did not eat breadfruit'

Kusaiean is also an SVO language. As far as I know, only the two existence verbs in the language occur sentence-initially. So the rules that we have worked out for Taiwanese apply (with some adjustment) also in Kusaiean. In other words, the same idiosyncratic feature of the same verbs is shared by two genetically unrelated languages.

Considering the fact about the genetically unrelated languages like Kusaiean, we are not surprised that genetically related languages like Mandarin have the same idiosyncratic feature for the existence verbs you 'have and méi-you 'not have' that can both occur sentence-initially:

35. you rén cai cia. 'have man Prep home = there's somebody home'
36. mei-you rén cai cia. 'not-have man Prep home =
there is nobody home'

What is interesting about the observation we have made about the two types of \underline{m} in Taiwanese is that there seem to be two types of \underline{bu} 'not (want)' also in Mandarin. Compare 37 & 38:

37. tā bù lai. 'he will/does/did not want to come'

38 i. tā bù shè xúe shēng. 'he is not a student'

ii. tā bù zhē dàu. 'he does/did not know'

iii. tā bu gắn lái. 'he does/did not dare to come'

37 involves [volition] while 38 does not. There are, then, two types of \underline{bu} : \underline{bu} -1 and \underline{bu} -2, just like \underline{m} -1 and \underline{m} -2 in Taiwanese.

Such a distinction might be made. 14 Working on the structure of a particular language helps understand those of the others, genetically related or unrelated. What seems to be language-specific rules turn out to be language universal rules.

Some Residual Problems

The problem of co-occurrence restrictions among the negative and affirmative markers has not been handled in this paper, for example, bo bue?lai, be bo lai, but *m bue lai, *bue bo lai, *m bo lai, *bo be lai, and so on.

An alternative system has been proposed by Tsai-fa Cheng and Pang-hsin Ting. As Cheng (personal communication) pointed out, bo normally occurs before an NP and occasionally before Aux, e.g. bo ai 'not like to', bo bue? 'not want'. m may also occur before Aux, e.g. m ka 'not dare', m kheng 'not willing', m bat 'not ever, never'. bo occurs before VM, e.g. bo ka gua 'not particularly', bo cin cia 'not really'. The occurrences of bo and m are determined by the different classes of main verbs, and the meanings of m (only one type) are determined by the types of main verbs it co-occurs. He treats bue? 'want', ai 'like', kheng 'willing', ka 'dare', etc., as Aux, and si, cai 'know', cia? 'eat', etc., as main verbs. One of his PSR's is something like: VP \rightarrow (Neg) Aux+V.

One important difference between Cheng's system and mine is that his is entirely syntactically-based while mine tends to be more semantically-based. At the present stage of knowledge, it is difficult to tell which system will turn out to be simpler and meet "naturalness" condition.

^{14.} As Sawer pointed out, there are even more explicit ways of expressing volition in Mandarin by using iàu 'want', yuàn i 'willing', and such like. What, then, is going to be the difference between tā bù lái and tā bú iàu lái? It seems one can never stop when one goes into semantic features. This is certainly a problem one constantly faces when one works on the "semantically-based" model of transformational grammar.

Although there is good motivation for separating \underline{m} into two lexical entries in Taiwanese, an argument for two types of \underline{bu} in Mandarin is not so well grounded and people may raise an objection to it. As Sawer pointed out, quitely correctly, that 37 is ambiguous: it may or may not involve volition:

- 37. ta bu lai. (a) 'he will/does/did want to come',
 - (b) he is not coming'

Cf. 39. ta bú iàu lái. 'he will/does/did not want to come'

Is it the <u>bu</u> or the verb (or both) that carries the ambiguity?

Moreover, how are 37 (in the sense of (a)) and 39 to be distinguished

It seems another semantic feature will be required to make the distinction (see also Note 14).

If Mandarin has only one \underline{bu} , then it might turn out to be simpler to state that a closely related "dialect" like Taiwanese has also only one \underline{m} . But this is a controversial problem, and it can be interpreted in either way.

Professor Starosta suggests that <u>bu</u> is pure negation, but that it is connected with volition only when it negates verbs implying volition like <u>lái</u>, but not with non-volitive verbs like <u>shè</u>, <u>zhē dàu</u>, and <u>gǎn</u>. Apparently he has recognized the important role of the verb in the semantic interpretation. This position is congruous with the current trends in linguistic theory. In syntax, the notion that the verb is basic to the sentence is recognized in such works as Fillmore's case grammar (Fillmore 1968) and Lakoff (1965). It seems promising to work in that direction — assigning an important role to the verb rather than the negative marker.

On the other hand, the negative marker such as the English word "not" has been treated as a verb by the transformationalists. 15

^{15.} Cf. McCawley (1968), Lakoff (1965). Their argument for treating the negative as a verb is something like this: the English "not" precedes the main verb and takes the senseless "do" to hang on to, and this rule holds true of all verbs except the copula verb and a few so-called auxiliary verbs.

Their approach is quite different from the one taken in this paper.

A broblem not handled in this paper is "aspect markers", e.g. the ti in ti cia? be eating. The problem is also related to how the pair u—bo preceding the verb is treated. I have stated that i bo lai and i bo bi have essentially the same bo— the main verb, not aspect marker, of the sentences. This is an important claim. An argument for it is that bo co-occurs with an aspect marker, e.g. bo ti lai not coming now.

Summary

PS Rules & Redundancy Rules:

1.
$$S \longrightarrow NP + VP$$

2.
$$VP \longrightarrow ((\begin{cases} Neg \\ Aux \\ VM \end{cases}) V (\{NP\}) (PP) (Loc)$$

3.
$$[+V] \rightarrow [+Cop]$$

4.
$$[-Cop] \longrightarrow [+Adj]$$

5.
$$[+Cop] \rightarrow [+existence]$$

6. [+existence]
$$\rightarrow$$
 [-___[-transition]]

7. Loc
$$\rightarrow$$
 PP

8.
$$PP \longrightarrow P + NP$$

9. NP
$$\longrightarrow$$
 (Dem [Num] N)

10.
$$[\angle completive] \longrightarrow [- \angle volition]$$

Transformation Rules (TR):

31. SD: NP — P — NP — (Neg) V
1 2 3 4
SC: (1).
$$[\emptyset, 1, 2, 3, 4 \Longrightarrow 4, 1, 2, 3, \emptyset]$$

(2). $[1, 2, 3, 4, \emptyset \Longrightarrow \emptyset, \emptyset, 3, 4, 1]$

Morphophonemic Rules (MR):

MR-54. Neg +
$$\underline{\mathbf{u}} \Longrightarrow \underline{\mathbf{bo}}$$

$$\begin{bmatrix} +\mathbf{V} \\ +\mathbf{Neg} \\ +\mathbf{derived} \end{bmatrix}$$

MR-55. Neg +
$$\underline{e} \Longrightarrow \underline{be}$$

+V

+Neg

+derived

MR-56. Neg + bue?
$$m-1$$
 $+V$

+Neg

+derived

^{16.} It must be borne in mind that this is only a sample lexicon. In fact, only L-51 and L-63 have been carefully examined; the other items are merely listed for reference.

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