

A taxonomy of Lushootseed valency-increasing affixes*

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Like other Salishan languages, Lushootseed derives the bulk of its verb stems from monovalent radicals designating states and processes using a large number of *valency-increasing affixes*, affixes that are used to derive transitive and bivalent intransitive stems from monovalent bases. This paper will attempt to create a taxonomy of these affixes and show that, in spite of their variety, Lushootseed valency-increasers fit into a neat taxonomy based on two syntactic parameters familiar from typological literature on causative and applicative morphology.

The primary distinction that can be drawn among the valency-increasers is that between *causatives* and *applicatives*:

- *causatives* add a new event-participant (semantic actant) which is expressed as a syntactic subject
- applicatives add a new semantic actant which is expressed by an object

Within the causatives, it is possible to distinguish affixes according to the *government patterns* of the stems they create — that is, the different grammatical relations assigned to their syntactic arguments. This leads to a distinction between

- *transitive causatives*, causatives that create transitive stems that take a direct object,
- *intransitive causatives*, causatives that create bivalent intransitive verb stems that take an oblique object

Both types of affix can then be further subdivided according to additional semantic criteria. A list of valency-increasing affixes categorized according to the taxonomy proposed here is given in Table 1:

Affix	Name	Affix-Type	Type of Stem
-t	'internal causative'	transitive causative	transitive
-tx ^w	'external causative'	transitive causative	transitive
-dx ^w	'diminished control'	transitive causative	transitive
-b	'causative middle'	intransitive causative	bivalent intransitive
-alik ^w	'causative of activity'	intransitive causative	bivalent intransitive
-c/-s	'allative applicative'	transitive applicative	transitive
-yi-	'dative applicative'	transitive applicative	trivalent transitive
-bi-	'middle applicative'	transitive applicative	transitive
-di-	'secondary suffix'	transitive applicative	transitive
-i-	'secondary suffix'	transitive causative	transitive

Table 1: Lushootseed valency-increasing affixes

Of the affixes listed here, the first eight are well-attested as analyzable parts of a substantial number of lexemes; the last two secondary suffixes are largely fossilized, although they form part of a few high-frequency lexical items.

1 Verbal radicals

The majority of Lushootseed verb stems is built up out of fairly easily-analyzable elements based on monovalent radicals, generally of the phonological shape CVC.

- with only a few exceptions (see Table 4 below), Lushootseed radicals are monovalent and intransitive
- they require valency-increasing morphology to form verb stems with a valency of greater than one
- Lushootseed has almost no underived transitive verbs (e.g., Hess 1995; Beck 1996, 2000)

What are transitive verbs in most languages are derived from a large set of monovalent *patient-oriented* (Hess 1995) radicals whose syntactic subject expresses the semantic PATIENT or ENDPPOINT of an event rather than the AGENT. Consider (1):

* The author would like to acknowledge Thom Hess, Ronald Langacker, Dianne Massam, Igor Mel'čuk, Keren Rice, and Leslie Saxon for their help and advice with this research as it has evolved through various stages over the years. None of this would have been possible without Thom Hess's exemplary documentary work, or without the words and teachings of the Lushootseed elders who provided the texts on which this article is based. All the many errors that remain here are my own. The abbreviations used here are as follows: √ = verbal radical; ° = bound form; = = clitic boundary; - = affix boundary; • = lexical suffix boundary; SMALL CAPS = semantic role; ⊗, ⊙ = semantic actants; 1, 2, 3 = first, second, third person; ACT = activity; ADD = additive; ADNM = adjunctive nominalizer; ALTV = allative applicative; ATTN = attenuative; CNN = connective; CONT = continuous; COORD = coordinative; CSMD = causative middle; CTD = contained; DAT = dative applicative; DC = diminished control; DEF = definite; DIST = distal; DSTR = distributive; ECS = external causative; FEM = feminine; FOC = focus; HAB = habitual; REM = hypothetical/remote; ICS = internal causative; IMPF = imperfective; INCH = inchoative; INDEF = indefinite; INT = interrogative; IRR = irrealis; MAP = middle applicative; MD = middle; NEG = negative; NM = nominalizer; OBJ = object; PASS = passive; PFV = perfective; PL = plural; PO = possessive; PR = preposition; PROG = progressive; PROX = proximal; PRTV = partitive; PTCL = particle; REFL = reflexive; SBJ = subjunctive; SCONJ = sentential conjunction; SG = singular; SS = secondary suffix; STAT = stative; SUB = subject.

- (1) a. ʔuʔiʔ^{c} čəd
 ʔu-ʔiʔ^{c} čəd
 PFV–be.cut 1SG.SUB
 ‘I got cut with a knife’
- b. $\text{ʔuʔiʔ}^{\text{c}}\text{id}$ čəd tə $\text{sq}^{\text{w}}\text{iq}^{\text{w}}\text{ali}$
 $\text{ʔu-ʔiʔ}^{\text{c}}\text{i-d}$ čəd tə $\text{sq}^{\text{w}}\text{iq}^{\text{w}}\text{ali}$
 PFV–be.cut–ICS 1SG.SUB INDEF hay
 ‘I started to cut hay (with a blade)’
 (Bates, Hess & Hilbert 1994: 146)

- $\sqrt{\text{ʔiʔ}^{\text{c}}}$ ‘be cut (with a knife)’ — in spite of expressing an event high on the scale of semantic transitivity (Hopper & Thompson 1980) — can take only a single syntactic argument, a subject expressing the PATIENT of the event
- to express an AGENT, it is necessary to apply a valency-increasing suffix such as the internal causative *-t*

A patient-oriented radical is focused on the final state achieved or the change undergone by a PATIENT or ENDPOINT of an event, rather than on the cause of that state or the involvement of an AGENT:

$\sqrt{\text{ʔad}^{\text{q}}}$ ‘be met’	$\sqrt{\text{g}^{\text{w}}\text{alal}}$ ‘be hurt’	$\sqrt{\text{sux}^{\text{wt}}}$ ‘be recognized’	$\sqrt{\text{ʔay}^{\text{w}}}$ ‘be traded’
$\sqrt{\text{g}^{\text{w}}\text{əx}}$ ‘be untied’	$\sqrt{\text{tak}^{\text{w}}}$ ‘be bought’	$\sqrt{\text{ʔəʔ}}$ ‘be eaten’	$\sqrt{\text{hay}^{\text{w}}}$ ‘be known’
$\sqrt{\text{təq}^{\text{w}}}$ ‘be slapped’	$\sqrt{\text{bi}^{\text{ł}}}$ ‘be smashed’	$\sqrt{\text{k}^{\text{w}}\text{aw}}$ ‘be chewed’	$\sqrt{\text{tudəq}^{\text{w}}}$ ‘be enslaved’
$\sqrt{\text{caq}^{\text{w}}}$ ‘be speared’	$\sqrt{\text{k}^{\text{w}}\text{aw}}$ ‘be bumped’	$\sqrt{\text{tul}^{\text{w}}}$ ‘be interpreted’	$\sqrt{\text{cil}^{\text{w}}}$ ‘be dished up’
$\sqrt{\text{k}^{\text{w}}\text{ax}^{\text{w}}}$ ‘be helped’	$\sqrt{\text{tup}^{\text{w}}}$ ‘be pounded’	$\sqrt{\text{c}^{\text{w}}\text{a}^{\text{ł}}\text{k}^{\text{w}}}$ ‘washed’	$\sqrt{\text{k}^{\text{w}}\text{a}^{\text{ł}}}$ ‘be released’
$\sqrt{\text{tu}^{\text{x}}}$ ‘be stretched’	$\sqrt{\text{c}^{\text{w}}\text{əl}}$ ‘be defeated’	$\sqrt{\text{k}^{\text{w}}\text{əd}}$ ‘be held, taken’	$\sqrt{\text{t}^{\text{x}}}$ ‘be pulled’
$\sqrt{\text{c}^{\text{w}}\text{əs}}$ ‘be pecked’	$\sqrt{\text{lək}^{\text{w}}}$ ‘be eaten’	$\sqrt{\text{t}^{\text{q}}}$ ‘be patched’	$\sqrt{\text{c}^{\text{w}}\text{a}^{\text{ł}}}$ ‘be dug up’
$\sqrt{\text{t}^{\text{uk}}}$ ‘be measured’	$\sqrt{\text{c}^{\text{w}}\text{əd}^{\text{z}}}$ ‘be stalked’	$\sqrt{\text{tal}^{\text{w}}}$ ‘taken from fire’	$\sqrt{\text{x}^{\text{w}}\text{ac}}$ ‘be hoisted’
$\sqrt{\text{da}^{\text{ł}}}$ ‘be named’	$\sqrt{\text{ʔiʔ}^{\text{c}}}$ ‘be cut with knife’	$\sqrt{\text{x}^{\text{w}}\text{əb}}$ ‘be thrown’	$\sqrt{\text{c}^{\text{w}}\text{i}^{\text{x}}}$ ‘be fried’
$\sqrt{\text{tid}^{\text{w}}}$ ‘be tied’	$\sqrt{\text{x}^{\text{w}}\text{s}}$ ‘be thrown’	$\sqrt{\text{c}^{\text{w}}\text{ac}}$ ‘be hidden’	$\sqrt{\text{ł}^{\text{w}}\text{ak}^{\text{w}}}$ ‘be stitched’
$\sqrt{\text{x}^{\text{w}}\text{əd}}$ ‘be pressed’	$\sqrt{\text{c}^{\text{w}}\text{al}}$ ‘be overtaken’	$\sqrt{\text{ł}^{\text{w}}\text{ip}}$ ‘be compressed’	$\sqrt{\text{x}^{\text{w}}\text{ib}}$ ‘be grabbed’
$\sqrt{\text{pu}^{\text{ł}}}$ ‘be blown on’	$\sqrt{\text{x}^{\text{w}}\text{ad}^{\text{z}}}$ ‘be injured’	$\sqrt{\text{g}^{\text{w}}\text{əc}^{\text{z}}}$ ‘be sought’	$\sqrt{\text{q}^{\text{w}}\text{al}}$ ‘be marked, be painted’

Table 2: Patient-oriented radicals

With only one or two exceptions, patient-oriented radicals form their transitive counterparts with the internal causative *-t* (Section 2.1); many of them also take the diminished control suffix *-dx^w* (2.3) and the causative of activity *-alik^w* (2.4).

A smaller group of radicals are AGENT-oriented verbs whose subjects express semantic AGENTS or agent-like actants:

$\sqrt{\text{ʔə}^{\text{ł}}}$ ‘come’	$\sqrt{\text{g}^{\text{w}}\text{uh}}$ ‘bark (dog)’	$\sqrt{\text{q}^{\text{w}}\text{i}^{\text{ł}}\text{ad}}$ ‘yell’	$\sqrt{\text{ʔibə}^{\text{s}}}$ ‘travel, walk’
$\sqrt{\text{k}^{\text{w}}\text{iis}}$ ‘stand up’	$\sqrt{\text{q}^{\text{w}}\text{u}^{\text{ł}}\text{q}^{\text{w}}\text{a}}$ ‘have drink’	$\sqrt{\text{ʔig}^{\text{w}}\text{ə}^{\text{ł}}\text{a}}$ ‘climb tree’	$\sqrt{\text{k}^{\text{w}}\text{ata}^{\text{c}}}$ ‘climb’
$\sqrt{\text{saq}^{\text{w}}}$ ‘fly’	$\sqrt{\text{ʔil}^{\text{w}}}$ ‘sing’	$\sqrt{\text{k}^{\text{w}}\text{ə}^{\text{ł}}}$ ‘miss’	$\sqrt{\text{šub}^{\text{w}}}$ ‘disappear’
$\sqrt{\text{ʔu}^{\text{x}}}$ ‘go’	$\sqrt{\text{k}^{\text{w}}\text{it}^{\text{w}}}$ ‘go to shore’	$\sqrt{\text{šut}^{\text{w}}}$ ‘look around’	$\sqrt{\text{cut}^{\text{w}}}$ ‘speak’
$\sqrt{\text{lab}^{\text{w}}}$ ‘appear’	$\sqrt{\text{tatab}^{\text{w}}}$ ‘speak’	$\sqrt{\text{c}^{\text{w}}\text{əb}}$ ‘clear land’	$\sqrt{\text{la}^{\text{x}}}$ ‘recall’
$\sqrt{\text{tay}^{\text{w}}}$ ‘go raiding’	$\sqrt{\text{c}^{\text{w}}\text{ic}^{\text{w}}\text{əyik}^{\text{w}}}$ ‘wink’	$\sqrt{\text{ta}^{\text{ł}}}$ ‘arrive at place’	$\sqrt{\text{təc}^{\text{w}}}$ ‘roll off’
$\sqrt{\text{d}^{\text{w}}\text{al}}$ ‘turn around’	$\sqrt{\text{p}^{\text{w}}\text{ayəq}^{\text{w}}}$ ‘carve’	$\sqrt{\text{t}^{\text{uk}}}$ ‘go home’	$\sqrt{\text{g}^{\text{w}}\text{ah}}$ ‘accompany’
$\sqrt{\text{p}^{\text{w}}\text{əq}^{\text{w}}}$ ‘drift’	$\sqrt{\text{wiliq}^{\text{w}}}$ ‘make enquiry’	$\sqrt{\text{g}^{\text{w}}\text{i}}$ ‘make an invitation’	$\sqrt{\text{q}^{\text{w}}\text{əlb}}$ ‘camp out’

Table 3: Agent-oriented radicals

A number of these form transitive stems with the internal causative; however, more of them form transitive verbs with the external causative *-tx^w* (Section 2.2). On the whole, this class of verbs is less consistent in terms of its derivational possibilities than the patient-oriented radicals.

There are some bivalent verbal radicals, although these are few in number:

$\sqrt{\text{ʔalad}^{\text{z}}}$ ‘care for ⊗’	$\sqrt{\text{qada}^{\text{w}}}$ ‘steal ⊗’
$\sqrt{\text{ʔulə}^{\text{x}}}$ ‘gather ⊗, forage for ⊗’	$\sqrt{\text{q}^{\text{w}}\text{u}^{\text{ł}}}$ ‘be together with ⊗’
$\sqrt{\text{c}^{\text{w}}\text{əba}^{\text{ł}}}$ ‘be loaded down with ⊗’	$\sqrt{\text{pus}^{\text{w}}}$ ‘be hit by ⊗ (missile)’
$\sqrt{\text{k}^{\text{w}}\text{uk}^{\text{w}}\text{cut}^{\text{w}}}$ ‘cook ⊗’	$\sqrt{\text{šə}^{\text{ł}}}$ ‘make ⊗’
$\sqrt{\text{təg}^{\text{wt}}}$ ‘leave ⊗’	$\sqrt{\text{təx}^{\text{w}}}$ ‘buy ⊗’
$\sqrt{\text{ł}^{\text{w}}\text{al}}$ ‘put ⊗ on’	$\sqrt{\text{x}^{\text{w}}\text{i}^{\text{ł}}\text{x}^{\text{w}}\text{i}^{\text{ł}}}$ ‘hunt for ⊗, forage for ⊗’

Table 4: Bivalent radicals

The stems in Table 4 are all intransitive except for $\sqrt{\text{təg}^{\text{wt}}}$ ‘leave something’, which is a true transitive verb:

- (2) a. $\text{ʔutʰəgʷət̚ čət̚ ti kikəwič}$
 $\text{ʔu-tʰəgʷət̚ čət̚ ti kikəwič}$
 PFV-leave.behind 1PL.SUB DEF ATTN-hunchback
 ‘we left Little Hunchback behind’

[LA Basket Ogress, line 121]

- b. $\text{həy tʰəgʷəlb, x̣ʷulʰ ʔəsqʰil ʔal tiʔət̚ qʰilʰbid}$
 $\text{həy tʰəgʷəlb-x̣ʷulʰ ʔəs-qʰil ʔal tiʔət̚ qʰilʰbid}$
 SCONJ leave.behind-PASS only STAT-aboard PR PROX canoe
 ‘and then [his corpse] was left, [it] was just aboard his canoe’

(Hess 1998: 92, lines 37–38)

Most of the radicals in Table 4 subcategorize for oblique objects introduced by the preposition ʔət̚ :

- | | |
|---|--|
| <p>(3) a. $\text{qada čəxʷ ʔu ʔət̚ tə sduukʷ}$
 $\text{qada čəxʷ ʔu ʔət̚ tə sduukʷ}$
 steal 2SG.SUB INT PR INDEF knife
 ‘did you steal the knife?’
 (Bates, Hess & Hilbert 1994: 172)</p> | <p>b. $\text{ləsčəbaʔ ʔət̚ tə hud}$
 $\text{ləs-čəbaʔ ʔət̚ tə hud}$
 CONT-back.pack PR INDEF wood
 ‘she’s shoulder-packing the wood’
 (Bates, Hess & Hilbert 1994: 61)</p> |
|---|--|

These bivalent radicals are more or less productive bases for derivation, although as a set they do not show any predictable combinatory patterns, other than that none appears with the causative of activity (Section 2.4), which normally serves to derive a bivalent intransitive stem from a patient-oriented radical.

2 Causative affixes

Causative affixes add an agentive semantic subject to their bases. Lushootseed has five such affixes:

- three transitive causatives: $-t$ ‘internal causative’, $-txʷ$ ‘external causative’, $-dxʷ$ ‘lack of control causative’
- two intransitive causatives: $-b$ ‘causative middle’ and $-alikʷ$ ‘causative of activity’

2.1 Internal causative $-t$

$-t$ ‘internal causative [ICS]’ is the most frequent in terms of the number of stems of which it forms a part. Its primary and most prevalent use is as a transitive causative suffix which changes a patient-oriented monovalent stem expressing a state into a transitive stem by adding a semantic AGENT, realized as a syntactic subject:

- | | | |
|---|--|---|
| <p>(4) a. ʔutʰucʰ čəd
 ʔu-tʰucʰ čəd
 PFV-shot 1SG.SUB
 ‘I got shot’
 (Bates, Hess & Hilbert 1994)</p> | <p>b. ʔutʰucʰucid ʔu
 $\text{ʔu-tʰucʰu-t-sid ʔu}$
 PFV-shot-ICS-2SG.OBJ INT
 ‘did s/he shoot (at) you?’
 (Hess 1995: 43, ex. 11a)</p> | <p>c. ʔutʰucʰutəb čəd
 $\text{ʔu-tʰucʰu-t-əb čəd}$
 PFV-shot-ICS-PASS 1SG.SUB
 ‘I was shot (at)’
 (Bates, Hess & Hilbert 1994)</p> |
|---|--|---|

The syntactic effects of this suffix are clearly causative, as are its semantic effects:

- the radical itself expresses a state
- the derived transitive stems expresses an action preformed by an AGENT resulting in a PATIENT coming into that state¹

This added AGENT, like the CAUSER in typologically more ordinary causatives

- is realized as the syntactic subject
- the subject of the radical becomes the direct object of the transitive stem, encoded by an object marker, as in (4b)
- the object of an internal causative stem is amenable to syntactic operations such as passivization (4c)

When the derived stem takes an overt NP argument, this argument is always interpreted as direct object:

- (5) $\text{ʔukʷwət̚əd ti qʷuʔ}$
 $\text{ʔu-kʷwət̚əd ti qʷuʔ}$
 PFV-poured-ICS DEF water
 ‘s/he poured the water’

(Hess 1995: 18, ex. 1a)

¹ See Beck (1996). The distinction between the internal causative $-t$ and the external causative $-txʷ$ is taken up in Section (2.2).

- this is an interpretative property of all transitive verbs, often referred to as the One-Nominal Interpretation Law (Gerdtz 1988) in other Salishan languages

The forms given in Table 5 are a representative sample of internal causative stems based on radicals attested as free forms:

<i>ʔaʔəd</i> ‘put ⊗ there’	(√ʔa ‘be there’)
<i>ʔixʷid</i> ‘throw ⊗ away’	(√ʔixʷ ‘be thrown; have thrown to’)
<i>bapad</i> ‘pester ⊗’	(√bap ‘be busy’)
<i>bəčad</i> ‘set ⊗ down’	(√bəč ‘be lying, be fallen from standing’)
<i>bəlɫʷəd</i> ‘pass ⊗’	(√bəlɫʷ ‘be beyond’)
<i>caqʷad</i> ‘spear ⊗’	(√caqʷ ‘be speared’)
<i>cilid</i> ‘dish ⊗ out’	(√cil ‘be dished up’)
<i>cʷagʷad</i> ‘wash ⊗’	(√cʷaʔkʷ ‘be washed’)
<i>čalad</i> ‘chase ⊗’	(√čal ‘be overtaken’)
<i>čʷaxʷad</i> ‘hit ⊗ with a stick’	(√čʷaxʷ ‘be hit with a stick’)
<i>dəgʷad</i> ‘put ⊗ inside’	(√dəkʷ ‘be inside’)
<i>dʷakʷad</i> ‘rock ⊗’	(√dʷakʷ ‘be shaky, be shaking’)
<i>dʷaλʷəd</i> ‘confuse ⊗’	(√dʷaλʷ ‘be confused’)
<i>dʷalqəd</i> ‘turn ⊗ around’	(√dʷal ‘turn around, turn over’)
<i>dʷiɫid</i> ‘break ⊗ down’	(√dʷiɫ ‘be broken down, be fallen apart’)
<i>gʷəxʷad</i> ‘untie ⊗’	(√gʷəxʷ ‘be untied’)
<i>huyud</i> ‘make ⊗’	(√huy ‘be completed, be finished’)
<i>kʷədad</i> ‘take ⊗’	(√kʷəd ‘be held, be taken’)
<i>lild</i> ‘move away’	(√lil ‘be far away’)
<i>ʔaqʷad</i> ‘put ⊗ down’	(√ʔaqʷ ‘be fallen, be lying down’)
<i>ʔičʷid</i> ‘slice ⊗’	(√ʔičʷ ‘get cut with knife’)
<i>ʔidid</i> ‘tie ⊗’	(√ʔid ‘be tied’)
<i>λʷiqid</i> ‘take ⊗ out from within’	(√λʷiq ‘emerge’)
<i>pədičəd</i> ‘dirty ⊗’	(√pəd ‘be dirty’ + -ič ‘covering’)
<i>pusud</i> ‘throw at ⊗’	(√pus ‘be hit by ⊗ (missile)’)
<i>qiqʷəd</i> ‘confine ⊗’	(√qiqʷ ‘be confined’)
<i>qʷatad</i> ‘lay ⊗ out’	(√qʷat ‘be lying; snow falls’)
<i>qʷibid</i> ‘prepare ⊗’	(√qʷib ‘be ready’)
<i>qʷšabəd</i> ‘fog ⊗ up’	(√qʷšab ‘be foggy’)
<i>qʷaxʷad</i> ‘freeze ⊗’	(√qʷaxʷ ‘be frozen’)
<i>qʷilid</i> ‘put ⊗ on board’	(√qʷil ‘be aboard’)
<i>qʷəld</i> ‘cook ⊗’	(√qʷəld ‘be cooked, be ripe’)
<i>qʷibid</i> ‘unload ⊗’	(√qʷib ‘be disembarked, be unloaded’)
<i>qʷuʔəd</i> ‘gather ⊗’	(√qʷuʔ ‘be together with ⊗’)
<i>šəqəd</i> ‘move ⊗ up high’	(√šq ‘be high’)
<i>šubud</i> ‘make ⊗ disappear’	(√šub ‘disappear’)
<i>šukʷild</i> ‘grey ⊗’	(šukʷil ‘turn grey’ from √šukʷ ‘powder’)
<i>šulud</i> ‘pass underneath ⊗’	(√šul ‘be in, be under’)
<i>təjəd</i> ‘roll ⊗’	(√təč ‘roll off, tumble down’)
<i>tʷucʷud</i> ‘shoot ⊗ (target)’	(√tʷucʷ ‘be shot, fired on’)
<i>xʷalad</i> ‘write ⊗’	(√xʷal ‘be written’)
<i>xʷəxʷaʔxʷaʔəd</i> ‘make ⊗ lighter’	(√xʷəxʷaʔxʷaʔ ‘be lightweight’)

Table 5: Internal causative stems formed from free radicals

There is also a very large set of internal causative stems based on bound radicals, as well as many transitive verbs that appear to contain -*t* but which are not based on clearly-attested radicals found in other verb forms.

2.2 External causative *-tx^w*

Like *-t*, *-tx^w* ‘external causative [ECS]’ is a transitive suffix that is added (with a few exceptions) to monovalent radicals to form a transitive stem expressing an event in which an AGENT causes a PATIENT/THEME to come into the state expressed by the radical; however, the AGENT in *-tx^w* forms is construed as being less directly involved in or affected by the event than it is in stems formed with the internal causative. As with any causative, the new argument is realized as the subject and the erst-while subject of the base is realized as a direct object:

(6) a. $\text{ʔuʔu}\check{x}^w$ čəd ʔu–ʔu \check{x}^w čəd PFV–go 1SG.SUB ‘I went’ (Hess 1995: 6, ex. 1)	b. $\text{ʔuʔu}\check{x}^w\text{tub}\check{s}$ ti č’ač’as ʔu–ʔu \check{x}^w –tx ^w –bš ti č’ač’as PFV–go–ECS–1SG.OBJ DEF child ‘the boy took me’ (based on Hess 1995: 42)	c. $\text{ʔuʔu}\check{x}^w\text{tx}^w$ ti č’ač’as ʔu–ʔu \check{x}^w –tx ^w ti č’ač’as PFV–poured–ECS DEF water ‘s/he took the boy’ (Hess 1995: 22, ex. 3b)
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- *-tx^w* forms a transitive verb in which the AGENT is the subject
- the PATIENT or THEME is the direct object
- when the derived stem takes an overt NP argument, this argument is interpreted as direct object

The forms in (6) are based on a radical expressing motion, $\text{ʔu}\check{x}^w$ ‘go’. Many such radicals combine with *-tx^w* to form verbs of taking and bringing:

$\text{ʔ}\partial\lambda^w\text{tx}^w$ ‘bring ⊗’	($\sqrt{\text{ʔ}\partial\lambda}$ ‘come’)
$\text{ʔib}\partial\check{s}\text{tx}^w$ ‘take ⊗ for a walk’ ²	($\sqrt{\text{ʔib}\partial\check{s}}$ ‘travel, walk’)
$\text{ʔu}\check{x}^w\text{tx}^w$ ‘take ⊗’	($\sqrt{\text{ʔu}\check{x}^w}$ ‘go’)
$\check{c}ub\partial\text{tx}^w$ ‘take ⊗ ashore’ ³	($\sqrt{\check{c}ub\partial}$ ‘go inland’)
$g^w a\check{x}^w\text{tx}^w$ ‘take ⊗ for a walk’	($\sqrt{g^w a\check{x}^w}$ ‘take a stroll’)
$k^w\text{ata}\check{c}\text{tx}^w$ ‘carry ⊗ up a hill’ ⁴	($\sqrt{k^w\text{ata}\check{c}}$ ‘climb’)
$k^w\text{wit}^w\text{tx}^w$ ‘take ⊗ down to shore’	($\sqrt{k^w\text{wit}^w}$ ‘go down to shore’)
$\text{ʔa}\text{ʔtx}^w$ ‘bring ⊗ to a place’	($\sqrt{\text{ʔa}\text{ʔ}}$ ‘arrive at a specific place’)
$\text{ʔalil}\text{tx}^w$ ‘bring ⊗ ashore’	($\sqrt{\text{ʔalil}}$ ‘go ashore’)
$\text{ʔ}\check{c}il\text{tx}^w$ ‘arrive with ⊗’	($\sqrt{\text{ʔ}\check{c}il}$ ‘arrive’)
$q^w\text{il}\text{tx}^w$ ‘take ⊗ by canoe’	($\sqrt{q^w\text{il}}$ ‘be aboard’)
$saq^w\text{tx}^w$ ‘fly off with ⊗; fly ⊗ (airplane)’	($\sqrt{saq^w}$ ‘fly’)
$sax^w\partial b\text{tx}^w$ ‘run off with ⊗, kidnap ⊗’	($\sqrt{sax^w\partial b}$ ‘jump, sprint’)
$\check{s}\partial d^w\text{al}\text{tx}^w$ ‘take ⊗ outside’	($\sqrt{\check{s}\partial d^w\text{al}}$ ‘go outside’)
$\text{t}\partial\text{lawil}\text{tx}^w$ ‘run off with ⊗’	($\sqrt{\text{t}\partial\text{lawil}}$ ‘run’)
tuliltx^w ‘take ⊗ across river’	($\sqrt{\text{tulil}}$ ‘cross river’)
$\text{t}^w\text{uk}^w\text{tx}^w$ ‘take ⊗ home’	($\sqrt{\text{t}^w\text{uk}^w}$ ‘go home’)

Table 6: Verbs of taking and bringing formed with *-tx^w*

- the radical expresses the type of motion undergone by the THEME
- the suffix adds an AGENT responsible for causing that motion
- there is no inherent telicity or notion of transfer expressed by the verbs themselves
- these notions may be implied by context

The stems in Table 6 are (mono)transitive; if a recipient is involved, it may be expressed as an oblique object introduced by the preposition $\text{d}\check{x}^w\text{ʔal}$ ‘towards’, as in (7a):

(7) $\text{ʔu}\check{x}^w\text{tub}\partial x^w$ tiʔiʔ sʔulad \check{x}^w $\text{d}\check{x}^w\text{ʔal}$ tiʔiʔ sčətx ^w əd
$\text{ʔu}\check{x}^w$ –tx ^w –b=əx ^w tiʔiʔ sʔulad \check{x}^w $\text{d}\check{x}^w\text{ʔal}$ tiʔiʔ sčətx ^w əd
go–ECS–PASS=now DIST salmon PR DIST black.bear
‘the salmon was taken to Black Bear’

(Hess 1995: 154, line 67)

² This form also means ‘make ⊗ travel’; with this reading, it belongs in Table 7 below.

³ This form is also attested in the speech of older speakers as $\check{c}ub\partial stx^w$, the *-stx^w* version of the suffix being an archaic form still attested in some other languages of the family.

⁴ This is the gloss of the word as it is used in Skagit. In Snohomish, this verb also applies to climbing trees and ladders, while the Skagit use $\sqrt{\text{ʔig}^w\partial}$ for these latter two activities.

As shown in (7b), the preposition is the same as that used to express the goal of motion in the non-causativized forms. In addition to verbs of taking and bringing, *-tx^w* is used to form a wide variety of transitive verbs from intransitive stems:

<i>?alalustx^w</i> ‘do to ⊗’	(√ <i>?alalus</i> ‘happen’)
<i>?atx^w</i> ‘put ⊗ there’	(√ <i>?a</i> ‘be there’)
<i>?əłtx^w</i> ‘feed ⊗’	(^o √ <i>?əł</i> ‘be eaten’; cf. <i>?əłəd</i> ‘feed on ⊗’)
<i>?ista?tx^w</i> ‘do the same to ⊗’	(√ <i>?ista?</i> ‘be the same’)
<i>čəba?tx^w</i> ‘pack ⊗ on one’s back’	(√ <i>čəba?</i> ‘be loaded down with ⊗’)
<i>g^wahtx^w</i> ‘take ⊗ along’	(√ <i>g^wah</i> ‘accompany, go along’)
<i>g^wədiltx^w</i> ‘sit ⊗ down’	(√ <i>g^wədil</i> ‘sit down’)
<i>həli?tx^w</i> ‘cure ⊗’	(√ <i>həli?</i> ‘be alive’)
<i>hiwiltx^w</i> ‘go ahead with ⊗’	(√ <i>hiwil</i> ‘proceed’)
<i>huyg^wastx^w</i> ‘marry ⊗’	(from √ <i>huy</i> ‘be completed’ + <i>-g^was</i> ‘pair’)
<i>kiistx^w</i> ‘stand ⊗ up’	(√ <i>kiis</i> ‘stand up’)
<i>k^wa?tx^w</i> ‘release ⊗’	(^o √ <i>k^wa?</i> ‘released’; cf. <i>k^wa?d</i> ‘let go of ⊗’)
<i>laχtx^w</i> ‘remind ⊗’	(√ <i>laχ</i> ‘recall, remember’)
<i>łidtx^w</i> ‘tie to ⊗’	(√ <i>łid</i> ‘be tied’)
<i>ł’aχ^wtx^w</i> ‘bring up ⊗, raise ⊗’	(√ <i>ł’aχ^w</i> ‘grow’)
<i>ł’iq’ačibtx^w</i> ‘make ⊗’s hands sticky	(from √ <i>ł’iq</i> ‘be sticky’ + <i>-ačib?</i> ‘hand’)
<i>saq^wtx^w</i> ‘fly off with ⊗’	(√ <i>saq^w</i> ‘fly’)
<i>šəł’əbiłədtx^w</i> ‘make rope of ⊗’	(from √ <i>šəł</i> ‘make ⊗’ + √ <i>t’əbiłəd</i> ‘rope’)
<i>šultx^w</i> ‘show to ⊗’	(√ <i>šul</i> ‘look around, gaze’)
<i>tədziltx^w</i> ‘put ⊗ to bed’	(√ <i>tədzil</i> ‘go to bed, lie in bed’)
<i>təłtx^w</i> ‘make ⊗ true, speak truth’	(√ <i>təł</i> ‘be true’)
<i>t’ičibtx^w</i> ‘make ⊗ wade’	(√ <i>t’ičib</i> ‘wade’)
<i>t’uc’iltx^w</i> ‘fire ⊗’	(<i>t’uc’il</i> ‘fire weapon’ from √ <i>t’uc</i> ‘be shot’)
<i>χa?χa?tx^w</i> ‘forbid ⊗’	(√ <i>χa?χa?</i> ‘powerful, taboo’)
<i>χiliχtx^w</i> ‘make war on ⊗’	(√ <i>χiliχ</i> ‘be at war’)

Table 7: Causative stems formed with *-tx^w*

In most instances, these bases are monovalent radicals and adding *-tx^w* forms a transitive stem following the pattern illustrated in (6) above; however, in one or two cases the causative is added to a bivalent intransitive base. The effect on the valency and government pattern of the verb in these cases depends on the stem.

The final aspect of the external causative to be discussed here concerns its overlap with the internal causative, *-t*.

- the basic semantic distinction between these two causatives is the relative involvement of the AGENT in the event, state, or process expressed by the radical (Beck 1996)
 - in the internal causative, the AGENT is considered to be a more integrated participant in the event either by direct physical contact with the PATIENT or greater affectedness of the AGENT by the event itself.
 - external causative forms, like causatives in many other languages, imply that the change-of-state or process undergone by the PATIENT was caused by a separate (often unspecified) action or event initiated by the AGENT

Most radicals select either the internal or the external causative, depending on the nature of the state or process they express however, there are a number of radicals that have both an internal and an external causative form:

- in some cases, the glosses of the verb stems make the difference in meaning between the two types of causative clear
- in others, the forms seem to be nearly synonymous — or at least to overlap greatly in their potential to be used to describe particular events

2.3 Diminished control *-dx^w*

-dx^w ‘diminished control [DC]’ is added to intransitive stems and, like *-t* and *-tx^w*, adds an AGENT/subject to the expression. However, in *-dx^w* forms the AGENT is in less than complete control of the situation:

- (8) a. g^wəl ʔəsɓəč, ʔəsxaʔaqšəd ʔal k^wi ʔudəg^wif ʔə tiʔif qəlalg^wif
 g^wəl ʔəs–bəč ʔəs–x̣a–x̣aq•šəd ʔal k^wi ʔu–dəg^w•g^wif ʔə tiʔif qəl•al•g^wif
 then STAT–lie STAT–DSTR–wrapped•leg PR REM PFV–middle•canoe PR DIST bad•CNN•canoe
 ‘then he lay with his feet wrapped in the middle of the funeral canoe’

[ML Mink and Tutyika I, line 80]

- b. ʔubəčdubš ti sq^wəbay?
 ʔu–bəč–dx^w–bš ti sq^wəbay?
 PFV–lying–DC–1SG.OBJ DEF dog
 ‘the dog accidentally knocked me over’
 (Hess 1995: 41, ex. 4b)
- c. ʔubəčdub čəd ʔə ti sq^wəbay?
 ʔu–bəč–dx^w–b čəd ʔə ti sq^wəbay?
 PFV–lying–DC–PASS 1SG.SUB PR DEF dog
 ‘I was accidentally knocked over by the dog’
 (Hess 1995: 41, ex. 4a)

- in (8a), the bare radical is shown with its basic meaning, ‘be lying down’
- the addition of the diminished control suffix creates a verb meaning ‘knock something over’ — that is, ‘accidentally cause something to be lying down’
- this adds an AGENT to the expression which is expressed as a syntactic subject
- the PATIENT (the THEME of the radical) is expressed as a direct object

Table 8 gives a number of examples of stems formed with the diminished control morpheme, along with the gloss provided for them in the source:

ʔad ^w qdx ^w ‘happen to meet ⊗’	(^o ʔad ^w q ‘met’; cf. ʔad ^w qbid ‘meet ⊗’)
ʔaʔildx ^w ‘manage to put ⊗ there’	(ʔaʔil ‘get there’ from ʔa ‘be there’)
ʔuq ^w dx ^w ‘be left open to ⊗,’	(^o ʔuq ^w ‘unplugged’; cf. ʔuq ^w ud ‘unplug ⊗’)
bək ^w dx ^w ‘manage to get all ⊗’	(^o ʔbək ^w ‘be all’)
c’aldx ^w ‘manage to defeat ⊗’	(^o ʔc’al ‘be defeated’; cf. c’ald ‘defeat ⊗’)
čaldx ^w ‘catch up to ⊗’	(^o ʔčal ‘be overtaken’)
č’ax ^w dx ^w ‘manage to club ⊗’	(^o ʔč’ax ^w ‘be hit with a stick’)
dik ^w dx ^w ‘instruct ⊗’	(^o ʔdik ^w ‘be advised’; cf. dx ^w dig ^w id ‘advise ⊗’)
həliʔdx ^w ‘save the life of ⊗’	(^o ʔhəliʔ ‘be alive’)
huydx ^w ‘manage to do ⊗’	(^o ʔhuy ‘be completed, be finished’)
k ^w aʔdx ^w ‘manage to let go of ⊗’	(^o ʔk ^w aʔ ‘be released’; k ^w aʔtx ^w ‘release ⊗’)
k ^w ax ^w dx ^w ‘manage to help ⊗’	(^o ʔk ^w ax ^w ‘be helped’; cf. k ^w ax ^w ad ‘help ⊗’)
k ^w ədx ^w ‘manage to take ⊗’	(^o ʔk ^w əd ‘be held, be taken’)
k ^w ətdx ^w ‘spill ⊗’	(^o ʔk ^w ət ‘pour out, spill out’)
labdx ^w ‘see ⊗’	(^o ʔlab ‘appear’)
laḫdx ^w ‘remember ⊗’	(^o ʔlaḫ ‘recall, remember’)
lək ^w dx ^w ‘manage to eat ⊗’	(^o ʔlək ^w ‘be eaten’; cf. lək ^w əd ‘eat ⊗’)
ludx ^w ‘happen to hear ⊗’	(^o ʔlu ‘be heard’; cf. luhələdiʔ ‘hear ⊗’)
lildx ^w ‘draw away from ⊗’	(^o ʔlil ‘be far away’)
λ’ubildx ^w ‘manage to improve ⊗’	(^o ʔλ’ubil ‘improve’ from ʔλ’ub ‘good, well’)
p’alildx ^w ‘revive ⊗’	(p’alil ‘regain consciousness’)
qətdx ^w ‘accidentally awaken ⊗’	(^o ʔqət ‘be awake’)
šudx ^w ‘catch sight of ⊗’	(^o ʔšut ‘look around, gaze’)
təqdx ^w ‘block ⊗’s path’	(^o ʔtq ‘closed’; cf. tqad ‘close ⊗, block ⊗ off’)
xətdx ^w ‘injure ⊗’	(^o ʔxət ‘be sick’)
x ^w al’dx ^w ‘get the better of ⊗’	(^o ʔx ^w al’ ‘be unable, fail, lose’)

Table 8: Stems formed with -dx^w

The diminished control expressed by -dx^w generally has one of two sources

- either the action is performed accidentally, or
- the action is performed with some difficulty

Which of the two types of reading a verb will have depends loosely on the basic meaning of the radical.

- radicals expressing non-desirable states or conditions unlikely to be desired by an actor tend to have accidental readings
- radicals that express more desirable states or the endpoints of willful action on the part of an AGENT (^oʔk^wax^w ‘be helped’, λ’ubildx^w ‘manage to improve’) tend to have the achieved-with-difficulty reading

- radicals expressing undesirable states that might be resisted by a potential undergoer generally take $-dx^w$ with a reading of difficulty in achievement
- many verbs of perception ($labdx^w$ ‘see’, $ludx^w$ ‘hear’) and mental states ($la\check{a}dx^w$ ‘remember’, $p'alildx^w$ ‘bring around’) also take (or are only used with) $-dx^w$, reflecting the lack of direct conscious control we have over perceptual stimuli and mental processes

However, with most stems the source of the diminished control is ultimately context-dependent:

- (9) a. $\text{ʔu}\check{c}'ax^w dx^w$
 $\text{ʔu}-\check{c}'ax^w-dx^w$
 PFV-clubbed-DC
 ‘he finally got a “lick” in [with his switch]’
- b. $\text{ʔu}\check{c}'ax^w dubu\check{t}$
 $\text{ʔu}-\check{c}'ax^w-dx^w-bu\check{t}$
 PFV-clubbed-DC-1PL.OBJ
 ‘he accidentally hit us with a stick’
 (Bates, Hess & Hilbert 1994: 69)

Although the verb stems in the two sentences are the same, the glosses (based on the context of utterance) are entirely different with respect to the locus of the diminished control. In the first case, the AGENT is not in control due to the resistance of the PATIENT not wanting to be switched, in the second case the diminished control comes from the inadvertent nature of the act.

2.4 Causative middle *-b*

The suffix *-b* ‘causative middle [CSMD]’ is an intransitive causative suffix added to a monovalent base to create a bivalent intransitive verb stem, increasing the valency of the radical by adding an agentive syntactic subject, while the erstwhile PATIENT of the radical is realized as an oblique object:

- (10) a. $di\check{t} \text{ l}\check{a}sq^w \text{ ə}l\check{a}s \text{ g}^w \text{ ə}b\check{a}di\check{t}\check{a}s$
 $di\check{t} \text{ l}\check{a}s-q^w \text{ ə}l\check{a}s \text{ g}^w \text{ ə}b\check{a}=di\check{t}\check{a}s$
 FOC PROG.STAT-cooked=3SBJ SBJ=ADD=FOC=3SBJ
 ‘it’s this that would be cooked if it were that sort of thing’
 (Bates, Hess & Hilbert 1994: 195)

- b. $huy \text{ q}^w \text{ ə}lb=ax^w \text{ ə}lg^w \text{ ə}ʔ \text{ ʔ}\check{a} \text{ ti}ʔ\check{a}ʔ \text{ bu}ʔq^w$
 $huy \text{ q}^w \text{ ə}l-b=ax^w \text{ ə}lg^w \text{ ə}ʔ \text{ ʔ}\check{a} \text{ ti}ʔ\check{a}ʔ \text{ bu}ʔq^w$
 SCONJ cooked-CSMD=now PL PR PROX duck
 ‘well then they cook themselves these ducks’
 (Hess 2006: 65, line 547)

Semantically, the causative middle adds an element of self-interest on the part of the AGENT and focuses the expression on the AGENT’s involvement in the action expressed by the verb rather than its effect on the PATIENT. Compare the causative middle form in (10b) with the transitive (internal causative) form in (11):

- (11) $b\check{a}\check{t}\check{c}i\check{l}x^w \text{ yit}\check{a}b \text{ ʔ}\check{a} \text{ ti}ʔ\check{a}ʔ \text{ ʔ}al\check{a}\check{s} \text{ ʔ}\check{a} \text{ ti}ʔ\check{a}ʔ \text{ s}ʔ\check{a}\check{t}\check{a}d \text{ \check{λ}}'ushuys \text{ k}^w i \text{ \check{λ}}'usq^w \text{ ə}l\check{a}ds \text{ ə}lg^w \text{ ə}ʔ$
 $b\check{a}=\check{t}\check{c}i\check{l}-tx^w-yi-t-\check{a}b \text{ ʔ}\check{a} \text{ ti}ʔ\check{a}ʔ \text{ ʔ}al-\check{a}\check{s} \text{ ʔ}\check{a} \text{ ti}ʔ\check{a}ʔ \text{ s}ʔ\check{a}\check{t}\check{a}d \text{ \check{λ}}'u=s=huy=s$
 ADD=arrive-ECS-DAT-PASS PR PROX PL-sibling PR PROX food HAB=NM=do-3PO
- $k^w i \text{ \check{λ}}'u=s=q^w \text{ ə}l-d=s \text{ ə}lg^w \text{ ə}ʔ$
 REM HAB=NM=cooked-ICS=3PO PL
 ‘the brothers brought food to her again when they finished cooking it’
 (Hess 2006: 45, line 72)

In this example, the focus is clearly on the fact that the food is cooked, and the AGENTS, the brothers, do the cooking on behalf of someone else rather than in their own specific interests.⁵

In other forms, the semantic contribution of the causative middle is less that of self-interest and more one of placing emphasis on the AGENT’s activity, backgrounding its effect on a specific PATIENT. Both aspects of the middle’s semantics — the self-interest and the activity reading — are quite in line with the cross-linguistic behaviour of what are called middle-markers in a wide range of languages, and fit nicely with Kemmer’s (1993) hypothesis that the middle is in general a marker of reduced semantic transitivity.

⁵ Note that here I am separating the causative middle from the valency neutral middle *-b*, which, although obviously cognate, has distinctive morphophonemic and morphosyntactic properties, and is less closely associated with the notion of self-interest than the causative middle. See also Watanabe (2003) and Dilts (2006) for similar proposals in Sliammon and Okanagan, respectively.

Table 9 shows several forms where the middle marker is added to a monovalent radical to form a bivalent intransitive stem:

<i>č'aʔab</i> 'dig for ⊗ (roots)'	(^o √ <i>č'aʔ</i> 'be dug up'; cf. <i>č'aʔad</i> 'dig ⊗ up')
<i>gʷəč'əb</i> 'seek ⊗ for self'	(^o √ <i>gʷəč'</i> 'be sought'; cf. <i>gʷəč'əd</i> 'look for ⊗')
<i>kʷədab</i> 'take ⊗ for self'	(√ <i>kʷəd</i> 'be held, be taken')
<i>tič'ib</i> 'cut ⊗ (cattails) for mats'	(√ <i>tič'</i> 'get cut with knife')
<i>λ'agʷəb</i> 'make ⊗ (mat)'	(^o √ <i>λ'akʷ</i> 'be stitched'; cf. <i>λ'agʷəd</i> 'stitch ⊗ (mat)')
<i>qədəb</i> 'have illicit sex with ⊗'	(^o √ <i>qəd</i> 'fornicate'; cf. <i>dxʷqəd</i> 'cuckhold ⊗')
<i>q'ilb</i> 'put ⊗ into own canoe' ⁶	(√ <i>q'il</i> 'be aboard')
<i>q'əlb</i> 'cook ⊗ for oneself'	(√ <i>q'əl</i> 'be cooked, be ripe')
<i>yəcəb</i> 'report on ⊗'	(^o √ <i>yəc</i> 'be reported'; cf. <i>yəcəd</i> 'report ⊗')
<i>yiq'ib</i> 'make ⊗ (baskets)'	(√ <i>yiq'</i> 'be worked into tight place')

Table 9: Bivalent intransitive stems formed with -b

2.5 Causative of activity -*alikʷ*

The suffix -*alikʷ* 'causative of activity [ACT]' — or, as it has been traditionally glossed, 'creative activity' (Hess 1976; Bates, Hess & Hilbert 1994; Bates & Hess 2003) — is an intransitive causative suffix which, when added to a monovalent base, creates a bivalent intransitive verb by adding an AGENT expressed as syntactic subject. The resultant verbs express an event in which the AGENT is engaged in an activity affecting a PATIENT or involving a THEME. As an intransitive causative, however, the causative of activity creates a stem that expresses the PATIENT/THEME as an oblique, rather than direct, object:

- (12) a. ʔuč'axʷ čəd
ʔu-č'axʷ čəd
PFV-clubbed 1SG.SUB
'I got hit [by a branch in the thicket]'

(Bates, Hess & Hilbert 1994: 69)

- b. λ'ubəxʷ čəʔ ʔuč'axʷalikʷ ʔə tiʔəʔ buʔqʷ
λ'ub=əxʷ čəʔ ʔu-č'axʷ-alikʷ ʔə tiʔəʔ buʔqʷ
well=now 1PL.SUB PFV-clubbed-ACT PR PROX duck
'we had better use [our paddles] as clubs against these ducks'

(Hess 2006: 76, line 810)

- c. c'əlalikʷ tsiʔiʔ λ'aλ'ac'apəd
c'əl-alikʷ tsiʔiʔ λ'aλ'ac'apəd
defeated-ACT DIST:FEM ant
'Ant wins'

(Hess 1995: 145, line 58)

- the radical *č'axʷ* 'be hit with a stick' in its bare form assigns the semantic role of PATIENT to its single argument
- the subject of the derived form is an AGENT and the PATIENT is expressed as an oblique object, as in (12b)
- an overt, non-oblique NP is interpreted as the subject rather than the object of an -*alikʷ* form (12b)

This is an interpretive property of what have traditionally been referred to as "agent-oriented stems" (e.g., Hess 1995).

In addition to changing the valency of its base, -*alikʷ* adds the notion of a repeated or temporally extended action (Bates & Hess 2003), frequently creating verbs for culturally important or routine activities:

<i>ʔabalikʷ</i> 'give ⊗ out as in potlatch'	(^o √ <i>ʔab</i> 'be extended'; cf. <i>ʔabəd</i> 'extend ⊗')
<i>ʔilalikʷ</i> 'interpret ⊗'	(√ <i>ʔil</i> 'sing')
<i>bəč'alikʷ</i> 'bet ⊗, wager with ⊗'	(√ <i>bəč'</i> 'be lying, be fallen from standing')
<i>caq'alikʷ</i> 'spear ⊗, impale ⊗'	(√ <i>caq'</i> 'be speared, be impaled')
<i>cilalikʷ</i> 'dish ⊗ (food)'	(√ <i>cil</i> 'be supported, be dished up')
<i>cilyialikʷ</i> 'dish up ⊗ (food) for ⊙'	(√ <i>cil</i> 'be supported, be dished up')
<i>c'əlalikʷ</i> 'defeat ⊗'	(^o √ <i>c'əl</i> 'be defeated'; cf. <i>c'əld</i> 'defeat ⊗')

⁶ This form is also attested as *q'iləb* when the middle suffix is in word-final position.

<i>c'ixalik^w</i> 'fry ⊗'	(^o √ <i>c'ix</i> 'be fried'; cf. <i>c'ixid</i> 'fry ⊗')
<i>c'salik^w</i> 'peck at ⊗'	(^o √ <i>c'as</i> 'be pecked'; cf. <i>c'asad</i> 'peck ⊗')
<i>č'a?alik^w</i> 'dig for ⊗ (edible roots)'	(^o √ <i>č'a?</i> 'be dug up'; cf. <i>č'a?ad</i> 'dig ⊗ up')
<i>č'axwalik^w</i> 'hit ⊗ with stick'	(√ <i>č'ax^w</i> 'be hit with a stick')
<i>č'ad'alik^w</i> 'stalk ⊗ (prey)'	(^o √ <i>č'ad^z</i> 'stalked'; cf. <i>č'ad'ad</i> 'sneak up on ⊗')
<i>d'ubalik^w</i> 'dance'	(^o √ <i>d'ub</i> 'be kicked'; cf. <i>d'ubud</i> 'kick ⊗')
<i>gəlk'alik^w</i> 'knit ⊗'	(√ <i>gəlk</i> 'be wound, be tangled')
<i>g^wəč'alik^w</i> 'habitually seek ⊗'	(^o √ <i>g^wəč^z</i> 'be sought'; cf. <i>g^wəč'ad</i> 'look for ⊗')
<i>g^wəlalalik^w</i> 'kill ⊗, slaughter ⊗'	(^o √ <i>g^wəlal</i> 'be hurt'; cf. <i>g^wəlal^d</i> 'kill ⊗')
<i>huyalik^w</i> 'make ⊗, create ⊗'	(√ <i>huy</i> 'be completed, be finished')
<i>k^wədalik^w</i> 'take ⊗ over and over'	(√ <i>k^wəd</i> 'be held, be taken')
<i>k'awalik^w</i> 'chew ⊗'	(^o √ <i>k'aw</i> 'be chewed'; cf. <i>k'awad</i> 'chew ⊗')
<i>k^wʔalik^w</i> 'serve ⊗ (liquid)'	(√ <i>k^wʔt</i> 'pouring out, spill out')
<i>ʔac'alik^w</i> 'fight fire'	(√ <i>ʔac</i> 'go out (fire)')
<i>λ'atəbalik^w</i> 'salt ⊗'	(√ <i>λ'atəb</i> 'be salty')
<i>p'ʔalik^w</i> 'save ⊗'	(^o √ <i>p'ʔ</i> 'be stored'; cf. <i>p'ʔad</i> 'store ⊗')
<i>qitalik^w</i> 'hang ⊗ (fish) up to dry'	(^o √ <i>qit</i> 'be hung'; cf. <i>qit'id</i> 'hang ⊗')
<i>šabalik^w</i> 'dry ⊗ (food)'	(√ <i>šab</i> 'be dry')
<i>tag^walik^w</i> 'buy ⊗'	(√ <i>tak^w</i> 'be bought')
<i>tsalik^w</i> 'hammer ⊗, pound ⊗'	(^o √ <i>ts</i> 'be punched' cf. <i>tasad</i> 'punch ⊗')
<i>tuχ^walik^w</i> 'stretch ⊗'	(^o √ <i>tuχ^w</i> 'be stretched')
<i>t'qalik^w</i> 'make bread; plaster'	(√ <i>t'q</i> 'be thick')
<i>χλ'alik^w</i> 'bite into ⊗'	(^o √ <i>χλ</i> 'be bitten'; cf. <i>χλ'ad</i> 'bite ⊗')
<i>x^wšalik^w</i> 'sow ⊗; give ⊗ at potlatch'	(^o √ <i>x^wš</i> 'be thrown'; cf. <i>x^wšad</i> 'throw ⊗')
<i>χ^wad'alik^w</i> 'slaughter ⊗'	(^o √ <i>χ^wad^z</i> 'be injured'; cf. <i>χ^wad'ad</i> 'punish ⊗')

Table 10: Stems formed with *-alik^w*

3 Applicative affixes

In contrast to causative affixes, applicatives add a non-agentive object to the valency of their bases. Lushootseed has four affixes that fit this definition:

- the allative applicative *-c/-s*
- three secondary suffixes — *-yi-* 'dative', *-bi-* 'middle applicative', and *-di-/i-* 'secondary suffix' — which combine with one of the other valency-increasers to add a new object to the valency of the stem

3.1 Allative applicative *-c/-s*

-c/-s 'allative applicative [ALTV]' adds a new argument to the valency of its base, most frequently a GOAL, which is realized as the direct object of the derived verb:

(13) a. <i>huy ʔəλ'ax^w tiʔə? čx^wəlu?</i>	b. <i>g^wəl ʔuʔəλ'cbuʔ əlg^wə? ...</i>
<i>huy ʔəλ'=ax^w tiʔə? čx^wəlu?</i>	<i>g^wəl ʔu=ʔəλ'-c-buʔ əlg^wə?</i>
SCONJ come=now PROX whale	then IRR=come-ALTV-1PL.OBJ PL
'and then Whale comes'	'then they will come for us'
[ML Mink and Tutyika I, line 106]	(Hess 2006: 72, line 712)

- the intransitive verb *ʔəλ'* (13a) becomes transitive in (13b)
- the new object is a direct object and can be realized as an object-suffix

(14) a. <i>ʔuʔəλ'cəb čəʔ</i>	b. <i>ʔuʔəλ'c ti sq^wəbay?</i>
<i>ʔu=ʔəλ'-c-əb čəʔ</i>	<i>ʔu-ʔəλ'-c ti sq^wəbay?</i>
IRR=come-ALTV-PASS 1PL.SUB	PFV=come-ALTV DEF dog
'we will be come after'	's/he came for the dog'
[ML Mink and Tutyika I, line 14]	(Hess 1995: 15, ex. 10c)

- this new object is subject to syntactic operations such as passivization
- when the verb takes an overt NP argument, this argument is interpreted as the direct object:

The allative applicative morpheme has two allomorphs. The [-c] allomorph is used with a small, idiosyncratic group of stems:

<i>?əλ'c</i> 'come after ⊗'	(√ <i>?əλ'</i> 'come')
<i>?əλ'cbid</i> 'come after ⊗'	(√ <i>?əλ'</i> 'come')
<i>?ig^wətaac</i> 'climb after ⊗'	(√ <i>?ig^wəta</i> 'climb tree') (Sk)
<i>?uχ^wc</i> 'go to ⊗'	(√ <i>?uχ^w</i> 'go')
<i>baliic</i> 'forget about ⊗'	(√ <i>bali</i> 'be forgetful')
<i>cuuc</i> 'speak to ⊗'	(√ <i>cut</i> 'speak')
<i>čubaac</i> 'go inland after ⊗'	(√ <i>čubə</i> 'go inland')
<i>day'ay'c</i> 'run out of ⊗'	(√ <i>day'</i> 'only')
<i>həd?iw'c</i> 'go inside after ⊗'	(√ <i>həd?iw'</i> 'be inside a house')
<i>k^wəλ'c</i> 'miss ⊗ (target)'	(^o √ <i>k^wəλ'</i> 'miss'; cf. <i>k^wəλ'g^wasbid</i> 'miss meeting')
<i>laχc</i> 'think of ⊗'	(√ <i>laχ</i> 'recall, remember')
<i>ləqc</i> 'listen to ⊗'	(√ <i>ləq</i> 'listen') (Sk)
<i>luuc</i> 'listen to ⊗'	(^o √ <i>lu</i> 'be heard'; cf. <i>luhəladil?</i> 'hear ⊗')
<i>q^wi?aac</i> 'call out to ⊗'	(√ <i>q^wi?ad</i> 'yell')
<i>šuuuc</i> 'look at ⊗'	(√ <i>šut</i> 'look around, gaze')
<i>tayc</i> 'come after ⊗ in raid'	(√ <i>tay</i> 'go raiding')

Table 11: Stems formed with -c

When attached to V-final stems, the [-c] allomorph triggers lengthening of the final vowel (e.g., *bali* 'be forgetful' > *baliic* 'forget about something', *?ig^wəta* 'climb tree' > *?ig^wətaac* 'climb after something'). If the final vowel is /ə/, it becomes /a/ (*čubə* 'go inland' > *čubaac* 'go inland after something'). For an idiosyncratic set of C-final stems, the allative applicative causes vowel-lengthening as well as syncope of the final consonant (*šut* 'see' > *šuuuc* 'look at', *q^wi?ad* 'yell' > *q^wi?aac* 'call out to').

The second allomorph, [-s], is found associated with a relatively larger group of stems, all of which end in /il/.

<i>?usis</i> 'dive after ⊗'	(√ <i>?usil</i> 'dive')
<i>c'ip'əlis</i> 'ignore ⊗'	(√ <i>c'ip'lil</i> 'shut eyes')
<i>g^wəcis</i> 'wade after ⊗'	(√ <i>g^wəcil</i> 'wade')
<i>g^wədis</i> 'sit down next to ⊗'	(√ <i>g^wədil</i> 'sit down')
<i>həli?is</i> 'live on ⊗'	(<i>həli?il</i> 'heal' from √ <i>həli?</i> 'be alive')
<i>hiwis</i> 'approach ⊗, go after ⊗'	(√ <i>hiwil</i> 'proceed')
<i>lis</i> 'go over to ⊗'	(√ <i>lil</i> 'be far away')
<i>talis</i> 'go ashore after ⊗'	(√ <i>talil</i> 'go ashore')
<i>tčis</i> 'arrive at ⊗'	(√ <i>tčil</i> 'arrive')
<i>qadils</i> 'come up behind ⊗'	(<i>qadil</i> 'get behind' from √ <i>qad</i> 'behind')
<i>q'ilag^wis</i> 'catch a ride with ⊗'	(<i>q'ilag^wil</i> 'get aboard' from √ <i>q'il</i> 'be aboard')
<i>q^wcag^wis</i> 'slide down after ⊗'	(<i>q^wcag^wil</i> 'slide down' from ^o √ <i>q^wc</i> 'slide, slip')
<i>təd^ɛis</i> 'go to bed with ⊗'	(√ <i>təd^ɛil</i> 'go to bed, lie in bed')
<i>təlawis</i> 'run after ⊗'	(√ <i>təlawil</i> 'run')
<i>tud^ɛis</i> 'bend over to get ⊗'	(√ <i>tud^ɛil</i> 'bend forward')
<i>x^wak^wis</i> 'get tired of ⊗'	(√ <i>x^wak^wil</i> 'be tired')
<i>x^wt'ag^wis</i> 'climb down after ⊗'	(<i>x^wt'ag^wil</i> 'climb down' from ^o √ <i>x^wit'</i> 'lowered')
<i>χaλ'is</i> 'defend from ⊗'	(√ <i>χaλ'il</i> 'argue')
<i>χ^wubis</i> 'be quiet about ⊗'	(√ <i>χ^wubil</i> 'be quiet')

Table 12: Stems formed with -s

In a few of these cases, the final sequence /il/ of the base is synchronically analyzable as either the inchoative suffix *-il* or the autonomous action suffix *-ag^wil* (which may itself be historically analyzable as containing the inchoative suffix).⁷ In the bulk of cases, however, the radical without *-il* seems to be unattested in any environment, although generally the meaning of stems

⁷ In addition to the forms found in Table 12, there is a form *sax^wəbis* 'run after something', which appears to be based on the unattested stem **sax^wəbil* (from √*sax^wəb* 'jump, run), and *qadis* 'approach something from behind', which seems to be based on **qadil* (√*qad* 'back up').

with *-il* are compatible with an etymological analysis that posits a historical root-plus-inchoative combination. Thus, diachronically, the distribution of the *-s* allomorph of the allative applicative may have been due to morphological conditioning by the presence of the inchoative suffix *-il*, although synchronically this seems to have been reduced to a phonological condition on the allomorphy of the allative applicative suffix.

3.2 Secondary suffixes

Secondary suffixes are affixes that combine with another valency-increaser, usually *-t* ‘internal causative’,⁸ to form a morphological complex that adds a direct object expressing some semantic role other than PATIENT. In total, Hess & Bates (2004) list four secondary suffixes — *-yi-*, *-bi-*, *-di-*, and *-i-*. Of these, only *-yi-* and *-bi-* appear to be productive and can be associated with unique and fairly consistent meanings; the other two appear to be confined to a few fossilized forms and to have meanings that overlap with those of the more productive secondary suffixes.

3.2.1 Dative applicative *-yi-*

The secondary suffix *-yi-* ‘dative applicative [DAT]’ combines with the internal causative suffix *-d* to create trivalent transitive verbs which express an AGENT as subject and a RECIPIENT or BENEFICIARY as direct object. When the morphological complex *-yi-d* is added to a monovalent intransitive base, the effect is an increase in valency of two, as in (15):

- (15) a. $\text{ʔuk}^w\text{əd ti ʔiʔk}^w\text{əlq}$
 $\text{ʔu-k}^w\text{əd ti ʔiʔ-k}^w\text{əlq}$
 PFV-taken DEF PRTV-other.things
 ‘some (not all) was taken’

(Bates, Hess & Hilbert 1994: 123)

- b. $\text{ʔuk}^w\text{ədyic ʔə ti ʔaʔx}$
 $\text{ʔu-k}^w\text{əd-yi-t-s ʔə ti ʔaʔx}$
 PFV-taken-DAT-ICS-1SG.OBJ PR DEF platter
 ‘s/he took the platter from me’

(Hess 1995: 42)

- c. $\text{ʔuk}^w\text{ədyitəb čəd ʔə tsi č'ač'as ʔə ti k}^w\text{at'aq}$
 $\text{ʔu-k}^w\text{əd-yi-t-əb čəd ʔə tsi č'ač'as}$
 PFV-taken-DAT-ICS-PASS 1SG.SUB PR DEF:FEM child

 $\text{ʔə ti k}^w\text{at'aq}$
 PR DEF mat
 ‘I had the mat taken from me by the girl’

(Hess 1995: 36, ex. 13c)

(15a) shows the monovalent radical *k^wəd* ‘be held, be taken’ which takes a THEME as its subject. When *-yi-d* is added to the radical, the verb becomes trivalent, as in (15b). The new semantic roles added to the radical are AGENT — the role normally added by the internal causative — and BENEFICIARY/MALEFICIARY. Of these two new semantic actants, the AGENT is expressed as the subject and the THEME is expressed as an oblique. The direct object is the BENEFICIARY, which is marked using the *s*-series of object-markers associated with the internal causative (Section 2.1). The direct object of verbs formed with *-yi-d* is a syntactically ordinary direct object and is amenable to syntactic operations such as passivization (15c). An overt, non-oblique NP appearing with a *-yi-d* form is interpreted as the direct object:

⁸ In fact, there is only one form in the textual corpus that contains a secondary suffix followed by a valency-increasing morpheme other than the internal causative:

- (i) $\text{g}^w\text{əl lələk}^w\text{əd tiʔiʔ ləcucilyialik}^w \text{ s}ʔ\text{əʔəd}$
 $\text{g}^w\text{əl lə-lək}^w\text{-əd tiʔiʔ ləcu-cil-yi-alik}^w \text{ s}ʔ\text{əʔəd}$
 then PRG-eat-ICS DIST PROG.STAT-dish.out-DAT-ACT food
 ‘and as he was going along, he was eating the food that was being dished up’

(Hess 1998: 63, line 76)

The *Lushootseed Dictionary* (Bates, Hess & Hilbert 1994: 230) also contains the form *tupyib* ‘pound something to prepare as food’. It is not clear to what extent these verbs are fossilized or if they represent derivational possibilities in the synchronic language.

- (16) ?ulək^wyid ti luλ' ?ə ti s?uladx^w
 ?u-lək^w-yi-d ti luλ' ?ə ti s?uladx^w
 PFV-eaten-DAT-ICS DEF old PR DEF salmon
 's/he ate the old man's salmon'

(Hess 1995: 36, ex. 14b)

Thus, despite being trivalent, dative applicatives form ordinary transitive clauses, realizing the third argument of the verb as an oblique.

A number of dative applicative stems formed on monovalent radicals are given in Table 13:

<i>?abyid</i> 'give ⊗ to ⊙'	(^o √?ab 'be extended'; cf. <i>?abəd</i> 'extend ⊗')
<i>?ayid</i> 'put ⊗ there for ⊙'	(√?a 'be there')
<i>?ilyid</i> 'sing ⊗ for ⊙'	(√?il 'sing')
<i>?ux^wyid</i> 'go in place of ⊗'	(?ux ^w 'go')
<i>biq^wyid</i> 'permit ⊗ to ⊙'	(^o √biq ^w 'loose'; cf. <i>biq^wid</i> 'loosen ⊗; allow ⊗')
<i>cilyid</i> 'serve ⊗ to ⊙'	(√cil 'be dished up')
<i>hudčupyid</i> 'put ⊗ into fire for ⊙'	(√hud 'burn' + -čup 'fire')
<i>hudyid</i> 'make a fire for ⊗'	(√hud 'burn')
<i>huyid</i> 'make ⊗ for ⊙'	(√huy 'be completed, be finished')
<i>k^wədyid</i> 'take ⊗ from ⊙'	(√k ^w əd 'be held, be taken')
<i>ləc'yid</i> 'step on ⊗ affecting ⊙'	(^o √ləc' 'come down on'; cf. <i>ləc'əd</i> 'step on ⊗')
<i>lək^wyid</i> 'eat ⊗ away from ⊙'	(^o √lək ^w 'eaten'; cf. <i>lək^wdx^w</i> 'manage to eat ⊗')
<i>łag^widyid</i> 'set out a mat for ⊗'	(<i>łag^wid</i> 'sleeping mat')
<i>łčilyid</i> 'arrive with ⊗ for ⊙'	(√łčil 'arrive')
<i>łilyid</i> 'give ⊗ (food) to ⊙'	(√łil 'make a gift of food')
<i>pq^wyid</i> 'break off a bit of ⊗ for ⊙'	(^o √pk ^w 'be broken off leaving a larger piece')
<i>sulayid</i> 'set ⊗ before ⊙'	(√sula 'be in the middle of a room') ⁹
<i>šədyid</i> 'set ⊗ aside for ⊙'	(^o √šəd 'be pressed'; cf. <i>šədəd</i> 'push ⊗')
<i>šqičyid</i> 'bind ⊗ into a pack for ⊙'	(^o √šq 'be wrapped, be tied' + -ič 'bundle')

Table 13: Stems formed with -yi-d on monovalent bases

A few of these forms have lexicalized meanings that are metaphorical or idiomatic (e.g., ^o√šəd 'be pressed' > *šədyid* 'set aside for', ^o√biq^w 'be loose' > *biq^wyid* 'grant to, permit'). Most notable in this regard is *?abyid* 'give to' (from ^o√?ab 'be extended'), which is the most textually frequent of the -yi-d forms. There are also three forms in the table which seem to be only bivalent rather than trivalent — *?ux^wyid* 'go in place of', *hudyid* 'make a fire for', and *łag^widyid* 'set out a mat for'. Of these, *hudyid* 'make a fire for' and *łag^widyid* 'set out a mat for' both have conventionalized THEMES ('wood' and 'mat', respectively) inherent in the semantics of the stem itself. These simply may not bear expression as an NP argument. Whether the overt use of an oblique THEME argument with these forms is possible or whether the absence of such forms in the corpus is merely the improbability of an appropriate discourse context for such an argument must remain an open question. The third bivalent stem, *?ux^wyid* 'go in place of' is based on a monovalent agent-oriented radical and the absence of a third syntactic argument is no doubt a consequence of the absence of a plausible semantic role that such an argument might express. It should be noted in all three cases, however, that the semantic role which is added by -yi-d is BENEFICIARY; this is consistent with its behaviour in the other verb forms.

In addition to appearing with monovalent intransitive radicals, -yi-d is also found associated with a few bivalent intransitive radicals in verbs such as *?uləšyid* 'gather something for someone' (√?uləš 'forage for something'), *?əy'dx^wyid* 'find something for someone' (√?əy'dx^w 'find something'), *haydx^wyid* 'find out about something for someone' (√haydx^w 'know something'), and *hiq^wəbyid* 'covet something of someone's' (√hiq^wəb 'covet something'). In these cases, although the net gain in valency is only one, the government pattern of the resulting verb is the same as when -yi-d is added to a monovalent intransitive radical:

- (17) a. ?u?uləš ti luλ' ?ə ti bəsq^w
 ?u-?uləš ti luλ' ?ə ti bəsq^w
 PFV-forage DEF old PR DEF crab
 'the old man foraged for crab'

(Hess 1995: 28, ex. 15b)

⁹ This radical can also mean 'be at the front of a theatre or auditorium'.

- b. λ' al' čad g^wəbəʔuləχyid tiʔəʔ c'ixc'ix ʔə k^wi sʔuladx^w
 λ' al' čad g^wə=bə=ʔuləχ-yi-d tiʔəʔ c'ixc'ix
 also 1SG.SUB SBJ=ADD=gather-DAT-ICS PROX fish.hawk

ʔə k^wi sʔuladx^w
 Pr REM salmon
 'I too can get salmon for Fish Hawk'

(Hess 1995: 153, line 54)

In forms like these, the internal causative portion of the *-yi-d* complex does not causativize the verb, but seems merely to indicate that the verb is transitive.¹⁰

A similar pattern is found when *-yi-d* is added to transitive stems formed with one of the valency-increasing causative morphemes:

- (18) a. x^wuyub
 x^wuyub
 be.sold
 'make a sale'

(Hess & Bates 2004: 178, ex. 14)

- b. ʔux^wuyutubš čəx^w
 ʔu-x^wuyu-tx^w-bš čəx^w
 PFV-be.sold-ECS-1SG.OBJ 2SG.SUB
 'you sold me'

(Bates, Hess & Hilbert 1994: 255)

- c. ʔux^wuyubtx^wyid čad tsi dʔibac
 ʔu-x^wuyub-tx^w-yi-d čad tsi d-ʔibac
 PFV-be.sold-ECS-DAT-ICS 1SG.SUB DEF:FEM 1SG.PO-grandchild
 'I sold it for my granddaughter'

(Bates, Hess & Hilbert 1994: 255)

Here, the PATIENT semantic role associated with a valency-increasing affix like the external causative in (18b) is no longer the direct object of the verb formed with *-yi-d* (18c), which expresses the BENEFICIARY in this role. When overt, the PATIENT is expressed as an oblique object, as in (19):

- (19) ʔəsčal k^wi g^wədəx^wlək^wdx^wyids tsiʔəʔ ʔalšs ʔə tiʔəʔ sʔəʔəds
 ʔəs-čal k^wi g^wə=dəx^w=lək^w-dx^w-yi-d=s tsiʔəʔ
 STAT-how REM SBJ=ADNM=eaten-ICS-DC-DAT-ICS=3PO PROX:FEM

ʔalš-s ʔə tiʔəʔ sʔəʔəds
 sibling-3PO PR PROX food-3PO
 'how could he eat his sister's food away from her?'

(Hess 1998: 56, line 6)

¹⁰ The same holds for *ʔuləχ* when combined with the internal causative suffix alone:

- (i) λ' uʔuχ^w čad čada λ' uʔuləχəd tiʔəʔ č'itulbix^w ʔal tiʔəʔ diʔəʔ sbadil
 λ' u=ʔuχ^w čad čada λ' u=ʔuləχ-əd tiʔəʔ č'itulbix^w
 HAB=go 1SG.SUB 1SG.COORD HAB=gather-ICS PROX grass

ʔal tiʔəʔ diʔəʔ sbadil
 PR PROX DEM mountain
 'I go and I gather this grass on the mountain'

(Bates, Hess & Hilbert 1994: 21)

The effect of the internal causative on this particular stem is that of a simple transitivizer. None of the other bivalent intransitive stems listed above combines with *-t* on its own.

Here, the oblique object of the verb *lək'wɔdxʷyid* ‘eat something away from someone, manage to get someone’s food and eat it’, *tíʔəʔ sʔəʔəds* ‘her food’, corresponds to the PATIENT/direct object of the plain transitive form *lək'wɔdxʷ* ‘mange to eat something’. Once again, the internal causative portion of the *-yi-d* complex seems not to function so much as a valency-increasing affix as it does as a marker of the transitivity of the clause

As these examples show, while the basic syntactic effect of *-yi-d* is to increase the valency of a verb stem, it may not increase it beyond the upper limit of three syntactic arguments. If the verb stem is monovalent intransitive, its valency is increased by two, as in (15); if the form is bivalent intransitive, its valency is increased by one and the stem is transitivized, as in (17); if the stem is already transitive, the valency is increased by one and the government pattern is altered so that what was expressed as the direct object of the transitive form becomes an oblique object of the *-yi-d* form, as in (19). Although the effect on the stems is different, the government pattern of the resulting verb is always the same — a trivalent monotransitive verb with a RECIPIENT/BENEFICIARY expressed as direct object and a PATIENT/THEME expressed as an oblique. A number of bivalent stems that take *-yi-d* are given in Table 14:

<i>ʔaladʔiʔlyid</i> ‘babysit ⊗ for ⊙’	(^o √ʔaladʔ ‘care for ⊗’ + <i>-iʔt</i> ‘child’)
<i>ʔəy'dxʷyid</i> ‘find ⊗ for ⊙’	(√ʔəy'dxʷ ‘find ⊗’)
<i>ʔuləxʷyid</i> ‘gather ⊗ for ⊙’	(√ʔuləxʷ ‘gather ⊗, forage for ⊗’)
<i>cildxʷyid</i> ‘serve ⊗ to ⊙’	(√cil ‘be dished up’ + <i>-dxʷ</i> ‘DC’)
<i>haydxʷyid</i> ‘find out about ⊗ for ⊙’	(^o √hay ‘be known’; cf. <i>haydxʷ</i> ‘know ⊗’)
<i>hiq'wəbyid</i> ‘covet ⊗ from ⊙’	(√hiq'wəb ‘covet ⊗, lust after ⊗’)
<i>huydxʷyid</i> ‘set up ⊗ for ⊙’	(√huy ‘be completed’ + <i>-dxʷ</i> ‘DC’)
<i>k'wədabyid</i> ‘make ⊗ captive’	(√k'wəd ‘be held’ + <i>-b</i> ‘CSM’)
<i>k'wuk'wcutyid</i> ‘cook ⊗ for ⊙’	(√k'wuk'wcut ‘cook ⊗’)
<i>lək'wɔdxʷyid</i> ‘manage to eat ⊗ of ⊙’s’	(^o √lək'w ‘be eaten’ + <i>-dxʷ</i> ‘DC’)
<i>łčiltxʷyid</i> ‘bring ⊗ for ⊙’	(√łčil ‘arrive’ + <i>-txʷ</i> ‘ECS’)
<i>łəgʷlyid</i> ‘leave ⊗ for ⊙’	(√łəgʷł ‘leave ⊗’)
<i>pusilyid</i> ‘throw ⊗ for ⊙’	(√pus ‘hit by ⊗ (missile)’ + <i>-il</i> ‘INCH’)
<i>qadadyid</i> ‘steal ⊗ for ⊙’	(√qada ‘steal ⊗’ + <i>-t</i> ‘ICS’)
<i>q'wuʔq'wadyid</i> ‘drink ⊗ (drink) of ⊙’s’	(√q'wuʔq'wa ‘have a drink’ + <i>-t</i> ‘ICS’)
<i>təx'txʷyid</i> ‘buy ⊗ for ⊙’	(√təx'txʷ ‘buy ⊗’ + <i>-txʷ</i> ‘ECS’)
<i>x'wuyubtxyid</i> ‘sell ⊗ for ⊙’	(^o √x'wuyub ‘be sold’ + <i>-txʷ</i> ‘ECS’)

Table 14: Stems formed with *-yi-d* on bivalent bases

The forms in this table are built on both bivalent intransitive and bivalent transitive bases. The bulk of the transitive bases contain one of the causative valency-increasing affixes (*-txʷ* ‘external causative’, *-dxʷ* ‘diminished control’, or *-b* ‘causative middle’), although there are two inherently transitive forms — √ʔəy'dxʷ ‘find something’ and √łəgʷł ‘leave something’. The first of these is clearly diachronically derived from a *-dxʷ* form, while the third, √łəgʷł, is one of the few inherently transitive radicals with no identifiable derivational history. In addition, there is *pusil* ‘throw something’ which is formed from the radical √pus ‘be hit by something (missile)’ and an idiosyncratic use of the inchoative suffix *-il*. The remainder of the *-yi-d* forms in Table 14 are based on bivalent intransitive radicals. It is also worth noting that the forms *qadadyid* ‘steal something for someone’ and *q'wuʔq'wadyid* ‘drink something of someone’s’ appear to be based on unattested internal causative stems **qadad* ‘steal something’ and **q'wuʔq'wad* ‘drink something’; in the case of *qadadyid*, there is an attested bivalent intransitive form √qada ‘steal something’.

3.2.2 Middle applicative *-bi-*

The secondary suffix *-bi-* ‘middle applicative [MAP]’ combines with the internal causative suffix *-t* to form transitive stems whose direct object expresses semantic actants in a variety of roles other than PATIENT. The range of semantic roles, and to a certain extent the syntactic effect of *-bi-d* on its stem, is much more variable than it is for *-yi-d*, and the over-arching semantic linkage amongst the different uses of this morphological complex seems to be a rather abstract notion of reduced semantic transitivity (Hopper & Thompson 1980), a notion identified by Kemmer (1993) as being the common thread linking middle forms across a wide range of languages. The parallel is strengthened by the overlap in semantic domain with the valency-neutral middle *-b* in Lushootseed and the cognate *-m* and *-mi* suffixes in other Salishan languages, elements which also cluster in their meanings around the prototypical meanings of the middle.

The feature of *-bi-d* that distinguishes it most clearly from the ordinary middle suffix is its syntactic effects on the stem to which it is attached. Because middles are generally associated with reduced semantic transitivity, their most common syntac-

tic effect cross-linguistically is to detransitivize —or intransitivize — a stem; *-bi-d*, however, most often has the opposite effect on syntactic transitivity, increasing the valency of a stem by adding a direct object:

- (20) a. ʔuʔup' čəd
 ʔu-ʔup' čəd
 PFV-be.seated.on.lap 1SG.SUB
 'I sat on a lap'

(Bates, Hess & Hilbert 1994: 22)

- b. $\text{ʔəsʔup'bid čəd tiʔit}^{11}$
 $\text{ʔəs-ʔup'-bi-d čəd tiʔit}$
 STAT-be.seated.on.lap-MAP-ICS 1SG.SUB DIST
 'I'm sitting on his lap'

(based on Bates, Hess & Hilbert 1994: 22)

When the object is first- or second person, it is expressed by object-markers:

- (21) $\text{ʔ'ub čəxʷ ʔuʂəbɪc čxʷa baʔac}$
 $\text{ʔ'ub čəxʷ ʔuʂəb-bi-t-s čxʷa baʔa-t-s}$
 well 2SG.SUB pity-MAP-ICS-1SG.OBJ 2SG.COORD cure-ICS-1SG.OBJ
 'you should take pity on me and perform a shaman cure for me'

(Hess 1998: 57, line 32)

Like all direct objects, the argument added to the verb stem by *-bi-d* can be promoted by passivization to become a subject:

- (22) a. $\text{hay xʷul'əxʷ əlgʷəʔ ʔəʂhiq'ʷabid tiʔəʔ qa ʔəsqʷat}$
 $\text{hay xʷul'=əxʷ əlgʷəʔ ʔəs-hiq'ʷab-bi-d tiʔəʔ qa}$
 CONJ only=now PL STAT-covet-MAP-ICS PROX much
 ʔəs-qʷat
 STAT-laid.out
 'well then they just coveted the many (dentalia) that were lying there'

(Hess 2006: 60, line 439)

- b. $\text{gʷəl ʔəʂhiq'ʷabitəb ʔə tiʔəʔ sbiaw tsiʔəʔ čəgʷas sʂaʔhus}$
 $\text{gʷəl ʔəs-hiq'ʷab-bi-t-əb ʔə tiʔəʔ sbiaw tsiʔəʔ}$
 then STAT-covet-MAP-ICS-PASS PR PROX coyote PROX:FEM
 čəgʷas sʂaʔhus
 wife sawbill
 'then this wife, Sawbill, was coveted by Coyote'

(Hess 2006: 22, line 12)

Non-oblique NP arguments with *-bi-d* stems are interpreted as direct objects:

- (23) $\text{xəcbidəxʷ tsiʔəʔ čəgʷas}$
 $\text{xəc-bi-d=əxʷ tsiʔəʔ čəgʷas-s}$
 afraid-MAP-ICS=now PROX:FEM wife-3PO
 'he is afraid of his wife now'

(Hess 2006: 6, line 78)

Thus, like all applicative objects, the object of stems formed with *-bi-d* is a morphosyntactically ordinary direct object.

The most consistent pattern found with *-bi-d* derivations is one where a monovalent intransitive base is transitivized by the addition of a second semantic actant, in Table 15:

ʔəʔdilutʔbid 'go to eat off of ⊗'
 ʔup'bid 'sit on ⊗'s lap'

(ʔəʔdilut) 'go out to eat'
 (ʔup') 'be seated on a lap'

¹¹ The verb form is given in the source as ʔəsp'up'bid , although the sub-entry heading is the expected form ʔup'bid , as is the verb form in the subsequent example. The form ʔup'bid is also found in Hess & Bates (2004: 180, ex. 23).

<i>g^wahbid</i> ‘accompany ⊗’	(√ <i>g^wah</i> ‘accompany, go along’)
<i>laqbid</i> ‘be behind ⊗’	(√ <i>laq</i> ‘be last’)
<i>laḫbid</i> ‘remember ⊗’s story’	(√ <i>laḫ</i> ‘recall, remember’)
<i>ṭawʔbid</i> ‘be new for ⊗’	(√ <i>ṭawʔ</i> ‘be new’)
<i>sax^wəbid</i> ‘run after ⊗ or up to ⊗’	(√ <i>sax^wəb</i> ‘jump, sprint’)
<i>sulabid</i> ‘in middle of room relative to ⊗’	(√ <i>sula</i> ‘be in the middle of a room’)
<i>ṣuṭbid</i> ‘expect ⊗, look out for ⊗’s arrival’	(√ <i>ṣuṭ</i> ‘look around, gaze’)
<i>təlčbid</i> ‘miss ⊗ (throwing)’	(√ <i>təlč</i> ‘be wide of mark’)
<i>tʔʔabid</i> ‘put stickum on ⊗’	(√ <i>tʔʔ</i> ‘be patched’)
<i>x^wak^wilbid</i> ‘become disaffected with ⊗’	(√ <i>x^wak^wil</i> ‘be tired’)
<i>ḫəčbid</i> ‘intend ⊗’	(√ <i>ḫəč</i> ‘think, feel, use one’s mind’)
<i>ḫ^walʔbid</i> ‘be unable to manage ⊗’,	(√ <i>ḫ^walʔ</i> ‘be unable, fail, lose’)
<i>wačbid</i> ‘watch ⊗’	(√ <i>wač</i> ‘keep watch’)
<i>yayusbid</i> ‘work on ⊗’	(√ <i>yayus</i> ‘do work’)
<i>yəyəhubid</i> ‘tell ⊗ a traditional story’	(<i>yəyəhub</i> ‘tell a traditional story’)

Table 15: Applicative uses of -bi-d

As noted earlier, the specific semantic roles played by the new actants vary quite a bit from verb to verb. In several cases, the new role seems to be locative (e.g., *ṭupʔbid* ‘sit on someone’s lap’, *sulabid* ‘be in the middle of a room relative to something’) or directional (*sax^wəbid* ‘run after something or up to something’), whereas in others -bi-d seems simply to add whatever kind of additional role might plausibly be associated with a particular type of event. An interesting contrast is found between the forms *laxdx^w* ‘remember something’ and *laḫbid* ‘remember someone’s story, remember the whole situation regarding someone’, where the difference seems to be one of thinking specifically about a person versus recalling not so much that person directly as a set of events surrounding the individual. The common thread running through all of these forms is that the -bi-d object is not directly affected by the action in the way that PATIENT would be — in other words, the interaction between the AGENT and the UNDERGOER/ENDPOINT of the event is less semantically transitive than the typical interaction between an AGENT and a PATIENT, where the PATIENT undergoes some internal change of state.

To a certain extent the less-direct interaction between AGENT and ENDPOINT found with the middle applicative parallels in some ways the less-direct interaction between the AGENT and the GOAL in allative applicative constructions. Two of the radicals in Table 15 have both a -bi-d and a -c form. One of these is √*ṣuṭ* ‘look around, gaze’, which is the base for *ṣuṭbid* ‘keep an eye out for someone’s arrival’ and *suuc* ‘look at something’. The contrast in the semantic roles of the objects in these two forms is fairly clear: in the allative applicative form the EXPERIENCER’s gaze is directed towards an object which is present and can serve as a specific locus on which his/her attention is focused (i.e., a metaphorical GOAL for one’s attention), while in the middle applicative the potential PERCEPT is not present and the EXPERIENCER is not (yet) interacting with it. So the distinction here is both one of difference in semantic role (GOAL vs. non-GOAL) and in semantic transitivity, the -bi-d form being much lower on that particular scale. The second stem, *x^wak^wilbid* ‘become disaffected with something, tire of something due to lack of enthusiasm or energy’, contrasts with *x^wak^wis* ‘become fed up with something tiresome’, formed from the radical √*x^wak^wil* ‘be tired’ and the allative applicative. The distinction here seems to be a distinction in the locus of the impetus of the event: in the -bi-d form the source of the feeling of disaffection is internal, whereas in the allative form the impetus comes from the nature of the STIMULUS. While this is not easily characterized in terms of a distinction in semantic transitivity, it is consistent with the characterization of -bi-d as a middle, given that middles cross-linguistically are associated with the interests of the AGENT/EXPERIENCER/subject and are frequently used to express events in which the impetus for an event is internal to the ACTOR.

Reduced semantic transitivity in the form of the lack of direct-affectedness of the object by the subject in -bi-d constructions is seen quite clearly in a rather large group of stems in which the semantic role of the applicative object is that of MOTIVE:

<i>ṭuk^wuk^wbid</i> ‘make fun of ⊗’	(√ <i>ṭuk^wuk^w</i> ‘play, have fun’)
<i>ṭuṣəbid</i> ‘feel pity for ⊗’	(°√ <i>ṭuṣəb</i> ‘feel pity’)
<i>cʔadʔaxḫbid</i> ‘be bothered by ⊗’	(°√ <i>cʔadʔaxḫ</i> ‘annoyed’; cf. <i>cʔadʔaxḫ^w</i> ‘bother ⊗’)
<i>cʔipʔlilbid</i> ‘shut eyes not to see ⊗’	(√ <i>cʔipʔlil</i> ‘shut eyes’)
<i>dx^wcutəbid</i> ‘catch on to ⊗’	(<i>dx^wcutəb</i> ‘think something’ from √ <i>cut</i> ‘speak’)
<i>dʔaλʔbid</i> ‘be confused by ⊗’	(√ <i>dʔaλʔ</i> ‘be confused’)
<i>dʔaqəbid</i> ‘mourn for ⊗’	(°√ <i>dʔaq</i> ‘be in mourning’; cf. <i>dʔaqad</i> ‘mourn ⊗’)
<i>hiitbid</i> ‘be happy about ⊗’	(√ <i>hiit</i> ‘be happy’)
<i>juʔilbid</i> ‘be happy for ⊗’	(°√ <i>juʔ</i> ‘be glad’ + -il ‘inchoative’)
<i>pitəbid</i> ‘pay attention to ⊗’	(√ <i>pitəb</i> ‘pay attention, be aware’)

<i>q'albid</i> 'be fooled by ⊗'	(°√ <i>q'al</i> 'be fooled'; cf. <i>q'alad</i> 'fool ⊗')
<i>ḡayəbid</i> 'laugh at ⊗'	(√ <i>ḡayəb</i> 'laugh')
<i>ḡəcbid</i> 'fear ⊗'	(√ <i>ḡəc</i> 'be afraid')
<i>ḡiḡibid</i> 'be ashamed of ⊗'	(√ <i>ḡiḡi</i> 'be ashamed')
<i>ḡʷaqʷbid</i> 'be concerned about ⊗'	(√ <i>ḡʷaqʷ</i> 'be worried, be preoccupied')
<i>yabukʷbid</i> 'fight over ⊗'	(√ <i>yabukʷ</i> '(to) fight')

Table 16: Applicative stems formed with *-bi-d* expressing motive

The majority of the verbs in Table 16 are based on radicals expressing mental states or emotions, the applicative object being the STIMULUS or MOTIVE for the experience. Two of the verbs — *c'ip'libid* 'shut eyes to avoid seeing something' and *yabukʷbid* 'fight over something' — are based on radicals expressing more concrete actions; in both cases, the applicative objects are clearly MOTIVES for the event. In no case is the actant expressed by the object of any of these verbs necessarily affected by the actions performed or the emotions experienced by the ACTOR.

A third set of *-bi-d* stems is formed in combination with lexical suffixes. Several of these are given in Table 17:

<i>c'ic'əyikʷalusbid</i> 'wink at ⊗'	(°√ <i>c'ic'əyikʷ</i> 'wink' + <i>-alus</i> 'eye')
<i>dʷalqʷusbid</i> 'look over shoulder at ⊗'	(√ <i>dʷal</i> 'present other side' + <i>-us</i> 'face')
<i>dʷələḡadbid</i> 'visit ⊗'	(√ <i>dʷal</i> 'present other side' + <i>-aḡad</i> 'side')
<i>dʷəlulčbid</i> 'turn towards ⊗'	(√ <i>dʷal</i> 'present other side' + <i>-ulč</i> 'belly')
<i>ləqaladi?bid</i> 'overhear ⊗' ¹² (Sk)	(√ <i>ləq</i> 'listen' + <i>-al-adi?</i> 'ear')
<i>lə?ači?bid</i> 'touch ⊗ with hand'	(√ <i>lə?</i> 'arrive at place' + <i>-ači?</i> 'hand')
<i>lədəy?lucidbid</i> 'address ⊗ as woman' ¹³	(√ <i>lədəy?</i> 'woman' + <i>-l-ucid</i> 'mouth')
<i>tubšlucidbid</i> 'address ⊗ as man'	(√ <i>tubš</i> 'man' + <i>-l-ucid</i> 'mouth')
<i>xʷəbaličbid</i> 'toss ⊗ (pack) onto own back'	(√ <i>xʷəb</i> 'toss' + <i>-alič</i> 'bundle')
<i>ḡʷil'alcbid</i> 'lose ⊗'	(√ <i>ḡʷil</i> 'be lost' + <i>-alc</i> 'product')
<i>yələci?bid</i> 'use both hands on ⊗'	(°√ <i>yəl</i> 'pair' + <i>-ači?</i> 'hand')

Table 17: Stems formed with *-bi-d* and lexical suffixes

As with the verbs in the earlier sets, the stems here take a non-PATIENT object — one which is not directly affected by the action of the AGENT by undergoing an internal change of state — and the specific roles played by the objects are rather diverse. These range from PERCEPT (*ləqaladi?bid* 'overhear something') to DIRECTION/GOAL (*c'ic'əyikʷalusbid* 'wink at something', *dʷələḡadbid* 'visit someone'), HEARER (*lədəy?lucidbid* 'address someone as woman'), or various types of THEME (*lə?ači?bid* 'touch something with hand', *xʷəbaličbid* 'toss something (pack) onto own back', *ḡʷil'alcbid* 'lose something'). Hess & Bates (2004) point out that in these constructions the lexical suffix expresses a bodypart playing an instrument-like role in the event. Verbs expressing action directed towards or involving parts of an AGENT's body are commonly middle forms across languages (Kemmer 1993), and the lowered affectedness of the object (and, hence, the reduced semantic transitivity of the event) is typical of middle semantics.

There is at least one verb form in which *-bi-d*, like *-yi-d*, seems to increase the valency of its base by two rather than by one — *saxʷəbid* 'run away with something of someone's' (see the homophonous form *saxʷəbid* 'run after something or up to something' in Table 15):

(24) diłəxʷ sḡaab ʔə tsiʔə? sładəy? ʔusaxʷəbitəb ʔə tiʔə? tubədaʔs
 diłəxʷ s=ḡaab ʔə tsiʔə? sładəy? ʔu-saxʷəb-bi-t-əb
 FOC=now NM=cry PR PROX:FEM woman PFV-run-MAP-PASS

ʔə tiʔə? tu=bədaʔ-s
 PR PROX PAST=offspring-3po

'it is thus that the woman whose child was run away with is crying'

[HM Star Child, line 59]

Here, the verb form in question is in the passive, contained inside a subject-centred relative clause modifying *sładəy?* 'woman'. The subject of the passive is the MALEFICIARY, corresponding to the direct object of the active form, while the THEME, *tiʔə? tubədaʔs* 'her child' (lit. 'her former/ex-child') is realized as an oblique object, following the regular pattern for

¹² Also *ləqaladi?bid*.

¹³ Also *sładəy?lucidbid*.

derivations with *-yi-d*. Indeed, given the semantic role assigned to the object, we might have expected the form to be **sax^wabyid*; however, this form is unattested.

Also like *-yi-d*, *-bi-d* combines with a small number of bivalent bases whose valency remains unchanged:

<i>ʔəλ'cbid</i> ‘come after ⊗’	(√ʔəλ’ ‘come’ + -c ‘ALTV’)
<i>hiq^wəbid</i> ‘lust after ⊗’	(√hiq ^w əb ‘lust after ⊗’)
<i>k^wədabid</i> ‘take ⊗ captive’	(<i>k^wədab</i> ‘capture ⊗’ from √ <i>k^wəd</i> ‘be taken’)
<i>təg^wəlbid</i> ‘leave ⊗ behind’	(√təg ^w ‘leave ⊗’)
<i>qadabid</i> ‘steal ⊗’	(√qadaʔ ‘steal ⊗’)
<i>q^wuʔbid</i> ‘be together with ⊗’	(√q ^w uʔ ‘be together with ⊗’)

Table 18: Valency-neutral uses of *-bi-d*

In four of these cases (*hiq^wəbid* ‘lust after someone’, *k^wədabid* ‘take someone captive’, *qadabid* ‘steal something’, *q^wuʔbid* ‘be together with someone’), *-bi-d* combines with a bivalent intransitive stem to create a transitive verb, and so acts merely as a syntactic transitivizer. In the remaining two instances (*ʔəλ'cbid* ‘come after someone’, *təg^wəlbid* ‘leave someone behind, leave someone’s presence’), *-bi-d* combines with a transitive stem without affecting its valency or government pattern. The glosses given for the *-bi-d* forms and their bases are significantly different in only two cases — *k^wədabid* ‘take someone captive’ and *təg^wəlbid* ‘leave someone behind, leave someone’s presence’. In the remainder of the examples, the two forms seem to be nearly synonymous; however, in most of these, the *-bi-d* stems take objects that are human — that is ‘someone’ rather than ‘something’. The bulk of these verbs express actions (e.g., ‘lust after someone’, ‘be together with someone’) that most naturally have human endpoints, and even those that do not seem to require a human object for semantic reasons, such as *qadabid* ‘steal something’, have these exclusively in their textual attestations:

(25) *huy, yəcəbax^w ʔə tiʔəʔ sqadabitəbs ʔə tsiʔəʔ sx^wəyuq^w tiʔiʔ wiw^wsu*
huy yəc-əb=ax^w ʔə tiʔəʔ s=qada-bi-t-əb=s ʔə
 SCONJ reported-MD=now PR PROX NM=steal-SS-ICS-PASS=3PO PR

tsiʔəʔ sx^wəyuq^w tiʔiʔ wiw^wsu
 PROX Basket.Ogress DIST children

‘he told about the stealing of the children by the Basket Ogress’

[ML Basket Ogress, line 54]

In this sentence, the human NP *tiʔiʔ wiw^wsu* ‘those children’ is the subject of the passive form of the verb, thereby corresponding to the direct object of the active form. Although the number of textual attestations of all of the *-bi-d* forms in Table 18 is limited, they all seem to involve human objects and the semantic roles played by the objects of these forms is consistent with other uses of *-bi-d*: they are not canonically PATIENT-like in that the semantic ENDPOINTS of the events do not undergo any internal change of state. Nevertheless, it should be noted that the bivalent bases for these *-bi-d* forms have the same glosses, and in at least some cases their objects can also be human:

(26) a. *x^wiʔ k^w adsʔəλ'cbuʔ*
x^wiʔ k^wi ad=s=ʔəλ'-c-buʔ
 NEG REM 2SG.PO=NМ=come-ALTV-1PL.OBJ
 ‘don’t come to us’

(Hess 2006: 32, line 263)

b. ... *tsiʔəʔ bədaʔs səshiq^wəbs*
tsiʔəʔ bədaʔ-s s=ʔəs-hiq^wəb=s
 PROX:FEM offspring-3PO NM=STAT-lust.for=3PO
 ‘... his daughter after whom he lusted’

(Hess 1998: 95, line 131)

Thus, it seems that teasing out whatever semantic distinctions there are between the pairs of verb forms in Table 18 will depend on uncovering further textual attestations; nevertheless, the middle applicative forms themselves — transitive verbs with a non-PATIENT object — are entirely typical of *-bi-d* derivations.

In a few other stems, *-bi-d* seems to act as a causative, adding an AGENT/subject to a monovalent radical rather than adding an object:

ʔadʔqbid ‘meet ⊗’ (°√ʔadʔq ‘be met’; cf. *ʔadʔqdx^w* ‘happen to meet ⊗’)

<i>čəgʷasbid</i> ‘take ⊗ as wife’	(√ <i>čəgʷas</i> ‘wife’)
<i>kʷədbid</i> ‘steal from ⊗’	(√ <i>kʷəd</i> ‘be held, be taken’)
<i>pʷayəqbid</i> ‘hew ⊗, carve ⊗’	(√ <i>pʷayəq</i> ‘carve canoe’)
<i>qəlbidbid</i> ‘discard ⊗’	(<i>qəlbid</i> ‘garbage’ from √ <i>qəl</i> ‘bad’ + <i>-bid</i> ‘instrument’)
<i>suxʷtəbid</i> ‘recognize ⊗’	(°√ <i>suxʷt</i> ‘be recognized’; cf. <i>suxʷtəš</i> ‘recognize ⊗’)
<i>yəcbid</i> ‘tell about ⊗’	(°√ <i>yəc</i> ‘be reported’; cf. <i>yəcəd</i> ‘report ⊗’)

Table 19: Causativizing uses of *-bi-d*

Although the syntactic effect of *-bi-d* on its base in these forms resembles the effects of a causative morpheme such as *-t*, *-txʷ*, or *-dxʷ*, the true causatives create verbs that express events in which an AGENT acts upon a PATIENT or some other semantic actant in a PATIENT-like semantic role. With the exception of *pʷayəqbid* ‘hew something, carve something’,¹⁴ the objects of the *-bi-d* forms in Table 19 are non-PATIENTS and do not undergo an internal change of state as a result of the AGENT’s actions: instead, the change experienced by the object of such verbs seems to reside more generally in its relationship to the AGENT (*čəgʷasbid* ‘take someone as wife’, *qəlbidbid* ‘discard something’ [lit. ‘cause something to be refuse to one’]) or as a point of reference — literal (*?adʷqbid* ‘meet someone’) or figurative (*kʷədbid* ‘steal from someone’) — for the AGENT’s action. The reduced semantic transitivity of such forms is clear. The fact that *-bi-d* adds an AGENT/subject in these forms rather than a non-PATIENT object, as it does more regularly, may have to do with the nature of the radicals, which are (with the exception of *čəgʷasbid* ‘take someone as wife’ and *qəlbidbid* ‘discard something’, which are based on nouns) “patient-oriented” in the sense that they express states that are the outcome of events involving the interaction of two or more participants, and express the ENDPOINT of the event as their syntactic subject. However, given the relative scarcity of such forms, it seems likely that this is only a diachronic or a post-hoc explanation, and the forms in Table 19 will have to be treated as lexicalized uses of what is otherwise an applicative morpheme.

The secondary suffix sequence *-bi-d* also appears in at least four forms following another valency-increasing affix — specifically, the allative applicative. These forms are given in Table 20:

<i>lčisbid</i> ‘visit ⊗ and bother them’	(<i>lčis</i> ‘arrive at ⊗’ from √ <i>lčil</i> ‘arrive’)
<i>šuučbid</i> ‘keep an eye out for ⊗’	(<i>šuuč</i> ‘look at ⊗’ from √ <i>šut</i> ‘look around, gaze’)
<i>tədʷisbid</i> ‘have sex with ⊗’	(<i>tədʷis</i> ‘go to bed with ⊗’ from √ <i>tədʷil</i> ‘lie down’)
<i>xʷakʷisbid</i> ‘tire of ⊗ (person)’	(<i>xʷakʷis</i> ‘tire of ⊗’ based on √ <i>xʷakʷil</i> ‘be tired’)

Table 20: Stems formed with *-bi-d* and the allative applicative

In these stems, the affixation of the middle applicative has no effect on the syntactic valency of its base, nor does it have any great effect on the semantic role of the applicative object. Its major effect is to modify the event expressed by the allative stems in more subtle ways. In one of these cases, *xʷakʷisbid* ‘tire of someone’, *-bi-d* seems to indicate that the applicative object is animate or human (cf. some of the valency-neutral forms in Table 18 above). This may also be the case for *šuučbid* ‘keep an eye out for someone’, although the few attested examples of this form (all of which do have human objects) make it difficult to ascertain if there is any other semantic distinction between this and the plain allative form. The remaining two verbs, *lčisbid* ‘visit someone and inconvenience them’ and *tədʷisbid* ‘have sex with someone’ also necessarily have human objects, but differ in other — rather idiosyncratic ways — from their allative forms. Clearly, judged by the unusual syntactic and semantic effects of *-bi-d* in these forms, the stems in Table 20 are lexicalized forms and, although they are not entirely out of step with more transparent middle applicatives, they can not be treated as synchronically compositional forms.

Not unexpectedly, there are a number of stems that appear to contain *-bi-d* but are not synchronically transparent or analyzable. Two of these are *qʷitbid* ‘store something (food)’ (apparently based on an otherwise unattested radical *√*qʷit* ‘be stored’), *pəkʷwibid* ‘snatch something’ (based on *√*pəkʷwib* ‘snatch something’), and *yičəbid* ‘observe something’ (based on *√*yičəb* ‘observe’). Among the idiomatic forms are *qʷicʷbid* ‘be unable to do something’ (from √*qʷic* ‘be indifferent, be lazy about’), *qʷuʷbid* ‘mouth waters for something’ (from the nominal radical √*qʷuʷ* ‘water’), and *šʷilʷalcbid* ‘lose something’ (√*šʷilʷ* ‘be lost’ + *-alc* ‘productive’).

3.2.3 Other secondary suffixes *-di-*, *-i-*

In addition to *-yi-d* and *-bi-d*, there are two more secondary suffix complexes that can act as applicatives. One of these, *-di-d*, appears as part of four stems, given in Table 21:

¹⁴ Thom Hess (p.c.) suggests that the exceptional nature of *pʷayəqbid* ‘hew something, carve something’ may stem from the involvement of one’s spirit power in the carving of a canoe, *-bi-* indicating a reduced semantic transitivity that comes either from the idea that the AGENT is acting indirectly through an intermediary, or that the primary interaction is between the carver and the spirit-power, and the product of the interaction is construed as less directly involved than a prototypical PATIENT.

<i>dx^wqədīd</i> ‘sleep with ⊗ (spouse) of ⊙’	(<i>dx^w</i> ‘contained’ + ^o <i>√qəd</i> ‘fornicate’)
<i>punishdid</i> ‘punish ⊗’	(Eng. <i>punish</i>)
<i>qadadid</i> ‘steal ⊗ from ⊙’	(^o <i>√qada?</i> ‘steal ⊗’)
<i>q^wu?q^wadid</i> ‘drink ⊗’	(^o <i>√q^wu?q^wa</i> ‘have a drink’)

Table 21: Stems formed with *-di-d*

Even in this small set of verbs, there is a great deal of variation in the effects of *-di-d* on the valency and government pattern of the base to which it is attached. In two of the cases, *qadadid* ‘steal something from someone’ and *q^wu?q^wadid* ‘drink something’, the secondary suffix complex has a clearly applicative effect, adding a direct object to the clause. As noted by Hess & Bates (2004), however, the objects of *-di-d* forms do not consistently express a particular semantic role. The object of *q^wu?q^wadid* ‘drink something’ is clearly a PATIENT, at least to the extent that a liquid undergoes an internal change of state when it is drunk (otherwise, it is a THEME), whereas the direct object of *qadadid* ‘steal something from someone’ is a MALEFICIARY. Hess & Bates (2004) point out that the latter form co-exists with a *-yi-d* stem based on the same radical:

- (27) a. ?uqadaditəb čəd ?ə ti dsduuk^w
 ?u–qada–dī–t–əb čəd ?ə ti d–sduuk^w
 PFV–steal–SS–ICS–PASS 1SG.SUB PR DEF 1SG.PO–knife
 ‘I had my knife stolen’

(Bates, Hess & Hilbert 1994: 172)

- b. ?uqadadyitəb ti luχ^ʔ
 ?u–qada–d–yi–t–əb ti luχ^ʔ
 PFV–steal–ICS–DAT–PASS DEF old
 ‘the old man was stolen from’

(Bates, Hess & Hilbert 1994: 173)

The same verb form in (27b) also appears in examples glossed ‘steal for someone’, whereas the *-di-d* form in (27a) has only the gloss ‘steal from someone’, leading to the conclusion that *-yi-d* is more closely associated with the BENEFICIARY/MALEFICIARY semantic role whereas *-di-d* may be (like *-bi-d*) more an indicator of a less-specific non-PATIENT role which is interpreted as MALEFICIARY here because of the nature of the event (an implicit third semantic role in a theft being a victim). However, it should be noted that the form *qadadyid* appears to be based on an unattested stem **qadad*, and so has a more complicated derivational history than most *-yi-d* forms. Thus, the co-existence of *qadadid* and *qadadyid* may have more to do with historical development than with a consistent semantic contrast between the two secondary suffixes.

The remaining two forms are even less helpful in sorting out the meaning and syntactic behaviour of *-di-d*. In the case of *punishdid* ‘punish someone’, the precise effects of *-di-d* on its base are hard to pinpoint because the “radical” *punish* is an English borrowing that would not normally be used on its own in the language and so is of indeterminate valency (for Lushootseed speakers). The verb *dx^wqədīd* ‘have sex with someone’s spouse’ is trivalent rather than monovalent, as shown in (28a), and is based on a radical that otherwise only appears with the middle suffix *-b*, as in (28b):

- (28) a. diʔ əw’ə hig^wəx^w ?udx^wqədīdəx^w tiʔə? sʔuʂəbābdx^w sbəq’wə? ?ə tsiʔə? čəg^was x^wuʔx^wəy?
 diʔ əw’ə hig^wəx^w ?u–dx^w–qəd–dī–d=əx^w tiʔə?
 FOC PTCL big=now PFV–CTD–fornicate–SS–ICS=now PROX

sʔuʂəbābdx^w sbəq’wə? ?ə tsiʔə? čəg^was–s x^wuʔx^wəy?
 unfortunate heron PR PROX:FEM wife–3PO helldiver
 ‘indeed, it is he who cuckolded poor Heron with his wife, Helldiver’

(Hess 2006: 14, line 77)

- b. ?uqədəb əw’ə ?ə tiʔə? cədiʔ sč’ətχ tiʔə? tushuy ?ə tsiʔə? x^wuʔx^wəy?
 ?u–qəd–əb əw’ə ?ə tiʔə? cədiʔ sč’ətχ tiʔə?
 PFV–fornicate–MD PTCL PR PROX he kingfisher PROX

tu=s=huy ?ə tsiʔə? x^wuʔx^wəy?
 PAST=NM=do PR PROX:FEM helldiver
 ‘what Helldiver did [was] have sex with Kingfisher’

(Hess 2006: 21, line 238)

Once again, attributing a specific effect of *-di-d* on its base in this form is rather difficult as the radical otherwise is attested only as part of a middle form — possibly a causative middle, given that the verb *qadab* is bivalent. This might lead us to surmise that the radical itself is more amenable to a patient-oriented gloss rather than the agent-oriented gloss ‘fornicate’. This would make *-di-d* more like *-yi-d* both semantically and syntactically, as it both causativizes the radical — adding an AGENT — and acts as an applicative, adding a MALEFICIARY. Nevertheless, with only four forms containing *-di-d*, little more can be said of it than that it is a historical relic, probably a remnant of an older secondary suffix used in the formation of some kind of applicative, and whose effects on a particular base are today essentially idiosyncratic.

Hess & Bates (2004) also point to a fourth secondary suffix complex, *-i-d*, which is most robustly associated with lexical suffixes. A number of such forms is given in Table 22:

<i>ʔabucidid</i> ‘bring ⊗ lunch’	(^o √ʔab ‘be extended’ + <i>-ucid</i> ‘mouth’)
<i>čʔalpaciʔid</i> ‘twist ⊗’s wrist’	(√čʔalp ‘sprain, turn’ + <i>ačiʔ</i> ‘hand’)
<i>dx^wcaqʔaxadid</i> ‘spear ⊗ in the side’	(√caqʔ ‘be speared’ + <i>-axad</i> ‘side’)
<i>dx^wpuhig^wadid</i> ‘blow on ⊗’	(^o √puʔ ‘be blown on’ + <i>-ig^wad</i> ‘body’) ¹⁵
<i>dx^wʔəqʔyaʔadid</i> ‘open ⊗ (door)’	(^o √ʔəqʔ ^w ‘be open’ + <i>-y-axad</i> ‘side’)
<i>k^wadaʔadid</i> ‘take ⊗ by the arm’	(√k ^w əd ‘be held, be taken’ + <i>-axad</i> ‘arm’)
<i>laxšadid</i> ‘light ⊗’s way’	(√lax ‘be light, be bright’ + <i>-šad</i> ‘lower leg’)
<i>λʔalšadid</i> ‘put ⊗’s shoes on him’	(√λʔal ‘put ⊗ on’ + <i>-šad</i> ‘lower leg’)
<i>tičʔšadid</i> ‘amputate ⊗’s leg’	(√tičʔ ‘get cut with knife’ + <i>-šad</i> ‘lower leg’)
<i>tqʔaʔadid</i> ‘slap ⊗ in mouth’	(√tqʔ ‘slap’ + <i>-aʔad</i> ‘mouthpart’)
<i>xəqšadid</i> ‘bind legs of ⊗’	(^o √xq ‘be wrapped, be tied’ + <i>-šad</i> ‘lower leg’)

Table 22: Stems formed with a lexical suffix and *-i-d*

With these verbs, however, the effect of *-i-d* is not applicative but is instead causative, adding an AGENT/subject to its base rather than adding an object. Consider the examples in (29):

- (29) a. ʔucaqʔ čəd ʔə tiʔəʔ sʔədiʔac
 ʔu-caqʔ čəd ʔə tiʔəʔ sʔədiʔac
 PFV-be.speared 1SG.SUB PR PROX devil’s.club
 ‘I got speared by the Devil’s Club’

(Bates, Hess & Hilbert 1994: 43)

- b. caqʔatəbəx^w ʔə tiʔəʔ caadiʔ tiʔiʔ ʔucutəb ʔə tudiʔ luʔ sx^wiʔx^wiʔs əlg^wəʔ
 caqʔa-t-əb=əx^w ʔə tiʔəʔ caadiʔ tiʔiʔ
 speared-ICS-PASS=now PR PROX they DIST

ʔu-cut-t-əb ʔə tudiʔ luʔ sx^wiʔx^wiʔ-s əlg^wəʔ
 PFV-speak-ICS-PASS PR yonder old game-3PO PL
 ‘what was said by that old man to be their game was speared by them’

(Hess 2006: 51, line 224)

- c. dx^wcaqʔaxadid tiʔiʔ čʔətʔ
 dx^w-caqʔ-axad-i-d tiʔiʔ čʔətʔ
 CTD-speared-side-SS-ICS DIST kingfisher
 ‘he speared Kingfisher in the side’

(Hess & Bates 2004: 20, ex. 71)

(29a) shows the radical, √caqʔ ‘be speared, be impaled’, which takes as its syntactic subject the expression of the PATIENT semantic role and which does not express an AGENT.¹⁶ In (29b), the internal causative formed from the same radical, *caqʔad* ‘spear something’, is shown in its passive form; here, its subject is the expression of the PATIENT and the AGENT is expressed as an oblique object. The expression of the AGENT in this sentence is allowed for by the presence of the internal causative suffix *-t*, which creates a transitive verb from an intransitive radical (Section 2). Similarly, the form in (29c) is transitive and takes as its subject the AGENT rather than the PATIENT which is the subject of the radical in (29a). Thus, the effect on the valency and government pattern of the radical of adding *-i-d* is the same as that of adding the transitive causative suffix *-t*.

¹⁵ Cf. the internal causative form of this radical, *puʔud* ‘blow on something, blow something out’, which illustrates the contrast in semantic transitivity of the *-d* and *-i-d* forms.

¹⁶ The PP *ʔə tiʔəʔ sʔədiʔac* ‘by the Devil’s Club’ expresses an inanimate (or at any rate, botanical) INSTRUMENT rather than an AGENT.

This raises the issue of what contribution, if any, the secondary suffix *-i-* makes to the meaning of the stem. One possibility is that *-i-* is not a meaningful element at all and that the sequence [id] may simply be an allomorph of the internal causative associated with a lexical suffix (or a particular subset of lexical suffixes). This seems unlikely given that there are abundant internal causative stems containing lexical suffixes such as *c'ag^wačičid* 'wash someone's hands' (cf. *č'əlpəčičid* 'twist someone's wrist' in Table 22) that do not contain *-i-*. Another possibility is that the *-i-* is associated with the possessor-raising seen in sentences like (29c) whereby it is the bodypart that is affected by the action, but the possessor of the bodypart is expressed as the direct object. This, however, still begs the question of why *-i-* is not present in all transitive stems containing lexical suffixes that express affected bodyparts. Contrasts such as those between the stems in (29) may thus be relics of an earlier, more regular verbal affix. Another reason for not dismissing *-i-* as a morpheme entirely, at least from a diachronic perspective, is that it turns up in a few other places as a stem-formative associated with *-t*. One particularly suggestive pair of verbs is *ha?lid* 'make good for someone, make someone comfortable' vs. *hal?ad* 'tend to someone', both derived from the radical *√ha?l* 'be good'. However, these are the only such contrastive pairs found in the corpus to date, making any analysis of *-i-* as anything more than a vestige of an earlier form that was most likely associated in some way with valency-altering constructions little more than speculation.

4 Conclusions

When it comes to valency-increasing morphology, Lushootseed suffers an embarrassment of riches. However, as the discussion here has shown, in spite of the large number of morphemes involved in verbal derivation, these affixes can be neatly categorized in terms of their syntactic behaviour. In the first instance, all of the affixes (with the exception of the fossilized secondary suffixes) can be clearly divided into causatives and applicatives, depending on what grammatical relation they add to the valency of their base. Each of them can also be characterized in terms of what type of verb stem, transitive or intransitive, they form. Individual differences among the affixes — that is, the lowest-level distinctions in the taxonomy — can then be attributed to the semantic nuances expressed by each. The advantages of undertaking this classification lie not only in imposing a bit of order on what might seem like an overly-complex system of verbal derivation, but also in allowing for productive cross-linguistic comparison with valency-altering morphological processes in other languages. As with lexical items, there is no *a priori* reason to expect the precise meanings of morphemes in one language to match the precise meanings of morphemes in other languages; however, there is some expectation that cross-linguistically valid generalizations can be drawn based on syntactic and morphosyntactic behaviours. By abstracting away from the often-exotic semantic nuances of the Lushootseed verbal affixes and classifying them in terms of their syntactics, we are able to make more direct comparisons with morphemes showing similar syntactics in other languages. The most notable insight this provides us is in the case of the Lushootseed internal causative, which (along with its cognates in other Salishan languages) has often been characterized as simply a "transitivizer", ignoring the parallels it presents with more traditional causatives in other languages. By recognizing *-t* as a causative, we provide it with a proper typological context, removing the misapprehension that it is a typological aberration. At the same time, by recognizing it as a causative, we are able to highlight a unique aspect of Lushootseed grammar — the lack of a robust distinction between AGENT and CAUSER. Thus, a proper taxonomy of valency-increasers both brings Lushootseed into line with universalist claims about the potentialities of valency-increasing affixes and underscores the particularist aspects of the Lushootseed system.

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