Kwak'wala *-mas* and event causation[*]

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Abstract: This paper investigates the semantics of the Kwak'wala causative suffix *-mas* and argues for a bieventive analysis of causativization over an analysis involving the addition of a cause theta-role. I present two types of data in order to motivate an event-based semantics fo*r -mas*: data concerning thematic restrictions on the external arguments of *-mas* sentences, and data involving adverbial modification and scopal ambiguity. Adopting Pylkkänen's (2008) framework, I analyze *-mas* as a voice-bundling causative which selects a *v*P complement. I also discuss how restrictions on causativizing transitives can be seen to follow from a more general dispreference in the language for having more than one accusative-case marked argument in a clause.

Keywords: causatives, event semantics, external arguments, Wakashan

1 Introduction

Morphological causatives have often been described as involving the addition of a non-core argument that is interpreted as the causer of an event described by the verb root. (e.g. Comrie 1976; Dixon 2000; Pylkkänen 2008). Pylkkänen (2008:88) describes two broad types of formal analyses which have been proposed to account for this increase in valence, summarized in (1)–(2).

(1) **Theta-role Analysis**: *Introduction of a cause theta role*
    a. Cause: $\lambda x.\lambda e.$ causer(x, e)
    b. x is the causer of some event e.   e.g. Reinhart 2002, Doron 1999

(2) **Bieventive Analysis**: *Addition of a cause event*
    a. Cause: $\lambda P.\lambda e. (\exists e')$ P(e') & CAUSE(e, e')
    b. There is some causing event e that causes event e'.   e.g. Pylkkänen 2008, Parsons 1990

Pylkkänen argues that morphological causatives universally have the bieventive semantics in (2) and that observed cross-linguistic variation arises from two syntactic parameters. The first parameter, termed 'voice-bundling', concerns whether or not a causative is bundled together with a Voice head to introduce an external argument. The second parameter, termed 'selection', refers to the size of complement selected for by the causative; any given causative may select for a root ('root-selecting'), a VP ('verb-selecting'), or a *v*P ('phase-selecting') constituent.

    This paper examines Kwak'wala *-mas* using Pylkkänen's framework. Basic examples of causativization with *-mas* are given in (3)–(7) below. As the examples show, Kwak'wala *-mas* can

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causativize a diverse set of predicate types. Nevertheless, transitives (7)[1] show special restrictions related to accusative case assignment; these are discussed in Section 5 below.

(3) **WEATHER PREDICATE: *ƛ̓is-* 'to sun-shine, be sunny out'**
    ƛ̓isəlamasoχ Merlin(χʷa nalaχ).
    tł̓is-a̱l-a-mas=ox̱   merlin   (x̱wa   nala=x̱)
    sun.shine-PL.ACT-FV-CAUS=2LOC   merlin (ACC   day=VIS)
    'Merlin [*the magician*] made it sunny out (today).' (VF)[2]

(4) **NOMINAL PREDICATE: *p̓əƛ̓a* 'airplane'**
    p̓əƛ̓axʔidamasuχ Merlinəχa kʷikʷ.
    p̓ạtł̓a-x'id-a-mas=ux̱   merlin=a̱x̱=x̱a   kwikw
    airplane-BEC-FV-CAUS=2LOC   merlin=VIS=ACC   eagle
    'Merlin [*the magician*] made the eagle turn into a plane.' (VF)

(5) **UNACCUSATIVE VERB: *tiqaχ-* 'to fall down'[3]**
    tiqaχamasi Simonəχa c̓əq̓ʷana.
    tiḵ-ax̱-a-mas=i   simon=a̱x̱=x̱a   ts̱ak̓wana
    fall-down-FV-CAUS=3LOC   simon=VIS=ACC   bird
    'Simon made the bird fall' / 'Simon dropped the bird.' (VF)

(6) **UNERGATIVE VERB: *qas-* 'to walk'**
    qasamasoχda kəlxaχa bəsəχa bəgʷanəm qa lalaχ laχa t'əm̓yilas.
    ḵas-a-mas=ox̱=da   ḵa̱lxa=x̱a   ba̱s=a̱x̱=x̱a   bagwana̱m...
    walk-FV-CAUSE=2LOC=OST   driver=ACC   bus=VIS=ACC   man...

      ...ḵa   lalax̱   la=x̱a   t̓a̱my-'ilas.
      ...COMP   go.along   PREP=ACC phone-place
    'The bus-driver made a man walk to get to the phone.' (VF)

(7) **TRANSITIVE VERB: *təp-* 'to break'**
    *təp̓idamasoχ Simonəχ Lolaχa qʷəʔsta.
    ta̱p-x'id-a-mas=ox̱   simon=a̱x̱=x̱   lola=x̱a   ḵwa̱'sta
    break-BEC-FV-CAUS=2LOC   simon=VIS=ACC   lola=ACC   cup
   *intended*: 'Simon made Lola break the cup.' (JF)

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[1] The root *təp-* 'to break' in (7) can in fact occur unmarked in both intransitive and transitive frames. What (7) is specifically showing, then, is the ill-formedness of the transitive use of this root with *-mas*.

[2] Abbreviations used in this paper include the following: - affix boundary, = clitic boundary, 1POSS first person possessor, 1SG first singular, 3CO.POSS third-person possessor coreferent with subject, ACC accusative, 1LOC proximal locative deictic, 2LOC medial locative deictic, 3LOC distal locative deictic, AUX auxiliary, BEC become operator, CAUS causative, COMP complementizer, DISC discourse particle, DST.PST distance past, EXP experienced-thing (voice), FUT future, FV final vowel, (IN)VIS visibility clitic, NM nominalizer, NOM nominalizing voice suffix, OBL oblique case, O.POSS oblique possessor, OST ostensive marker, PL.ACT pluractional, RED reduplication, JF judged form, TF translated form, VF volunteered form.

[3] I use the terms 'unaccusative' and 'unergative' in this paper as convenient semantic labels; diagnostics have not yet been found for a syntactic distinction between these classes in Kwak'wala.

Below I argue that *-mas* requires a bieventive semantic analysis as in (2). Syntactically, I analyze *-mas* as a phase-selecting causative that is bundled together with an external-argument introducing head.[4] The details of this analysis are summarized in (8).

(8) **Analysis of Kwak'wala *-mas***
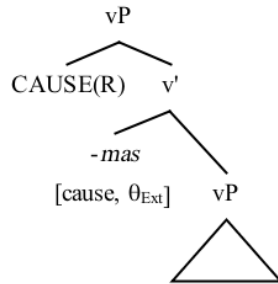
-mas is a complex head [cause, θ_{Ext}] that is interpreted in 2 steps:

vP

CAUSE(R)   v'

-mas

[cause, θ_{Ext}]   vP

Step 1: **Addition of cause event**
   $\lambda f_{<s,t>}.\lambda e. (\exists e') f(e') \& CAUSE(e, e')$

Step 2: **Introduction of external argument**
   $\lambda x.\lambda e. \theta_{Ext}(e, x)$

In Section 2 I provide some basic background on relevant features of Kwak'wala. Then in Section 3 I discuss thematic constraints on the external argument that may appear with *-mas*, and argue that these favour a bieventive analysis over a theta-role analysis. Section 4 presents another set of arguments for a bieventive analysis involving adverbial modification and scopal ambiguity. Then in Section 5 I revisit the analysis in (8), provide two arguments for *-mas* being a *v*P-selecting causative, and propose that causativization of transitives is independently constrained by restrictions on the assignment of accusative case. Section 7 summarizes and concludes.

2   Background on Kwak'wala

Kwak'wala is a Wakashan language spoken on northwestern Vancouver Island, the adjacent mainland, and in urban centers in British Columbia. The language is endangered, with about 150 remaining first-language speakers, though about 13% of the population identify as learners and 8% as semi-speakers (FPHLCC 2010) and revitalization efforts are underway. All data below are from original fieldwork during 2009 to 2015 with six consultants, altogether speaking two of the five generally recognized dialects of Kwak'wala (Anonby 1997), Kwak'wala and 'Nakwala. To date I have not found any differences in how causatives are used across these two dialects.

Kwak'wala is relatively fortunate for a Northwest Coast language in terms of its documentation though much work remains to be done, especially in phonetics and semantics. Moreover, there has been no previous work on causatives in any Northern Wakashan language.[5] To address this gap, the work here focuses on Kwak'wala's most productive causative, *-mas*.[6]

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[4] Since the term "voice" has been used in a recent analysis of the Kwak'wala 'passive' suffixes (Sherer 2014) I adopt the phrase "external-argument introducing head" here in place of Pylkkänen's (2008) term "voice-bundling head" to avoid confusion.

[5] Early description of Kwak'wala is in Boas (1911, 1947); more recent work in syntax and semantics has been done in general syntax (Anderson 1982), passives/voice (Levine 1980, Rosenblum 2013, Sherer 2014), complementation (Levine 1984), determiners (Nicholsen and Werle 2009, Black 2011) and determiner phrases (Chung 2007), copulas and clefts (Littell 2010, Stewart 2011), aspect (Greene 2013), and argument structure (Davis & Sardinha 2011), among others.

[6] The causative discussed here is listed as *-amas* in Boas (1911, 1947); see Section 5 for discussion on the morphological shape of *-mas*. A second causative suffix *-(g)il* exists which is more limited in its distribution, showing up in certain common causative forms (e.g. *həṁgila* 'to feed') as well as productively in creation

Kwak'wala is a polysynthetic, almost exclusively suffixing language. Boas (1911, 1947) divides the verb into three zones, simplified somewhat and summarized in Figure 1. The 'stem suffixes' in Figure 1 include contentful lexical suffixes and aktionsart suffixes; the 'word suffixes' contain suffixes which alter valence[7]; and the inflectional enclitics mark various clause-level grammatical distinctions such as outer aspect, tense, mood, person, and subject agreement.
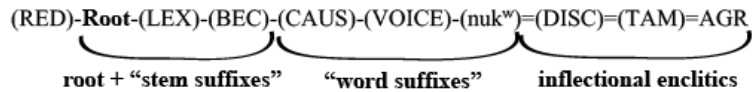

(RED)-**Root**-(LEX)-(BEC)-(CAUS)-(VOICE)-(nukʷ)=(DISC)=(TAM)=AGR

root + "stem suffixes"   "word suffixes"   inflectional enclitics

Figure 1 The Kwak'wala Verb

The unmarked clausal word order in Kwak'wala is VSO, with auxiliaries frequently preceding the verb, sometimes followed by fronted subjects. Inflectional enclitics typically occur in second position and attach to the prosodic constituent that precedes the syntactic constituent to which they refer. Non-subject argument DPs are either obligatorily marked with accusative =χ(a) or oblique =s(a) case, which is to some extent a lexical property of each verb (Davis & Sardinha 2011, Sherer 2014) or else occur case-marked in prepositional phrases at the right edge of the clause. Example (9) illustrates these basic clausal properties using the verb ċo 'to give', with the subject, oblique argument, and prepositional argument delimited by square brackets.

(9)   ċowida cedaqəsa ƛatəmɬ laχa bəgʷanəm.
        ċo[=i=da   cedaq][=sa   ƛatəmɬ] [la=χa   bəgʷanəm]
        give=3LOC=DET   woman=OBL   hat   PREP=ACC   man
        'The woman is giving a hat to the man' (VF)

In cases where a third-person subject is not an overt nominal, locative deictics agree with the non-overt argument as in (10).

(10)   daʔɬəloχ.
        daʔɬ-əl=oχ
        laugh-PL.ACT=2LOC
        'He/she/it/they [medial distance from speaker] is/are laughing.' (VF)

In discourse, however, third-person subjects may also be unmarked for agreement, a fact that will factor in to the discussion in Section 3.4 regarding pronominal subjects.

3   External arguments with *-mas*

3.1 Obligatoriness

Kwak'wala sentences with causative *-mas* require an external argument. Kwak'wala therefore differs from languages like Japanese and Finnish which allow true unaccusative causative constructions that lack an external argument (Pylkkänen 2008). That this latter type of construction

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contexts (e.g. *nəxʷəneʔgila* 'to make a blanket'). A third causative suffix listed in Boas (ibid.) as *-oʔso*, appears to have fallen out of use, at least to my knowledge.

[7] The suffix *-nukʷ* means 'to have' with nominal stems, and is used to form indefinite object constructions with verbal stems (Sardinha 2013, Sherer 2014).

is ungrammatical in Kwak'wala is shown by (11b), which sounds to consultants like an incomplete sentence. For the semantic causee to appear as the subject of a sentence with *-mas*, the verb must take a voice suffix (glossed NOM below; see Sherer 2014) as it does in (11c).

(11)   *Context: My puppy Loki went outside; when he came back in a few minutes later, his ear was bleeding. We don't know what caused it.*

    a.   ʔəlkʷoχ p̓əsp̓ay̓uχs Loki.
        a̲lkw=ox̲   p̓asp̓a̲'yu=x̲=s   loki
        bleed=2LOC   ear=VIS=O.POSS   loki
        'Loki's ear is bleeding.' (VF)

    b. *ʔəlkʷamasoχ p̓əsp̓ay̓uwəs Loki.
        a̲lkw-a-mas=ox̲   p̓asp̓a̲'yu=s   loki
        bleed-FV-CAUS=2LOC   ear=O.POSS   loki
        lit. Loki's ear caused [*missing object*] to bleed.' (JF)
        [**Intended***:* 'Loki's ear was made to bleed on him.']

    c.   ʔəlkʷamacuwoχ p̓əsp̓ay̓uwəs Loki.
        a̲lkw-a-mas-su'=ox̲   p̓asp̓a̲'yu=s   loki
        bleed-FV-CAUS-NOM=2LOC ear=O.POSS   loki
        'Loki's ear was made to bleed.' / 'Something made Loki's ear bleed.' (VF)

Since causative *-mas* does not appear to occur without an external argument also being present, I assume that the suffix fits Pylkkänen's (2008) criteria as a voice-bundling causative.

3.2 Thematic constraints

Broadly-speaking, Kwak'wala *-mas* constructions take external arguments that are thematically construable as causes. Thus agents (12), natural forces (13), and stimuli (14) are commonly found as external arguments with *-mas*:

(12)   *Context: Hannah put cayenne in the soup when the cook was out.*

    ƛ̓ax̌ʷstuxʷʔidamasuχ Hannahχʷa yusaχ.
    t'ła̲x̲wstu-x'id-a-mas=ux̲   **hannah**=x̲wa   yusa=x̲
    red.colour-BEC-FV-CAUS=2LOC hannah=ACC   soup=VIS
    '**Hannah** made the soup (turn) red.' (VF)

(13)   p̓pəlamx̌ʔidamasuχda yoləχuχ Katie.
    p'a̲la̲m-x'id-a-mas=ux̲=da   **yola**=a̲x̲=x̲=ux̲   katie
    blink-BEC-FV-CAUS=2LOC=OST wind=VIS=ACC=2LOC katie
    '**The wind** made Katie blink.' (VF)

(14)   ləm̓isida təp̓ala wok̓ʷəgaʔɫamasχa w̓ac̓i.
    la̲='mis=i=da   **ta̲p-'ala**   wok̓w-ga'ł-a-mas=x̲a   'wa̲t̓si
    AUX=DISC=3LOC=OST break-NOISE   bark-emit-FV-CAUS=ACC   dog
    '**The sound of shattering** made the dogs bark.' (VF)

Out-of-the-blue, sentences with instruments (15) or static enabling conditions (16) as external arguments tend to be construed as having agentive properties, as shown by the consultants' comments below; this tends to result in them being judged as infelicitous.

(15) # təṗidamasida ƛəbayuχa qʷəʔstabidu.
      tap-x'id-a-mas=i=da   dɫabayu=x̱a   k̲wa'sta-bidu
      break-BEC-FV-CAUS=3LOC=OST hammer=ACC   cup-DIM
      'The hammer made the little cup break.' (JF)
      Consultant's comment: "Nobody's holding it. Ghost, maybe...*loʔlinoχ*."

(16)   *Context: Jon's nighttime fishing plans were spoiled when it snowed.*

      # kiƛamasi kʷ'isaχoχ Jon χa ǧaʔala.
      kitɫ-a-mas=i   k̇wisa=x̱=ox̱   jon   x̱a   g̱a'ala
      fish.with.net-FV-CAUS=3LOC   snow=ACC=2LOC   jon   ACC   morning
      'The snow made Jon [go] fishing in the morning.' (JF)
      Consultant's comment: "It sounds funny - *kiƛamasida kʷ'isa* – the snow made him go fishing. As if the snow was talking [laughter]."

The general thematic constraints above are consistent with either a theta-role analysis involving the addition of a cause theta-role onto a single event (1), or a bieventive analysis involving the introduction of an external argument that is the subject of an added cause event (2). The next two subsections present data that argue in favour of the latter bieventive analysis.

3.3 Event construals in context

The first argument for a bieventive analysis comes from the ability for static conditions to be licensed as external arguments in context. In (17) and (18) cold and heat are construed as events, rather than entities, and can therefore occur as felicitous external arguments with *-mas*.

(17)   *Context: My mom put salmon outside to thaw overnight, but it got way colder than expected. In the morning, the salmon had frozen.*

      yuṁuχda ẇədalaχ ƛ̓uχʷʔidamasχʷa k̓utəlaχ.
      yu='m=ux̱=da   **'wa̱dala**=x̱   tɫux̱w-x'id-a-mas=x̱wa   k̓uta̱la=x̱
      be.2LOC=DISC=2LOC=OST   cold=VIS   ice-BEC-FV-CAUS=ACC   salmon[F.Rupert]=VIS
      'The **cold** made the salmon freeze.' (VF)

(18)   *Context: Eddie fell asleep on the couch with a slab of butter in his hand.*

      yaχʔidamasida c̓əlkʷaʔsa ʔayasuʔχada bada leʔ meχʔidi Eddie.
      yax̱-x'id-a-mas=i=da   **tsa̱lkwa=sa**   **ayasu'**=x̱a=da   bada
      melt-BEC-FV-CAUS=3LOC=OST heat=O.POSS   hand/arm=ACC=OST   butter

         ...   le'   mex̱-x'id=i   eddie
             PREP.NM   sleep-BEC=3LOC   eddie
      '**The hand's heat** made the butter melt when Eddie fell asleep.' (JF)

The fact that external arguments of *-mas* are generally felicitous as long as they are construable as standing in for an event, and not necessarily felicitous if construed as an entity,

argues in favour of a bieventive analysis of *-mas* over a theta-role analysis. It is also interesting to note that instruments strongly resist being external arguments in sentences with *-mas*, presumably because they are much harder to construe in eventive terms.[8]

3.4 Events as pronominal external arguments

Event nominals are rare as subjects in Kwak'wala with the exception of a small number of lexicalized eventive roots, such as *ninini* 'earthquake' shown in (19). Consultants often prefer to express event causation using several predicates and more than one clause. Example (20) shows how one consultant's translation of an English 'make' construction explicitly mentions two events – a getting sick event, and a resulting state of appreciation for being out in the sun.

(19)   lida ninini k̓ət̓ʔidamasχən n̓in̓iǧʷac̓i.
      la̱=i=da   ninini   k̓a̱l-x'id-a-mas=x̱=a̱n   'ni~'nigwats̓i
      AUX=3LOC=OST   earthquake go.off-BEC-FV-CAUS=ACC=1.POSS PL~light
      'The earthquake made my lights go out.' (VF)

(20)   *Context: Years ago Norman got sick and had to stay indoors all the time. Ever since he got better, he's really appreciated being out in the sunshine. So* <u>*Norman's illness made him really love the sunshine.*</u>

      lot̓eʔ c̓ɔxǫ̓i Norman laʔəm λu:ma la ʔiʔakχada λ̓isəla.
      la̱=woɬ=i   t̓sa̱x-x'id   norman   la̱='am   t̓łuma la
      AUX=DIST.PST=3LOC sick-BEC   norman   AUX=DISC very   go

         ... ix'ak=x̱a=da   t̓łisa̱la
             like=ACC=OST   sun.shine
      'A long time ago Norman got sick, and now he really likes the sunshine.' (VF)

Nevertheless, while event nominals are rarely subjects in Kwak'wala, it does appear to be possible for events to serve as pronominal external arguments of -mas sentences. Thus a likely analysis of example (21) involves a null (*pro*) third-person external argument in the second clause that refers to a causing event. Note that while it's possible that *pro* in this example could be referring grammatically to an entity (*=ən doǧʷəλ* 'my seen thing') in the previous clause, rather than an implicit event, even this would seem to involve *=ən doǧʷəλ* being construed as an event. Example (22) is more clear: in this example reference to an implicit event is accomplished with the use of a voice suffix *-suʔ* that suppresses the external (event) argument.

(21)   *Context: I saw a shadow which I thought was a cougar, and I ran away! But then I looked back and realized it was just a cat that I had seen.*

      busiyən doǧʷəλ k'is bədiyəl ləm̓is daʔɬamas gaχən.
      busi=a̱n   dogw-a̱tɬ   k̓is   ba̱di-a̱tɬ   la̱='mis...
      cat=1POSS   see-EXP   NEG   cougar-EXP   AUX=DISC

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[8] Delancey (1984:203) draws attention to potentially related restrictions on instrument subjects in English: e.g. *The axe broke the window* is felicitous if an axe fell off a shelf and hit the window, but most likely infelicitous if the axe was used in a deliberate hitting event. This example came to my attention via Levin and Rappaport-Hovav (2005:49).

... da'ł-a-mas   ∅   gax̱a̱n
laugh-FV-CAUS **pro**   1SG.OBJ
'A cat is what I saw, not a cougar, so **it** made me laugh.'   (VF)
[*lit*. 'My seen-thing is a cat, [I] didn't [see] a cougar, so **it** made me laugh.']

(22)   *Context: Rita felt bad when no one showed up for her party...until she
realized she had sent out invitations with the wrong date!*

ləm̓i q̓otəlax̌i Ritax̱a gʷix̓ʔidaʔas ləm̓is ʔolek'al ʔikeqəlamacuẇaʔ.
la̱='m=i   k̓ota̱l-a=tł=i   rita=x̱a   gwix-x'id-a-'as...
AUX=DISC=3LOC   know-FV=FUT=3LOC   rita=ACC   happen-BEC-FV-NM

... la̱='mis   ola̱k̓al   ik-e̱kal-a-mas-su'=a'
AUX=DISC   really   good-in.mind-FV-CAUS-NOM=3INVIS
'Then Rita realized what had happened and she felt a lot better (*lit.* 'She was made to
feel good').' (VF)

If events are able to serve pronominally as external arguments with *-mas*, this provides another
argument that *-mas* encodes the addition of a cause event, rather than just adding an entity.

To summarize this section, causative *-mas* is acceptable with external arguments that are
thematically agents, natural forces, stimuli, (pro) events, and static enabling conditions when these
are construable as events. On the other hand, *-mas* is unacceptable with instruments and enabling
conditions contrued as entities. These constraints on possible external arguments with   *-mas* argue
favour a bieventive analysis as in (2) over a theta-role analysis as in (1).

4 Adverbial modification

4.1 Modification with temporal adverbs

Temporal adverbs can be used to explicitly tease apart the two events that make up statements
with *-mas*, the causing event and the caused event, thereby providing additional evidence for a
bieventive semantic analysis. In (23) a complex event in which Eddie causes Shelly to get hurt,
expressed with *-mas*, is explicitly split into two parts: the causing event (Eddie putting wood on the
ground) is modified by the temporal adverb *ɬənswəɬ* 'yesterday', while the caused event (Shelly
getting hurt) is modified by the temporal adverb *x̌a nala* 'today'. In example (24), the causing event
(my sweetheart sending flowers) is modified by *ɬənswəɬ* 'yesterday' and the caused event (my
smiling) gets an implicit day-of-utterance reading assigned to it by context.

(23)   *Context: Eddie dropped a piece of wood on the path yesterday. Today, Shelly tripped
over the piece of wood and got hurt.*

yəlkʷamasi Eddieyəx̱ Shellyx̱a nala leʔ ʔəx̌ʔəl̓sx̱a ləqʷa ɬənswəɬ.
yalkw-a-mas=i   eddie=a̱x̱=x   shelly=x̱a   **nala**   le'...
get.hurt-FV-CAUS=3LOC   eddie=3VIS=ACC   shelly=ACC   day   PREP

... a̱x'a̱l's=x̱a   la̱kwa   **ɬa̱nswəɬ**
put.outside=ACC   wood   yesterday
'Eddie made Shelly get hurt **today**, when he put wood on the ground **yesterday**.' (JF)

(24) *Context: My sweetheart sent me flowers yesterday. I received them today and smiled.*

mənxʷʔidamasən ẇayas gaχən leʔ haɬaχsada iksukʷ kʼwaǩʷaχʔoma gaχən ɬənswəɬ.
m_anxw-x'id-a-mas=an   'wayas   ga_x_an   le_ʔ...
smile-BEC-FV-CAUS=1SG.POSS sweetheart   1SG.OBJ   PREP

     ... hala_x_s=sa=da iksukw   kwakwax'oma   ga_x_an   **ɬ_answ_aɬ**
        send=OBL=DET   beautiful plant.life   1SG.OBJ   yesterday
'My sweetheart made me smile when he sent beautiful flowers to me yesterday.' (VF)

On a theta-role analysis, there should only be one event for temporal modification to target. The possibility of having different temporal adverbs modify a causing event and a caused event therefore provides another argument for a bieventive analysis of causative *-mas*.

4.2 Adverbial scope ambiguities

A bieventive analysis of *-mas* predicts that adverbs will be able to modify either the causing event or the caused event. Example (25) with *ʔalaq* 'almost' shows that this prediction holds: sentences with *ʔalaq* and *-mas* are scopally ambiguous between a reading where *ʔalaq* modifies the causing event (25a) or the caused event (25b).[9]

(25) *Context: Ruby, Katie, and Katie's mom are playing a game where each takes a turn trying to make one of the others laugh in 1 minute.*

    a. **X almost (CAUSE (Y LAUGH))**

ʔalaχm̓oχ Katieyəχ daʔɬamasəχ Ruby ʔom̓isoχ ǧʷaɬa gaχeʔ Pat ƛuẇis ẇaẏas.
ala_k_='m=o_x_   katie=a_x_ da'ɬ-a-mas=_x_   ruby   o='mis=o_x_...
almost=DISC=2LOC katie=VIS   laugh-FV-CAUS=ACC   ruby   AUX=DISC=2LOC

     ... gwaɬ-a   ga_x_=e'   pat   dɬu=is   'wa'yas
        stop/finish-FV   come=NM pat   with=3.CO.POSS sweetheart
'Katie almost [*started to try to make*] made Ruby laugh, but she stopped when Pat and his sweetheart arrived.' (VF)

    b. **X CAUSE (almost (Y LAUGH))**

ʔalaχm̓oχ daʔɬamasən ʔəbəmp gaχən ʔom̓isoχ mənxʷʔidamasoχ gaχən.
ala_k_='m=o_x_   da'ɬ-a-mas=_a_n   _a_b_a_mp ga_x_an...
almost=DISC=2LOC laugh-FV-CAUS=1SG.POSS   mom   1SG.OBJ

     ... o='mis=o_x_   m_a_nxw-x'id-a-mas=o_x_   ga_x_an
        AUX=DISC=2LOC   smile-BEC-FV-CAUS=2LOC   1SG.OBJ
'My mom almost made me laugh, but she just made me smile.' (VF)

According to Pylkkänen's (2008) criteria, the potential for ambiguity with non-agentive adverbs like *ʔalaq* rules out *-mas* being a 'root-selecting' causative. When it comes to differentiating verb-selecting causatives from phase-selecting causatives, Pylkkänen predicts a split depending on the potential for scopal ambiguity with agentive adverbs: verb-selecting causatives are never ambiguous with agentive adverbs since at most one agent can be present in the

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[9] The different position of the subject in (26a) and (26b) relative to the verb is not truth-conditionally significant.

representation, whereas phase-selecting causatives are potentially ambiguous since there can be up to two external arguments present which could in theory both be agents. In Kwak'wala, however, I have not found a syntactic configuration where the adverb *hinuma(s)* 'to do on purpose' can be ambiguous – examples (26) and (27) show two attempts to obtain both high and low scope readings. According to Pylkkänen's test, then, *-mas* patterns as a verb-selecting causative.

(26)   ***hinuma(s)* 'to do on purpose' + *mənxʷʔidamas* 'to make someone smile'**

    a.   yum̓uχ Karenχ hinuma mənxʷʔidamasχuχ Scott.
                yu='m=ux̱   karen=x̱   hinuma...
                be.2LOC=DISC=2LOC   karen=VIS   on.purpose

                ...   mạnxw-x'id-a-mas=x̱=ux̱   scott
                       smile-BEC-FV-CAUS=ACC=2LOC   scott
                'Karen$_i$ purposely$_i$ made Scott smile.' (VF)
                [**Can't mean:** 'Karen made Scott$_i$ purposely$_i$ smile.'] (JF)

    b.   yum̓uχ Karenχ ǧʷixʔidaʔasnukʷ hinumasəsuχ Bill qa mənxʷaɫeʔs.
                yu='m=ux̱   karen=x̱   gwix-x'id-a-'as-nukw
                be.2LOC=DISC=2LOC   karen=2VIS   happen-BEC-FV-NM-something

                ...   hinumas=s=ux̱   bill   ka̱   mạnxw-aɫ=e'=s
                       on.purpose=O.POSS=2LOC   bill   COMP   smile-PL.ACT=NM=O.POSS
                '*lit.* Karen did something so Bill$_i$ would purposely$_i$ smile.' (VF)
                [**Can't mean:** 'Karen$_i$ purposely$_i$ made Scott smile.'] (JF)

(27)   ***hinuma(s)* 'to do on purpose' + *daʔɬʔidamas* 'to make someone laugh'**

    a.   hinumasoχ Pat leʔ daɬʔidamasəχ Masaki
                hinumas=ox̱   pat   le'   da'ɬ-x'id-a-mas=x̱   masaki
                on.purpose=2LOC   pat   PREP.NM   laugh-BEC-FV-CAUS=ACC   masaki
                'Pat$_i$ intentionally$_i$ made Masaki laugh.' (VF)
                [**Can't mean**: 'Pat made Masaki$_i$ laugh intentionally$_i$.'] (JF)

    b.   ləm̓i Pat wəƛaχ Masaki qəs hinumasbuɬeʔ daʔɬəla.
                la̱='m=i   pat   wa̱tɫ-a=x̱   masaki   ka̱=s...
                AUX=DISC=3LOC   pat   ask-FV=ACC   masaki   COMP=O.POSS

                ...   hinumas=buɫ=e'   da'ɬ-a̱l-a
                       on.purpose=pretend=NM   laugh-PL.ACT-FV
                'Pat asked Masaki$_i$ to intentionally$_i$ pretend to laugh.' (VF)
                [**Can't mean**: 'Pat$_i$ intentionally$_i$ made Masaki laugh.'] (JF)

I suspect, however, that there are independent reasons for why *hinuma(s)* cannot be ambiguous in Kwak'wala. Firstly, low scope readings of *hinuma(s)* in examples like (26a) and (27a) may be ruled out on purely semantic grounds, since causees in *-mas* constructions tend to have low control relative to causers and might just be too difficult to construe as volitional. Heidi Harley (p.c.) notes that it is not uncommon for languages to disallow ambiguities with agentive adverbs in examples like (26a) and (27a). Secondly, Kwak'wala may just be restricted in its ability to modify non-subject arguments by secondary predication (see Anderson 1984 on the 'subject-centredness' of Kwak'wala). Significantly, if Pylkkänen's test fails for independent reasons such

as these, it is still possible that *hinuma* is a phase-selecting causative. In fact, this is what I will argue for below in Section 5.

In summary, the ability for non-agentive adverbs like *ʔalaq* 'almost' to modify either a causing or a caused event argues for a bieventive analysis over a theta-role analysis. Agentive adverbs do not exhibit such ambiguities, but it is not clear how to best interpret this result.

5 Analysis

The proposed analysis of *-mas* is shown in (8) below, repeated from the Introduction.

(8) **Analysis of Kwak'wala *-mas***
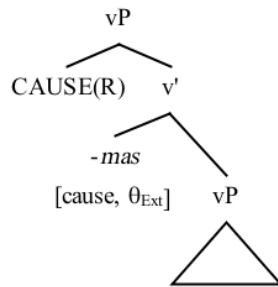
-mas is a complex head [cause, θ_{Ext}] that is interpreted in 2 steps:

Step 1: **Addition of cause event**
$\lambda f_{<s,t>}.\lambda e. (\exists e') f(e')$ & CAUSE(e, e')

Step 2: **Introduction of external argument**
$\lambda x.\lambda e. \theta_{Ext}(e, x)$

The bieventive semantics of *-mas* was argued for in Section 3 and Section 4, while the property of *-mas* being bundled together with an external-argument introducing head was argued for in Section 3. The final piece of the analysis to be accounted for is the size of *-mas*' complement. In the next two subsections I provide two arguments for *-mas* being a phase-selecting causative.

5.1 Distribution across verb classes

The first argument that *-mas* is a phase-selecting causative comes from its ability to causativize all intransitive verbs, including ones with unergative semantics, such as (6). On the assumption that unergative verbs take an external argument, *-mas* must be a phase-selecting causative. A potential problem with this argument is that if *-mas* were truly phase-selecting, we might expect there to be no restrictions on *-mas* causativation, and yet we see in (7) that transitives resist causativization with *-mas*. However, by hypothesis there is an independent explanation for why transitives resist causativization – namely, the fact that Kwak'wala generally disallows two $=\chi(a)$ (accusative) marked arguments in a clause (Sherer 2014, Davis & Sardinha 2011). Thus (28):

(28) **Kwak'wala Accusative Case Restriction**
There can only be one $=\chi(a)$ marked (accusative) argument[10] per clause.

Assuming that (28) holds, and seeing that *-mas* consistently assigns accusative case to its direct object, *-mas* is by hypothesis unable to select a complement that also assigns accusative case.[11]

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[10] The term 'argument' is apparently important here as temporal adjuncts, which are often introduced by $=\chi(a)$ enclitics, can co-occur with identically $=\chi(a)$ marked objects. See example (3).

[11] It is still unclear whether (28) is a strict constraint or a strong dispreference in Kwak'wala, as there is quite a bit of variation in the degree to which consultants accept or produce causatives of transitives (7). A few verbs such as *duqʷ-* 'to see' have also recently been found to form *-mas* causatives with idiosyncratic properties, including, it seems, double accusative marking; more research is needed on this class of verbs.

Evidence that (28) is at play in restricting causativization of transitives in Kwak'wala comes from the observation that it *is* possible to causativize transitives when the clause is restructured so that accusative case is only assigned to one argument. Examples (29) and (30) show near paraphrases of (7) in which only one argument is assigned accusative case. In example (29) one argument is demoted with a voice suffix and another is expressed in an adjunct, while example (30) utilizes a copular cleft construction to distribute arguments across two clauses.

(29)   təṗidamacuʔuχda qʷəʔsteχs Dennis gayəla laχ Anna.
        tap-x'id-a-mas-su'=uχ=da   kwa'st=eχ=s   dennis...
        break-BEC-FV-CAUS-NOM=2LOC=OST   cup=VIS=O.POSS   dennis

            ... ga-ala   la=χ   anna
                coming-PL.ACT   PREP=ACC   anna
        'The cup was broken [*lit. 'caused to be broken'*] by Dennis because of Anna.' (VF)

(30)   heṁi Anna lagiɬes Dennis təṗidamasχa qʷəʔsta.
        he='m=i   anna   la-giɬ=e=s   dennis...
        be.3LOC=DISC=3LOC   anna   AUX-reason=INVIS=O.POSS   dennis

            ... tap-x'id-a-mas=χa   kwa'sta
                break-BEC-FV-CAUS=ACC   cup
        'Anna's the reason Dennis broke the cup.' (VF)

Example (31) shows a similar pattern with the optionally transitive verb *qas-* 'to walk' (compare (6) with (31a)). Once again we see that causativization with *-mas* is ungrammatical when it results in two accusative-case marked arguments (31b). However, when the clause is restructured, as in (31c) with a voice suffix and oblique possessor, the result is grammatical.

(31) a. qasoχda c̓ədaqəχis ẁaċiχ.
         kas=oχ=da   tsadak=aχ=χ=is   'watsi=χ
         walk=2LOC=OST   woman=VIS=ACC=3.CO.POSS   dog=VIS
         'The woman is walking her dog.' (VF)

    b.*qasamasida c̓ədaqəχa bəgʷanəməχa ẁaċ'i.
         kas-a-mas=i=da   tsadak=aχ=χa   bagwanam=aχ=χa   'watsi
         walk-FV-CAUS=3LOC=OST   woman=VIS=ACC   man=VIS=ACC   dog
         intended: 'The woman made the man walk the dog.' (JF)

    c. qasamacuʔoχ bəgʷanəməχa ẁaċisa c̓ədaq.
         kas-a-mas-su'=oχ   bagwanam=aχ=χa   'watsi=sa   tsadak
         walk-FV-CAUS-NOM=2LOC   man=VIS=ACC   dog=O.POSS   woman
         'The man was made to walk the woman's dog.' (JF)

It is plausible then that a restriction on assigning only one accusative-case per clause is what restricts the causativization of transitives with *-mas*: in order to form causatives of transitives, consultants must creatively find ways to restructure the clause to make sure accusative case only

gets assigned to one argument.[12] This hypothesis is consistent with *-mas* being a phase-selecting causative that assigns structural accusative case to its direct object.[13] I leave the details of how to implement the generalization in (28) within the grammar as a topic for future research.

5.2 Affix-ordering

A second, somewhat tentative, argument for *-mas* being a phase-selecting causative relates to where *-mas* attaches within the verb. Returning to the Kwak'wala verb template in Figure 1 above, we can see that *-mas* straddles a boundary between the 'stem suffixes' and 'word suffixes'. If this morphological division reflects a phase boundary, then the positioning of *-mas* relative to other affixes constitutes a morphological argument for it being a phase-selecting causative.

Evidence for *-mas* selecting a 'phase' comes from the status of the affixal neighbours to its right and left. On its right edge, *-mas* is immediately followed by voice suffixes (when these are present). Sherer (2014) analyzes voice suffixes as attaching above the verbal phase, embedding verbs with complete argument structures; it is plausible, then, that *-mas* could also be located in this higher phase. Now consider that on its left edge, *-mas* immediately precedes 'stem-completive *a*' (glossed here as FV, 'final vowel'), which is a default verb form that attaches at the right edge of verb stems with or without aktionsart suffixes (Greene 2013).[14] On the assumption that *-a* is a verbalizer of some sort, it could plausibly mark the rightmost edge of the lower verbal phase, which would provide additional morphological evidence for *-mas* being phase-selecting, given its position adjacent to *-a*. Though the status of morphological phases in Kwak'wala is in need of further study, the position of *-mas* relative to other affixes is at least suggestive of its being a phase-selecting causative.

Nevertheless, an alternative morphological analysis of the causative requires mention – namely, the analysis whereby the shape of the causative suffix is actually *-amas*, as was assumed in Boas (1911, 1947). On this analysis, the initial *-a* in *-amas* is present underlyingly but deleted when the suffix follows a vowel. In practice, it is very hard to distinguish between Boas' morphological analysis and the one I am assuming, in part because *-mas* usually attaches to momentaneous *-xʔid* which is consonant-final, and in part because we would expect verbal stems to have stem-completive *-a* anyway, making it impossible to tell whether this *-a* is part of the stem or part of the suffix. Nevertheless, in those rare instances where *-mas* causativizes a consonant-final, non-verbal stem without *-xʔid*, the *-a* is absent, as shown in (32): this supports a morphological analysis of the causative as *-mas* over the analysis assumed by Boas.

(32)   səbadzoʔilasmasi Merlinəχa gukʷ.
        sa̱badzo'ilas-mas=i   merlin=a̱x=x̱a   gukw
        movie.theatre-CAUS=3LOC   merlin=2VIS=ACC   house
        'Merlin [*the wizard*] made a house into a movie theatre.' (VF)

Boas' misanalysis of this suffix is understandable as we would expect relevant examples like (32) to be exceedingly rare in Boas' textual materials (i.e. 'to cause to be an N'), and also

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[12] Consultants have expressed surprise at being unable to directly translate sentences like (7) into Kwak'wala. As creative masters of their language, however, they are always quick to provide alternatives.

[13] Note that weather predicates are unique in consistently allowing null causees, as seen in (3); this makes sense on the assumption that weather predicates denote events without arguments (e.g. $\lambda e.\text{rain}(e)$).

[14] In Kwak'wala, *-a* is often elided when adjacent to a vowel-initial enclitic determiner; however, it consistently shows up when second-position clitics attach to an auxiliary predicate, as well as in the presence of the 'discourse marker' *-ʔəm/-m̓*. See Greene (2013) for discussion of stem completive *-a*.

because many suffixes in Kwak'wala do in fact lose initial segments in certain contexts. Only exceedingly rare examples like (32) are capable of disproving Boas' morphological analysis.

6 Conclusion

In this paper I have investigated Kwak'wala causative *-mas* using the framework in Pylkkänen (2008) and have argued for a bieventive analysis of causative *-mas* over a theta-role analysis. This and other properties of *-mas* identified in this paper are summarized in (33).

(33)   **Summary: Properties of Kwak'wala causative *-mas***
      1. *Bieventive semantics*: *-mas* introduces a causing event.
      2. *External-argument introducing*: *-mas* is syntactically bundled with an external-argument introducing head.
      3. *Phase-selecting*: *-mas* selects for a *v*P.
      4. *Case-assigning*: *-mas* assigns accusative case to its direct object.
      5. *Restricted by case*: *-mas* cannot directly causativize transitives which assign accusative case to their objects, unless the clause is reorganized to make it so accusative case is only assigned once within the clause.

An important question for future research is how to best implement the case-restriction generalization in (28) in a way which accounts for various observed grammatical restrictions in Kwak'wala grammar. In addition to (28) being relevant for constraining causatives of transitives – as argued for above – a restriction on case assignment is likely also relevant for explaining the use of dummy prepositions to host optional second arguments in Kwak'wala (Davis & Sardinha 2011), a pattern that is reminiscent of the role played by preposition-like constructions in Southern Wakashan (Woo 2007). Future research is also needed to address how -mas differs from other causatives in the language, including the relatively more restricted zero-causative.

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