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Náhuatl Causative/Applicatives in Cognitive Grammar

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0. Introduction

A striking feature of Aztecan morpho-syntax is the use of verbal suffixes which function both as causatives and as applicatives.¹ In the causative constructions a subject causes a direct object to do the process designated by the verb stem; in the applicatives a subject does the process designated by the verb stem to (or for, or from, or against, etc.) a direct object. These suffixes also form transitive verbs from nouns, adjectives, and postpositions. Tetelcingo Náhuatl (henceforth TN)² has seven such suffixes; in each case the suffix has a constant phonological shape and constant morphological properties such as position-class in the verb, conditioning of stem-formation rules, and pattern of tense formation, which make it desirable to treat it as one suffix in spite of its different functions and meanings.

An important theoretical problem such data raise is this: can causatives and applicatives and the verbalizations associated with these suffixes be analyzed in a way that shows their relatedness, accounting for the great, repeated overlap, or not? Many current theories of syntax do not allow for this: they would lead us to posit a cluster of accidentally homophonous suffixes which are quite separate from each other in terms of their meanings (if in fact they have any) and of their syntactic behavior. Langacker's Cognitive Grammar model (CG — see papers and references in this volume), however, makes possible an analysis which shows close relationships among all these usages, presenting the suffixes in question as integrated (though complex) units rather than arbitrary collections of accidentally homophonous forms.

In this paper I present a CG analysis of representative usages of these suffixes, describing the usages in some detail, and setting forth schematic

structures which embody the generalizations obtaining among them and show their relatedness.

1. Preliminaries

1.1 Schematic Hierarchies

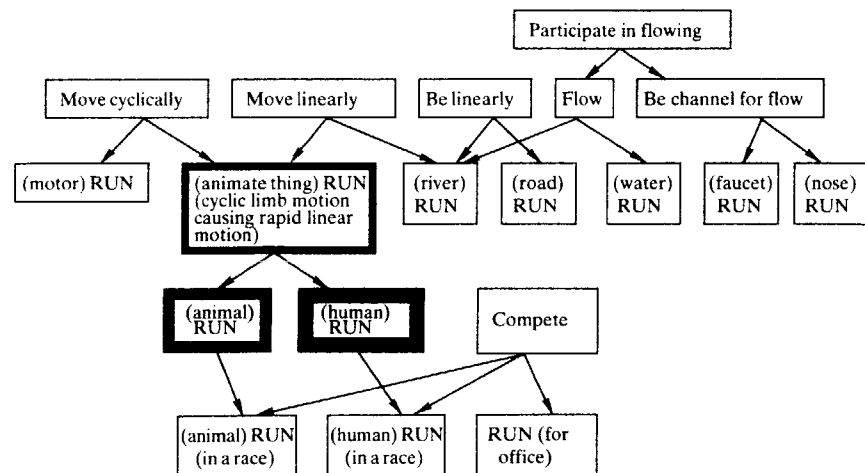


Figure 1: Schematic Hierarchy for *run*.

Lexical items typically have a semantic structure like that in Figure 1, with a core or prototypical meaning or set of meanings, and with related meanings corresponding to different usages. In CG all these meanings are linked to each other by relationships of schematicity, where a schematic concept covers the same semantic territory as its elaboration or instantiation, but in less detail. Thus in Figure 1 the prototypical meaning of *run* is the notion of a human running; also very salient is the notion of an animal running; and the two are subsumed under a schema which neutralizes the distinctions between them. (Schematicity is symbolized by an arrow from the schematic concept to its elaboration; the degree of prototypicality by the width of the line forming the box around the concept's representation.) The schema neutralizing animal and human running is a sub-case of schemas involving cyclic motion and (rapid) linear motion; under the one it is sister to such notions as that of an engine running, and under the other to such as those of a river or road running. And so forth: even one's nose run-

ning is not unrelated or unrelatable.

Such structures, are, of course, language specific, and essentially unpredictable. This does not mean, however, that they are arbitrary. There is not a strict dichotomy between the arbitrary and the predictable: rather there is a continuum. The absolutely predictable and the totally arbitrary are its theoretical endpoints, but most of language lies somewhere in between, exhibiting varying degrees of unsurprisingness or reasonableness without attaining the inevitability of the truly predictable.

Under CG, this same type of structure is expected of morphological and syntactic units. The causative/applicative suffixes will bear a range of meanings corresponding to different usages and related in a schematic hierarchy similar to that in Figure 1, meanings not predictably, but reasonably related. With such an analysis we can certainly distinguish among those meanings, but we can also see them all as related, and the suffix as a single, though complex, unit.

1.2 Causation

Causation is a notion crucial to our discussion, so we must deal briefly with the vexed question of its nature. I assume that, like many other complex concepts, it consists in the coincidence in prototypical cases of a number of characteristics, many or perhaps any of which may be violated or instantiated less than fully in non-prototypical cases.³

In the cases we will be discussing, the following two characteristics always hold true; they may be considered definitional for causation:

(i) Causation is a relation uniting two relations rather than just two Things.⁴ Often some Thing in one or other of the component relations is so prominent that, if we factor out all elements below a certain level of salience, it will seem to enter directly into the causal relation. But if we lower the threshold of salience, it will be seen that some relation in which that Thing is involved is what actually does the causing or is caused. These relations we will for convenience call Relation A and Relation B.

(ii) The probability of Relation A contributes to that of Relation B; to the extent that A happens or is likely to happen, so does B happen or so is B likely to happen.

Two other characteristics that virtually always hold are the following:

(iii) The trajector (i.e. the most prominent Thing, the Thing which will correspond to an external subject if there is one) of Relation A is also

trajector of the causal relation as a whole. This trajector we call the causer.

(iv) The trajector of Relation B is the primary landmark of the causal relation (i.e. it occupies the position of secondary prominence, and will correspond to an external direct object.)

There are also a number of other characteristics that are true of the prototypical cases (and the majority even of the non-prototypical cases). Among them are (v) Relations A and B are both processes; (vi) A precedes B temporally; (vii) as a further development on the theme of (ii), A is both necessary and sufficient for B; (viii) the landmark of the causal relation (i.e. the trajector of relation B) is passive or resistant to the actualization of B; (ix) the trajector of the causal relation (and of A) is a sentient being who wills the actualization of B; (x) A involves physical action; and so forth.

One final characteristic is (xi): the causal relation itself is construed as a process. This of course is not universal: English *because* and *so* construe a causal relation non-processually; however it is true for all the causative/applicative cases we will be discussing.

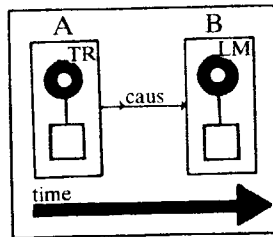


Figure 2: Causation

The causal relation will be represented diagrammatically as in Figure 2, by a two-headed arrow marked "caus";⁵ it will always exhibit characteristics (i), (ii), and (xi), and (with the exception of Figures 14 and 22) (iii) and (iv); the other characteristics will usually (but may not always) be manifested.

2. Causatives

- (1) *ni-miki*
I-die
"I die"

ni-k-mik-tiya
I-him-die.perf-caus
"I kill him"

A typical TN causative usage is given in (1):⁶ The stem *mik-tiya* means "kill someone". The following facts should be reflected in our analysis of it: (a) *mik* is a (perfective) verb stem designating a process of dying. The rest of the meaning of *mik-tiya* can be presumed to be *-tiya*'s contribution. (b) *mik-tiya* designates a process in which a causer, prototypically a person, causes another entity, again prototypically a person, to undergo the process of dying (designated by *mik*). (c) The causer is the trajector of *mik-tiya*: he will be identified with the subject that is expected to combine with the stem, and (d) the person who undergoes the process of dying is the landmark, and will be identified with the expected direct object.

We deduce, then, the following semantic structure for *tiya*: it designates a process (i.e., it is a verbal element) in which one relation causes another. The trajector of the causing relation (A) is trajector of *-tiya* as well, and the trajector of the caused relation (B) is its primary landmark. (These are characteristics (i) to (iv) of section 1.2.) When *-tiya* and *mik* are combined, the process designated by *mik* is identified with Relation B. Thus the trajector of *mik* automatically corresponds to the primary land-

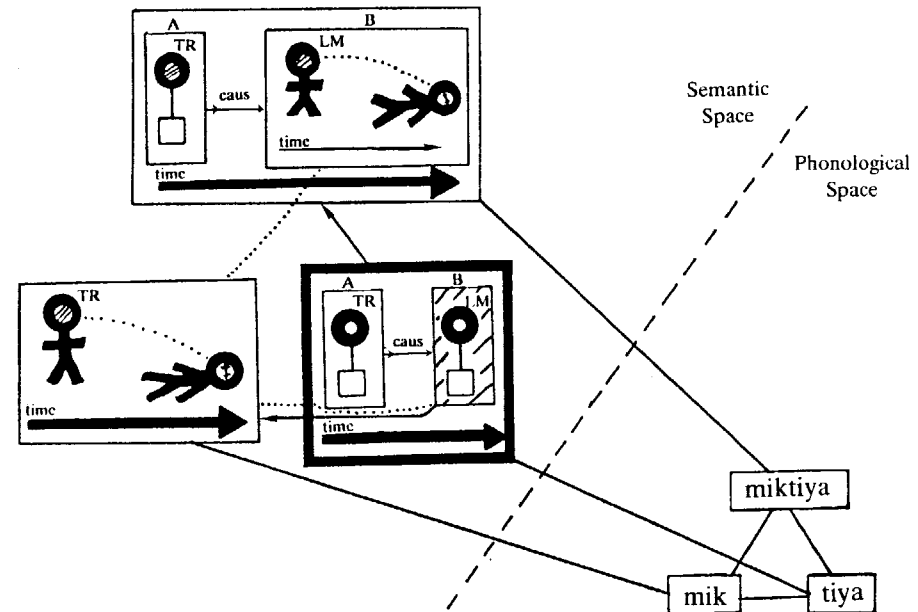


Figure 3: *mik-tiya*

mark of *-tiya*. In this way the nature of the caused relation is explicated: it is one of dying. The nature of Relation A is left unspecified; we do not know exactly what the causer does to cause the landmark to die. Finally, the specifications of *-tiya* take precedence over those of *mik* in the composite structure: *mik-tiya* designates the same causal relation as *tiya*, with the nature of Relation B elaborated; it does not designate the process of dying profiled in *mik*. In CG terms, then, *-tiya* is the “profile determinant” in the structure. All these claims are represented diagrammatically in Figure 3.⁷

One aspect of *mik-tiya* that we have not discussed is the fact that it itself is a transitive verb stem. That is: (a) there exists a schematic direct-object-*mik-tiya* construction, in which some Thing elaborates the primary landmark of *mik-tiya*, and (b) *mik-tiya* is so closely associated with that construction that activating *mik-tiya* automatically activates the construction.

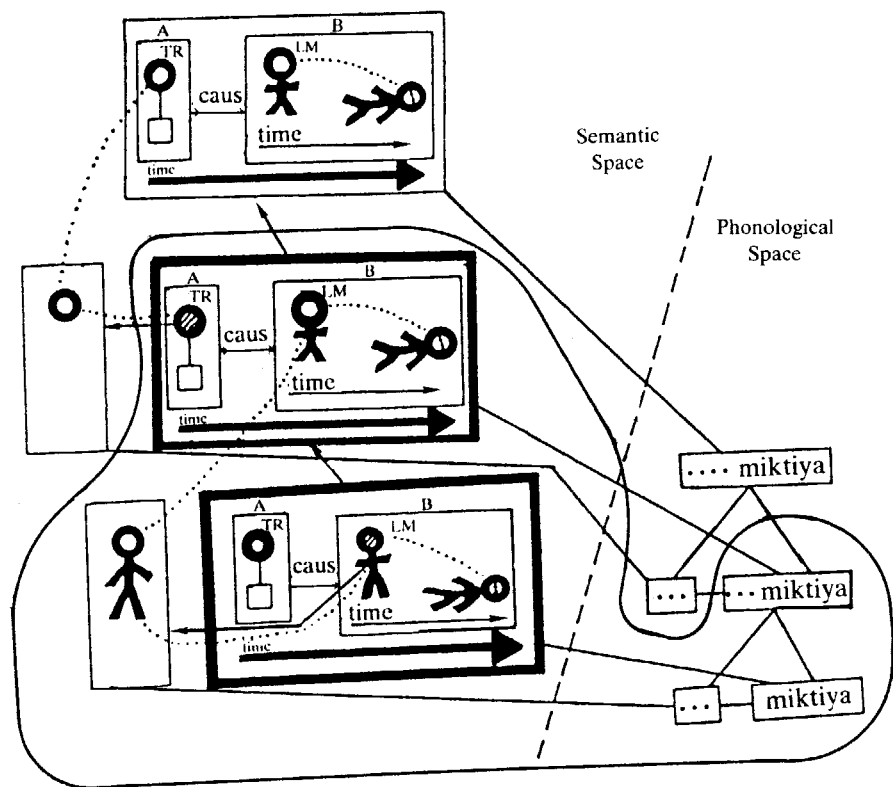


Figure 4: Subject-Object-*mik-tiya* Construction

This creates the strong expectation that the construction will in fact be used, i.e. that *mik-tiya* will occur in construction with a direct object elaborating its primary landmark. This direct-object-*mik-tiya* construction is diagrammed in the circled portion of Figure 4. This construction in turn (like all other TN verb stems) is closely tied to a subject-verb stem construction (Figure 4), in which some Thing elaborates its trajector, so that a subject is also strongly expected. These expectations I have represented in Figure 3 and subsequent diagrams by cross-hatching the representation of the entities (the trajector and landmark) which are expected to be elaborated; this is to be understood as an abbreviation for claiming that the stems do not exist independently of constructions analogous to those in Figure 4. Specific structures such as *ni-k-mik-tiya* “I kill him” ((1)), in which the elaborations have in fact taken place, are sanctioned by those schemas.

mik-tiya as we have represented it in Figure 3 is a rather schematic version of that stem; there exist various instantiating structures which specify more details of the killing process. In what is probably the prototypical version an episode of shooting causes the death. This presumably comes from an established instantiation of *mik*, in which shooting is specified as the cause of the designated episode of dying. (Positing such an instantiation is

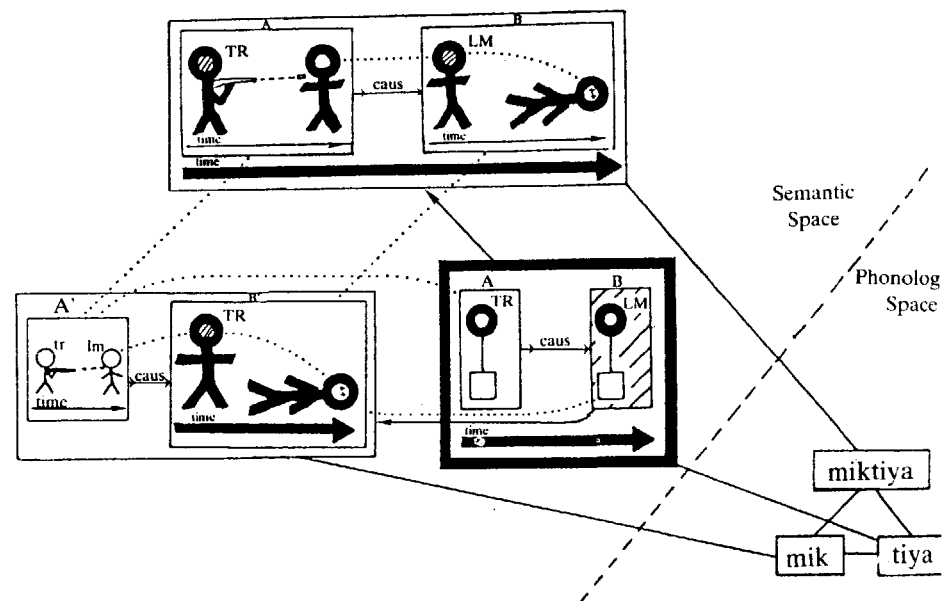


Figure 5: *mik-tiya*-with-a-gun (Prototypical Construal)

equivalent to claiming that it is common knowledge that one of the things that may cause death is getting shot.) This non-profiled shooting episode is then put in correspondence with Relation A in *-tiya*, explicating the nature of that relation. This structure, which directly instantiates that of Figure 3, is diagrammed in Figure 5.

There are many other verb stem-*tiya* constructions in TN which parallel *mik-tiya*, differing in that some other process is designated by the verb stem and thus identified as the caused Relation B in the composite structure. Some examples are given in (2) below.⁸

(2) <i>ni-pāki</i> I-rejoice "I am happy"	<i>ni-k-pāk-tiya</i> I-him-rejoice.perf-caus "I make him happy"
<i>ni-nēsi</i> I-appear "I appear"	<i>ni-k-nēš-tiya</i> I-it-appear.perf-caus "I find/discover it"
<i>ni-mā-kīsa</i> I-hand-emerge "I escape"	<i>ni-k-mā-kīš-tiya</i> I-him-hand-emerge.perf-caus "I rescue him"
<i>ni-koči</i> I-sleep "I sleep"	<i>ni-k-koči-tiya</i> I-him-sleep-caus "I put him to sleep"
<i>wiksi</i> cook "it cooks"	<i>ni-k-wikšī-tiya</i> I-it-cook-caus "I cook it"

For each of these stems diagrams parallel to Figures 3-4 could be drawn, embodying analyses directly analogous to that given for *mik-tiya*. The composite stems often bear semantic specifications which are not (or not as strongly) associated with either the component verb stem or with *-tiya*. For instance, the prototypical version of *koči-tiya* specifies the means of causing sleep (rocking in a hammock-cradle, perhaps singing a lullaby), much as the prototypical version of *mik-tiya* (Figure 5) specified shooting as the means of causing death. Similarly, *nēš-tiya* (appear-caus) specifies that the causer must be among those to whom the landmark appears; the stem means "discover" or "find", but not "show" or "demonstrate". This is, of course, what CG leads us to expect: complex concepts are not just the product of their components, but typically contain meaning of their own.

The generalization subsuming all these structures is a schematic structure with the following characteristics: (a) A verb stem (i.e. a symbolic structure designating a process) precedes *-tiya* phonologically. (b) *-tiya* profiles a process in which one relation (Relation A) causes another relation (B) to obtain. The causer (i.e. the trajector of Relation A) is trajector of *-tiya* as a whole, and the trajector of Relation B is primary landmark. (c) The verb stem is integrated with *-tiya* by being identified with Relation B, the caused relation. Thus the trajector of Relation B (the primary landmark of *-tiya*) is identified with the trajector of the verb stem. (d) *-tiya* is profile determinant. An automatic consequence is that the stem-*tiya* construction is processual (i.e. verbal), designating the same process of causation that *-tiya* designates. (e) The stem-*tiya* construction is transitive. These specifications are diagrammed in Figure 6, the Causative Verb-*tiya* construction.

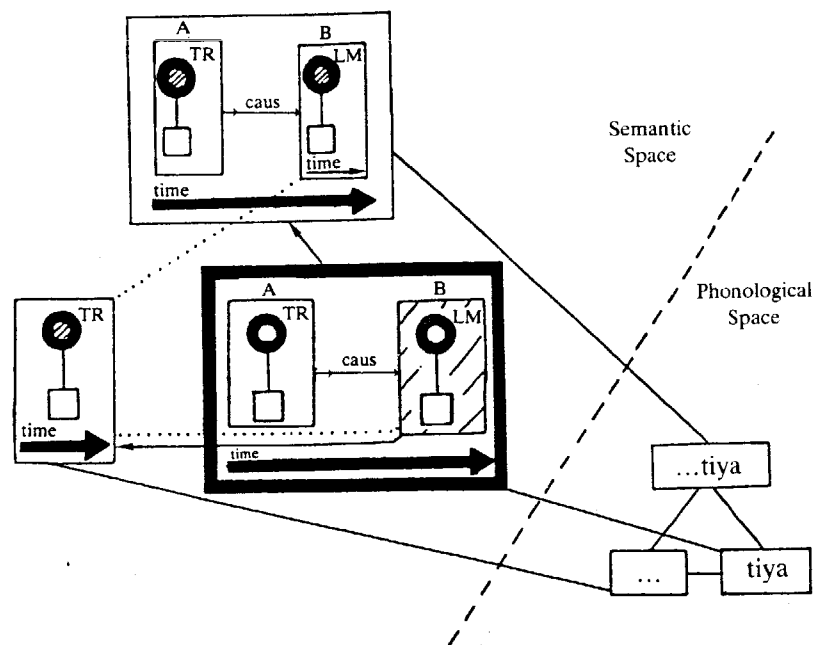


Figure 6: Causative Verb-*tiya* Construction

(3) <i>ni-k-ihta</i> I-it-see "I see it"	<i>ni-k-ihti-tiya</i> I-him-see-caus "I show him (s.t.)"
--	--

ni-k-mati
I-it-know
"I know it"

ni-k-mač-tiya
I-him-know.perf-caus
"I teach him (s.t.)"

ni-k-mači-s-tiya
I-him-know-fut-caus
"I announce (s.t.) to him"

ni-k-il-nāmiki
I-him-memory-meet
"I remember him"

ni-k-il-nāmikī-tiya
I-him-memory-meet-caus
"I remind him (of s.o.)"

In (1) and (2) *-tiya* attaches to intransitive verb stems: it also may attach to transitive stems, as the examples in (3) illustrate. When it does so, the stem-*tiya* construction is not transitive with respect to the same landmark the stem expected an object for (the Thing seen in *ihta*, the Thing known in *mati*, and the Thing remembered in *il-nāmiki*.)⁹ This is a natural (though not inevitable) result of the stems' use in a stem-*tiya* construction: *-tiya* is profile determinant, and its specifications (which do not include transitivity with respect to the landmark of its Relation B) take precedence over those of the stem.

(4) *ni-mēwa*
I-arise
"I arise"

ni-k-mēwi-liya
I-him-arise-caus
"I raise him"

laçilīni
ring
"it (bell) rings"

ni-k-laçilīni-liya
I-it-ring-caus
"I ring it (bell)"

ni-lāka-ti
I-man-inchoative
"I am born"

ni-k-lāka-ti-liya
I-him-man-inchoative-caus
"I give birth to him"

-tiya is not the only causative suffix in TN: in (4) are given forms with *-liya*, and similar lists could be given for *-liya*, *-wiya*, *-(i)ya*, *-owa*, and *-a*. For each stem structures similar to those diagrammed in Figures 3 and 4 would be posited, and for each suffix a structure like that of Figure 6, differing only in the phonological shape of the suffix.

We can express the commonality of all these causative structures by the highly schematic structure of Figure 7, the CG analogue of a rule of causative formation. This structure has as direct instantiations Figure 6 and the parallel structures for the other suffixes; among these *-tiya* and *-liya* are prototypical, as they are far and away the most common (and apparently

the only productive) structures. These relationships are represented in Figure 8: note the resemblance of this structure to that posited for English *run* in Figure 1.

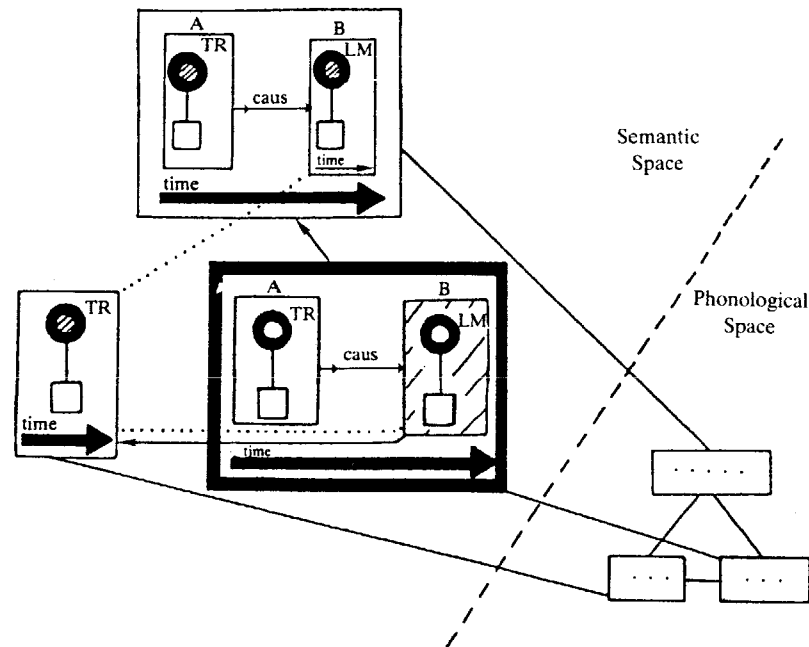


Figure 7: Causative Verb-suffix Construction

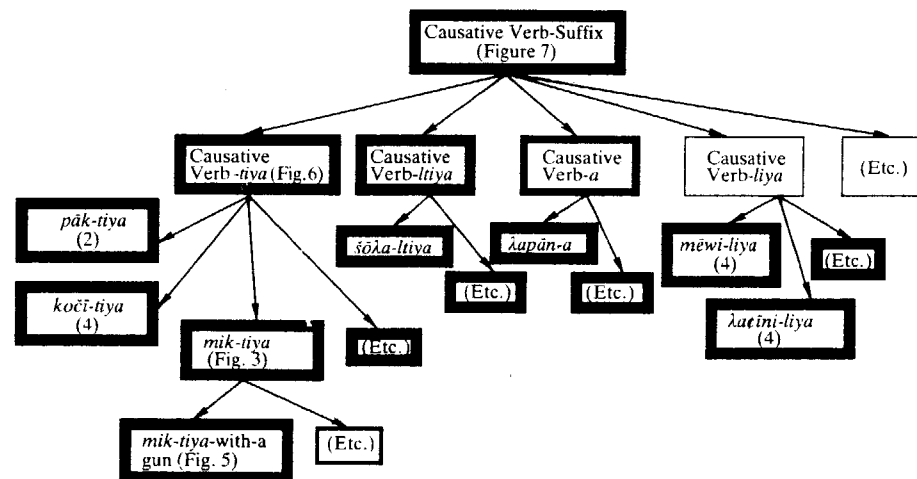


Figure 8: Schematic Hierarchy of Causative Verb-Suffix Constructions

3. Applicatives

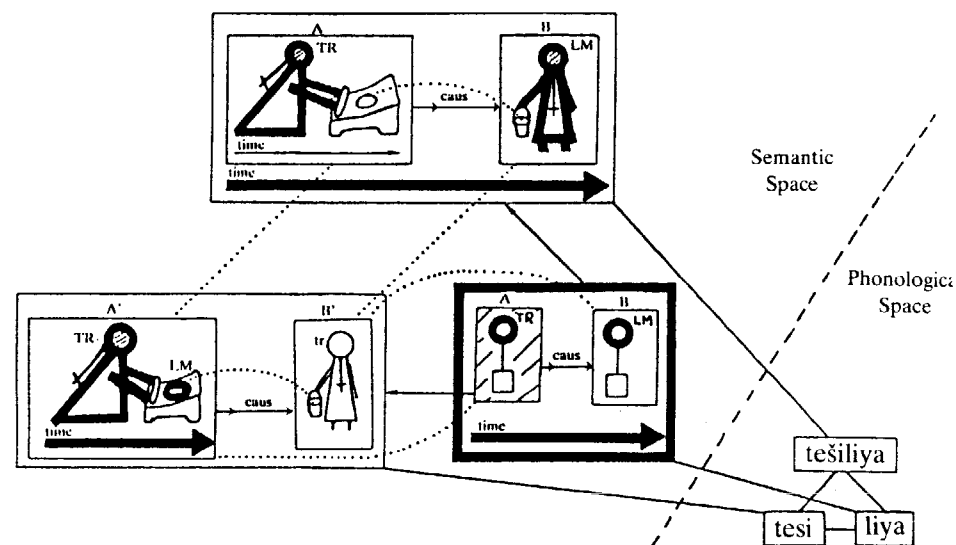
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| (5) | <i>ni-tesī</i> | <i>ni-k-teši-liya</i> |
| | I-grind.corn | I-her-grind.corn-applic |
| | "I grind corn" | "I grind corn for her" |

(5) is a typical applicative usage of *-liya*. The stem *tesī* alone means "grind corn" (it is intransitive), and *teši-liya* means "grind corn for s.o.". *tesī* designates a process in which the trajector (usually a woman) grinds prepared corn (*neš-tamal-i*), which results in someone (usually herself) possessing a quantity of dough (*teš-li*) for tortillas or tamales or whatever. This resultant possession is not part of the profile: only the grinding episode is actually designated by the stem.

This possessive relation I have termed "resultant"; I could as well have said it is caused by the episode of grinding. It fulfills all the characteristics we have given for causation except (viii)--the possessor of the *teš-li* is not usually resistant to coming to possess it.

In *teši-liya* the same episode of grinding is included in the profile, and the person doing the grinding is still retained as trajector of the composite stem, but the profile is expanded to include the causing of possession. The person who comes to possess the *teš-li* functions as primary landmark, in accordance with characteristic (iv), and the stem is transitive with respect to it.

If, as we did with *-tiya* in *mik-tiya*, we assign to the suffix all the semantic material that is not contained in the stem, we deduce the following structure for *-liya*: it designates a process in which a Relation A causes a Relation B. The trajector of A is overall trajector, and the trajector of B is overall primary landmark. (These are, of course, exactly the same specifications we posited for *-tiya*.) When *-liya* is combined with *tesī*, the process designated by *tesī* is identified not with the caused Relation B, but with the causing Relation A. Thus the trajectors of *tesī* and *teši-liya* automatically correspond to each other, and the nature of the causing relation is explicated: it is one of grinding corn. The non-profiled caused relation of possession in *tesī* is put in correspondence with Relation B, explicating the nature of that relation, just as the non-profiled causing relation of shooting was put in correspondence with Relation A in Figure 5. Finally, *-liya* (again paralleling *-tiya*) is profile determinant for the composite structure. These specifications are diagrammed in Figure 9.

Figure 9: *teši-liya*

There are many other examples of stems with *-liya* which can be analyzed in a manner directly parallel to that used for *teši-liya*. Some of them are given in (6).

- | | | |
|-----|----------------------|----------------------------|
| (6) | <i>ni-k-šīpēwa</i> | <i>ni-k-šīpēwi-liya</i> |
| | I-it-peel | I-him-peel-applic |
| | "I peel it" | "I peel him (a fruit)" |
| | <i>ni-ḡahēi</i> | <i>ni-k-ḡahēi-liya</i> |
| | I-shout | I-him-shout-applic |
| | "I shout" | "I shout to him" |
| | <i>ni-k-kāwa</i> | <i>ni-k-kāwi-liya</i> |
| | I-it-leave | I-him-leave-applic |
| | "I leave it" | "I leave him (s.t.)" |
| | <i>ni-k-kīš-tiya</i> | <i>ni-k-kīš-ti-liya</i> |
| | I-it-emerge-caus | I-it-emerge-caus-applic |
| | "I take it out" | "I take (s.t.) out of it" |
| | <i>ni-ḡa-pāḡka</i> | <i>ni-k-ḡa-pāḡki-liya</i> |
| | I-unspec-squeeze | I-it-unspec-squeeze-applic |
| | "I milk" | "I milk it (cow/goat)" |

ni- λ a-tēmowa
I-unspec-search
"I search (for s.t.)"

ni-k- λ a-tēmowi-liya
I-him-unspec-search-applc
"I frisk him"

In some of the examples in (6) the stem to which *-liya* is added is transitive; just as with the examples in (3), and for the same reasons, the object with respect to which the stem is transitive is no longer the primary landmark in the composite stem; rather it is displaced by the trajector of Relation B. Note also that the nature of the caused Relation B varies from case to case: sometimes it is possession, sometimes it is loss, sometimes it is benefit, sometimes detriment, the choice depending, to some extent, on what resultant relation is prominent in the semantics of the stem with which *-liya* combines. About all that is common to all the cases is that the primary landmark is somehow affected (i.e. some relation involving that landmark is caused) by the process designated by the stem.¹⁰

To capture the generalization uniting all these forms, we posit a structure like that of Figure 9, but with the semantic and phonological details of the stem despecified. This structure, diagrammed in Figure 10, characterizes the prototypical usage (and thus the prototypical meaning) of *-liya*.

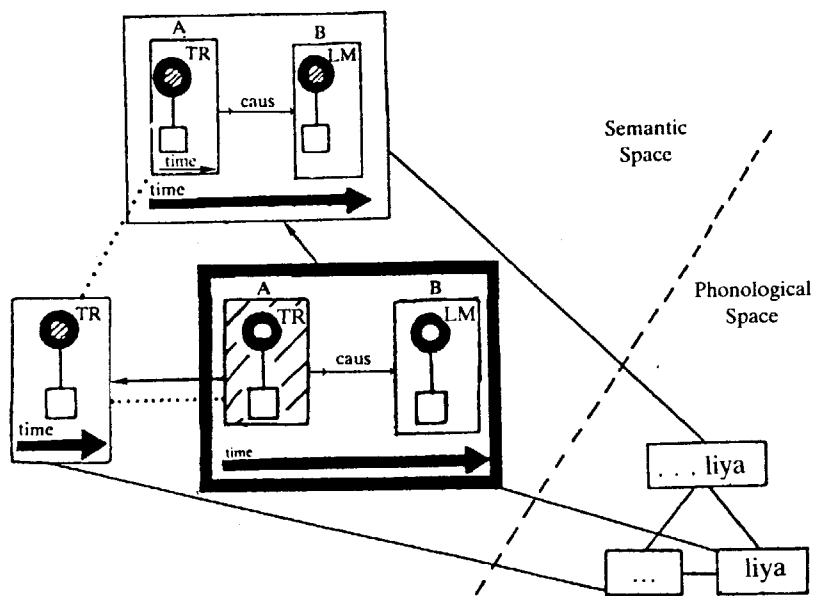


Figure 10: Applicative Verb-*liya* Construction

(7) *ni-k^wi-ika*
I-sing
"I sing"

ni-k-k^wi-ika-tiya
I-him-sing-applc
"I sing to him"

ni-k-tōka
I-it-bury
"I plant it"

ni-k-tōkī-ltiya
I-it-bury-applc
"I plant it for him"

ni-k- λ arowa
I-it-open
"I open it"

ni-k- λ apo-lwiya
I-him-open-applc
"I open it for him"

ni- λ a-poh-polowa
I-unspec-rdp-lose
"I erase (things)"

ni-k- λ a-poh-pol-wiya
I-him-unspec-rdp-lose-applc
"I forgive him"

-liya is not the only applicative suffix in TN, however. *-tiya* is occasionally (though rarely) used in the same way, and certain other suffixes are quite common with this usage. Some examples are given in (7). To the extent that such applicative usage is established with any of these suffixes, it will have a structure like that in Figure 10 associated with it. And a

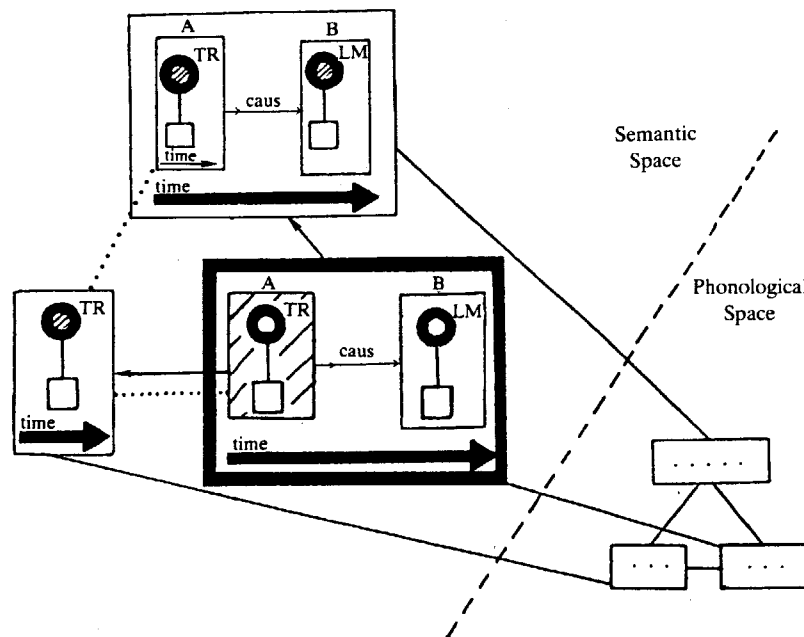


Figure 11: Applicative Verb-Suffix Construction

schema at the same level of abstraction as the Causative Verb-Suffix structure of Figure 7 will capture the generalization uniting all these Applicative Verb-Suffix structures. This schema is diagrammed in Figure 11.

4. The Causative/Applicative Schema

The Causative and Applicative Verb-Suffix constructions (Figures 7 and 11) have a great deal in common. In both cases the suffix profiles a causation process, with the trajector of Relation A as overall trajector, and the trajector of B as primary landmark. The suffix rather than the stem is profile determinant. The composite structure is transitive, i.e. it carries with it the expectation that the landmark (as well as the trajector) will be elaborated syntagmatically. The difference between the two constructions is whether the stem is identified with the causing Relation A (with the natural consequence that its trajector corresponds to that of the suffix and thus to the trajector of the composite structure), or with the caused Relation B (with the result that its trajector corresponds to the landmark of the suffix and therefore of the composite structure).

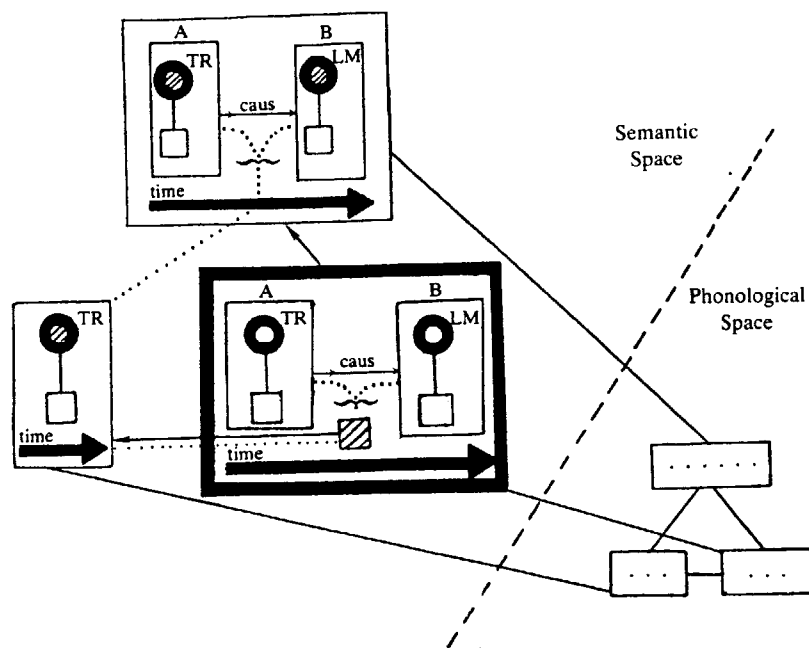


Figure 12: Causative/Applicative Verb-Suffix Construction

Figure 12 represents the schema which embodies the commonality of these two structures. The ease with which this schema can be extracted is a very important result; we have here a direct and powerful expression of the close relationship of causatives to applicatives.

Figure 12 represents the generalization uniting all the causative/applicative suffix usages. Instantiating it are schemas for each of the suffixes that function both as causatives and applicatives, like Figure 12 but with the phonological shape of the suffix specified. Thus there is a Causative/Applicative-*liya* construction, which has as its prototypical instantiation the Applicative-*liya* construction (Figure 10) and as a less salient instantiation the Causative-*liya* construction. Similarly the Causative/Applicative-*tiya* schema will generalize over the prototypical Causative-*tiya* construction (Figure 6) and the less strongly entrenched Applicative-*tiya* construction. A schematic hierarchy exhibiting some of these relationships is given in Figure 13.

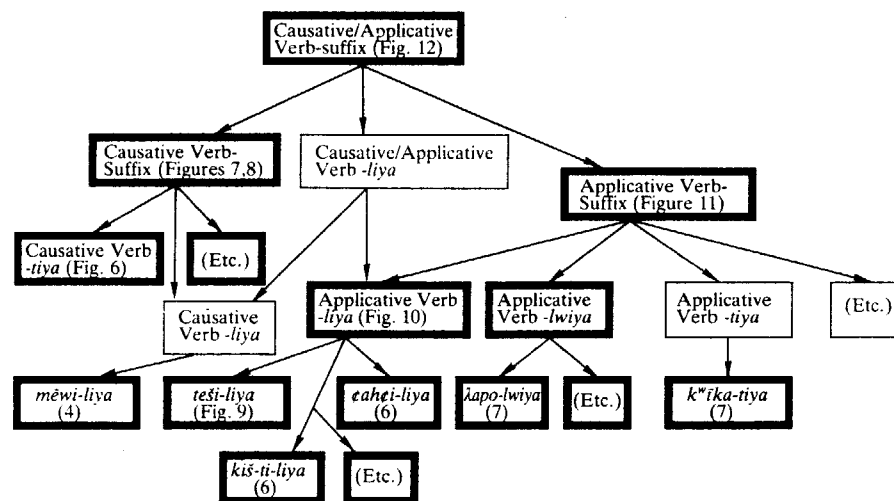


Figure 13: Schematic Hierarchy of Causative/Applicative Verb-Suffix Constructions

5. Cases Intermediate between Causatives and Applicatives

The relationship between causatives and applicatives is seen to be even closer when certain intermediate cases are considered. We here will examine two types of such cases:¹¹ the “because-of” cases, and cases where a structure can reasonably be analyzed as either a causative or an applicative or as both at once.

5.1 “Because-of” Constructions

The “because-of” cases include such forms as *ni-k-weçki-liya* (I-him-laugh-applic?) “I laugh at him” or *ni-k-çökî-tiya* (I-him-cry-applic?) “I mourn him”. To the extent that in laughing at someone or mourning him one intends that person to hear, these stems could be viewed as applicatives of the communication variety (parallel to e.g. *ni-k-çahçi-liya* “I shout to him” in (6) or *ni-k-k’ika-tiya* “I sing to him” in (7)), with perhaps a twinge of the malefactive idea in the first case. However, I would claim that at least equally important, if not primary, is the idea of laughing or crying because of the person laughed at or mourned.¹²

“Because of” is essentially the same notion as “cause”, but with the trajector and landmark flipped: i.e. “X because Y” is almost identical in meaning to “Y cause X”. We can, then, represent the structure of a “because of” suffix by the familiar causation schema, but instead of the trajector of Relation A being overall trajector it is the landmark, and the trajector of B is overall trajector.¹³ The process designated by the stem (crying or laughing) is identified with the caused Relation B (i.e. it is construed as caused by something else). As in the case of *mik-tiya-with-a-gun* (Figure 5), the particular stem involved will include non-profiled (background) information about what is likely to cause its occurrence: people in the TN culture cry when someone dies, and they laugh when someone looks, does something, or says something, ridiculous. Such information is identified with the causing Relation A (again after the manner of Figure 5), and the resultant composite structure has some relation pertaining to a landmark (his death, or his ridiculousness) causing a process of crying or laughing to occur, with the trajector of that process being overall trajector. This analysis for *çökî-tiya* is diagrammed in Figure 14.

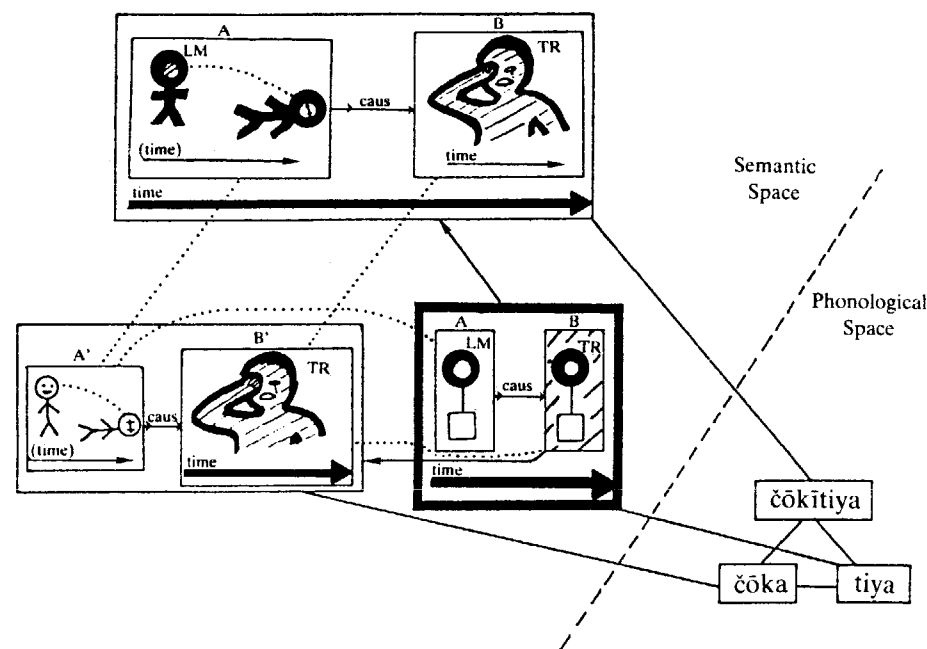


Figure 14: *çökî-tiya*

The structure of Figure 14 shares with causatives (Figure 7 and its instantiations) the identification of the stem with the caused Relation B rather than the causing Relation A. With applicatives (Figure 11 and its sub-cases) it shares the identification of the stem with the relation whose trajector is overall trajector. Thus, like causatives, the process designated by the verb stem is construed as caused; like applicatives, the trajector of the verb stem is trajector of the overall structure as well. These insights can be captured by including in our schematic hierarchy the network diagrammed in Figure 15.

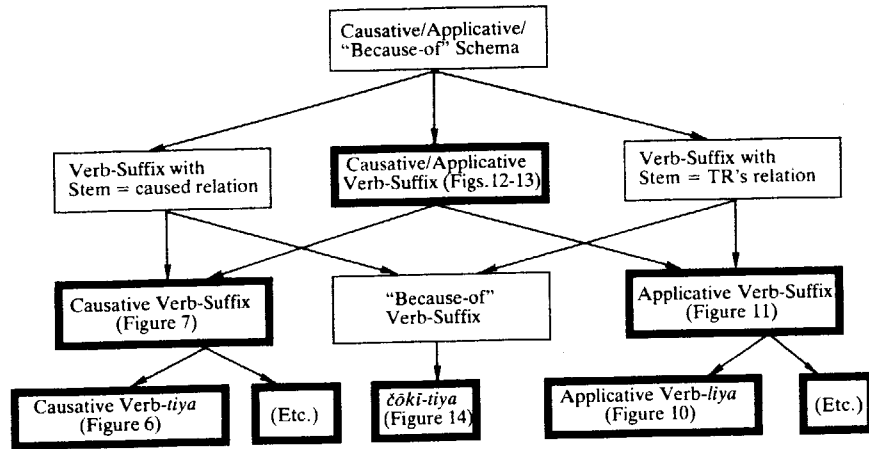


Figure 15: Schematic Hierarchy for Causative, "Because-of", and Applicative

5.2 Multiple and Mixed Construals

In certain cases, a causing action is essentially of the same type as the action it causes. Whenever this is the case, a causative of the action can also be construed as an applicative. To take an English example, when you *be-friend* someone, are you making him your friend, or are you being his friend? In German *be-atmen* (be-breathe) "give artificial respiration mouth-to-mouth", do you breathe for (or to) the other person, or do you cause him to breathe? Some TN stems can be viewed in this ambivalent way as well. We analyzed *mač-tiya* "teach" as a causative (know-caus). Yet when you consider what the nature of the causing Relation A is, a salient component of it is the teacher's knowledge. To that extent an analysis is reasonable where *mač* "know" is identified with Relation A rather than, or as well as, with B.

A very interesting form in this light is *ni-k-aši-tiya* (I-it-arrive-caus?/ applic?) "I arrive with it". Here we have again the familiar A-causing-B structure, but with both the causing action and the caused action being arrivals. Thus the stem elaborates Relation A (I arrive), and also Relation B (it arrives), with Relation B still separate from Relation A (it is a different instance of arrival, with a different trajector) and caused by it. Interestingly, Characteristic (vi) of Section 1.2 is violated: the causing process coincides with rather than precedes the caused process. This construal is dia-

grammed in Figure 16; it should be clear that it is an instantiation of both Causative and Applicative Verb-Suffix constructions (Figures 6, 7, and 11), further underscoring their close relatedness.

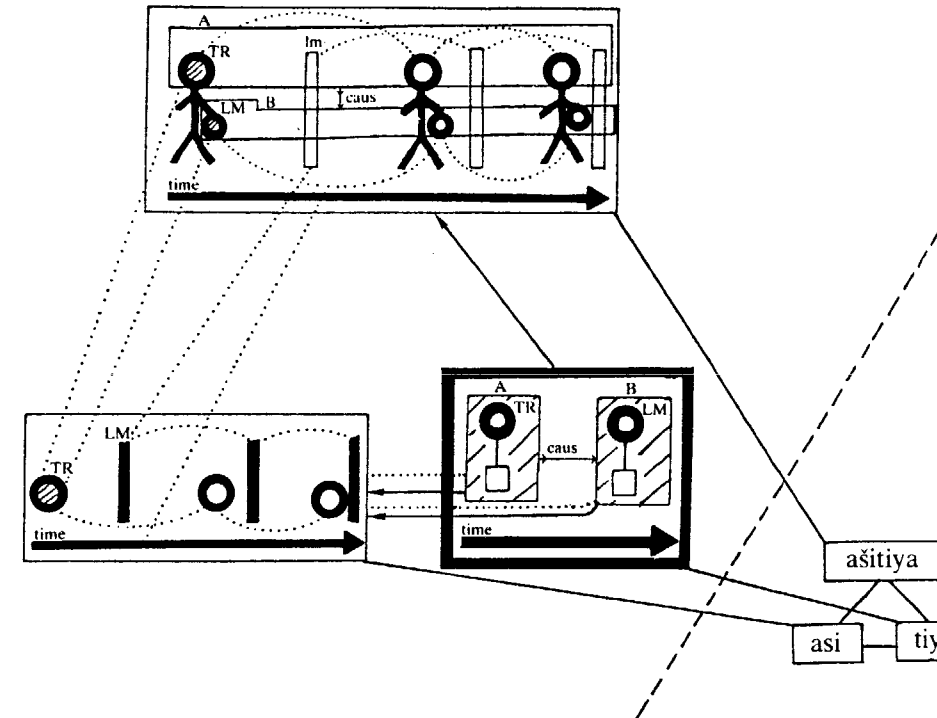


Figure 16: *aši-tiya*

6. Verbalizing Usages

-tiya and *-liya* and the other causative/applicative suffixes are often suffixed to non-verbal stems, converting them into transitive verbs. Space prohibits more than a quick overview of a few typical constructions. Yet it will be clear that these are closely related to the causatives and applicatives we have been examining: it is anything but arbitrary that the same suffixes serve both usages.

6.1. Verbalizations of Stative Relations

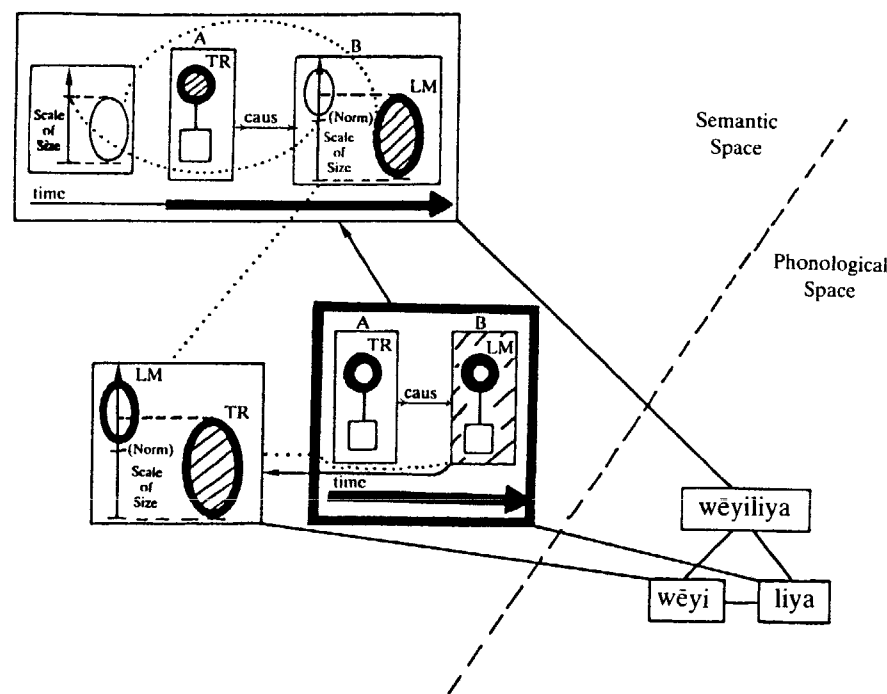
- | | | |
|-----|--------------------------|-----------------------------|
| (8) | <i>wēyi</i> | <i>ni-k-wēyi-liya</i> |
| | big | I-it-big-caus |
| | “big” | “I enlarge it” |
| | <i>piço-ti-k</i> | <i>ni-k-piço-ti-liya</i> |
| | pig-adj-adj | I-it-pig-adj-caus |
| | “ugly, dangerous” | “I uglify it” |
| | <i>se-sel-ik</i> | <i>ni-k-ıla-se-sel-tiya</i> |
| | rdp-soft-adj | I-him-unspec-rdp-soft-caus |
| | “(very) calm, mild soft” | “I pacify him” |

In (8) are several verbalizations of adjectives. CG considers adjectives, adverbs, and adpositions to be stative, or non-processual, relations. Thus, for instance, the adjective *wēyi* “big” profiles a static “in” relation between the furthest extension of a trajector along some relevant dimension(s), and the region beyond the norm for that/those dimension(s). The composite stem *wēyi-liya*, however, is processual rather than stative: it profiles our familiar process of causation, with the caused relation specified to be one of bigness.¹⁴

As the diagram in Figure 17 makes clear, this could be a subcase of the Causative Verb-Suffix construction (Figure 7), except that the stem is a stative rather than a processual relation. We would posit, then, a Causative Stative-Relation-Suffix structure, like Figure 7 but without the profiled time arrow in the semantic specification of the stem. This would of course be joined with Figure 7 under a still higher schema stating only that the stem profiles a relation but not specifying whether it is processual or stative.

Applicative-type verbalizations are rare, for complex reasons (probably having to do with the difficulty of perceiving non-processual relations as causing things to happen), but they do exist.¹⁵ *ni-k-çikāwi-liya* (I-it-strong-applic) means “I light into it (a job), work hard(er) at it”. The job (the overall landmark) is not caused to be strong; rather the trajector is (or waxes) strong, which affects how the job gets done.

ni-k-çikāwi-liya should be compared with *ni-k-çikāw-a*, in which the same stem is verbalized by the suffix *-a*. *ni-k-çikāw-a* has two meanings: one is a causative “I strengthen/toughen it”; the other is an applicative “I get tough with him, I resist him”. This latter construal is very similar to that of *ni-k-çikāwi-liya*, but it differs in the nature of the landmark (a person rather than a job) and what the effect is on the landmark (frustration of intentions

Figure 17: *wēyi-liya*

rather than being accomplished). Both are reasonable usages for an applicative verbalization of the concept “strong”; neither is strictly predictable: they are meanings associated by convention with the composite structures rather than with the components.

- | | | |
|-----|-------------------|-------------------------|
| (9) | <i>n-īš-pa(n)</i> | <i>ni-k-īš-pan-tiya</i> |
| | my-eye-on | I-it-eye-on-caus |
| | “in front of me” | “I exhibit, display it” |
| | <i>no-ma-k</i> | <i>ni-k-ma-k-tiya</i> |
| | my-hand-loc | I-it-hand-loc-caus |
| | “in my power” | “I surrender it” |

In (9) are two causative verbalizations of postpositions. The complex postpositions *īš-pan* and *mā-k* are transitive stative relations, expecting as object a possessive prefix, and as subject a noun or verb phrase. When verbalized they are construed as caused to occur, and the trajector (the Thing

that is in front of the landmark, or in the landmark's power) is construed as the primary landmark of the verb. As usual, the trajector of the causing relation is trajector of the verb as well. The landmark of the postposition is not a central participant of the verb; it is not transitive with respect to it. This exactly parallels the causatives of transitive verbs in (3); the only difference is that those are processual relations and these are stative. We simply include the examples in (9) as further sub-cases of the Causative Stative-Relation-Suffix schema.

6.2. Verbalizations of Nouns

- | | |
|--|---|
| (10) <i>pantalō(n)</i>
trousers
"trousers" | <i>ni-k-pantalōn-tiya</i>
I-him-trousers-caus
"I betrouser him" |
| <i>lāl-i</i>
earth-abs
"earth, land, dirt" | <i>ni-k-lāl-tiya</i>
I-him-earth-caus
"I endow him with land" |
| | <i>ni-k-lāl-iyā</i>
I-it-earth-caus
"I put it down (on the ground)" |
| <i>tōkā-yō-λ</i>
name-possd-abs
"name" | <i>ni-k-tōkā-yō-tiya</i>
I-him-name-possd-caus
"I name him" |
| <i>nāmik-λi</i>
husband-abs
"husband" | <i>no-nāmik-tiya</i>
I.refl-husband-caus
"I (woman) get married" |
| <i>yeyān-λi</i>
safe-abs
"treasury, safe" | <i>ni-k-yeyān-tiya</i>
I-it-safe-caus
"I put it away safely" |
| <i>atemi-λ</i>
louse-abs
"louse" | <i>ni-k-atemi-liya</i>
I-him-louse-caus?/applic?
"I de-louse him" |

In (10) are given a number of noun verbalizations, all of which may be plausibly classified as causative. In the semantics of each noun are backgrounded relations in which it typically figures as landmark: some such relation is identified with Relation B of *-tiya*, and the Thing profiled by the noun stem is identified with the landmark of B (which is a sub-landmark

with respect to *-tiya* as a whole). For instance, an important (though unprofiled) specification of *pantalōn* is that the designatum is worn over the legs and lower trunk of a human. That relation of wearing is, in *pantalōn-tiya*, construed as caused, with the person causing the wearing taken as trajector, and the person wearing the trousers as landmark. This construal is diagrammed in Figure 18.

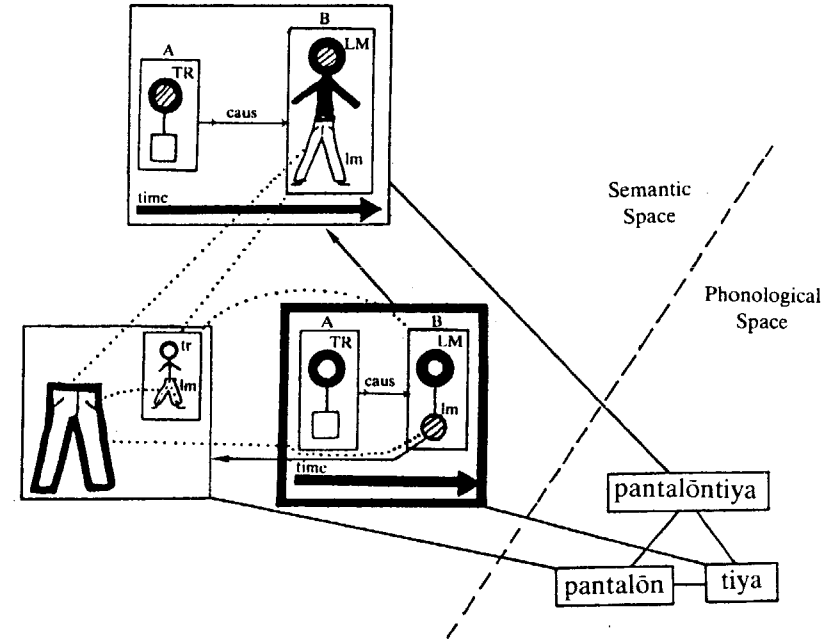


Figure 18: *pantalōn-tiya*

The other forms can be analyzed similarly. In *lāl-tiya* the relation of owning land is caused; in *lāl-iyā* a different relation of earth to a person is construed as caused. The difference between the two meanings is a matter of convention: both are reasonable; neither is strictly predictable. In *tōkā-yō-tiya* the relation is the conventional association of a name with a person, in *nāmik-tiya* it is the marriage relation, in *yeyān-tiya* it is a locative (and protective) relation; in *atemi-liya* it is the cessation of a locative (and detrimental) relation that is caused. (The contrast between e.g. *lāl-tiya* "give land", and *atemi-liya* "take away lice", is paralleled by the contrast in English between *be-ribbon* and *be-head*, or between *planting* and *weeding* a gar-

den.) All of these construals may be subsumed under a schema which we can call the Causative Noun-Suffix construction: it is diagrammed in Figure 19. In calling this a causative construction, we are not claiming that the Thing designated by the noun stem is construed as caused (i.e. caused to exist), but rather that it functions within the relation (Relation B) which is caused.

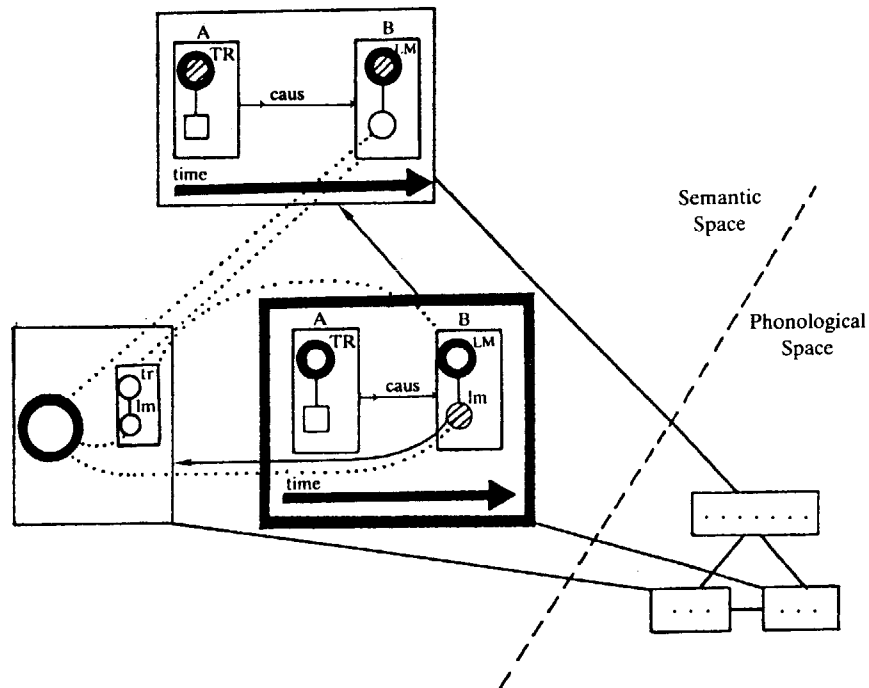


Figure 19: Causative Noun-Suffix

(11) *no-mah-pil*
my-hand-child
"my finger"

ni-k-mah-pil-wiya
I-him-hand-child-applc
"I beckon to him
(with my finger)"

mawi-lis-ai
respect-noun-abs
"fear, respect"

ni-k-mawi-liya
I-him-respect-applc
"I fear/respect him"

Applicative verbalizations of nouns, like those of adjectives, are not easy to come by; the examples in (11) are fairly clear, however. In each case the Thing designated by the noun stem appears to figure more saliently in the causing relation than in the caused relation. Thus in *mah-pil-wiya* the trajector does something with his finger, which causes the landmark to understand a message that the trajector desires to convey. Similarly in *mawi-liya* the trajector feels respect or fear: this results in his treating the landmark appropriately. Figure 20 gives a schema for such applicative-like usages.

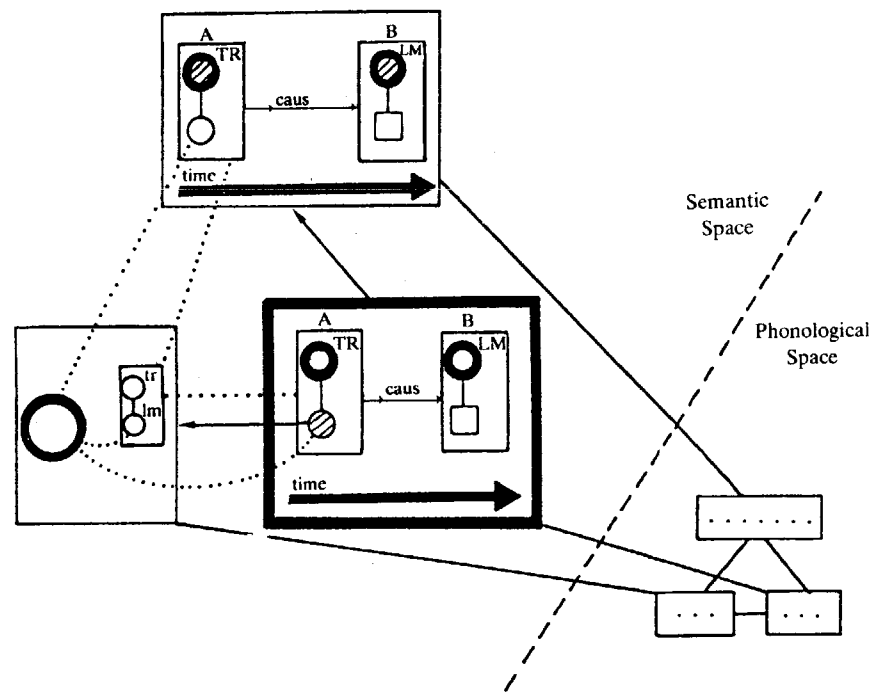


Figure 20: Applicative Noun-Suffix

Actually many causative noun-suffix structures may be construed under this applicative construal also. For instance, in *atemi-liya* the louse is not only the landmark of the caused relation of freedom, it is also the landmark of the causing relation: the trajector directly manipulates the louse in order to free the primary landmark of it. Similarly the trousers in *pantalón-tiya* figure to some extent in the causing relation as well as the caused: they

typically come to be on the landmark by the trajector directly handling them in order to put them there. Similarly in the examples in (11), the finger and the fear may be viewed as fairly important elements in the relation which is caused: the landmark sees the finger, or senses the respect. It is thus a matter of degree which of the two analyses is prominent for these forms, and the close historical and synchronic association of causatives with applicatives becomes even more understandable.

7. Summary and Conclusion

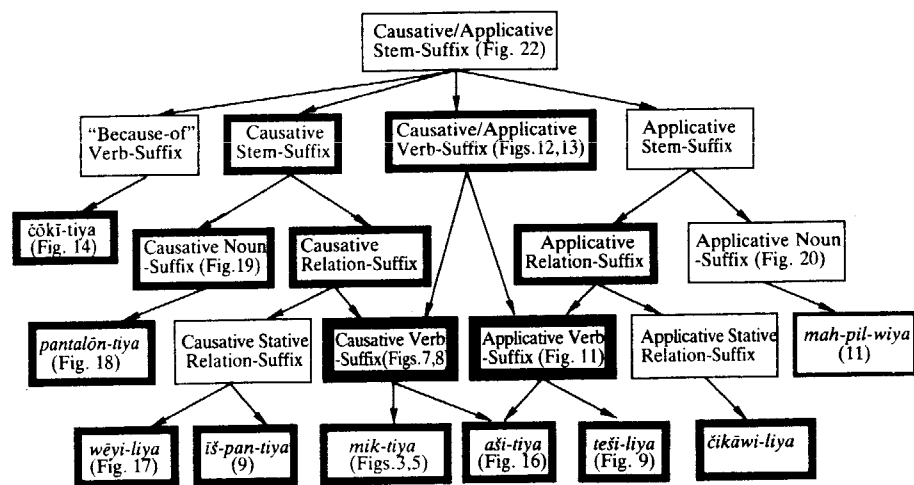


Figure 21: Schematic Hierarchy of Causative/Applicative Stem-Suffix Constructions

All of the forms we have examined can be united into one great schematic network, a portion of which is represented in Figure 21. The causative and applicative structures are all very closely related semantically in a structure of the same sort as that uniting the different senses of *run* in Figure 1. The topmost schema, which is represented in Figure 22, embodies the commonality of all the usages, which is as follows: The suffix profiles a causation process. The stem is somehow integrated with that process: just how is of course the main parameter along which the usages differ. The suffix is profile determinant: the stem is fitted into its specifications rather than

vice versa. The composite structure is transitive, expecting to be used in an object-stem (and a subject-object-stem) construction. In the vast majority of cases the trajectors of the two Relations A and B are trajector and landmark of the suffix, respectively (with “because-of” forms like *cōkī-tiya*, Figure 14, being exceptions.) Beyond that the main split is between cases in which the stem is associated (primarily) with the caused Relation B (causatives) or the causing Relation A (applicatives). While such differences clearly exist and are clearly expressed, the whole structure is also clearly unified.

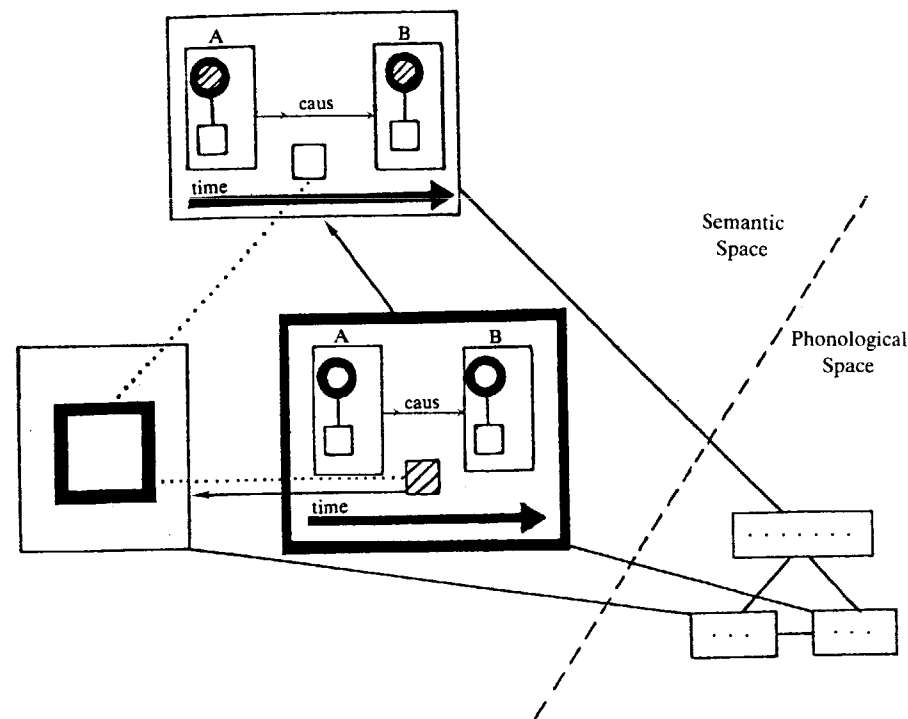


Figure 22: Causative/Applicative Stem-Suffix

The CG framework has been important to achieving this result. No other framework I know of offers the flexibility provided by the interactions of such notions as conventionality, prototypicality, schematicity, encyclopedic meaning, profile vs. base, internal specification of participants (e.g. trajector and landmark) as well as their external counterparts (subject

and object), and multiple sanction, which are all crucial to various aspects of the analysis. Most other theories would either not capture the similarities or not express the differences nearly as well.¹⁶ Under the CG analysis these suffixes are very natural pieces of human language, and their historical development and persistence need not be viewed as accidental.

Notes

1. Similar phenomena occur elsewhere, notably in other Uto-Aztecan languages. Langacker (1977:144 ff.) suggests five proto-forms, three of them ancestral to suffixes discussed here. Germanic *be-* (as in English *be-spatter*, *be-wail*, *be-ribbon*, German *be-enden* "cause to end" and *be-kochen* "cook for s.o."), Indonesian *-kan*, and Lushai high to low tone shift are further examples; Comrie (1981a:177) speaks of the phenomenon as widespread, and gives Wolof *-al* as an example.
2. TN is spoken in the town of Tetelcingo and two adjoining colonias, about five miles north of Cuautla, Morelos, and about sixty miles southwest of Mexico City. Works describing it include Brewer and Brewer (1962), Pittman (1948, 1954), and Tuggy (1979, 1981).
3. Thus *big* in the prototypical case involves exceeding the norm for size along all three spatial dimensions; yet a physically *big* man could be short, as long as he was much wider and heavier than normal, or thin, if he was very tall, etc.
4. This concurs with e.g. Dowty (1972:62) "CAUSE invariably takes a sentential subject rather than an individual", or Shibatani (1976a:1) and Talmy (1976:53), for whom causality holds between two Events (i.e. processual relations: cf. my Characteristic (v) below).
5. The following traditional CG diagramming conventions should be mentioned: circles represent the schema Thing, circles (or boxes) connected by a line represent the schema Relation. A box enclosing other symbols represents unit status of the enclosed material. Bold-facing indicates profiling (designation). The label TR identifies the trajector of a relation; LM identifies the primary landmark; tr and lm indicate sub-trajectors or sub-landmarks. A bold-faced arrow labelled "time" marks processes. Further conventions will be noted as they are introduced.
6. The following abbreviations are used in glossing: abs = absolutive; adj = adjectival ending; applic = applicative; caus = causative; perf = perfective; possd = possessed; rdp = reduplication; refl = reflexive; s.o. = someone; s.t. = something; unspec = unspecified object marker. The third person singular non-honorific object marker *k/ki-* is glossed "him", "her", or "it", according as a human, female human, or non-human object is judged more likely. All TN words are pronounced with penultimate stress. The "long/short" marking on vowels is phonetically misleading but cross-dialectally helpful. λ is a voiceless lateral *tl* affricate; the other orthographic symbols should be unproblematic.
7. The following conventions are illustrated in Figures 3 and ff.: semantic space is divided off from phonological space by a dashed line. Symbolic units are represented by a solid line connecting a unit in semantic space with one in phonological space. Co-occurring units are ranged side by side, and the manner of their integration is indicated by dotted "lines of correspondence", indicating identification of the entities joined. Arrows (as in

Figure 1) indicate a relation of schematicity, with the instantiation at the head and the schema at the tail of the arrow. As explained below, cross-hatching is used to indicate the expectation that an entity will be elaborated by a syntactically linked symbol: e.g. the cross-hatched trajector of *mik* in Figure 3 indicates that *mik* expects to be constructed with a subject, and the cross-hatched Relation B of *-tiya* indicates that *-tiya* expects to be put in construction with a stem which elaborates that relation. Composite units are represented above their components, with lines of correspondence and schematicity arrows indicating the manner of their integration. Profile determinance is indicated by an arrow of schematicity from a component to the composite structure, and also (as is traditional) by boldfacing the box enclosing the component. Relatively elaborate concepts like *mik* "die" are represented by crude diagrams hopefully iconic enough to certain visual aspects of the extremely complex specifications to jog the readers' minds enough for identification. They are at least as good as writing something like DIE in capital letters; better in that they permit identification of trajectors and landmarks, which will be important to us. Stick-men are used to represent Things that are prototypically human.

A succession of dots indicates schematic (unspecified) phonological content. The integration of the phonological components and their relationship to the composite phonological structure is indicated only by straight lines; it is in many ways parallel to semantic integration, but it is not particularly relevant to our concerns and is thus ignored.

8. Several morphophonological alternations are exemplified in (2), including palatalization of apical obstruents, "lengthening" of the vowel *i*, and formation or failure to form a (truncated) perfective stem for use with *-tiya*; future examples (e.g. in (3)) will show a stem-final *a* changing to *i*. Most of these changes do not seem to correspond systematically to any discernible semantic differences, and they may all be ignored for our purposes.
9. These landmarks may be elaborated by clausal constructions (as can other secondary landmarks), but there is no strong expectation that they will be: the verbs as they are given form perfectly acceptable clauses without any such secondary objects.
10. A number of complexities in the applicatives are here glossed over. In particular some applicatives need not be analyzed as involving extension of the profile to include a previously non-profiled caused relation, but may be construed as simply switching the primary landmark status to an otherwise secondary landmark. *ni-k-kĩš-ti-liya* "I take (s.t.) out of it" in (6) above is an example. This and other matters are discussed in Tuggy (1981:419ff.).
11. There are more: see Tuggy 1981 (e.g. 444 ff.) for discussion.
12. Sullivan (1976:216-217) makes this ("acción motivada por alguien") the third meaning of the Classical Náhuatl applicative; the other two are "action which benefits someone" and "action which deprives someone".
13. This is of course a non-prototypical construal of causation, violating Characteristics iii and iv of section 1.2. It is also somewhat natural for these particular cases: causers (and trajectors generally) are typically volitional, wishing the accomplishment of the process they cause (Characteristic ix); in these cases, the ridiculed person usually does not, and the dead person presumably never does, want to be laughed at or cried for. Thus they are less than prototypical causers, and weaker candidates for trajectorhood.

14. The norm, as is nearly universal in such causatives, is equated with the LM's previous size. *wēyi-liya* does not mean "make it big (absolutely)", or even "make it bigger than the norm for its type", but "make it bigger than it was."
15. The pattern appears to hold cross-linguistically. Germanic *be-* is usually applicative when used on verbs; with adjectives and nouns it is strongly causative: e.g. *be-little*, *be-foul*, *be-fool*, *be-doctor*.
16. In Tuggy (1981:472-484) a Relational grammar analysis of some of these data was presented. Causatives and applicatives had to be produced by very different syntactic mechanisms (Clause Union and Advancement to Direct Object, respectively); in the one case the suffix was a predicate meaning "cause"; in the other it was a marker introduced by the syntax, showing that Advancement had occurred. Many forms (e.g. the "because-of" forms and most of the verbalized forms) were not produced by the syntax at all, but were consigned to the lexicon. Instead of there being one suffix *-tiya* or *-liya*, embracing a number of closely related meanings, there were accidentally homophonous suffixes for the two types, with other accidentally homophonous suffixes for cases relegated to the lexicon. The theory is undergoing some promising changes since then, but the problem still remains: causatives and applicatives are, and must be treated as, separate kinds of syntactic beasts, and there is no explanation for why a language would use the same forms to code them. The Government-Binding theory, insofar as I understand it, would have the same problem accounting for such data. Comrie (1981a:176) sees them as unified in that they both increase the valence of the verb to which they attach: that is fine as far as it goes (though some cases change the valence rather than increase it), but it does not express all the similarities (e.g. the importance of causation to both notions is not expressed, nor the essential sameness of the composite structure whether the suffix is placed on a verb, adjective, postposition or noun) nor does it account sufficiently for the differences.

PART III

A HISTORICAL PERSPECTIVE