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RELATIVE CLAUSES IN LAI CHIN, WITH SPECIAL REFERENCE TO VERB STEM ALTERNATION AND THE EXTENSION OF CONTROL THEORY*

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0. INTRODUCTION

I shall begin with some fairly comprehensive examples of the way relative clauses are constructed in the Lai (Haka) Chin language, a Tibeto-Burman language of the Kuki-Chin branch, spoken in the Central part of the Chin State, in the mountains on the West of Burma (Myanmar). It will be seen, *inter alia*, that two things need to be accounted for. On the one hand, one wants a proper account of the relative clause construction, where the language gives no evidence of overt movement,[1] especially wh-movement, but where, none the less, the clause is introduced by a noun phrase with a wh-determiner. On the other hand, when such a construction relativises on the subject of a transitive clause, it will be noticed that the form of the verb stem changes, and this, too, wants a systematic and coherent account.

I shall first offer a treatment of the latter question, chiefly by way of a proposed analysis of the Lai Chin system of verb stem alternation as a foundation. I shall then attend to the former question, claiming, as an extension of previous work (Lehman 1986) that in relative clauses the wh-element serves

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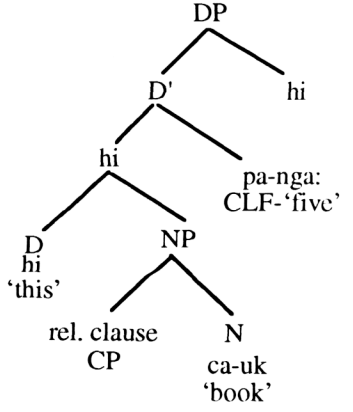
* This paper was originally presented to the 29th ICSTLL at Leiden in October, 1996. It represents part of a long term project on the syntax of Lai Chin, which I have been engaged in for some time. I am indebted for discussion on many points here to my colleagues in this project, Professor George Bedell, Kenneth Van Bik, and Pu Lian Uk. None of these three is responsible for, or even necessarily in agreement with, the present analysis. In addition, I acknowledge gratefully the contribution to this analysis of my colleague Dr. M. Lalitha of Delhi University, who worked with me and Lian Uk intensively for a month during the Christmas holidays of 1995-96, with regard both to Lai Chin and her own speciality of its close relative Mizo (Lushai). I have somewhat simplified the typography by writing the singular person agreement clitics (*ka-*, *na-*, *a-*) prefixed to verb stems with the vowel "a". Phonetically the vowel is in fact [ə], but this is because inherent clitic forms ending in the vowel /a/ are reduced to the neutral schwa because of the essentially iambic nature of Chin (and most Tibeto-Burman) foot structure.

1 The central observation in this connection is the fact that this is a Free Empty Category language, where any noun phrase argument, whether or not 'licensed' by agreement, may be freely represented by a null pro with non-specific/'arbitrary' reference.

as a Control theoretic operator, passing specification of an otherwise non-specific NP within the clause itself, to the head noun phrase of the construction. This will require me to clarify and generalise the hitherto somewhat opaque notion of a logico-syntactic operator. I shall throughout be assuming, in a general way, the theoretical framework of current, that is Minimalist generative syntax. However, for present purposes the distinction between 'standard' Government and Binding theory (Chomsky 1981, 1986) and Minimalist syntax (Chomsky 1995), which I ultimately intend here and which I have used elsewhere (e.g., Lehman 1996a, b), will not prove particularly important in my treatment of the matter in hand, especially because it remains unclear how Control is to be encompassed in Minimalist syntax, as Chomsky himself says (1995). In particular I shall make little if any explicit reference to the internal categorial constituency of a clause here, and whatever I need to say about the constituency of the relative construction, with a noun as its head, will be equally compatible with either framework. For the record, however, I append herewith, without further comment, the strictly Minimalist syntactic analysis of the noun phrase (Determiner phrase, in fact) that I argue for in detail in another paper (Lehman 1996b),



(1) These five books, which ...

with *hi* the proximal deictic determiner, NP the complement of the determiner, *pa-nga* a numeral expression consisting of a cliticised numeral classifier and a cardinal number, and the rightmost element (copying the determiner in many such cases) serving amongst other things as a morphological base for case marking; the relative clause is arguably the complement, possibly the specifier of N, but nothing depends upon which it might be, and current Minimalist

syntax is undecided on the matter; the quantifier phrase and the second *hi* are specifiers of D.[2]

1. THE SURFACE PATTERN OF LAI RELATIVE CLAUSES.

The following three examples provide a fairly comprehensive view of the relative clause in Lai. I have chosen to use a ditransitive verb in the relative clauses illustrated here, chiefly because of the light that this can shed on the facts of verb stem alternation involved.

(2) [[[$Ø_s$ $Ø_o$ $Ø_{io}$/ amah-ah ka-peek]$_{TP/IP}$ X/zei mi]$_{CP}$ ca-uk]$_{NP/DP}$
him-to 1SG-give WH one book
'The book I gave to him.'[3]

(3) [[[$Ø_s$ ca-uk_{do} $Ø_{io}$ ka-peek] X/zei (mi)] mi-pa]
book 1SG-give WH one man
'The man to whom I gave the book.'

(4) [[[$Ø_s$ Ø/ ca-uk_{do} $Ø_{io}$ a-ka- **pee**] X/zei (mi)] mi-pa]
book give(Stem II)
'The man who gave **it**/the book to me.'

Here Ø stands for the aforementioned "pro arb" (technically pro_{ivj}, for non-specific reference—cf. Lehman 1985). I assume that 'X', alternating freely with *zei* (wh-) is in the spec of CP, the head, C, being *mi*, which quite commonly in Lai means 'one' (non-specific pronoun), though elsewhere it also means 'person' (see Bedell 1996), as indeed in *mipa* 'man' (lit. 'person-male'). The exact status of 'X' is questionable; given that *mi* is already non-specific, it is just possible that 'X' merely stands for an unfilled spec of CP, in which case *zei* is somewhat redundant as a specifier also indicating non-specificity (certainly the use of *zei* in this construction is distinctly a rather formal, elaborate usage). Nevertheless, this possibility has to be discounted because, as I shall try to show, the specifier of C in this construction has got to be filled with some kind of operator, in order that specification of one of the interior clause's non-specific pro elements may be assured through having its index set in identity with that of the head noun phrase of the relative construction. I therefore assume, *ex hypothesi*, that 'X' stands for a so-called empty operator,

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2 See Lehman (1996b) on the fact, not very peculiar as it turns out, that the head, D, of the functional phrase category DP is on the left whilst that of the substantive NP is on its right.

3 Post-vocalic -h in the orthography symbolizes /-ʔ/; combinations of sonorant-plus-h in final position stand for glottalized sonorants (e.g. "velh" /veʔl/); initially [ʔ] occurs automatically in syllables with no other prevocalic consonant, though this is not indicated in the orthography. [Ed.]

corresponding exactly to the overt element *zei* with which it alternates (see now Chomsky 1995: 151-152). It remains particularly murky how complementiser, C, and its specifier *zei* are to be categorised in view of the fact that *zei* is basically a wh-determiner (Lehman 1995) and *mi* is a nominal element. Here I take the view that they are indeed, in this construction, specifier and head, respectively, of CP, even though, otherwise, *zei* is the head of DP, with the NP, containing, N, as its complement. This is an aspect of a perfectly general problem, namely, that complementisers tend to be borrowed from other lexical categories, such as prepositions (English *for*), demonstratives (English *that*), nouns (Thai *thîi* 'place') and so on. Of greater moment is the obvious question whether the *zei* represents wh-movement from the coreferent to 'book' in the interior clause. I am assuming out of hand that it does not. My reasons are as follows.

First and foremost, there is simply no evidence in general for overt movement in this language. I need not deal with feature-movement at LF in this paper. Furthermore, wh-movement here is especially unlikely in view of the fact that the interior coreferent is often an empty, inherently non-specific nominal, not requiring to be embedded under a redundant wh-determiner phrase. In addition, as already noted above, the complementiser *mi* inherently "selects" as a possible specifier a non-specific quantifier. While it is possible to suppose that this amounts to evidence that it can "attract" wh/*zei* by way of overt movement, this is counterindicated in view of the fact that 'pro' is simply unable to take an overt determiner in any way.

Having laid the foregoing out by way of initial examples and their preliminary syntactic construal, let me pay attention now to the peculiar fact that (4) requires the use of the Second Stem of the verb, *peek/pee* 'to give'. In order to pursue this line of attack, I must lay out in some detail the basic facts about Lai Chin verb stem alternation.

2. THE VERB STEM SYSTEM OF LAI

By "Stem I", I shall mean the form of a verb that appears in plain, tensed/finite declarative clauses. The rule is simple. For any intransitive verb, adjectives included, this verb stem is used for everything except gerundives and nominalisations (V+*naak*). For transitive verbs (mono- or ditransitive), only negatives take a different stem (my Stem II). The apparent explanation eluded me for some forty years.

Every intransitive verb in this language is an unaccusative; and, in gerundives and nominalised contexts, the subject does not "raise" syntactically to external Argument position (i.e., doesn't have any Specifier of INFL/TNS to

go to and so remains an internal Argument).[4] In the case of transitive verbs, without regard to the distinction between finite and non finite contexts, the distinction between an internal and an external Argument persists (Spec/VP vs. Complement of V). However, in simple negatives the effect is to remove obligatory selection/subcategorisation of the internal Argument, thus converting the verb to a logico-semantic predicate of one, external, argument only, not entailing presupposition of a patient, goal, or whatever. Yet, as one sees from the examples below, even in this case there are contexts where the negated transitive can after all let the verb be in Stem II; namely, if the negation does not necessarily delink the internal argument.

Consider an intransitive that is an adjective, such as *ping* 'to be close/tight'. The paradigm is (I and II being Stem I and Stem II, respectively):

(5)

	I	II
a-ping	'it is tight'	*a-pin ah cun/caah* 'when/because it's tight'[5]
a-ping lo	'it's not tight'	*pin-naak* 'tightness'/*pin-mi* 'a tight one'
a-ping lai	'it will be tight'	
a-ping lai lo	'it won't be tight'	

Note that adjectives have no imperatives, so none is cited here. Note also that the nominalisation in *naak* is simply a more general and abstract version of the more concrete one in *-mi*, which has got to nominalise on the subject — 'a tight one' (mi), as against 'tightness' (naak).

Now consider a non-adjectival intransitive, such as *ṭhap*, 'to cry', 'to weep'. The paradigm is

(6)

	I	II	
a-ṭhap	'he cries'	*a-ṭhah ah-cun*	'if he cries'
a-ṭhap lo	'he doesn't cry'	*ṭhah-naak*	'crying'
a-ṭhap lai	'he'll cry'		
a-ṭhap lai lo	'he won't cry'		

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4 More accurately from a Minimalist perspective (cf. Hale and Keyser 1993 and, for Chin itself, Lehman 1996b), it fails to raise to *v*, the light verb; Stem II is just the V uncomposed with v. More exactly, it is a verb with no external *argument*. So, it has an argument structure/complex distinct from a verb having exactly one, external, argument. In the case of transitives, below, disentailing the internal argument amounts to deriving a verb with, again, *exactly a single, external argument*; and again, Stem II is the stem of any verb with an argument complex distinct from that of a sole, external argument! Stem II, then can have two or more external arguments, or none.

5 The latter is really a nominalisation with a possessive (non-external) argument: "for the 'case' of its being tight".

ṭhap hlah 'don't cry!'
ṭhap, ṭhap tuah 'cry!'

There is a related verb,[6] meaning 'to cry for someone', as when old women formally wail for the newly buried dead in old Lai custom, or when a child cries for its mother.

(7)

I		II	
a-nu a-ṭhah	'he cries for his mum'	*a-ṭhah ah-cun*	'if he cries for her'
ṭhah hlah	'don't cry for your mum!'		

Here, typically, for a derived sense (these verb families probably should be thought of as distinct lexical items under a single lexical entry, but I am not sure of that part of lexical theory), the Second Stem of the root sense verb serves as Stem I, and in this case it is phonologically invariant from Stem II. Many verbs of all classes are stem-invariant as to morphophonological shape.

Now let me deal with transitive verbs. Consider, *chawnh* 'to speak with someone'. The paradigm is

(8)

I		II	
ka-chawnh	'I speak (with someone)'	*ka-chawn lo*	'I don't speak ...'
ka-chawnh lai	'I shall speak ...'	*ka-chawn lai lo*	'I won't speak ...'
chawnh-naak	'speaking/ conversation'		
ka-chawnh ah-cun	'if I speak ...'		

This is implicitly at least a ditransitive, with a object like *bia* (words) and an indirect object or dative indicating the one spoken to (e.g., *nu-ah* 'to the woman').

One may take another transitive verb, *theih* 'to hear', which is monotransitive, though it can have as object the thing heard *or* the person heard.

(9)

I		II	
ka-theih	'I hear'	*ka-thei lo*	'I don't hear'
ka-theih lai	'I shall hear'	*ka-thei lai lo*	'I shan't hear'
theih-naak	'hearing',		
theih-mi	'something heard'		
ka-theih ah-cun	'if I hear'		

6 According to Kenneth VanBik, this related verb has a non-aspirated initial: *ṭah*. [Ed.]

Consider also *velh* ('to beat'), a plain monotransitive:

(10)

	I		II
ka-velh	'I hit (someone)'	*ka-vel lo*	'I don't hit'
ka-velh lai	'I shall hit...'	*ka-vel lai lo*	'I shan't hit'
ka-velh ah-cun	'if I hit ...'		
velh-naak	'hitting'/		
velh-mi	'someone hit; the one hit'		

This pattern never breaks. However, one should notice that there is a classificatory problem here that is directly mirrored by the fact that, on the whole (see, below for exceptions), we expect the root form of a verb to lack the stop or glottal stop and the derivative form to have it, and transitive verbs seem to turn this ordering on its head. The explanation is easy. If we remember that what counts synchronically as Stem II for transitive verbs "disentails"[7] the second, or internal Argument, and that, furthermore, *relativisation on a head co-referent with the subject of the relative clause does the same thing* and turns the verb into a sort of antipassive-adjective (*ka-vel-mi pa*, 'the person who hits'), we can understand that Stem II of a transitive verb is effectively a Stem I of a related (and in fact, semantically, root-sense) intransitive (antipassive adjective) verb. Disentail the internal argument and you have a root sense verb, in effect.[8]

There is, as I have said, an exception to the foregoing. It is usually possible, in the case of a transitive verb, to negate the verb in Stem I. This is when the disentailment of the object is blocked, as in the following example:

(11)

a. zei ca-dah [cu pa cu] na- velh lo
why DEM man beat NEG
'Why didn't you hit [that fellow]?'

b. zei ca-dah [cu pa cu] na-velh lai lo
'Why won't you hit him?'

Here, implicitly, by discourse context presupposition or by explicit mention (given in square brackets, here), the patient remains entailed and is so understood.

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[7] I am using this as a mere mnemonic, to be replaced below with the term "delinking" which I shall thereupon define. In turn, in the Conclusions (§5), I shall speak rather of the "suppression" of an argument, defining the idea even more precisely.

[8] We see this in another way in Mizo/Lushai (mīzō ṭàwng), where relativising on an object takes the verb to the derived stem form as a passive adjective; for, in Mizo, transitive verbs have the etymological root sense form of the verb as their Stem I.

2.1. From stem alternation to derivational verb families. The Chin lexicographer David VanBik (personal communication to Bedell, K. VanBik and the present author) has claimed, for instance that a certain verb, typical of many others, has five distinct forms ("stems" in the present usage): *pit, pin, ping, pih, pinh*, all having somehow to do with characterising a semantic direct object as being 'tight' or 'close'.

(12)

a. na-ngaidi a pin/*ping/*pinh/*pit lo caah a-zut.
your-thatch it packed NEG for it-leak
'Because your thatch is ill packed, it leaks.'

b. thlaici kha pinh/*pin/*pit deuh in tuh
sowing DEM packed more you DIRECT.OBJECT
'Tighten up your planting of seed there!'

c. na-ngaidi a-ping tuk i a pih in a-pit
very PRT -ly
'Your thatch is densely packed "and" [so] its completely "sealed."'[9]

d. na-thlaici a-ping/*pin/*pinh tuk
'Your planting is quite dense/thick'

na-thlaici a-pit/*pih tuk
'Your planting is quite sealed up (as dense as could be).'

e. na-ngaidi a-pin lo
'The thatch is not well packed'(they didn't pack ~~it~~ tightly/ it didn't pack ~~itself~~ tightly)

Note that the pair *pit ~ pih* is a passive adjective, with the gerund in Stem II as *pih*. Sometimes *pit* is glossed as 'blocked'. In David Van Bik's *English-Lai Dictionary* (1987: 41), we notice that the transitive verb, 'to block; to blockade' is derived by another, even more classical Tibeto-Burman process of derivational morphology, namely, aspiration of the initial consonant (*phit ~ phih*).

The form *pinh* is rather slangy, used only in rather specialised contexts, as in

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[9] Actually *i* is the mark of participial subordinate clause conjunction; there is no sentential co-ordinate conjunction in these languages, or in any Tibeto-Burman language except Manipuri and, arguably, Tibetan. So, the sentence is more literally translated as "Your thatch being densely packed, it is quite 'sealed' up."

(13) thalici kha pinh-deuh in tuh
'You should make your thatch tighter!'

The totally obscure pair, *pin* ~ *pinh* seems to mean 'to get, or become tight', a culminative sense. However, as Lian Uk (personal communication) has pointed out to me, many people will never use *pinh,* and hardly any one will use it in careful speech; only in very fast, rather off-hand speech. In slower speech it is replaced by *pinh ter deuh*, 'to let be tighter', 'to make tighter' (hence the culminative reading) and it is almost certain that the form *pinh* is a contraction of *pinh ter*, so that there really is no Stem I *pin* to correspond with the apparent Stem II *pinh.*

3. STEM ALTERNATION IN RELATIVE CLAUSES

Thus, the verb stem choice is strictly conditioned by entailments of argument structure, as we have claimed. We now have a basis for explaining the stem alternation pattern in examples 2-4 (above) for relative clause constructions, namely, why it is that relativising on the object of a transitive verb requires a change to Stem II.

Note in particular (examples 2-4) that there is in fact always a second agreement marker after the subject agreement marker, though it is 'zero' for third person singular. The second agreement position makes reference to the object argument, and, if the verb be ditransitive, this has to be the indirect object, with the additional consequence, that the empty direct object is empty without regard to morphological agreement. It is noteworthy that when one relativises on the subject of a ditransitive verb clause one changes the verb of the clause to Stem II. This avoids all ambiguities. In fact it works like this:

The *apparent* subject agreement clitic *-a*, in (4) actually makes reference to the direct object of the transitive counterpart, and the second agreement marker to the *indirect object* (as by default expected for three argument verbs), and, in effect, the verb is adjectivalised, so that the agent/subject is demoted to adjunct status, and the relativisation is on this term. Thus, there is never ambiguity as to whether a *mi-pa* head Noun of this construction relativises on *indirect object* or S (see §4 above), or (marginally) *direct object* of the embedded clause. More perspicuously stated, (4) actually means something like 'It's [the book's] "I was given [it]" man', so that *ka-* is really the unique (subject) agreement clitic of verb-stem *pee*, taken as a passive adjective, 'to be given', and *a-* is a possessive and not an argument agreement clitic at all.

In the case of (1), it is understood that the indirect object is marked by an agreement clitic and the direct object is to be controlled because it is the only unspecific argument and the controller is inanimate. In the case of (2), it is

understood that third-singular controller *mi-pa* (animate, human) can only control, by default, the *indirect object* without crashing under current Minimalist syntactic theory (Chomsky 1995) for lack of an available interpretation, and the third-singular non-subject agreement is still with the indirect object. In (3), similarly, the apparent (the at least entailed agent) subject has to be animate, so that we construe it with the controller *mi-pa* (human, animate); the *indirect object* has to be first-singular and so a third-singular head cannot successfully control its pro counterpart.

So, as for (3), whatever else be the case, there is a "delinking" of an argument, namely of the surviving external one, the direct object, because *pee* is a passive adjective semantically, so that the direct object becomes only an implicit argument. This gives, in effect, 'the man of it was given to me'. Thus, we extend the conclusion as follows.

Stems change whenever *any one* of the principal (selected) Arguments is "delinked" (on "delinking" and "linking" see Chomsky 1981:132ff.; Huang 1995:132 ff. An item can be a link in a Chain of coreferent items, typically traces and their overt head-of-Chain; it is misleading to make any connection with Pesetsky's (1987) phonetically similar D-linking [discourse linking], the property of, say, a wh-element that uses discourse based suppositions to choose the item it refers to.[10] Given a monotransitive verb, e.g., *velh/vel*, if you relativise on the subject, the only available external argument is delinked and you end up with only one linked argument, the object, with the consequence of the indicated stem change in (14).

(14) ka-vel ([zei] mi) mipa
[the] I am hit]'s] man
'the man who hit me'

[10] By delinking, I mean making it impossible for a given argument to be overtly (still less certainly specifically), mentioned. Thus, 'the man I hit' can only mean 'the man wh-[I hit pro/someone-or-other]'; 'the man to whom I gave a book' has to be 'the man [to] wh-[II gave a book to pro/someone-or-other]'; 'the book I gave to him' has to be taken as 'the book wh-[I gave pro/something-or-other to him', and so on. Ultimately I claim this is the universal logico-semantic form for relative clause constructions even in English (see Lehman 1986), but in any case it is the surface form in Lai. As to 'the man who gave me a book', by delinking the agent-subject one effectually removes the direct object as anything but an implicit argument, as we have seen. Consequently, and only by virtue of the availability of the passive adjective form of 'to give', only the original indirect object remains as an argument that can be linked, so that we get the attested 'the man wh-its/the book's[I am given pro/something-or-other]'. Anyhow, the effect of delinking is indeed to entail that the pro in question cannot be construed as a link in a proper Chain, where all the links bear identical reference, with an intermediate link at spec of comp and a head at the NP head of the relative construction — until, that is, some operation passes Control over the pro to reset its non-specific index of reference in identity within that of the head of the construction.

In a ditransitive, however, when you relativise on the indirect object, you delink only one internal argument, the lowest ranked, non-agreeing, direct object, and no stem switch occurs; when you relativise on the indirect, the direct object remains and can be an agreeing internal argument, and so again no stem change occurs. If, however, you relativise on the subject, you have delinked the subject/external argument, with the result that, in effect, there is no longer a proper selectional definition for linking the direct object either (so to speak, subject-object relationality collapses, and what is left is just the propositional logic of someone's being given something), giving 'Its/the book's I am given['s] man' for 'the man who gave it/the book to me'.

4. CONTROL THEORY OF RELATIVE CLAUSES

Let us now consider how, in Lai relative clause constructions, the element *mi* occurs in the complement of the clause, whilst the specifier of CP contains, covertly or overtly a wh-word that cannot have been moved from the coreferent NP within the clause of the head noun; strictly speaking coreference is an outcome of the formation of the relative clause, because the element in the clause in question is simply empty pro-arb, whilst the head noun phrase of the construction is often a specific, or even a definite NP (*some man or other who..., a (particular) man who..., the man who...*). I am assuming (Lehman 1985) that non-specific NPs are not, as often claimed, "non-referring"; that in fact they have a referential index 'disjoint and ranging over all ordinal values of the members of some set or class,' best indicated by the algebraic subscript notation '$i_{\forall j}$'. Briefly, this claim is based on the demonstrable fact that even non-specific NPs can be antecedents for pronouns, and, if pronouns are said to co-*refer* to their antecedents, this can be coherently interpreted only if the antecedent itself refers.

(15) I want something$_{i\forall j}$ [or other] as a gift and *it* $_{i\forall j}$ had better be expensive

If then I also suppose that we end up understanding that the pro in the clause is referentially identified with the head noun of the construction, and that there has been no wh-movement, the question at once arises how this coreference is established. I intend to claim (see Lehman 1986 for an extended and comprehensive treatment) that the mechanism is simply the ordinary mechanism of Control independently established in an apparently very different context, namely, the context of so-called 'control verbs' which ensure that one of their proper arguments fixes the identity of an empty pro-arb in their complements. Stated that way, the parallelism between those standard cases of Control and the application of Control theory to relative clause constructions is not hard to see.

Still, in order to make the matter a bit clearer, let me review briefly some facts about Control theory in the standard cases.

4.1. Control: its standard application to verb-complement constructions. Typically, we find Control operating in the following sorts of verb-complement constructions.

(16)
a. I want [pro to V]
b. I promised (John) [pro to V],

where the verbs of the matrix clause are said to be "control verbs". In (a) we can be certain that pro is construed as equal to the subject of *want* (that what I want is that I should V). In (b), by contrast, whether or not there be an expressed object of the matrix verb, the pro subject of the complement clause has to be construed with that of the matrix verb. This is enough for present purposes, although one ought at least to draw a distinction between rigid control verbs, such as *promise*, which has got to take a complement clause with a pro (controllable) subject, and *want*, which can take a complement clause with an overt (non-controllable) subject

(17) I want [(for) John to V].

In the constructions in (16) we call the matrix verbs "control verbs" because they serve to force an otherwise unspecific pro to take coreference with a particular one of the arguments of that matrix verb. What such a verb does is to pass control over the specification of pro to another NP/DP. In this sense, it is quite proper technically to think of the control verb as an operator, i.e. an element that mediates a relationship by "passing" such a relationship between other entities. That is (cf. Chomsky 1981:102), an operator is an element that, in the standard propositional calculus with quantification, as applied in formal grammar to Logical Form (LF), is said to "bind" the interpretation of one element, a "variable" (i.e. a non-specific nominal), to another.

4.2. Control theory extended to the relative clause construction. On that view, and under assumptions already stated and justified, the wh-element in spec of comp in relative clauses, in particular in the Lai constructions without evidence of wh-movement, have to be construed as operators, in particular as Control theoretic operators. It is uncontroversial and hardly novel to claim that wh-element in spec of comp which are operators because they obviously bind variables in relative constructions, as well as in

wh-questions, where they force construal of what is otherwise simply a non-specific pro-element (wh-, as in 'who*ever*, what*ever*, and so on — see now Aissen (1996:495 ff.) for a sound discussion) as a question, in effect binding the non-specific argument to a presumed (in some languages overt) question morpheme in C (complementiser, head of CP) in such a way as to ensure that there is a demand for a specific 'resolution' of the disjoint-ranging, variable reference of the non-specific. What is neither obvious nor usual is to claim that they are properly understood as Control operators, equivalently, to claim that a control verb is likewise an operator. Let me show why I say this is the case.

First of all, the wh- in spec of comp binds the variable in the lower clause to the variable-like element in C itself, rather in the way a wh- element is said to bind such an element to a question element, Q, in C. It is then the element in C, *mi*, that is in turn bound to the head of the construction. More relevantly still, as in Control of the standard sort, the set-up allows one (rather in the way of rigid control verbs) to determine uniquely which of the possibly several empty arguments in the interior clause is to be so 'bound'. This is readily seen by re-examining what has been said about examples (2-4), repeated here for convenience:

(2) [[[$Ø_s$ $Ø_o$ $Ø_{io}$/ amah-ah ka-peek]$_{TP/IP}$ X/zei mi]$_{CP}$ ca-uk]$_{NP/DP}$
him-to 1SG-give WH one book
'The book I gave to him.'[11]

(3) [[[$Ø_s$ ca-uk$_{do}$ $Ø_{io}$ ka-peek] X/zei (mi)] mi-pa]
book 1SG-give WH one man
'The man to whom I gave the book.'

(4) [[[$Ø_s$ Ø/ ca-uk$_{do}$ $Ø_{io}$ a-ka- **pee**] X/zei (mi)] mi-pa]
book give(Stem II)
'The man who gave **it**/the book to me.'

In (2), with 'book' as the head noun of the construction, it is clear that, considering the interior verb to be 'give', it has to be the direct object that is being bound. In (3), with the animate construction head 'man', it must be the indirect object that is bound, because, given the facts about argument delinking, it cannot be the subject of the Stem I of 'give'. In (4), by the same logic, the bound variable has to be the subject of the complement clause. If both the subject and object of a transitive verb are alike, say, [+human], the matter is not

[11] Post-vocalic -h in the orthography symbolizes /-ʔ/; combinations of sonorant-plus-h in final position stand for glottalized sonorants (e.g. "velh" /veʔl/); initially [ʔ] occurs automatically in syllables with no other prevoclic consonant, though this s not indivicated in the orthgraphy. [Ed.]

materially different, not less determinate, as seen by re-examining (14), again repeated herewith:

(14) ka-vel ([zei] mi) mipa
[the] I am hit]'s] man
'the man who hit me'

For, given the particular Stem of the verb 'hit' (*velh/vel*), only the agent of the hitting can be the bound variable. The only limitation on the applicability of strict Control theory to this analysis arises, somewhat unusually as a pragmatic matter, in the case of a relative clause with a ditransitive verb for which it is possible for *all* the arguments to be, say, [+human]. If both the indirect and the direct object of such a verb be alike [+human], there will be the predictable ambiguity of construal as to which of the two human object pro arguments is to be bound to a [+human] noun at the head of a relative construction. Thus

(18)

a. $[[\emptyset_s\ \emptyset_o\ \emptyset_{io}$ ka-peek$]_{TP/IP}$X/zei mi$]_{CP}$ nupi$]_{NP/DP}$
wife

can mean, equally well

b. the wife to whom I gave him (e.g., a slave)

or

c. the one (say, a bridegroom) to whom I gave a wife

This limitation comes about only because of the particular argument structure of ditransitive verbs, taken relatively to the verb Agreement system and the fact that there are only two agreement clitic positions with the indirect object taking precedence over the direct object in filling the non-subject agreement slot. There is no obvious parallel to this in the case of Control as standardly applied to Control verbs and their clausal complements, if only because a control verb only controls the subject argument of its complement clause, a fact that is certainly part of UG (Universal Grammar). On this last observation, see below, § 5.

5. CONCLUSIONS

It seems that the chief result of the present exercise has been the demonstration that a proper account of the phenomenon of verb stem variation in relative constructions falls out most naturally from the hypothesis that the

choice of the pairing of the head noun of the construction with an argument of the complement clauses necessarily "delinks" that argument, so that it cannot be overtly expressed within its own clause, the consequence being that the delinked argument is effectually "suppressed" in a sense not yet possible to make totally clear. Still, it *is* clear that this suppression of one of two object arguments of a ditransitive verb satisfies the requirement of leaving an unsuppressed object argument to motivate filling the object agreement slot of a transitive verb, whereas, suppressing (delinking) the subject argument of the clause means that there can be no unsuppressed subject argument (external argument) to motivate filling the subject agreement slot of a transitive verb, so that the indirect object has to be construed as the unaccusative subject argument of the equivalent passive adjective, with all the consequences explained in the case of (4).

In addition, I have shown that there is a hitherto unrecognised similarity between the way Control works, in the standard case of matrix verbs controlling construal of their complement subjects, and the way Lai *in situ* wh-in spec of comp passes construal of an 'unresolved' non-specific pro (pro-arb/variable) in the complement clause of a head noun (in parallel to the complement clause of a verb) to the head noun of the construction. Indeed, stating the matter that way may permit one to suggest that the *dis*similarities between the two proposed applications of Control theory follow from the fact that the effective (logical) 'head' of a control construction, the complement-taking element, is a verb, whereas, in the case of the relative constructions being examined here, the complement-taking head of the construction is itself a nominal element, a potential argument in its own right. For instance, there is undoubtedly a connection between the limitation of Control in the standard case to complement subject arguments only and the fact that complement-taking verbs characteristically have a special relationship to their complement subjects (indicated by the fact that the latter commonly, as in English, are allowed), where morphological case marking applies at least, to take the case of an object of the verb, even if this is due to the subject's being c-commanded and/or governed by C, the complementiser (see Chomsky 1981, *passim*). A nominal, however, has no privileged relationship to any of the arguments in its complement clause. In any case, if this part of my demonstration is more or less correct, it certainly constitutes a distinct simplification of the relevant part of syntactic theory by collapsing into a single framework what have hitherto been separate sub-theories, those of Control and Binding, respectively.

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