THE CAUSATION HIERARCHY, SEMANTIC CONTROL AND EVENTIVITY IN NISGHA

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1. Introduction

In this paper I examine several varieties of causative constructions in the Tsimshian language Nisgha.[1] The causative constructions in this language contribute to the study of causation from both a semantic and syntactic perspective, because of the degree of specialization which has been assigned to the different causative predicates. Specifically, there are at least three morphologically distinct causative predicates, and each seems to have its own prototypical base predicate. The base predicates selected by the three different types fall into three basic categories: states, events, and actions. These causative predicates take the form of bound morphemes, and these morphemes can be stacked up onto the same base predicate, but when they are they must be interpreted in the correct order: action first, then event, then state. The order of interpretation does not appear to be driven by morphological bracketing, but rather seems to be determined by primarily semantic factors. The order of interpretation appears to provide evidence for certain characteristics of event concepts, and, specifically, they underscore the importance of the eventive/stative distinction and the agentive/non-agentive distinction in event composition. Moreover, the primary features which the different predicates select for appear to be aspectual; the thematic characteristics appear to be entailed in the aspectual event types. I therefore attempt to extrapolate from these facts to a view of event selection in which something which looks like

(1) The Nisgha people live primarily in several villages along the Nass river of Northwestern British Columbia. The language is no longer learned as a first language, although there is a vigorous attempt underway to revive it through a native-run bilingual education program. Most Nisgha people over the age of about 50 speak the language fluently, as do some younger Nisghas; fluent speakers number less than 1.000.

The language is classified by linguists as belonging to the Tsimshian family, though Nisgha itself is probably closer to the sim'algax ("real language") of pre-contact native times than any of the other Tsimshianic languages, including the Tsimshian language itself, which is spoken in the coastal area around Prince Rupert.

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selectional restrictions on participants in an event is instead seen as restrictions on whole events.

2. A brief description of Nisgha sentence structure

Nisgha sentence structure displays a moderately high degree of syntactic ergative properties, has an essentially rigid VSO word order, and is (accurately) characterized by Bruce Rigsby as "analytic to mildly synthetic" (1975: 346). It does not display the highly synthetic properties of many Northwest Coast Salishan languages, and words usually consist of no more than three or four morphemes, though occasionally one encounters slightly longer sequences of five or six. The following examples should serve to introduce most of the basic morphology:[2]

(1) a. kslaqs-ə-t-s džan-ɬ ɬt' (91: 25)
kick-AFF-3_i -DC $Subj_i$ -NC ball
"John kicked the ball" *Kslaḵsis Johnhl hlit'.*

b. yuk^w-t ɬəmo:m-t-s džan-t bɪl
prog-3_i help-3_j -DC $John_i$ -DM $Bill_j$
"John is helping Bill" *Yukwt hlimooms Johnt Bill.*

These two sentences exemplify two important clause types in Nisgha, which are often referred to as *Independent Order* (a) and *Dependent Order* (b). The terminology Independent and Dependent Order are applied from Bruce Rigsby's work on closely related Gitksan. Simplifying slightly, Independent Order clauses are main clauses without any overt Tense/Mood/Aspect marking; Tarpent (1991) has argued that the terminology is a misnomer, and that Independent Order clauses are really headless relative clauses. Under that analysis, the /-ə-/ morpheme, which has been notoriously difficult to properly analyze, is identified as a relative marker. I shall not comment on this debate in the present work, and I shall use the unenlightening but neutral label "AFF" (affix) in the interlinear glosses. Dependent Order clauses are those which occur embedded under some higher verbal predicate, though one must be aware that the class of predicates which precipitate the Dependent Order includes Negation and Aspectual predicates (such as the progressive predicate *yukw-* in example (1b)).

(2) The examples are given in roughly phonological transcription, as well as in standard Nisgha orthography (italicized). I have included the Nisgha orthography (which is largely a phonetic representation) so that Nisghas can read the examples in the familiar spelling, and the phonological transcriptions so as to display morphemes which disappear in a surface phonetic representation. The phonological transcription largely follows the IPA, though the following items are worth noting: x = voiceless uvular fricative, ɬ = voiceless lateral fricative, glides followed by an apostrophe are glottalized, and stops followed by the apostrophe are ejective. As mentioned, I have given a roughly phonological transcription, however, I have given a more or less *phonetic* representation of vowel quality, since there are still complexities in the environments conditioning vowel quality which elude me. Finally, it should be noted that in the standard Nisgha orthography, the apostrophe is usually written over the glide (whereas I have placed it after the glide).

The examples used are either drawn from my field notes from July 1991 and March 1993, from Marie-Lucie Tarpent's reference grammar (to appear), phone conversations with native speakers, or else from the Nisgha Bilingual/Bicultural center's 1986 Nisgha Phrase Dictionary (NPD).

The morphemes labeled 3_i ,3_j are person agreement markers. The conditions under which they appear are rather complicated to explain, but are not directly relevant to the issues which concern us, so I will not attempt to explain them here (see Hunt (1991) and Belvin (1990) for a detailed discussion). DC, NC and DM mean *determinate connective*, *non-determinate connective* and *determinate marker* (respectively), all part of a class of morphemes which in the Tsimshian literature are usually called connectives; connectives carry one or two types of information: case and determinacy (and possibly indicate something about constituency as well). They appear suffixed to the word preceding the word they actually apply to. For instance, in example (1a), the NC /-ɬ/ is semantically linked to *ɬɪt'* (ball), not *džan* (John).[3]

3. Nisgha causatives

As noted, Nisgha causatives show, in relation to most languages, an unusually high degree of specialization. There are three productive causative predicates in Nisgha, which take the form of bound morphemes. They affix to verbal or adjectival predicates. They can be roughly characterized as denoting (respectively): state causation, event causation, and action causation (where event and action are distinguished by semantic *control*; that is, actions are controlled events, and plain events are not controlled). The three most important causative morphemes in Nisgha are *si-* /sə-/, *-'in* /-'ən/, and *gwin-* /kʷən/. The three of these are described and exemplified below:

3.1. State causation with *si-*

This morpheme adds one argument to (mostly) intransitive, (mostly) stative predicates. The subject of an intransitive base predicate is demoted to direct object, and the problematic morpheme /-ə/ (AFF - "affix") must appear, at least if this occurs in an "independent order" (main clause) context. (In examples where there are names needing no translation, I have sometimes glossed the causer and the causee of transitives as Subj1 and Subj2, respectively)

(2) al'aq-t bɪl "Bill's angry." (91: 41)
angry-DM Bill *Al'aḵt Bill.*

(3) *sə*-'al'aq-*ə*-t-s bɪl-t džan "Bill made John angry." (91: 31)
CAUS-angry-AFF-3_i-DC Subj1_i-DM Subj2 *Si'al'aga̱s Billt John.*

(4) saq-ɬ laxha "The weather is cold." (NPD: 26)
cold-NC sky *Saḵɬ laxha.*
(sharp)

(3) The difference between the DC and the DM appears to me to be a difference in Case, where DC includes the information that Case has been assigned via a process of mediated Case assignment, while DM includes the information that Case has been assigned directly from a lexical head. See Belvin (1990) for justification of this claim.

(5) tɬm *sə*-saq-ə-y'-ɬ qant'imis-(i)n (NPD: 159)
FUT CAUS-sharp-AFF-1s-NC pencil-2s
"I will sharpen your pencil." *Dim sisagay'hl gant'imisin.*

si- also functions to express bringing into use or creation of a material object:

(6) *sə*-'anax n'i:y' "I made bread."
make-bread 1s *Si'anax n'iiy'.*

(7) *sə*-ho:n n'i:y' "I caught/processed fish."
make-fish 1s *Sihoon n'iiy'.*

It occurs with a few intransitive (arguably) non-stative predicates as well:

(8) *sə*-wiyitk^{w}-ə-t-s džan-ł łkutk'iłk^{w} "John made the child cry."
CAUS-cry-AFF-3$_i$-DC Subj1$_i$-NC child *siwiyitgwis Johnhl hlkutk'ihlkw.*

(9) *sə*-woq-ə-t-s džan-ł łkutk'iłk^{w} "John made the child sleep."
CAUS-sleep-AFF-3$_i$-DC Subj1$_i$-NC child *siwogas Johnhl hlkutk'ihlkw*

The morpheme does not generally occur with transitive verbs, except when combined with other transitivizing morphology which attaches after *si-*.

3.2. Event causation with *-'in:*

This morpheme adds one argument to (mostly) intransitive (mostly) event predicates. The subject of the original base predicate is demoted to direct object, except where the base predicate is transitive, in which case the original subject appears in a PP, the object of the base predicate remaining in direct object position. *-'in* denotes *direct* causation, though not necessarily through physical force. No /-ə/ (AFF) morpheme appears to be present, even in the few cases where *-'in* attaches to transitive verbs.

(10) xsit-t džan "John vomited."
vomit-DM John *Xsitt John.* (91: 31)

(11) xsit-*'ən*-y'-t džan "I made John vomit."
vomit-CAUS-1s-DM John *Xsit'iniy't John.* (91: 32)

(12) hu:t-ł kyuwatan "The horses ran away."
run-NC horses *Huuthl gyuwadan.* (91: 13)

(13) hu:t-*'ən*-y'-ł kyuwatan "I chased the horses away."
run-CAUS-1s-NC horses *Huut'iniy'hl gyuwadan.* (91: 14)

(14) woq-t džan "John is sleeping"
sleep-DM John *wokt John*

(15) woq-*'ən*-t n'i:y'-ɬ pils "The pills put me to sleep"
sleep-CAUS-3s 1s-NC pills *wok̲'ant n'iiy'hl pils* (91: 54)

In addition to **-'*in***'s use with event predicates, it is also used with certain adjectives to express something like a psych-predicate:

(16) x̲lɬl'-*'ən*-s džan-ɬ ma:y' (T89: 666)
delicious-CAUS-DC Subj-NC berries
"John finds the berries delicious" *x̲lil'ɬ'ins Johnhl maay'*

(17) aski-*'ən*-y' wɬa: hi-t (NPD p.252)
strange-CAUS-1s how speak-3s
"I think he has a very strange way of speaking" *asgit'iniy' wilaa hit*

As mentioned, it can also occur with transitive verbs, although this use is much less frequent:

(18) ho:y-*'ən*-t-s nox̲-t-ɬ k'utac' 'ə-ɬ ɬkutk'iɬkʷ (91: 90)
use-CAUS-3_i-DC mother$_i$-3_j-NC coat prep-NC child$_j$
"His mother made the child use a coat"
hooy'ins nox̲thl k'udats' ahl hlkutk'ihlkw

3.3. Action causation with *gwin-*

gwin- adds one argument to transitive or unergative predicates, and a second optional argument to transitives (the *causee* argument). The Subject of an intransitive base predicate will be demoted to direct object, and the Causer argument will appear in the matrix subject position. Moreover, when the base predicate is intransitive, the addition of *gwin-* will precipitate the appearance of the /-ə/ suffix:

(19) c'ɪn-ɬ hanaq' "The woman came in."
come.in-NC woman *Ts'inhl hanak̲'*. (T82: 57)

(20) *kʷən*-c'ɪn-ə-t-s dana-t meri "Donna had Mary come in."
CAUS-come.in-AFF-3-DC Subj-DM Obj *Gwin-ts'inis Donnat Mary*
(T82: 57)

When added to a transitive predicate, *gwin-* causes the original subject to be demoted to a prepositional object (if it is expressed at all), the direct object of the base predicate remains the direct object, and the Causer argument is expressed as the new Subject.

(21) kslak̲s-ə-t-s džan-ɬ ɬt' "John kicked the ball"
kick-AFF-3_i-DC Subj-NC ball *kslak̲sis Johnhl hlit'* (91: 25)

(22) *kʷ∂n*-kslaks-∂-t-s bɪ-ɬ ɬt' '∂-s džan
CAUS-kick-AFF-3_i-DC Subj1_i-NC ball prep-DC Subj2
"Bill had John kick the ball" (91: 26a)
gwin-kslaksis Bill-hl hlit' as John

gwin- is a typical *indirect causation* predicate, both semantically and syntactically; syntactically because the transitive causee is optional, and when present is expressed as a prepositional object, semantically because the causee must be acting with a relatively high degree of volitionality. Thus, not surprisingly, *gwin-* cannot be used with unaccusative base predicates, since these predicates do not readily admit a volitional interpretation for their subjects (for related discussion see Kural this volume):

(23) t'ɪkʷantkʷ-ɬ c'ak' (lax han'i:wan)
fall-NC plate onto floor
"The plate fell (onto the floor)." (91: 10)
T'igwantkwhl ts'ak' lax han'iiwan.

(24) * *kʷ∂n*-t'ɪkʷantkʷ-∂-t-s meri-ɬ c'ak' (lax han'i:wan)
CAUS-fall-AFF-DC Subj-NC plate onto floor
"Mary had the plate fall *(onto the floor)." (91: 12)

This is part of the rationale for referring to *gwin-* as the *action* causation predicate; while *si-* and *-'in* seem to link a Subject to a state or event by means of acting directly on the causee, *gwin-* can only link a Subject to a state or event through an intermediate action with an intermediary Agent. In this sense, *gwin-* is very similar semantically to causative *have* in English, so much so, in fact that we can generally determine whether a sentence with *gwin-* would be acceptable by looking at whether an analogous sentence with *have* would be acceptable.

Now, before going into any analysis, consider the fact that the three *cause* morphemes we've been discussing may be stacked up onto the same base predicate. Thus, in many cases predicates affixed with either state causation *si-* or event causation *-'in* can appear along with action causation *gwin-*, and in some cases we may even have all three concatenated onto the same base predicate. The possibilities are exemplified below:

gwin-si- ...

(25) *kʷ∂n-s∂*-hokyax-t-*∂*-s džan-ɬ wɪla: wɪl-ɬ kɪmxti-t '∂-s bɪl
CAUS-CAUS-right-DF-AFF-DC Subj1-NC how do-NC sister-3s prep-DC Subj2
"John had Bill settle his sister's (funeral) arrangements."
Gwin-sihogyaxdis Johnhl wilaa wilhl gimxdit as Bill. (91: 117)

gwin- ... *-'in*

(26) yukʷ n∂-*kʷ∂n*-ho:y-*'∂n*-ɬ k'uta:c'-ɬ ɬkutk'iɬkʷ '∂-s meri
prog 1s-CAUS-use-CAUS-NC coat-NC child prep-DC Subj2

"I'm going to have Mary put the child's coat on." (91: 137)
Yukw ni-gwin-hooy'inhl k'udaats'hl hlkutk'ihlkw as Mary.

si- ... -'in

(27) yuk^{w}-t *sə*-wɪla:x-*'ən*-ɬ səm-'alkyax̲ (NPD)
prog-3s CAUS-know-CAUS-NC real-talk
"(S)he is teaching Nisgha"
yukwt siwilaay'inhl sim'algyax̲

(28) *sə*-x̲pɪc'aw-*'ən*-s džan-t bɪl
CAUS-afraid-CAUS-DC Subj-DC Obj-NC
"John frightened Bill" (BA 11/3 - cf T p.679)
sax̲bits'aw'ins Johnt Bill

There are not very many predicates which may occur with both *si-* and *-in*, and it may be the case that these are lexicalized forms which are no longer analyzed by the speaker as two causatives. However, the fact that, at least in the case of *teach* (*siwilaay'in*), the stem *wilaax* (*know*) may be used with either *si-* or *-'in* separately (to mean *learn* and *inform/introduce*, respectively) would suggest that the meaning is still transparent.[4] Thus, it may still be the case that *siwilaay'in* is analyzed as containing two causatives, such that *teach* is understood not as *to make know*, but rather as *to make learn*, (a possible very literal interpretation being *to make someone make her/himself know*).[5]

gwin-si- ... -'in

(29) *k^{w}ən-sə*-wɪla:x-*'ən*-s džan-ɬ səm-'alkyax̲ 'ə-s bɪl (BA 11/3)
CAUS-CAUS-know-CAUS-DC Subj1-DC real-talk Prep-DC Subj2
"John had Bill teach Nisgha" *gwin-siwilaay'ins Johnhl sim'algyax̲ as Bill*[6]

(4) Although I do not have firm evidence of this, I conjecture that *learn* was, at least at one time, conceived of literally as *make oneself know*.

(5) A reviewer notes that in these cases one might expect more than one logical subject to show up in a PP, given the fact that in both *-'in* and *gwin-* causatives formed with transitive bases, causees turn up in oblique phrases. This would be an interesting phenomenon to investigate, and does seem to bear on the bracketing problems I will be looking at. I have only one example in the data I have collected which displays multiple oblique subjects, as follows:

(i) Dim gwin-si-wilaay-'in-in-hl Nisga'a *a-hl kubatk'ihlkw a-s Sam*
FUT CAUS-CAUS-know-CAUS-2s-NC Nisgha prep-NC chidren prep-DC Sam
"(You will) have Sam teach Nisgha to the kids." (93: 63)

Although it is obviously not sufficient to draw much in the way of sturdy generalizations, it is suggestive that the order of the obliques follows the order of the semantic bracketing (i.e. the outermost PP corresponds to the outermost causee, the inner PP corresponds to the inner causee). I will have to leave this interesting question for future work.

(6) At least one speaker has informed me that this sentence can also mean "Have John teach Nisgha to Bill".

(30) *kʷ∂n-s∂-*x̲*pɪc'aw-'∂n-*s meri-t džan '∂-s bɪl
CAUS-CAUS-afraid-CAUS-DC Subj1-DC Obj Prep-DC Subj2
"Mary had Bill frighten John" (BA 11/3 - cf T p.679)
gwin-sax̲bits'aw'ins Maryt John as Bill

What is rather striking about these constructions with more than one causative is that there is a distinct order required in their interpretation. Specifically, it would seem that *si-* is always interpreted as having lower scope than *-'in*, and both *si-* and *-'in* are always interpreted as having lower scope than *gwin-*. Thus, *si-wilay-'in* must be interpreted as *cause someone to learn* (ie, *teach*) and never *cause someone to introduce/inform someone.* Thus, the bracketing must be, semantically, as follows:

(31) [[si[wilay]] 'in]

Likewise, *gwin-x̲sit'in* can only mean *have someone make somebody vomit*, and not *make someone have somebody vomit.* Thus, the semantic bracketing must be as follows:

(32) [gwin [[x̲sit]'in]

One might argue that the reason for this apparent restriction is purely morphological, and the only reason we don't find a different bracketing semantically is that the morphological position of *gwin-* is higher than *-'in.* This objection is undermined, however, by the fact that other morphology may occur in what appears to be the same position morphologically, and yet be interpreted as *lower* in scope than *-'in*, as in the following:

(33) *n'a:m-*x̲sit-*'∂n-*t n'i:y'-ɬ kat kust
want-vomit-CAUS-3 1s-NC man DEM
"That guy makes me want to throw up."
N'aam-x̲sit'int n'iiy'hl gat gust. (BA12/92)

(34) *n'a:m-*wok̲*-'∂n-*t n'i:y'-ɬ pils
want-sleep-CAUS-3s 1s-NC pills
"The pills make me want to sleep."
N'aam-wok̲'ant n'iiy'hl pils. (91: 55)

Moreover, it is well-known that morphological bracketing does not necessarily correspond to semantic bracketing (the well-known cases of bracketing paradoxes discussed, e.g., in Pesetsky 1985). Thus, appealing to purely morphological forces as a way of explaining the interpretive restrictions on Nisgha causatives seems a rather unsound strategy. This being the case, we are still left with the question of why *gwin-* must always be interpreted as having scope over *si-* or *-'in*, and why *-'in* appears always to be interpreted as having scope over *si-*.

4. The Eventuality/Theta-Grid mismatch

A first approximation of how the solution should go is based on the following (relatively standard) idea: states, events, and actions are semantic entities of different

types, and they will therefore assign different types of θ-roles. A typical *state* might license an *experiencer* argument, as in sentences like "John is afraid", but nothing higher on the θ-hierarchy. Events would license θ-roles as high as *actor* external arguments, as in "The ball hit the window", but they would not by themselves license *agents*, although agency could be added by a rule of construal (the difference, as discussed below, is related to volitionality and semantic control) (cf. Minkoff this volume). Finally, actions would license the agent θ-role. In fact, when looked at in this way, there may not be any need to speak of θ-role content (especially external argument θ-role content) as having any independent status; θ-role content will be largely determined by the kind of eventuality which is assigning them (see Davis this volume for related discussion).[7]

Under the view I want to develop, these eventuality types are genuine semantic objects, though they probably do not have the status of true primitives. Nonetheless, at a certain level of analysis, they can be appealed to as providing a reasonable level of explanatory adequacy. For a state-causation predicate, then, a rough event structure representation of the kernel of the sentence might look something like the following (external arguments underlined):

(35) [$_{\text{Event}}$cause actor,[$_{\text{State}}$afraid experiencer]]
si- *xbitsaxw*
make *afraid*

For an event causation predicate, we might have the following:

(36) [$_{\text{Action}}$cause agent,[$_{\text{Event}}$vomit actor]]
-'in *xsit-*
make *vomit*

Finally, for action-causation, we would have something like the following:

(37) [$_{\text{Action}}$cause agent, [$_{\text{Action}}$kiss agent,...]]
gwin- *humc'ax-*
have *kiss*

Now consider what happens when one embeds one type of causative construction under another. State causation under event causation or action causation works fine, as depicted below:

(7) This kind of approach to θ-role assignment will no doubt remind the reader of the Vendler/Dowty eventuality distinctions. Recall Dowty's proposal for the three basic eventuality types of BECOME, CAUSE, and DO, informally defined as follows:

BECOME denotes a situation in which a state Σ begins to exist.

CAUSE denotes a situation in which one event E_1 causes another event E_2 where the causation is defined counterfactually, essentially $\neg E_1 \vDash \neg E_2$.

DO denotes a situation in which some sentient entity controls an event E.

A sentient entity may DO a causing or becoming event, and may DO an event which causes a becoming event. However, a DO or CAUSE event will never be the Σ in a BECOME event (since neither DO nor CAUSE are states). Moreover, one will probably suppose that a DO event will never serve as E_2 in a CAUSE event, since DO assumes that the begining of the event E is a sentient entity's volition, and not some other event E_1.

(38) a. [$_{Action}$ cause, agent, [$_{Event}$ cause, actor, [$_{State}$ afraid, experiencer]]
-'in *si-* *xbitsaxw*
make *make* afraid
-as in: *saxbits'aw'ins Johnt Bill as Mary*
"John made Bill afraid of Mary" (BA: 1/93)

b. [$_{Action}$ cause, agent, [$_{Action}$ cause, agent, [$_{State}$ afraid, experiencer]]
gwin- *si-* *xbitsaxw*
have *make* afraid
-as in: *gwin-saxbits'axwdis Johnt Bill as Mary*
"John had Mary frighten Bill" (BA: 1/93)

The reader may have noticed that I have not been consistent in the structures just given. Specifically, I offered *si-* as an *event* in (38a), but as an *action* in (38b), and, accordingly, given it an *actor* external argument in (a) and an *agent* external argument in (b). The justification for this is that in (a), the causee may or may not be interpreted as volitional, depending on the circumstances, while in (b), it must be. The idea is that what distinguishes an *actor* from an *agent* is that, while an *actor* is the external argument of an event predicate, an actor is not acting under its own volition. An *agent*, on the other hand, is. This distinction (or some terminological variant) appears frequently in the relevant literature for a variety of reasons which I cannot go into here (but see, e.g., Jackendoff 1983, 1990, Croft 1991, Kural 1996).[8]

Actions and *agency* are thus seen as arising from an *additive* operation which takes *events* as its starting point. This operation can arise either by lexical specification or by *rules of construal* in the sense of Jackendoff (1991), so the fact that *gwin-* selects for an *action* can be satisfied by rules of construal which take the event to an action (but see Minkoff this volume). Jackendoff characterizes these rules as operating on his Lexical-Conceptual Structures, which are similar to the event structures which we have been employing (though with a much more highly decomposed thematic specification). He investigates the problem of explaining cases like "The light flashed until dawn." Such sentences are interesting to him because normally "flash" denotes a single, bounded (in fact instantaneous) event of flashing, but in this sentence can only plausibly be interpreted as a series of flashes (i.e. the flashing is iterative). He argues that this interpretation arises through a rule of construal which operates on conceptual structures. This particular rule adds the conceptual element PL (plural) to the conceptualization of the flashing event; since flashing events are *lexically* specified as being individual bounded events, PL must be added to render the event congruent with the *until dawn* adverbial.

PL, may, of course, be present in lexical material (e.g. the plural number morpheme *-s*), but it does not have to be to appear in an LCS representation of a sentence. Under appropriate conditions it may also be added by a rule of construal. Note, on the other hand, that a lexically specified PL element could not be deleted by a rule of construal. Thus, *the dogs* cannot be interpreted as singular under appropriate conditions, because it is lexically fixed as plural.

(8) One proposal which is of more immediate interest is made by Kyle Johnson (1986) for the *threaten* class of verbs, wherein he proposes that there is actually a syntactic difference between the positions whence *actor* versus *agent* are assigned.

I assume that this kind of operation is responsible for the possibility of embedding plain *events* (i.e. not *actions*) under *gwin-*. Thus, actions may be created from events, since this presumably involves the addition of something like volition or semantic control, but events cannot be created from actions, since this involves subtraction of the relevant notion.

This being said, consider now what happens when we attempt to embed an event or action causation predicate under the state-causation predicate; we would end up with the following:

(39) [$_{\text{Action}}$ cause, agent [$_{\text{Action}}$ cause, agent, [$_{\text{Action}}$ kiss, agent,patient]
si- *gwin-* *humts'ax*
make *have* *kiss*

The problem with this is that it does not fit with the argument requirements of *si-*, as given in (35) above, since *si-* requires a stative complement. One might object that we should be able to apply the same kind of rules of construal to save this structure as I appealed to earlier to account for why *si-* can occur under *gwin-*. However, the only rule of construal which could save this structure would be a *subtractive* one, presumably disallowed. That is, because *action* is "bigger" than *state*, we cannot convert them to the appropriate elements by adding anything. Thus, we end up with a mismatch between eventuality type if we attempt to put the action predicate *gwin-* within the scope of state causation predicate *si-*.

Exactly the same argument can be used to explain why we cannot put action causation *gwin-* within the scope of event causation *-'in*, as well as why we cannot put *-'in* within the scope of *si-*. In the case of *-'in* under *si-*, since events are larger and more complex eventualities than states, we would be required to subtract something in order to satisfy the argument requirements of *si-*. Likewise, in the case of *gwin-* under *-'in,* since actions are larger and more complex elements than events, we would be required to subtract something in order to satisfy the argument requirements of *-'in*, namely the volitional part of agency. This last point confirms the distinction mentioned earlier, namely that *actions* are truly distinct from *events*. In the next section we compare the Nisgha causative data with some semantically parallel cases in English.

5. *Make* and *Have* causatives in English

In English the functional equivalents of Nisgha *si-*, *-'in* and *gwin* are covered by both morphological and periphrastic causatives. *si-* (the state causation morpheme) is translated by either morphological causatives (in particular, the zero causative morpheme seen in cases like *John angered Bill*, or the *-en* suffix seen in *John frightened Bill*). It is also sometimes translated periphrastically, as in *John made Bill mad.* Similarly with Nisgha *-'in.* It may be translated either by lexical items which contain a causative entailment like *chase away* (viz. *make run away*), as well as periphrastic causatives with *make* (e.g. *John made Bill fall*). Importantly, though, neither *si-* nor *-'in*

may be translated to a periphrastic causative which expresses indirect causation, for example *have* or *get* causatives. Nisgha will always express such causatives as *gwin*. Interestingly, just as there seems to be a restriction in Nisgha against interpreting a construction with both *gwin* and *-'in* as the *-'in* (event) causative causing the *gwin* (action) causative, there seems to be a restriction in English against putting a *have* causative under a *make* causative. Thus, we find that the sentence in (40a) is anomalous, compared to (40b) which is fine:[9]

(40) a. ?#Jane made Bill have Frank leave.
b. Jane had Bill make Frank leave.

Notice that eventive causative *have* generally requires both its own subject, as well as the embedded subject, to be volitional. Thus, (41a) below is fine while (41b,c) are impossible.

(41) a. John had Bill jump.
b. #The noise had Bill jump. c. #The fire had the shadows jump.

This contrasts markedly with English *make*, which can take either a volitional or non-volitional subject or embedded subject:

(42) a. John made Mary jump.
b. The noise made Mary jump. c. The fire made the shadows jump.

Thus, it seems that we can make the following generalization: *make* embeds an *event* (not an action), and causative *have* is always interpreted as an action.[10] Thus, causative *have* may not be embedded under *make* for the same reason that *gwin-* must be interpreted as having wider scope than *-'in*.

Authier and Reed (1991) appeal to the notion of semantic *control* in order to account for properties of the French *faire-à* causative construction. They define *control* as "the possibility of canceling what is denoted by the predicate if the subject of this predicate decides to stop doing it" (p.202).[11] For example, for them, the subject of the predicate *accélérer* (accelerate) has control over the predicate, while the sub-

(9) Thanks to Kevin Russell for bringing this fact to my attention.

(10) This requires us to claim that *jump* is an *event*, not an action, though it may be converted to an action by the rule of construal discussed earlier. The fact that *make* may also take IP complements which appear to be unambiguously *actions* (e.g. "John made Bill kiss Mary") requires some explanation. I can only give a sketchy answer to the question here. My perspective is that *make*, in some way which I have yet to fully apprehend, erases the volitionality part of actions. One way of viewing this would be to follow Chomsky's recent proposals regarding the question of how an Agency interpretation arises. He claims (1995) that Agency arises when a verbal element is generated as the complement of another (lighter) verbal element (his v-V configuration). Though he does not expound, one infers that the former contains the basic core of the verbal predicate, the latter the volitionality part. *Make*, then, could be seen as selecting just for the V part of the predicate. I have argued (1996) for the basic correctness of this type of approach to explaining a range of phenomena found in the causative *have* paradigm, some of which I shall touch on in the coming discussion. Whatever the case, there is clearly more that needs to be said about the facts in (41,42), though I will have to defer such an investigation for future work.

(11) Many others invoke such a concept as well, often in connection with explanations for similar (causative) data, grammatical voice phenomena, Case marking, and so on. For discussion, see Klaiman (1991).

ject of the predicate *tomber* (fall) does not. This would appear to be the relevant property for explaining which predicates can appear under *gwin-*. That is, only predicates which assign *control* to their subjects may be complements of *gwin-*. Moreover, *control* would also appear to be the relevant property for explaining which predicates can appear under *have*.

One must ask, however, how it is that causative predicates like *gwin-* and *have* place this requirement for *control* on the causee. Is it the case that the matrix causative predicates place a selection restriction on the embedded subject (i.e. the *causee*)? Certainly, in many accounts of causative formation the answer to this question is "yes," with the rationale being that there is some process of complex predicate formation. If the causative predicate combines with the base predicate to form a larger predicate with more than two arguments, then of course it is normal for the causee to have restrictions placed on it. However, if the causative predicate is seen as selecting only a subject (the causer) and a complement event, such a restriction would be unexpected.

I will ultimately argue that the latter view is correct, as suggested in the introduction, and that the apparent restrictions on the causee are side-effects of the real restriction, which is on the base event. Before going further into that view, however, I wish to consider one recent version of the complex predicate formation view.

6. Argument array composition and some of its shortcomings

Alsina (1992) has argued for an argument array composition approach to causation (see Kural this volume in relation to Alsina's proposal). Based on data primarily from Bantu languages, he argues that the causee in causative constructions like Nisgha's has a place both in the CAUSE predicate's array as well as the base predicate's array. That is, rather than taking the common view that causatives are two-place predicates which take the causer as the first argument and the caused event as the second, he argues that at least in some languages, causatives entail a three-place predicate, which takes a causer, a caused event, and a patient. The patient argument of the causative predicate may be linked to either the agent or the paitent of the base predicate, leading to direct or indirect causation interpretations (respectively). Thus, the argument structure of this type of causative with a transitive base predicate will, before linking takes place, be as in (43).

(43) [agent, patient,[$_{\text{Event}}$ agent, patient]]

The patient argument of the causative may then link either to the embedded agent, or the embedded patient, yielding a direct causation interpretation in the former, an indirect causation interpretation in the latter, as indicated below:

(44) a. Direct causation: [agent, patient, [$_{\text{Event}}$ agent, patient]]

b. Indirect causation: [agent, patient, [$_{\text{Event}}$ agent, patient]]

Alsina's approach is not, strictly speaking, incompatible with the foregoing analysis of the causative constructions in Nisgha, and as far as I can tell, nothing in his account would be jeopardized by making the finer grained distinction between different types of eventualities proposed above (i.e. *state*, *event*, *action*, versus just *event*). However, the finer grained distinctions are unnecessary if we can glean the differences solely by linking an internal argument of the cause predicate to different arguments of the embedded clause.

I will illustrate with *gwin-* and *-'in*, although the same argumentation could be applied to *gwin-* and *si-* or *-'in and si-*. Suppose the argument arrays associated with *gwin-* and *-'in* are as in (45), similar to Alsina's arrays for Bantu causative predicates:

(45) *-'in* [actor,patient,event] *gwin-* [agent,patient,event]

These predicates look very much alike at first glance, however, there will be a difference in the way they compose with their base predicates. While *-'in* will link the patient argument to the embedded event's *agent*, *gwin-* will link the patient argument to the embedded event's *patient*, as shown in (46):

(46) a. *-'in* [actor, patient, [$_{\text{Event}}$ agent, patient]]

b. *gwin-* [agent, patient, [$_{\text{Event}}$ agent, patient]]

This difference will account for the difference in the semantics of the two causative types. In the *direct* causation sentence with *-'in*, the direct cause meaning arises out of the link between the *patient* of the matrix array and the *agent* of the embedded predicate's array. This is exactly the same claim made by Alsina for the double object causative construction in some Bantu languages. In the case of the indirect causation sentence with *gwin-*, the link will be between the patient of the matrix array and the patient of the embedded array. This will leave the embedded agent free to be interpreted just as an *agent*, without the patient meaning coloring its interpretation. (Note that the agentive causee may be left unexpressed.)

The foregoing again follows Alsina's analysis of Bantu causation, although in those languages, both meanings may arise with the same causative predicate. In those languages, the single causation morpheme allows for both linkings discussed above. In Nisgha, there is specialization: the direct causation morpheme has a different shape than the indirect causation morpheme.

Consider now what happens under this analysis when both *gwin-* and *-'in* appear on the same base. When *gwin-* is treated as the highest predicate w.r.t. linking at argument structure, we might have a linking something like that in (47a), assuming the bracketing given in (47b):

(47) a. [Event agent, patient, [Event agent, patient, [Event actor, patient]]]

gwin *'in* *ho:y*

b. [*gwin*- [[hooy]-*'in*]]

The rationale for the link between the highest *patient* and lowest *patient* is that we should build argument structures from the inside out. Thus, we first link the *patient* of the direct causation predicate with the *actor* of the base predicate, since the direct causation morpheme is closest to the base in the bracketing we are considering. We then go to the next bracketing, which contains the indirect cause predicate, and link its patient to the base predicate's patient. However, the base predicate is a complex predicate, and the only unlinked patient of this complex predicate is the lowest patient. Thus, I assume this is the required link to be made.

Now consider what happens if we bracket the causative predicates the other way, so that *gwin*- is closer to the base predicate than -*'in*, as in (48b). If we do this, we would end up with an argument structure looking like that in (48a) below:

(48) a. [Event agent, patient, [Event agent, patient, [Event actor, patient]]]

-*'in* *gwin* *ho:y*

b. [[*gwin*- [hooy]]-*'in*]

The question is then, why is such a structure prohibited? A possible answer is that *agents*, being volitional, don't like to be linked to patient arguments. Since the external argument of *gwin*- must always be volitional, the link to the patient leaves us with a kind of θ-role incompatibility. In this way, it seems, Alsina's apparatus give us the means to explain at least one of the Nisgha causatives scope facts.

In spite of demonstrating some explanatory power, though, there appear to be some basic problems with Alsina's approach. In a nutshell, Alsina's analysis would seem to predict that indirect causation shouldn't arise in places where it does, and moreover, that direct causation should arise in places where it doesn't. Alsina connects the different types of linkings to differences in meanings, arguing essentially that the linking in (46a) (from higher patient to lower agent) results in a meaning of direct causation, while that in (46b) (from higher patient to lower patient) results in indirect causation. The kernel of the problem is that he connects the linking of CAUSE's patient argument to the embedded predicate's internal argument to indirect causation.

But now consider what happens in intransitive predicates. For -*'in*, everything works fine. We get the linking below, and the meaning of direct causation:

(49) -*'in* [Action actor, patient, [Event subject]]

However, for *gwin-*, there is a problem, in that *gwin-* should only be able to link a patient to a patient. However, if we have an unergative base predicate, the only argument there is in the embedded predicate is an agent. We thus would expect that only unaccusatives should be able to serve as base predicates for *gwin-*, but in point of fact, it is just the opposite: *only* unergatives are able to serve as bases for *gwin-*.

This problem is not unique to Nisgha. Alsina argues that the French causative construction employing *faire-V* with the causee in the dative corresponds to direct causation linking (versus the *faire-par* construction, which corresponds to indirect causation linking). However, as discussed in Reed (1990), in fact *both* the direct and the indirect causation interpretation are available for this construction. Thus, for a sentence like (50) we may interpret the causee as acting either under his own volition, or else as under the control of the causer:

(50) J'ai fait manger des epinards à mon fils.
"I made/got my son (to) eat spinach."

Likewise with an unergative predicate, there are two possible interpretations, although there is only one embedded argument, leading to the prediction that only direct causation should be possible:

(51) J'ai fait lire mon fils.
"I made/got my son (to) read."

The problem then, seems to be the reliance on the linking mechanism to yield the correct meanings.[12] We do not encounter such a problem if we allow causative predicates to select different kinds of eventualities as their internal arguments. When the causative selects a *state*, the relation between the causee and the state will always be interpreted as a non-volitional one, because *states* don't assign their subjects an *agent* role. When the causative selects an *event*, again, the relation between the causee and the event will be non-volitional, because *events* assign only an actor role. It is only when the causative selects an *action* that the causee can (and must) be interpreted as having a volitional relation to the base eventuality.[13]

7. Some related phenomena

In this section I briefly look at some related phenomena in English, and remark on the overall view of grammar which this study favors. First, notice that English causative *have* constructions are ECM constructions; the embedded subject appears

(12) This problem with Alsina's approach has been noted elsewhere, as for example in Ackerman and Moore (1996: 8ff), who present an interesting alternative to either Alsina's approach or the approach advocated herein. Their explanation is based on the idea that the grammatical encoding of the causee is selected *paradigmatically* (versus syntagmatically); that is, semantic alternants will find syntactic correspondences across causative construction types.

(13) There are probably causative predicates which may select either an event or an action, possibly also a state, event or action. Allowing for this kind of latitude in selection should pose no problem for the proposal I am making.

with objective case, and, if coreferent with the matrix subject, is realized as an anaphor:

(52) a. Mary had him dance. b. John had himself elected.

One commonly observed phenomenon in ECM sentences is that the head of the embedded IP is subject to aspectual constraints. In this regard, ECM constructions diverge from complex sentences with an embedded CP. In the latter, the restrictions placed on the embedded clause are on the head of CP, not IP. Thus, in (53a) below, the CP must be interrogative, but the embedded IP itself does not seem restricted in any particular way. On the other hand, the ECM constructions in (54) present us with an embedded IP which is restricted to perfect or present continuous forms; that is, the matrix verb restricts the aspectual type of the IP, unlike regular tensed CP complement constructions:

(53) a. John wondered/asked if Mary witnessed the execution.
b. John wondered/asked if Mary had witnessed the execution.
c. John wondered/asked if Mary was witnessing the execution.
(54) a. John believed/knew Winnie to have witnessed the execution.
b. John believed/knew Winnie to be witnessing the execution.
c. *John believed/knew Winnie to witness the execution.

Now, if we make the assumption that the apparent requirement for a volitional causee in *have* and *gwin* causatives is in reality a requirement on the head of the IP, then the ECM character of causative *have* provides another indication that when a causative predicate puts a requirement for volitionality / control on its complement, it is a requirement on the embedded IP, and not an effect of argument array composition.

Throughout this article, I have made reference to the idea that apparent requirements on the causee in causative constructions are in reality requirements being placed on the base event. These requirements seem closely tied to aspectual requirements, again suggesting a parallelism between aspectual requirements placed on the head of ECM embedded predicates and requirements placed on the head of the IP of embedded causative predicates. One further piece of evidence that aspectual type can give rise to exactly the kind of thematic variation which causatives seem concerned with comes from the causative *have* paradigm which I made reference to earlier. Recall that when *have* takes an eventive complement, it generally appears to require both its own subject and the subject of its base event to be acting volitionally (examples repeated below for convenience). However, when *have* takes a stative complement (which for our purposes includes continuous aspectual forms), not only may the causee be acting non-volitionally, but the matrix subject may be as well (c,d, respectively).

(55) a. John had Bill jump. b. #The noise had Bill jump.
c. John had the wax melting into a cup.
d. The sun had the wax melting all over the counter.

Thus, we see that there is an extremely close relation between aspect/eventuality type, and the type of θ-role which is assigned to the causee.

If we combine the claim that actions are distinct from events w.r.t. a feature like volitionality or control with the claim that events and states are distinct semantic entities, we can speculate on a featural specification on predicative heads, where typical states are [–eventive, –control], events are [+eventive, –control] and actions are [+eventive, +control].[14]

8. Conclusion

Nisgha causative constructions give us reason to believe that expressions of eventualities in natural langauge differ along at least two distinct semantic parameters, eventivity and semantic control. These differences in eventuality type confirm a semantics in which *states*, *events* and *actions* are distinct. These eventuality types may be specified in the selection restrictions of predicates which take constituents expressing eventualities as one of their arguments. In the cases we examine here, causative predicates select for one of these three eventuality types as their internal argument. We have argued that this selection is concerned with the eventuality type itself, and should not be characterized as being concerned with composition of argument arrays, contra Alsina (1992).

I have presented my view as an alternative to not only Alsina, but the general view whereby causatives are created via a process of complex predicate formation. I do not see this article as providing a definitive closing argument against the complex predicate view, but rather as presenting an alternative which takes as highly significant the undeniable fact that there is a very close relation between aspectual event type and θ-role properties of a predicate. If my view can be applied successfully to a language like Nisgha, which would seem a perfect candidate for the complex predicate view, then it seems worth considering whether it is generally a more valid approach to the analysis of causatives.

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(14) Though I note the possibility of a predicate which is [-eventive, +control], and in fact argue in other work that this is the correct characterization of alienable possession. I have chosen to ignore the question of whether the hypothetical features proposed here have any visibility in the syntax, though elsewhere I have argued they do (see Belvin 1996 on both of these points).

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