

## A Note on Negation in Tamil

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### Introduction

This paper concerns negative-modal scope interaction in Tamil. Section 1 is a descriptive account of Tamil modals and negative-modal scope interactions. The main aim of this section is to show that both morphological form and semantic properties determine the scope of modals with respect to the negative. Morphology and semantics determine the form of a modal's negative and the syntactic structures in which the modal can appear. In cases where the morphological form of the modal is at odds with its semantic properties, semantics takes priority over form. Section 2 presents my overall conclusions which can be summarized as follows: Potentially odd facts about the language are shown to have principled explanations. Thus, a close interaction between semantics and morphology and syntax is seen in the discussion of negative-modal scope interaction.

#### 1.0 Facts about Tamil Modals

##### 1.1 Syntactic and Morphological Facts

All modals in Tamil are morphologically bound forms. This is important because the overt form of the modal influences its scope. There are two classes of modals: those that are bound stems and those that are affixes (hereafter Type A and Type B respectively):

1a. naan vele paNN-a muDi-yum (muDi-: Type A)

I work do-INF can-POS

'I can work'

b. avan vele paNN-a-TTum

(-TTum: Type B)

he work do-INF-let

**'Let him work'**

Typically, Type A modals (bound stems such as *muDi-*) follow the infinitive form of the verb. They are not morphologically marked for tense and have only two forms, positive and negative. Negative morphemes are always suffix- ed to Type A modals:

- 2a. *nii var-a veeND-um*  
       you come-INF need-POS

**'You must/have to come'**

- b. *nii var-a veeND-aam*  
       you work need-NEG

**'You need not come'**

Type B modals are typically suffixed to infinitives. This V + modal combination is also morphologically unmarked for tense:

3. *avan poo-xa-laam*  
       he go-INF-may

**'He may go'**

Like Type A modals, Type B modals also have only two forms, positive and negative, but differ in the way negation is indicated. The negative morpheme never affixes to the V+modal form. Instead, the negative form of positive sentences such as (3) are biclausal, with matrix and subordinate verbs, and the negative always attaches to the lower verb and the modal to the matrix verb. The negative morpheme in such cases is always the negative participle:

4. *avan poo-xa-aame iru-kka-laam*  
       he go-INF-NEG be-INF-may

**'He may not go'**

(Lit. He may remain without going')

So far we have seen the morphosyntactic differences between the two types of modals. Now we turn to see how these facts bear upon:

- (i) scope relation with negation and the square of opposition;
- (ii) lexicalization of the negated forms of the modals.

## 1.2 Scope Relations, the Square of Opposition, and Lexicalization

### 1.2.1 Scope Relations and the Square of Opposition

There are four possible scope combinations of modals ('possible' and 'necessary') with negation. These are shown in (5):

- 5a. possibility: possibly not (formally:  $\diamond \sim$ )  
                   not possibly (formally:  $\sim \diamond$ )  
 b. necessarily: necessarily not (formally:  $\Box \sim$ )  
                   not necessarily (formally:  $\sim \Box$ )

These possibilities can be seen in the following sentences from English.

6a. A priest could not marry.

b. You must not go.

c. He need not go.

(6a) has two possible interpretations: 'it is not possible for a priest to marry, ( $\sim \diamond$ ) or 'it is possible for a priest not to marry' ( $\diamond \sim$ ). (6b) has only one interpretation: the strong prohibition 'you must necessarily not go', ( $\Box \sim$ ). (6c) has the opposite interpretation, 'he does not need to go'. (cf. Horn, 1989).

Interestingly, the form of the negative affects the scope relation. Cliticization of the negative to the preceding modal restricts the reading and scope relations.

7. A priest couldn't marry.


(7) can mean only that 'a priest could not possibly marry' ( $\sim \diamond$ ). In (7), the negated form of the modal is lexicalized (i.e., the negated modal is a single overt form), and this forces only one reading. Alternatively, if we cannot lexicalize the negated modal due to the intervening material, we get only one reading, the opposite of (7):

8. A priest could always not marry

(Interpretation: A priest could possibly not marry.)

From this discussion we can see that there is a relationship between scope relations and the form of the negated modal. Lexicalization of the negated modal forces us into one reading, and

non-lexicalization gives a different reading<sup>1</sup>. These facts about scope and form become clearer when we consider the logical structure of the denotation of the modals and negatives in terms of the square of opposition. The square of opposition, first used about eight hundred years after Aristotle (Horn,1989: chap.1), expresses the universal structure of logical opposition:

9. 

A and I respectively indicate universal and particular affirmatives: eg., all and some. E and O indicate the corresponding negatives: eg., none and some not. The relationship between A and I and E and O is that of entailment. A/O and I/E pairs are contradictories; A/E pairs are contraries; and I/O pairs are subcontraries <sup>2</sup>. The opposition of modals and their negatives can also be mapped onto this square, with the resultant scope relations falling out nicely.

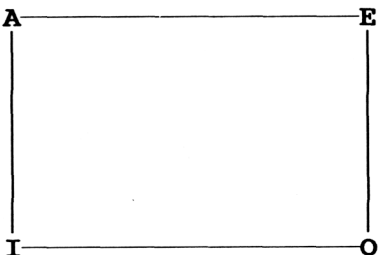
1. Need does not follow this pattern. For further discussion of these issues, please refer to Horn 1989.

2. Contradictories, as the term itself indicates, refers to a relation of opposition such that if P is true then 'not P' must be false and vice versa. With contraries on the other hand, both P and not P may be simultaneously false but cannot be simultaneously true. Subcontraries (I & O relation) allow both P and not P to be simultaneously true. They are the contradictories of the contraries, A and E.

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**A.**

**-E**



**possibly (P)**

not necessarily  
(~ □)

[possibly not  
(P)] ( $\diamond \sim$ )

The strong modal, **must**, maps onto the A corner; the weak modal, **could**, maps onto the I corner. When negated, **must**, always onto the E corner of the square ( $\square \sim$ ). The weak form (as in (6b)), has two options, corresponding to its scope relations. However, when the form is restricted, the scope facts change and the opposition changes accordingly. In the lexicalized form (with the contracted negative) I maps onto the E corner ( $\sim \diamond$ ), as in (7). But in the non-lexicalized form, it maps onto the O corner ( $\diamond \sim$ ), as in (8). These results follow from a general principle observed by (Horn 1972, 1989): although the E forms of both quantifiers and modals may or may not be lexicalized, the O forms of quantifiers are rarely lexicalized. (The O forms of modals are free to lexicalize as long as there is no possibility of misinterpreting the resultant form Horn, 1989).

From our observations above, we see that there is a systematic relation between form and scope in terms of the square of opposition. Since Tamil varies both form and scope, these facts are useful for our discussion in the next section.

### 1.2.2 Tamil Modals and the Square of Opposition

Below is a schematic rendering of the basic semantic and syntactic facts for five modals in Tamil.

muDiy-	
Type	A
Meaning	can, able (=I)
Syntactic Order	V-INF MOD-NEG
Negation in Sq. of Opposition	E
Scope	NEG over MOD (~ ◇)
Lexicalized	Yes
Negation	
Type of Negative	-aadu
-laam	
Type	B
Meaning	may, permit, let (=I)
Syntactic Order	V-INF-NEG] <sub>IP</sub> be-INF-MOD]
Negation in Sq. of Opposition	O
Scope	MOD over NEG (◇ ~)
Lexicalized	No
Negation	
Type of Negative	-aame
veeND-	
Type	A
Meaning	want, need, desire (= A/I)
Syntactic Order	V-INF MOD-NEG
Negation in Sq. of Opposition	E/O
Scope	MOD over NEG/NEG over MOD (□ ~/~ □)
Lexicalized	Yes
Negation	
Type of Negative	-aam
kuuD-	
Type	A
Meaning	must, should (A)
Syntactic Order	V-INF MOD-NEG
Negation in Sq. of Opposition	E
Scope	MOD over NEG (□ ~)
Lexicalized	Yes
Negation	
Type of Negative	-aadu

**-TTum**

Type	B
Meaning	may, let, permit (= A)
Syntactic Order	V-INF-NEG] <sub>IP</sub> be-INF-MOD]
Negation in Sq. of Opposition	O
Scope	NEG over MOD (~ □)
Lexicalized	No
Negation	
Type of Negative	-aame

**-Num**

Type	B
Meaning	must, necessary, should (= A)
Syntactic Order	V-INF-NEG] <sub>IP</sub> be-INF-MOD]
Negation in Sq. of Opposition	E
Scope	MOD over NEG (□ ~)
Lexicalized	No
Negation	
Type of Negative	-aame

Certain regularities of and exceptions to our discussion of scope relations and the square of opposition fall out of these facts. As mentioned earlier, Tamil modals may belong to Type A or Type B. In Type A, the negative morpheme affixes to the modal.

11a. *nii inge var-a kuuD-aadu*  
 you here come-INF must-NEG

'You must not come here'

b. *avan uuru-kku kaLamb-a veenD-aam*  
 he village-DAT start-INF need-NEG

'He need/must not start for the village'

c. *yenn-aale kaar woTT-a muDi-yaadu*  
 me-by car drive-INF can-NEG

'I cannot drive (a) car'

In (11a) we get the interpretation of 'necessarily not' (□ ~); (11b), on the other hand, because it has two possible interpretations, 'necessarily not or not necessarily', can map onto either E/O. (11c) has a weak modal and

has only one interpretation: negative over modal ( $\sim \diamond$ ). Thus in Type A cases, the modal takes scope over the negative depending upon the nature of the modal:

- i. when the modal is strong, it takes scope over the negative and maps onto the E corner;
- ii. when the modal is intermediate, it can either take scope over the negative or come within the scope of the negative and accordingly maps onto E/O;
- iii. when the modal is weak, it comes under the scope of the negative and we get an E reading.

These are the expected results, and so Type A modals conform to the regularities of the square of opposition.

Let us consider the type B modals, bound forms that are affixes. When negated they occur in a biclausal syntactic environment  $[[V- \text{INF-NEG}]_p, \text{be-} \text{INF-MOD}]$ . Typically, they affix to the infinitive form of the verb.

12a. *avan var-a-aame iru-kka-TTum*  
       he come-INF-NEG be-INF-may

'He may not come'

b. *avan var-a-aame iru-kka-laam*  
       he come-INF-NEG be-INF-may

'He may not come'

Contrary to expectations, *-TTum* is a strong modal, but has a 'not necessarily' interpretation, i.e., the O reading. Moreover, *-laam* is a weak modal, but has a 'possibly not' reading, also an O ( $\diamond \sim$ ) reading. The usual result is that the E reading is the preferred (see Horn 1989). Strong modals take scope over the negative and give the E reading, while weak modals are within the scope of the negative and give the E reading too. Therefore, these exceptions (12a&b) can be explained away by the way Tamil lexicalizes modals and negatives: that is, by how form interacts with meaning.



### 1.2.3 Lexicalization

In his discussion of **Quantity and Negative Incorporation** (section 4.5), Horn (1989) notes that the O vertex cannot be expressed by a single lexical item. That is, while the other three corners of the square of opposition are expressed by lexicalized forms, the particular negative is never lexicalized. Consider the following examples to clarify this point.

- 13a. all                    none (E)  
b. every                  no (E)  
c. some                  not all \*nall (O)  
d. all    A \_\_\_\_\_ E    no, none

some I ————— O not all, \*null

In the examples above while the E forms are lexicalized forms, there is no corresponding single, lexicalized O form. Instead, the negative of some is the negative of the universal, not all. In fact, cross-linguistically, a lexicalized negated form for this corner is ruled out, \*null. As Horn (1989) points out, E forms have a greater tendency towards lexicalization than O forms because the the O vertex can be Q-implicated. The Q-principle, which is hearer-oriented is a lower-bounding principle in terms of information structure that induces the upper-bounding implicata. Q-based implicature is basically negative in character. Relating this to the square of opposition above, we see that the sub-contraries (I, O), each tends to implicate the other. Thus, to say some are here, is to imply that some are not. The information conveyed by either corner is the same. The choice of I or O is determined by context. Therefore, languages do not require the two to be separately lexicalized. This is crosslinguistically validated.

In the case of modals in English, these distinctions are indicated by the ability of the negative to cliticize to the verb. We saw this

in our discussion of examples (7a & b). Thus, (7a) has the lexicalized form and has the E reading. (7b) cannot be lexicalized and has the O reading.

#### 1.2.3.1 Tamil Data

Let us take these ideas about lexicalization and reexamine the exceptional Tamil modals, -TTum and -laam. Two facts regularize these exceptions. First, neither one is lexicalized<sup>3</sup>. Second, both map onto the O corner. This is predicted from our discussion above because non-lexicalized forms take the O reading.

The syntax, semantics, and morphology of Tamil all seem to be conspiring to allow only certain structures, interpretations, and forms. In the case of the Type B modals, form supercedes content. Since the negation of -TTum, and -laam can be Q-implicated, their negated forms are not be lexicalized. Therefore, the morphology of Tamil has to 'create' them as suffixes rather than as stems or roots. The result is that they cannot themselves take any affixes. Since the negative morpheme is always a verbal suffix in Tamil, it cannot attach to the modal, and so we get a subordinate construction<sup>4</sup>. An apparent exception to this explanation is the strong suffixal modal, -Num:

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<sup>3</sup>. For English, we saw that 'lexicalization' meant the cliticization of the negative to the modal. For Tamil, we have to interpret this term differently. Tamil negatives, in the unmarked form, suffix to the modal. These will be the lexicalized forms. In the non-lexicalized forms two things are different. First, we have a biclausal construction; and second, the negative affixes to the lower verb rather than the modal. This is due to the suffixal form of the modal (which affixes to the upper verb).

<sup>4</sup>. Another way to explain why the negative -aame in the case of the strong modal, -TTum, takes scope over it but not so over the weak modal, -laam, is through NEG-raising. We could thus simply stipulate in the grammar that the former is marked for NEG-raising while the latter is not. However, this is not very explanatory.

14. avan poo-xa-aame iru-kka-Num  
 he go-INF-NEG be-INF-MOD

'He must not go'

-Num is a strong modal, and as predicted by the square of opposition, takes scope over the negative ( $\square \sim$ ). Though it is structurally very similar to -TTum, the E value results. Why doesn't form supersede content here? Two more particular questions can be raised with -Num that do not arise with -TTum:

- a. Why can't the negative take scope over the non-lexicalized -Num as it does over TTum?
- b. Why if -Num has an E reading, is it not lexicalized? (We would expect it to be lexicalized because it is not Q-implicated.)

One way out is to explain this through historical facts. -Num derives from the positive form, veeNDum of the full verb veeND-. This positive form has been truncated in modern colloquial Tamil (Asher, 1982) in its modal sense, though it retains the full form when used as a verb. The difference between the purely verbal and the modal senses seen below:

- 15a. nii aattu-kku poo-xa-(vee)N(D)um (modal)  
 you home-DAT go-INF-MOD

'You have/must to go home'

- b. yena-kku coffee veeNum/veeND-aam (verbal)  
 me-DAT coffee want/want-NEG

'I want coffee/don't want coffee'

We get both the epistemic and the deontic interpretations in (15a). However, to negate (15a) we can use two strategies.

- 16a. nii aattukku pooxa-veeND-aam  
 You home go-MOD-NEG

'You don't have to go home'/'You must not go home'

- b. *nii aattukku pooxa-aame iru-kka-Num*  
 You home go-NEG be-INF-MOD

'You must not go home'

(16a) has two readings: one with the negative taking scope over the modal and the other with the modal taking scope over the negative. This is in accordance with the fact that *veeND-* is an intermediate (or mid-scalar) modal (Horn 1989) and so is transparent to negation. How do we get (16b)? We may speculate that historically, as the verb root *veeND-* started to lose typical verbal morphology such as tense and agreement, it also started to acquire special semantics. In colloquial Tamil there is a phonological rule that deletes segments under certain circumstances. *vee* is thus deleted. Deletion of *D* is the result of a very productive consonant cluster simplification rule. These two rules apply to both the modal and the verbal forms of *veeND-*.

- 17a. *yenakku aattukku poo-xa-Num*  
 I home go-INF-want

'I want to go home'

- b. *naan aattukku poo-xa-Num*  
 I home go-INF-modal

'I must go home'

This explains the positive forms. We will now explain why the negated form has only the strong, deontic, 'necessarily not' reading.

We saw earlier that the negated mid-scalar modal, *veeND-*, has two interpretations: 'necessarily not' or 'not possible'. Horn (1989) points out that Q-based lexical narrowing is linguistically motivated. Thus, an already existing lexical item restricts the use and sometimes the meaning of a more productively formed lexical item. This can be seen in the restriction of the domain of *finger* in English to *nonthumbs* because *thumb* already exists. Thus, the formation of *-Num* is most likely to create problems in negated environments since *veeND-aam* (modal-NEG) already expresses the two E interpre-

tations ( $\square \sim, \sim \diamond$ ), and therefore the meaning of the new form is narrowed. Since this form turned out to be a suffix, it took the syntax of the other suffixal modals. However, its negation maps onto the 'E' corner of the Square and not to the 'O' corner. Thus, in this case, it is the nature of the modal that dictates scope interpretation.

Another possible explanation for the exceptional behavior of -Num can be obtained from Traugott (1989). Her basic idea is that languages exhibit three tendencies in semantic change. The first one is that meanings based in the external situation change to those based in the internal situation. The second tendency is to change meanings based in the external or internal situation to those based in the textual or metalinguistic situation. Finally meanings tend to be largely based in the speaker's attitude toward the proposition. In terms of these three tendencies she explains the emergence of epistemic meanings in English.

If we look at the history of the origin of -Num we see that it derives from the verb *veeND-*, which originally meant 'want, desire'. Since 'want' can be used in a deontic sense, in terms of Traugott's tendencies we can assume that Tendency III, that is, that meanings tend to be largely based in the speaker's attitude toward the proposition, gave rise to the epistemic meaning at a later stage in the development of the language. What is interesting about the Tamil data is that the new form, -Num, expresses both deontic and epistemic meaning (as well as A and I values) in the positive form but expresses only the deontic (and E value) in the negative. One should expect the opposite because the new form is morphologically a suffix which therefore takes the appropriate syntax, i.e.,  $[[V- \text{INF-NEG}]_P, \text{be-} \text{INF-MOD}]$ . The negative morpheme is -aame, the same as we saw above in the cases of the modals with O values. However, we do not get an O value with -Num. We get an E value. Why should this be so? We may hypothesize that two things need to be taken into consideration

for scope interaction. The first is the nature of the modal involved and the second is the form of the modal. Whenever there is a clash in the information conveyed by these two, the nature of the modal takes precedence over the form. Thus, from our chart in 1.2.3 we know that **-Num** is a strong, deontic with the meaning necessary, must, should. The other modal that has the same characteristics is **kuuD-**. However, the syntactic structure in which the two appear are quite different. If scope interpretation were done purely on the basis of syntactic structures, we would predict that **-Num** will go with **-TTum**. However, this is not the case. **-TTum** must be paired off with **-laam** because the former is a strong version of the latter (cf. chart above). The two also have similar morphological form. Therefore, the two must be similar in syntactic structure and their position on the square. For this to happen their interaction with negation must be as follows: **NEG** takes scope over **-TTum** but is under the scope of **-laam**. This is what we find.

**-Num** is different in that it has no corresponding weak form. A weaker form is the intermediate modal, **veeND-**. However, it patterns with the strong modal, **kuuD-**, in all respects except morphological form. Therefore, its scope interaction with negative follows the same pattern as **kuuD-**. Consequently, the negative must be under the scope of the modal. Further support for this comes from the fact that it is only the deontic meaning that has broken away from the intermediate form. This is what Traugott's (1989) analysis would predict.

We can further predict that **veeND-** should soon become obsolete. As Horn (1989) points out **O** values may freely lexicalize as long as there is no possibility of misinterpreting the resultant form. With **veeND-** we CAN get either the **E** or **O** value; we CAN get either the deontic or epistemic reading; and we CAN get two different scope relationships with the negative. Therefore, we can misinterpret the resultant form. We would then predict that it should not be lexicalized.

But **veeND-** is already lexicalized, and the new form indicating only one sense is not. Since this creates confusion in the language the logical choice seems to be to get rid of the form that is creating the confusion. In this case it will be **veeND-**. Tamil has already done so in the positive form as we saw above. Possibly, some time in the future it will do so for the negative form, **veeNDaam**. Once that happens, we may have both the deontic and epistemic reading (and O and E values) in one form, **-Num**. This will be acceptable since this form is not lexicalized.

### 1.3 Summary

In the preceding sections on negation-modal scope interaction we saw that the modals can be divided into two types in terms of their morphological form. Depending upon which type the modals belong to we saw that we could predict their properties. And in the one case (**-Num**) which did not follow the expected pattern, we invoked historical facts as well as the relation between form and meaning to explain the exceptions. Finally, we also saw how the language makes use of all the information that it can get. Thus, **-TTum** and **-laam**, both themselves being suffixes, could not take a negative suffix. Therefore, these two occur in special syntactic structures. Consequently, they map onto O and not E as we might expect. And **-Num**, which structurally resembles **-TTum** and **-laam**, maps onto E because the meaning of the modal supersedes form in determining scope.

### 2.0 Conclusion

We saw in this paper that what are potentially odd facts in a language actually have a principled explanation. The upshot of this paper is that languages do not work in a random manner. Any odd occurrence can be explained by other facts of the language.

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