

The Dural Structure of Halkomelem Motion Verbs

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Most recent literature on verb classes takes the viewpoint of *aktionsart*. Verbs are classified according to such Vendlerian features (Vendler 1967) as achievement, accomplishment, telicity, and their compatibility with different aspects (cf., Smith 1996). Our work on verb classes in Halkomelem takes a very different tack. Rather than superimposing Eurocentric concepts on the Halkomelem data, we have developed an analysis of verb classes based upon the compatibility of verb bases with various derivational affixes, following Gerdt (1991 and 1996).

Currently, we have complete information on the above-mentioned affixes on over 300 verb roots,¹ and partial information on over 600 verb roots. There are an estimated 1500 verb roots in Halkomelem, so much research remains in order to give a complete catalog of verb data.

Our tests reveal three major classes of intransitive verbs: unergatives (agent-oriented verb bases), process unaccusatives (patient-oriented verb bases), and states.² We focus here on the former two classes. Table 1 below illustrates these suffixes in combination with two verb bases *łak^w* ‘fly’ and *se[?]* ‘rise’. The asterisk * indicates that the combination of the verb base and the suffix is not possible. If the suffix is possible, a sample sentence is provided.

Table 1. Unergative and Unaccusative Bases Contrasted

Unergative³	Unaccusative
BASE:	BASE:
łak ^w ‘fly’	se [?] ‘rise’
yəłələk ^w t ^θ ə s ^q wələš	na [?] ət se [?] t ^θ ə łq̄e:ns t ^θ ə ləpla:š
ser-fly(cont) art bird	there riseart end-3pos art table
‘The bird is flying.’	‘One end of the board has lifted.’
TRANSITIVE:	TRANSITIVE:
*łak ^w ə-t	se [?] -t ‘raise it’
	ne ^m se [?] -t t ^θ ə ʃθəm ʔə t ^θ ə lətem
	auxlift art box obl art table
	‘Go lift the box and put it on the table.’
CAUSATIVE:	CAUSATIVE:
łək ^w -stəx ^w ‘make it fly/send it by air’	*se [?] -stəx ^w
ne ^m ʃ łək ^w -stəx ^w t ^θ ə sʃələm.	
go 2su fly-cs art writing	
Send the letter by airmail.’	
ANTIPASSIVE:	ANTIPASSIVE:
*łk ^w -els	sə [?] -els lift
	x ^w i [?] sə [?] -els ʃə k ^w θə swaw ^l əs
	next lift-ap evid art young-men
	‘The young men are into (competitive) lifting.’
DESIDERATIVE:	DESIDERATIVE:
łələk ^w -əl ^m ə ⁿ ‘wanting to fly (cont.)’	*se [?] -əl ^m ə ⁿ
ʔe [?] əθ wəl łələk ^w -əl ^m ə ⁿ θə s ^q wələš.	
here then fly(cont)-desid. art bird	
‘The bird wants to fly.’	
LIMITED CONTROL REFLEXIVE:	LIMITED CONTROL REFLEXIVE:

lək ^w namət	‘managed to fly’	se [?] -namət ⁴	
na [?] əθ wəɪ	lək ^w -namət θə qəle:qe [?]	s ^k wey k ^w ə	nə-s-se [?] namət
there then	fly-1.c.refl art crow	can’t art	1pos-nom-lift-1.c.refl
	‘The crow has managed to fly.’		‘I couldn’t managed to get myself up.’

These data show that there are differences between the two bases. While the unaccusative base *se[?]* ‘rise’ allows the transitive suffix, the unergative base *lak^w* ‘fly’ does not. In contrast, *lak^w* ‘fly’ takes the causative suffix while *se[?]* ‘rise’ does not. With respect to reciprocals and reflexives, their meaning is ‘each other’ or ‘oneself’ when they appear with *se[?]* ‘rise’, but they do not work with *lak^w* ‘fly’. The limited control reflexive when suffixed on *se[?]* ‘rise’ has a reflexive meaning, but when suffixed on *lak^w* ‘fly’ has the grammaticized meaning of ‘manage to’. Conversely, the desiderative suffix means ‘want’ when suffixed to *lak^w* ‘fly’ but does not combine with *se[?]* ‘rise’. Thus, we find that the unaccusative and unergative bases either provide environments of complementary distribution for the relevant set of suffixes, as in the case of transitive *-t* vs. causative *-stax^w* here. Or we see that very different forms arise when the same suffix is added to the two different bases, as in the case of the limited control reflexive, where unaccusatives take it in its literal sense and unergatives, if they combine with it, take on a grammaticized reading.

These results and those when other unergative and unaccusative bases are combined with the relevant class of suffixes are summarized in the following table. An asterisk means the affix cannot combine with the base. ‘*/...’ indicates two states of affairs. Either the form is rejected or it is assigned a grammaticized reading. Glosses are embraced with quotation marks when the form has a grammaticized meaning.

Table 2 ⁵	unergative	process unaccusative
transitive <i>-t</i>	*	adds agent
causative <i>-stax^w</i>	adds causer	*
limited control <i>-nax^w</i>	limited control causative	limited control transitive
reflexive <i>-θət</i>	*/‘alone’	action on self
antipassive <i>-els</i>	*	action on notional object
limited control <i>-namət</i>	‘manage to’	accidental action on self
desiderative <i>-əlmən</i>	want	*/‘about to, almost’

Notice that verbs of motion appear in the examples above. Clearly motion verbs are not a unified class in that, like verbs in many other semantic domains, they exhibit an unergative/unaccusative split as defined by their distribution with respect to the suffixes. (A larger class is suffixes is used in our tests, but these are sufficient for the present discussion.) Other motion verbs falling into these two classes are as follows.

Unergative verbs of motion include *ʔiməš* ‘walk’, *siχ^wəm* ‘wade’, *lak^w* ‘fly’, *štem* ‘swim underwater’, *lχiliš* ‘stand up’, *ʔəmət* ‘sit down, rise out of bed’.

Unaccusative verbs of motion include *k^we[?]* ‘drop down, come lose’, *hiləm* ‘tumble, fall’, *x^we[?]* ‘lower, go down’, *təyqəl* ‘move’, *ʔəλqəl* ‘go out’, *pliq* ‘move closer’, *hiq* ‘under’, *čiməl* ‘get near to’

The split of motion verbs into both classes is by no means confined to Halkomelem and numerous examples can be found in the literature. **Add citations & discussion.**

But while many verbs of motion seem to conform to either the unergative or the unaccusative paradigm, our preliminary results suggest that many verbs of motion are not well-behaved. There may be three additional classes. First, we found that one set of verbs seem to be basically unaccusative, but, unlike, take *-əlmən* and *-namət* in the unergative sense when the subject is animate and these are labeled ‘Unaccusatives with Animate-Subject Desideratives.’

Unaccusatives with Animate-Subject Desideratives: k^weý ‘move away’, pək^w float, go up to surface’, cłaq^w ‘go through’, x^wəč ‘go between, get in the middle’, wíl ‘appear’, q^wim ‘get off vehicle’.

Second, one subclass of motion verbs behaves as straightforward unergatives except that they not only take the causative *-stəx^w* as expected, but they also take transitive *-t*. We see however that the suffix *-t* gives the verb an additional argument which is a trajectory or goal. Some of these are otherwise manner-of-motion (e.g., ‘swim along’, ‘crawl’) while others already have a trajectory (‘go around’, ‘go over a mountain’). The following exemplifies the former subclass.

Table 3. Verbs Encoding Trajectory/Goal

BASE: tícəm ‘swim along’
 ni wəl tícəm t^θə mənə ni ʔə t^θə staləw.
 auxasp swim art child auxobl art river.
 ‘Your son has swum in the river.’

TRANSITIVE: tícəm-t ‘swim after’
 ni tícəm-ət-əs t^θə k^want t^θə snəx^wəl.
 auxswim-tr-erg art porpoise art canoe
 ‘The porpoise swam after the canoe.’

The following verbs fall into this class.⁶

Trajectory Verbs: tícəm ‘swim along’, čtem ‘crawl’, nəqəm ‘dive down’, x^wčənəm ‘run’, cłəm ‘jump’.

Third, one subclass of motion verbs patter with unergatives except they unexpectedly take *-els*. This is surprising in that *-els* is otherwise restricted to verbs which take transitive *-t* (or *-š*), never appearing on ones which take *-stəx^w*. However, it seems noteworthy that the function of *-stəx^w* here is not that which is generally associated with Halkomelem causatives of unergatives, namely to have or make someone do something. ʔiməš-*stəx^w* ‘walk-cs’ means ‘make it walk, walk it’, a typical causative meaning, but t^k*w*-*els* ‘go-home-cs’ means ‘take it home’. The object need not be something that is capable of carrying out the act (e.g., a sack of potatoes) and the subject is involved throughout the event. It is noteworthy that this sense is preserved in the corresponding antipassive *-els* form. The following is a profile of these verbs. They are mixed in some respects, particularly with respect to *-t* for promoting trajectory to object (cf., the trajectory verbs above).⁷

Table 4. Unergative Motion Verb with Comitative Causative

BASE: təx^w ‘go down from mountains/to beach’
 x^wən-netəl ʔiʔ wəl nem təx^w
 morning andasp go go-down
 ‘Early the next morning, he went down to the beach.’

TRANSITIVE: *təx^w-t

CAUSATIVE: tətəx^wstəx^w ‘take it down’
 nem cən tətəx^wstəx^w k^wθə nə syał
 go lsub go-down-cs art lpos firewood
 ‘I am going to take my firewood down.’

ANTIPASSIVE: tətəx^wels ‘bring down’
 xəθinə čə k^wθə mi tətəx^wels ʔə k^wθə syał
 four-people evid art come bring.down obl art firewood
 ‘Four people brought down the firewood.’

Motion Verbs with Comitative Causatives: k^wiʔ ‘climb’, šaq^wəl ‘cross to the other side’, nem ‘go’, cam ‘go up to house/mountains’, łe:l ‘go ashore’, ʔa:l ‘get on vehicle’, tak^w ‘go home’, təx^w ‘go down from mountains’, ča:ləc ‘go over mountain’, ʔəməq ‘returned something’, qteqən ‘go along base of mountains’, x^wəʔaləm ‘return’, təs ‘arrive there, get here’, wəq^wiləm ‘go downstream’,

he:wə ‘go away on a trip’, q̣taθəm ‘go along shore’, ʃwteʔ ‘come/go toward’, ta:l ‘go to the middle of floor’, ʃpil ‘go down’.

In summary, we see that motion verbs are mixed, a fact which is not particular to Halkomelem....**Add cross-linguistic citations?? This is broached above, or will be.**

5. Solutions.

We can view the relevant subclasses of motion verbs as having properties of both so-called unergatives and unaccusatives. Rather than representing unergativity and unaccusativity in argument structure we will assume that both are simply intransitive configurations but linked in different ways to semantic protoroles (Dowty 1991, Davis 1996) or an action tier (Jackendoff 1987, 1991).⁸ So simple unergatives and unaccusatives can be represented roughly as follows, where the actor and undergoer roles are semantic and ARG-ST (argument structure) is at the interface between syntax and semantics.

Diagram 1. Unergative

<i>actor – pred</i>	
ARG - ST	⟨a⟩
ACTOR	a

Diagram 2. Unaccusative

<i>undergoer – pred</i>	
ARG - ST	⟨a⟩
UNDERGOER	a

We propose that our class of comitative motion verbs derive from bases which all share the following configuration.

Diagram 3. Motion Verb Bases which Combine with Comitative -stəx^w

<i>motion – actor – undergoer</i>	
ARG - ST	⟨a⟩
ACTOR	a
UNDERGOER	a

This is still intransitive with respect to argument structure, and the single argument will link to subject. This captures the idea that the subject of an agentive motion verb simultaneously plays to roles, the role of doer and, in a sense, the role of undergoer in that this participant is an incremental theme or theme of motion.

5.1. -t transitives and trajectory/goal objects. We can think of the *motion-actor-undergoer* configuration given above as a lexeme type. Bases of this type (all of which are motion verbs as far as we know) qualify for -t suffixation in that they are intransitive (a single argument in argument structure) and this argument is linked to undergoer, which is typical of -t transitive bases.⁹ While we will not formalize a transitive-formation rule here, Diagram 4 provides an approximation of salient aspects of the trajectory -t transitive forms.

Diagram 4. -t Transitive Trajectory

PHONOLOGY	X + t
SUBJ	a
OBJ	b
ARG - ST	⟨a, b⟩
ACTOR	a
UNDERGOER	a
DIRECTION	b

Transitive motion verbs with *-t* add a directional argument, which we represent simply as ‘DIRECTION’ here (leaving open whether this is a place-holder for a proto-role or simply part of the thematic/semantic ‘soup’ which could be covered by entailments derived from the appropriate semantic type). However the specific semantic links are special here, so we will think of these forms as not being totally predictable. We will assume there is a special *-t* transitive rule which applies to this subset of motion verbs.

5.2. -Stəx^w transitives and ‘comitative’ objects. Causative *-stəx^w* normally combines with unergative bases to form morphosyntactic transitives (i.e., verbs which license direct case objects). Motion lexemes of the *actor-undergoer* type above qualify for the causative suffix in that their single argument is linked (inter alia) to actor. Again, we will not formalize a rule, but the derived ‘causative’ verbs will have salient properties along the lines of those in Diagram 5.

Diagram 5. -stəx^w transitives and comitative objects

PHONOLOGY	X + <i>stəx^w</i>
SUBJ	a
OBJ	b
ARG - ST	⟨a, b⟩
ACTOR	a
UNDERGOER	a
COMITATIVE	b

Notice that Diagrams 4 and 5 provide accounts incorporating the ‘dual’ properties of such motion verbs. Since their single argument is undergoer, they qualify for *-t* transitivity (albeit in a special way). And since their single argument is actor, they qualify for *-stəx^w*, again in a special sense.

4.3. -Els antipassives. It is remarkable that antipassive *-els* combines with motion verbs to form words which preserve the meaning relations of the transitive forms. In particular, we do not see the alternation between causative *-stəx^w* and *-els* in any other verb classes. We argue elsewhere that *-els* combines with bases which are transitive at some level (in argument structure). Since we are not saying that the *motion-actor-undergoer* lexemes have, in fact, transitive argument structures, it is less than obvious why they combine with *-els*.

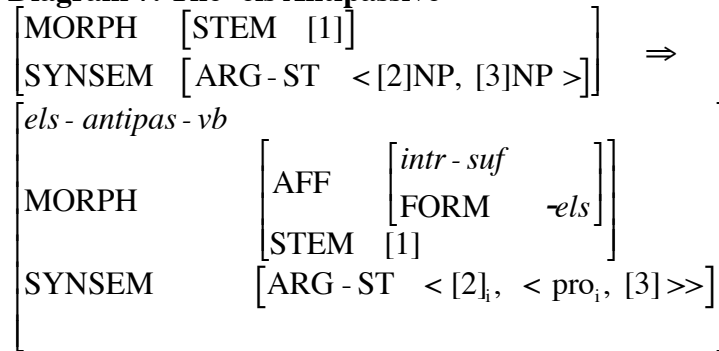
Let us assume that a lexeme type is formed by the causative in words with feature structures like the one above, one along the following lines.

Diagram 6. Input Lexeme for Comitative -els (based on Diagram 5)

<i>comitative – act – und</i>	
ARG - ST	⟨a, b⟩
ACTOR	a
UNDERGOER	a
COMITATIVE	b

This qualifies for combination with *-els* if we assume that it requires a base with a transitive argument structure (Gerdtts and Hukari 1998, 2000). A highly simplified version of the antipassive rule is as follows. Notice that ‘MORPH’ refers to the morphological structure of the word and ‘SYNSEM’ involves the syntactic and semantic features.

Diagram 7. The -els Antipassive



This is roughly along the lines of antipassivization as proposed by Manning and Sag (1999), in which the first argument (call it the ‘a-subject’) is promoted to first argument of a complex argument structure. The resulting comitative *-els* verbs then are roughly along the following lines (ignoring the higher-level features such as ‘SYNSEM’ above).

Diagram 8. Comitative -els.

MORPH	X + <i>els</i>
SUBJ	a
OBJ	∅
OBL	b
ARG-ST	$\langle a_i, \langle \text{pro}_i, b \rangle \rangle$
ACTOR	a
UNDERGOER	a
COMITATIVE	b

We assume that direct NP ‘matrix’ arguments map to subject and object in Halkomelem, while arguments which are embedded (and are not pro) map to obliques.

An obvious question arises concerning comitative causatives. Are they based on Diagram 6 as well? As causatives generally are derived from unergative verbs, we prefer to think that their bases are, in fact, the unergative verb form, thus Diagram 6 is, in effect, a back formation from the causative. The fact that comitative ‘causatives’ do not have normal causative semantics suggests they are special.

What then do we make of the more regular relationship between *-t* transitives and antipassives? We propose elsewhere (Gerdtts and Hukari 2000) that the transitive and antipassive forms are both derived from an abstract lexeme which is ‘transitive’ in its argument structure. The notion of transitive argument structure needs further examination but we assume at present that a transitive argument structure is one which as at least two NP arguments within it.¹⁰ This, however, is beyond the focus of the present paper.

6 Summary.

We have discussed various classes of Halkomelem motion verbs in this paper, first reviewing the morphological test frames developed in Gerdtts (1991 and 1996) for classifying unergatives and process unaccusatives. We then turned to various types of motion verbs with a view towards the means by which they introduce objects. Motion unaccusatives generally permit the transitivizer *-t* whereas motion unergatives take the causative *-stəx^w*, following the general patterns for unaccusatives and unergatives. We found however that some motion unergatives permit transitive *-t*, whereby the trajectory becomes the direct object. Also, we found a class of motion unergatives which take *-stəx^w* with a special reading:

the object, rather than being a normal causee which would be capable of initiating action, is taken along with the agent, hence we termed these ‘comitative causatives’. Furthermore, a significant number of these also take form antipassives preserving the comitative reading. Our hypothesis is that such motion verb bases map both actor and undergoer to a single argument structure position, hence they qualify for causative formation as their argument structure is ‘intransitive’ and the single argument is linked (inter alia) to the actor role. Our account of the surprising fact that these bases also form antipassives (as unergatives otherwise never do), involves backformation. We suggest that the comitative causative forms a template for a lexeme type whose argument structure is ‘transitive’ and this forms the base for the antipassive. The following table summarizes the verb classes discussed above

Table 11. Summary

	causative -stəx ^w	transitive -t	antipassive -els
unergative	adds causer	*	*
unaccusative	*	adds agent	action on notional object
motion unergative	adds causer	*/trajectory	*
motion unaccusative	*	adds agent	action on notional object
comitative motion unergative	adds comitative object	*/trajectory	comitative

Notes

¹We use the term ‘root’ to include both monomorphemic bases and frozen forms which include one inseparable suffix.

²We use the terms *unergative* and *unaccusative* without any theoretical stand on the issue of unaccusativity as a syntactic phenomenon. The account we develop is more semantic. See Kathol (1991) and Pollard (1994) for an HPSG treatment of German passives employing an ergative feature to single out unaccusative subjects & transitive objects. On that account, couched in current HPSG features, the highest argument of an unaccusative verb would link with the subject feature and the highest argument of an unergative would not.

³The following are the abbreviations used in glosses.

art = article	evid = evidential
asp = aspect (roughly, perfect)	fut = future
aux = auxiliary	l.c.refl = limited control reflexive
ap = antipassive	lnk = linker
cont = continuative (imperfective) aspect	nom = nominalizer
cs = causative	obl = oblique case marker
decid = deciderative	sub = subject
erg = ergative suffix	tr = transitive

⁴The predicate *sək^wey* ‘cannot’ takes a nominalized clause in this sentence example.

⁵Of these suffixes, the ones most relevant to motion verbs, which are the focus of the present project, are *-t*, *-stəx^w*, *-els*, *-namət*, and *-əlman*, so we confine our discussion to these suffixes for the remainder of the paper. Table 2 and Table 3 illustrate the use of the diagnostic suffixes with verb bases in sentences.

⁶Note that all verbs listed in this class have bases ending in /m/. This is probably the middle *-m* suffix historically, although it does not segment off in the current lexicon. The suffix combination *-m-t* is, to our knowledge, unattested except in cases where /m/ is a relic. Further investigation may reveal the nature of the correlation between /m/ and this class of *-t* transitives.

⁷The term ‘comitative causative’ is probably inappropriate in both respects: We do not think it is a true causative. Also ‘comitative’ often implies a co-actor, whereas the second participant need not be capable of independent action in this construction.

⁸For a somewhat different perspective on event structure, see Pustejovsky (1986, 1991).

⁹A problematic case is inherent antipassives, which we take to have underlying transitive argument structures yet combine with *-t*. This leads perhaps to another view of transitive formation, where the affix combines with lexemes which already have transitive argument structure but this is beyond the focus of the present paper. Note however that we are in fact assuming that antipassives are formed on abstract lexemes with ‘transitive’ argument structures.

¹⁰We only note that, if we follow Manning (1994), it may be possible to have multi-argument argument structures which count as intransitive, as Manning distinguishes between direct and oblique arguments. We leave this as an open issue.

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