

A unified modal semantics for ‘out-of-control’ marking in St’át’imcets

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This paper provides a unified semantic analysis of the so-called ‘out-of-control’ circumfix *ka-...-a* in St’át’imcets (Lillooet Salish). *ka-...-a* expresses an initially puzzling range of meanings, including “be able to”, “manage to”, “suddenly”, “accidentally”, and “non-controllable”. We propose that *ka-...-a* encodes circumstantial modality; we show that its various meanings all reduce to either an existential (ability) or universal (involuntary action) interpretation. Our analysis provides further support for a striking difference between St’át’imcets and English. In English, modals lexically encode quantificational strength, but do not encode distinctions between epistemic, deontic and circumstantial interpretations. St’át’imcets modals display exactly the inverse pattern (Rullmann et al. to appear). In line with this, *ka-...-a* lexically encodes circumstantial modality, but does not encode quantificational strength. The parallel between *ka-...-a* and other St’át’imcets modal elements provides support for our analysis, in contrast to previous accounts (e.g., Demirdache 1997), which treat *ka-...-a* as primarily aspectual in nature.

1 Introduction

The so-called ‘out-of-control’ circumfix *ka-...-a* in St’át’imcets (Lillooet Salish) expresses a puzzling cluster of meanings, including “be able to”, “manage to”, “suddenly”, “accidentally”, and “non-controllable”. In this paper, we present a detailed analysis of the semantics of this morpheme. Our central hypothesis is that *ka-...-a* encodes circumstantial modality, and that its

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various meanings all reduce to either an existential (ability) or universal (involuntary action) interpretation.

Our analysis provides support for a striking cross-linguistic difference between the St'át'imcets modal system and more familiar (primarily Indo-European) systems, which we have detailed in previous work: see Rullmann et al. (to appear) and Matthewson et al. (2006). According to standard formal semantic analyses based on Indo-European systems, modals are quantifiers over possible worlds whose quantificational strength is lexically specified as e.g., universal or existential, but differences between epistemic, deontic and other modal interpretations are derived from implicit conversational backgrounds, rather than from lexical ambiguity (Kratzer 1981, 1991). However, we have previously shown that the lexical specification of St'át'imcets modals is the inverse of the standard model: differences in modal conversational backgrounds are lexically specified (as e.g., epistemic or deontic) but quantificational strength is not. The current paper extends this analysis by demonstrating that *ka-...-a* lexically encodes circumstantial modality, but does not encode differences in quantificational strength. At the same time, the close semantic parallels between *ka-...-a* and other uncontroversially modal elements in St'át'imcets provides additional support for our modal analysis, in contrast to previous accounts (in particular that of Demirdache 1997; see also Davis and Demirdache 2000), which treat *ka-...-a* as primarily aspectual in nature.

Cross-cutting the dimension of quantificational force, we also show that *ka-...-a* allows both *personal* ('dispositional') and *impersonal* interpretations. Whereas the personal interpretation is unrestricted in distribution (save for pragmatic effects), impersonal interpretations are restricted to predicates without an external argument, including passives and unaccusatives.

The structure of the paper is as follows. In section 2, we briefly discuss relevant morphosyntactic properties of *ka-...-a*, before turning to its five typical interpretations. We then reduce these five interpretations to two: *ability* and *no-choice*. Section 3 contains the core of our analysis: after introducing the essentials of the Kratzerian framework we employ, we argue that the ability interpretation is an existential circumstantial modal, and that the no-choice interpretation is a universal circumstantial modal. We then unify the existential and universal interpretations by treating them both as universal quantifiers over sets of accessible worlds, with the difference between the two interpretations determined by the size of the set of worlds. In Section 4, we turn to the personal-impersonal distinction, and show that impersonal readings are confined to predicates without an external argument. Section 5 concludes.

St'át'imcets is a Northern Interior Salish language spoken in the southwestern interior of British Columbia, Canada. It has two major dialects, which are mutually intelligible but differ in various lexical, morphological, and syntactic respects. None of these differences are relevant to the current study, which draws on speakers from both dialects. St'át'imcets is highly endangered, with fewer than 100 first language speakers remaining.

The data in this paper are drawn both from textual materials and from primary fieldwork. We have used a variety of elicitation techniques in our

fieldwork, including judgments about the felicity and/or truth of utterances in particular discourse contexts, as well as translations either from English to St'át'imcets, or vice-versa. See Matthewson (2004) for further discussion of the methodology employed here.

2 The St'át'imcets marker *ka-...-a*

We begin this section by briefly describing some relevant morphosyntactic properties of *ka-...-a*, before turning to its interpretation.

2.1 The morphosyntax of *ka-...-a*

The discontinuous morpheme *ka-...-a* is referred to as 'resultative' in van Eijk (1997) and as 'out of control' in Demirdache (1997) and Davis and Demirdache (2000). We gloss it here as 'circumstantial' in anticipation of our own circumstantial modal analysis.

Both parts of *ka-...-a* are probably historically related to second-position enclitics, *ka-* to the irrealis enclitic $=ka$, and $-a$ to the 'reinforcing' or 'existential' enclitic $=a$.² However, in the contemporary language, *ka-...-a* clearly constitutes a distinct morpheme, as can easily be shown by the fact that, unlike second position clitics, it remains fixed to the main predicate in clauses containing pre-predicative auxiliaries. This is shown in (1) for *ka-* versus $=ka$ and in (2) for $-a$ versus $=a$: in each case, the enclitic appears after the auxiliary *huz'/cuz'* 'going to', while both elements of *ka-...-a* remain affixed to the main predicate *nas* 'go'.^{3,4}

² For a semantic analysis of $=ka$, see Rullmann et al. (to appear). For discussion of $=a$, see Matthewson (1998).

³ There is particularly suggestive evidence that the suffixal $-a$ part of *ka-...-a* was originally derived from its enclitic counterpart: just like enclitic $=a$, suffixal $-a$ follows certain other enclitics, including subject pronouns and the evidential marker $=an'$. This can be seen in (i) (Davis 2006).

(i) *ka-q'us=acw=án'-a*
CIRC-startled=2SG.CONJ=EVID-CIRC
'You look startled.'

We know that the subject pronoun and the evidential marker are enclitics, because when a pre-predicative auxiliary is present, they end up in second position, whereas the $-a$ suffix remains attached to the main predicate, as shown in (ii):

(ii) *stexw=ácw=an'* *ka-q'ús-a*
straight=2SG.CONJ=EVID CIRC-startled-CIRC
'You look really startled.'

This leads to a mismatch between linear order and relative mobility (one of several such mismatches in Salish morphology: see Kroeber 2003), which probably represents an intermediate stage in the "degeneration" of an enclitic into a suffix.

⁴ St'át'imcets examples are given in the van Eijk practical orthography now in general use in St'át'imc communities. Abbreviations are as follows: ACT = active intransitivizer, ADD = additive, ADHORT = adhortative, ANTI = antithetical, AUT = autonomous intransitivizer, CAUS = causative transitivizer, CIRC = circumstantial modal, COMP =

- (1) huz'=lhkan=ká=hem'=t'u7 ka-nás-a
 going.to=1SG.SUBJ=IRR=ANTI=ADD CIRC-go-CIRC
 'I think I'll be able to go.'
- (2) ti=húz'=a ka-nás-a
 DET=going.to=EXIS CIRC-go-CIRC
 'the one who will be able to go'

The affixal status of *ka-...-a* distinguishes it from other modals in St'át'imcets, which are all second position clitics. This reflects a structural difference: *ka-...-a* is in the c-command domain of the subject, whereas other modals are propositional operators with sentential scope.

While its distribution is generally free, *ka-...-a* may not co-occur with certain aspectual and transitivizing morphemes, most notably the directive (full control) transitivizer *-Vn*. When a predicate which would normally take the directive is affixed with *ka-...-a*, the causative (neutral control) transitivizer *-s* appears instead. See the Appendix for further discussion of this restriction, which we argue is purely morphological in nature.

2.2 The interpretations of *ka-...-a*

There are five salient interpretations associated with *ka-...-a*; see Davis (2006: Chapter 25), and Demirdache (1997) for previous discussion.⁵ These are listed in (3). We use the term 'interpretation' here in order to avoid the presumption that *ka-...-a* is ambiguous between different readings; in fact, one of the main claims of this paper is that these different interpretations can be captured by a unified analysis that posits no lexical ambiguity for *ka-...-a*.

- (3) *Interpretations of ka-...-a:*
- a. ability
 - b. manage-to
 - c. accidentally
 - d. suddenly
 - e. non-controllable

complementizer, CONJ = conjunctive (subjunctive) subject, COUNTER = counterfactual, C₂RED = C₂ reduplication, DEM = demonstrative, DET = determiner, DIR = directive transitivizer, EMPH = emphatic, EPIS = epistemic, ERG = ergative (transitive) subject, EXIS = existential, EVID = evidential, FOC = focus, FUT = future, IMPF = imperfective, INCH = inchoative, IND = indirective transitivizer, IRR = irrealis, LOC = locative, MID = middle intransitivizer, NEG = negation, NOM = nominalizer, OBJ = object, PASS = passive, PL = plural, POSS = possessive, PRSP = presuppositional, RED = redirective (relational) transitivizer, RFL = reflexive, SG = singular, STA = stative, SUBJ = (indicative) subject, TOP = topic maintenance marker, YNQ = yes-no question. A dash (-) marks an affix boundary and an equals sign (=) marks a clitic boundary.

⁵ Davis (2006) and Demirdache (1997) claim that there are four readings; we have added the fifth 'non-controllable' one.

In this sub-section we will illustrate each of these five interpretations, and in the next sub-section we will show that the five interpretations are reducible to two. In section 3, we will show that the two interpretations of St'át'imcets *ka-...-a* correspond to existential and universal circumstantial modal uses, respectively.

2.2.1 The ability interpretation

The *ability* interpretation is illustrated in (4-5); it covers typical ability attributions, which in English use *can* or *be able to*.

- (4) a. cúy'=lhkacw=ha *ka-cwák-a*
 going.to=1SG.SUBJ=YNQ *CIRC-wake-CIRC*
 lh=ma7g'úlm'ecw=as
 COMP=daybreak=3CONJ
 ‘Are you going to be able to wake up at dawn?’ (Davis 2006)
- b. wá7=lhkan *ka-cát-s-a* ta=k'ét'h=a
 IMPF=1SG.SUBJ *CIRC-lift-CAUS-CIRC* DET=rock-EXIS
 ‘I can lift the rock.’
- c. lh=núkw=as, xát'-min'=lhkan
 COMP=some=3CONJ want-RED=1SG.SUBJ
 kw=en=s=wá syéy'qtsa7 múta7 ...
 DET=1SG.POSS=NOM=IMPF girl again
 ‘Sometimes, I want to be a girl again...’
- t'u7 cw7áož=t'u7 kw=s=*ka-k'uk'wmi7t-kálh-a*
 but NEG=just DET=NOM=*CIRC-child-1PL.POSS-CIRC*
 múta7 wi=snímulh qelhmín
 again PL=1PL.EMPH old.person
 ‘...but we old people can't be children again.’⁶

⁶ Note that *ka-...-a* in this example is affixed to a nominal predicate. In fact, there are no categorial restrictions on its distribution, and – once pragmatic effects are taken into account – no categorial restrictions on its interpretation, either. (This contradicts the claim in Davis and Matthewson 1999 that *ka-...-a* may not attach to nouns, which the first two authors of this paper hereby retract). The unrestricted distribution and interpretation of *ka-...-a* distinguish it from aspectual affixes, which may either only attach to non-nominal predicates (as with the inchoative marker *-7-l-p*: see van Eijk and Hess 1986) or yield different interpretations when affixed to nominal and non-nominal predicates (as with the stative marker (*e*)*s*–: see Burton and Davis 1996). This distinction in turn provides an argument against an aspectual account of *ka-...-a*, and in favour of the modal approach taken here, where neither the distribution of *ka-...-a* nor its interpretations are directly restricted by event structure.

- (5) a. cw7aoz k=wa=s ka-gwél-a
 NEG DET(NOM)=IMPF=3POSS CIRC-burn-CIRC
 i=nesnú=s=a sp'ams
 PL.DET=damp=EXIS firewood
 'The damp firewood can't be burned.'
- b. lh=as pipántsek, cw7aoz
 COMP=(IMPF)3CONJ summer NEG
 kwelhkálh ka-gwél-cal-a, nilh
 DET+NOM+IMPF+1PL.POSS CIRC-burn-ACT-CIRC FOC
 t=s=k'ac-7úl=s=a ta=tmícw=a
 DET=NOM=dry-really=3POSS=EXIS DET=land=EXIS
 'We can't burn in the summer because the land is too dry.'
- c. cw7aoz kw=s=ka-gwél-s-tum'-a
 NEG DET=NOM=CIRC-CAUS-1PL.ERG-CIRC
 i=sp'áms=a
 PL.DET=firewood=EXIS
 'We can't get the firewood to burn.'

Example (5) shows *ka-...-a* affixed to the same root, but with three different argument/event structures. In (5a), it attaches to the bare (unaccusative) root *gwel* 'get burned' (an achievement); in (5b) it attaches to the active intransitive *gwel-cál* 'do burning' (an activity); and in (7c) it adds to the causative transitive *gwel-s* 'burn something' (an accomplishment).

2.2.2 The *manage-to* interpretation

The *manage-to* interpretation is illustrated in (6).

- (6) a. ka-gwél-s=kan-a
 CIRC-burn-CAUS=1SG.SUBJ-CIRC
 'I managed to get it lit.' (van Eijk 1997:51)
- b. ka-cwák-s=kan-a na=wá7 xúq'wleqs
 CIRC-wake-CAUS=1SG.SUBJ-CIRC DET=IMPF snore
 n-snúk'wa7
 1SG.POSS-friend
 'I managed to wake up my snoring friend.' (Davis 2006)
- c. ka-t'ál-a=ha ta=káoh-sw=a
 CIRC-stop-CIRC=YNQ DET=car-2SG.POSS=EXIS
 l=ta=kwézkwzem=a s7aolt
 on=DET=smooth=EXIS ice
 'Did your car manage to stop on the slippery ice?' (Literally: 'Was your car stoppable on the slippery ice?') (Davis 2006)

- d. qwenúxw=kan inátcwás, t'u7
 sick=1SG.SUBJ yesterday but
 ka-tsunam'-cal=lhkán-a=t'u7
 CIRC-teach-ACT=1SG.SUBJ-CIRC=ADD
 'I was sick yesterday, but I still managed to teach.' (Davis 2006)

2.2.3 The *accidentally* interpretation

The examples in (7) illustrate the *accidentally* reading. The English translations do not always contain the word 'accidentally' (see for example (7e)), but the meaning is that the action was not on purpose.

- (7) a. ka-gwél-s=kan-a ta=ngúy'tten=a
 CIRC-burn-CAUS=1SG.SUBJ-CIRC DET=bed=EXIS
 'I accidentally set my bed on fire.' (Davis 2006)
- b. ka-gúy't=kan-a, xúq'wleqs-kan aylh,
 CIRC-sleep=1SG.SUBJ-CIRC snore-1SG.SUBJ then
 ka-cwák-s=kan-a
 CIRC-wake-CAUS=1SG.SUBJ-CIRC
 na=n-snúk'w7=a
 DET=1SG.POSS-friend= EXIS
 'I fell asleep, started snoring, and accidentally woke up my friend.'
 (Davis 2006)
- c. ka-mul-aká7=lhkan-a l=ta=slhúm'=a
 CIRC-dip-hand=1SG.SUBJ-CIRC in=DET=soup=EXIS
 'I dipped my hand in the soup by accident.' (Davis 2006)
- d. ka-sék'w-s-as-a ta=nk'wanústen'=a
 CIRC-break-CAUS-3ERG-CIRC DET=window=EXIS
 ta=twéww'et=a
 DET=boy=EXIS
 'The boy broke the window accidentally.' (Davis 2006)
- e. ka-nk'méq'w=lhkan-a aylh
 CIRC-immersed=1SG.SUBJ-CIRC then
 l=ti=n-gwáts'-cal-ten=a
 in=DET=LOC-irrigate-ACT-thing=EXIS
 'I fell into the ditch.' (Matthewson 2005:158)

2.2.4 The *suddenly* interpretation

The *suddenly* reading is shown in (8).

- (8) a. *ka-q'ek'w-ts=kán-a*
CIRC-close-mouth=1SG.SUBJ-*CIRC*
 'My mouth got closed suddenly.' (Alexander et al. in prep.)
- b. *ka-lhexw-min-ts=kácw-a*
CIRC-come.up-RED-1SG.OBJ=2SG.SUBJ-*CIRC*
 'You came up to me all of a sudden.' (Alexander et al. 2006)
- c. *ni..lh s=cuy'=s ka-tíg-w-a i=tíntin=a*
 FOC NOM=start=3POSS *CIRC*-ring-*CIRC* PL.DET=bell=EXIS
kentákem
 everywhere
 'And suddenly bells started ringing everywhere.'
 (Matthewson 2005: 454)
- d. *qwaqwx-mín=lhkan ta=scwelálhp=a,*
 nightmare-RED=1SG.SUBJ DET=ghost=EXIS
ka-cwák=kan-a aylh
CIRC-wake=1SG.SUBJ-*CIRC* then
 'I had a nightmare about a ghost, then I woke up suddenly.'
 (Davis 2006)
- e. *nilh láti7 ka-t'ál=s-a ta=káoh-s=a*
 FOCthere *CIRC*-stop=3POSS-*CIRC* DET=car-3POSS=EXIS
 'His car suddenly stopped.' (Matthewson 2005:230)

2.2.5 The *non-controllable* interpretation

The *non-controllable* interpretation arises with unaccusative predicates, including weather verbs, as in (9a-b), verbs of appearance, as (9b-c), and change-of-state verbs, as in (9d).

- (9) a. *ka-t'ál-a ta=sk'éxem=a, kekáw' kent7ú ku=szénk*
CIRC-stop-*CIRC* DET=wind=EXIS far around DET=circle
 'The wind stopped blowing, far around that circle.' (Davis 2006)
- b. *ka-lhéxw-a ta=snéqwem=a*
CIRC-come.up-*CIRC* DET=sun=EXIS
 'The sun came out.' (Davis 2006)
- c. *lts7a sek'wel'wás=a lh=tákem=at ka-hál'h-a*
 here Cayoose.Creek=EXIS COMP=all=1PL.CONJ *CIRC*-show-*CIRC*
 'We were all born here at Cayoose Creek.' (Matthewson 2005:96)

- d. *ka-lhót-a* aylh i=s7áy'tsqw=a nilh
CIRC-get.squished-*CIRC* then PL.DET=raspberry=EXIS FOC
ka-téqw=s-a ti=n-tsq-ús-tn=a
CIRC-dent=3POSS-*CIRC* DET=LOC-put.down-face-thing=EXIS
 'The raspberries got squished and the pot got dented.'
 (Matthewson 2005:73)

Predicates with an external argument, including those with a natural force or other inanimate entity as subject, fail to yield a non-controllable interpretation with *ka-...-a*. Instead, these predicates get only ability and/ or accidental interpretations. With inanimate subjects, such interpretations are incongruous, as shown in the (a) examples in (10) and (11) below, since inanimate entities cannot generally be ascribed abilities or perform accidental actions. When asked to provide transitive sentences with inanimate subjects and non-controllable meanings, speakers volunteer plain causatives without *ka-...-a*, as shown in (10b-11b).

- (10) a. # *ka-tayt-s-tumulh-ás-a* ta=wá7 q'wel
CIRC-hungry-CAUS-1PL.OBJ-3ERG-*CIRC* DET=IMPF cooked
 sts'úqwaz'
 fish
 # 'The cooked fish managed to/accidentally made us hungry.'
- b. *tayt-s-túmulh-as* ta=wá7 q'wel sts'úqwaz'
 hungry-CAUS-1PL.OBJ-3ERG DET=IMPF cooked fish
 'The cooked fish made us hungry.'
- (11) a. # *wá7=k'a* láti7 stám'=as
 IMPF=EPIS there what=3CONJ
ku=ka-qwenuxw-s-tumc-ás-a
 DET=*CIRC*-sick-CAUS-1SG.OBJ-3ERG-*CIRC*
 # 'There must have been something that managed to make /
 accidentally made me ill there.'
- b. *wá7=k'a* láti7 stám'=as
 IMPF=EPIS there what=3CONJ
ku=qwenúxw-s-tumc-as
 DET=sick-CAUS-1SG.OBJ-3ERG
 'There must have been something that made me ill there.'

We discuss this restriction further in Section 4.

Some predicates with a non-controllable interpretation show free variation between the *ka-...-a* version and a bare root intransitive (12a-b), or between the *ka-...-a* version and a form containing the inchoative infix -7- (13a-b) or C₂ ('out of control') reduplication (14a-b). In these cases, there is no

detectable difference in meaning between the two forms.⁷

- (12) a. lan wa7 ka-kwís-a i=pétskelh-ts-a
 already IMPF CIRC-fall-CIRC PL.DET=leaf-3POSS=EXIS
 i=sráp-a
 PL.DET=tree=EXIS
 ‘The leaves have already fallen from the trees.’
- b. lan wa7 kwis i=pétskelh-ts-a
 already IMPF fall PL.DET=leaf-3POSS=EXIS
 i=sráp=a
 PL.DET=tree=EXIS
 ‘The leaves have already fallen from the trees.’
- (13) a. xwém=t’u7 kw=s=ka-mág=s-a
 fast=ADD DET=NOM=CIRC-bright=3POSS-CIRC
 ‘It got bright quickly.’
- b. xwém=t’u7 kw=s=má-7-eg’s
 fast=ADD DET=NOM=bright(INCH)=3POSS
 ‘It got bright quickly.’
- (14) a. ka-qácw-a ti=n-ts’íp’-men=a
 CIRC-break-CIRC DET=1SG.POSS-cold-instrument=EXIS
 ‘My fridge broke (down).’
- b. qácw-ecw ti=n-ts’íp’-men=a
 break-C₂RED DET=1SG.POSS-cold-instrument=EXIS
 ‘My fridge broke (down).’

In fact, some non-controllable predicates denoting changes of state have been lexicalized so that they *only* occur with *ka-...-a*, as shown in (15), while still others have been lexicalized so that they fail to occur with *ka-...-a* altogether, as shown in (16).

- (15) a. xwém=t’u7 kw=s=ka-t’ép=s-a
 fast=ADD DET=NOM=CIRC-get.dark=3POSS-CIRC
 ‘It got dark fast.’
- b. * xwém=t’u7 kw=s=t’ep=s
 fast=ADD DET=NOM=get.dark=3POSS
 ‘It got dark fast.’

⁷ There is considerable speaker variation as to the acceptability of non-controllable predicates with and without *ka-...-a*. One of our speakers rejected (12a), for example, while another found it fine.

- (16) a. * xwém=t'u7 kw=s=ka-máqa7=s-a
 fast=ADD DET=NOM=CIRC=snow=3POSS-CIRC
 'It suddenly snowed.'⁸
- b. xwém=t'u7 kw=s=máqa7=s
 fast DET=NOM=snow=3POSS
 'It suddenly snowed.'

We will argue below that the variation associated with the non-controllable interpretation of *ka-...-a* comes about because of the very close relationship between universal circumstantial interpretations of eventive predicates and plain event descriptions; in fact, in many cases, there are no detectable truth-conditional differences between the two, leading to free variation and apparently arbitrary lexicalization of forms with and without *ka-...-a*.

It is also worth noting that apart from the restrictions just discussed, there are other more straightforwardly pragmatic restrictions on which interpretations appear with which types of predicates. For example, it is difficult to accidentally become a chief, but it makes perfect sense to talk about whether one is able to become a chief. Conversely, it is not usual to talk about the sun being able to come up. Nevertheless, many predicates allow multiple interpretations, depending on the context. For example, (7d) above, *The boy broke the window accidentally*, can also mean *The boy managed to break the window*, given an appropriate discourse context. Note also that the ability reading is very general and applies even to unaccusatives, yielding an *-able* reading. One example of these was given in (5a) above; another is given in (17):

- (17) cw7aoz kw=a=s ka-ts'áqw-a
 NEG DET(NOM)=IMPF=3POSS CIRC-get.eaten-CIRC
 i=qwenáhp=a – wá7=iz' zúqw-cal!
 PL.DET=Indian.hellebore=EXIS IMPF=PL.DEM die-ACT
 'Indian hellebore isn't edible [can't be eaten] – it's poisonous [kills]'

In the next sub-section we begin the process of unifying the various interpretations of *ka-...-a*. First we argue for a unification of the ability and the manage-to interpretations, and then for the accidentally, the suddenly and non-controllable interpretations.

2.3 Unifying the interpretations

2.3.1 Manage-to = ability

Davis (2006) (following a suggestion by Demirdache 1997) shows that the manage-to reading of predicates with *ka-...-a*, unlike the English implicative

⁸ Again, there is speaker variation here. One of our consultants accepts *ka-máqa7-a*, while another rejects it.

verb *manage* lacks an actuality entailment. Before we present the evidence for this claim, we introduce some background about English *manage*. As argued by Karttunen (1971) and Karttunen and Peters (1979), a sentence containing *manage* asserts that an event took place, and conventionally implicates that there was some difficulty involved. This is illustrated in (18).

- (18) John managed to sit through the Chinese opera.
 a. *Assertion*: John sat through the Chinese opera.
 b. *Conventional implicature*: Sitting through a Chinese opera requires some effort for John. (Bhatt 1999: 179)

As predicted by this analysis, the assertion does not project when *manage* is in the scope of negation while the conventional implicature does. Thus, the truth of (19) entails the falsity of (18a), but not of (18b):

- (19) John didn't manage to sit through the Chinese opera.

In contrast with *manage*, the past tense of an ability attribution, *was able to*, does not carry an actuality entailment. Thus, (20a) is a contradiction, but (20b) is not.

- (20) a. # I managed to teach yesterday, but I didn't.
 b. I was able to teach yesterday, but I didn't.

Turning now to St'át'imcets *ka*...-a, the data show that there is no actuality entailment. Instead, the understanding that the event happened is only a cancelable conversational implicature. This is shown in (21-22). (21a) yields a typical *manage*-to interpretation; (21b) uses the same predicate and shows that there is no contradiction when the event is asserted not to have taken place.

- (21) a. qwenúxw=kan i=nátcw=as, t'u7
 sick=1SG.SUBJ when.PAST=day=3CONJ but
 ka-tsunam'-cal=lhkán-a=t'u7
 CIRC-teach-ACT=1SG.SUBJ-CIRC=ADD
 'I was sick yesterday, but I still managed to teach.' (Davis 2006)
- b. qwenúxw=kan i=nátcw=as,
 sick=1SG.SUBJ when.PAST=day=3CONJ
 ka-tsunam'-cal=lhkán-a=ka, t'u7 cw7áoy=t'u7
 CIRC-teach-ACT=1SG.SUBJ-CIRC=IRR but NEG=ADD
 'I was sick yesterday. I could have taught, but I didn't.'
 (Davis 2006)
- (22) aolsem=lhkán=tu7, páw-alhq'wel't=kan nilh
 sick=1SG.SUBJ=then swollen-throat=1SG.SUBJ FOC

s=cw7ay=s kw=en=s=ka-q'ém-cal-a
 NOM=NEG=3POS DET=1SG.POS=NOM=CIRC-swallow-ACT-CIRC
 ku=stám'
 DET=what

'I was sick. I had a sore throat, so I couldn't swallow anything.'

ts7ás=kan aylh ama-wíl'c
 come=1SG.SUBJ then good-become
 'Then I began to get better.'

ka-q'ém-s=kan-a aylh
 CIRC-swallow-CAUS=1SG.SUBJ-CIRC then
 n-kál'wat=a, t'u7 cw7áo= t'u7 múta7
 1SG.POSS-medicine=EXIS but NEG=ADD again
 kw=en=s=xát'-min', nilh
 DET=1SG.POSS=NOM=want-RED FOC
 s=7ús-ts-an
 NOM=throw.out-CAUS-1SG.ERG

'I was able to swallow my medicine, but I didn't want it any more, so I threw it out.'

These data indicate that what we have been calling the manage-to interpretation does not carry an actuality entailment, but an actuality *implicature* which arises in a past episodic context.⁹ We thus follow Davis (2006) in arguing that the ability and the manage-to interpretations are reducible to the ability reading.¹⁰

⁹ St'át'imcets does not obligatorily encode a past / present tense distinction. Imperfective aspect is overtly marked by the auxiliary *wa7*, but perfective aspect is unmarked: therefore, crucially, the sentences in (20-22) are perfective. See Matthewson (in press) for a detailed analysis of the St'át'imcets temporal system.

¹⁰ The St'át'imcets data contrast with Bhatt's (1999) and Hacquard's (2006) findings for perfective ability attributions in Modern Greek, Hindi, French and Italian. Bhatt and Hacquard show that in these Indo-European languages, ability attributions with perfective aspect have actuality entailments. Furthermore, Mills (2005:27) reports that in Tagalog, an imperfective form with the ability / involuntary action (AIA) morpheme (the Austronesian analogue of *ka-...-a*) gives only an ability reading, while a perfective form gives either a manage-to or an involuntary action reading, as shown in (i-ii):

- (i) nakakain ko ang lamok
 AIA.IMPF.eat 1SG.CASE NOM mosquito
 'I am able to eat the mosquito.'
- (ii) nakain ko ang lamok
 AIA.PERF.eat 1SG.CASE NOM mosquito
 'I managed to eat / accidentally ate the mosquito.'

Furthermore, as explicitly stated by Kroeger (1993: 81) the perfective manage-to reading of AIA forms in Tagalog has an actuality entailment, as in Indo-European, not an implicature, as in St'át'imcets. Travis (2000: 180-181) makes the same claim for parallel cases in Malagasy. Obviously, this difference invites further cross-linguistic research.

2.3.2 *Accidentally = suddenly = non-controllable = ‘no choice’*

Davis (2006) argues that the accidentally and the suddenly interpretations of *ka-...-a* are also reducible to a single reading. The basic intuition behind this move is that events that are accidents often happen suddenly, and vice versa. In contrast to Davis (2006), however, we will provide evidence here that it is the accidentalness (= lack of choice) which is critical for this unified reading, not the suddenness. We will therefore name the unified interpretation *no-choice*.

Evidence that the accidental (= lack of choice) aspect of meaning is basic to *ka-...-a* comes from the fact that the suddenly aspect is often cancelable, but the accidental aspect is not. In other words, *ka-...-a* never yields a deliberate-but-sudden reading, only an accidental – and possibly, but *not* necessarily, sudden – reading. This is shown in (22-23), where a deliberate but sudden action does not license *ka-...-a*.

- (22) *Situation: I wanted to do something funny for my kids so I was standing there perfectly still and then suddenly I stuck my tongue out.*

ka-taolhao7-cít=kan-a *i=sk'wemk'úk'wmi7t=a*
CIRC-tongue-IND=1SG.SUBJ-CIRC *PL.DET=children=EXIS*
 ‘I suddenly stuck my tongue out at the children.’

Consultant's comment: ‘That would mean you didn't mean to do it but you did.’

- (23) *Situation: We were sitting in a meeting when suddenly John stood up and ran from the room.*

a. * *ka-tálh-lec-a* *kw=s=John,* *nilh*
CIRC-stand-AUT-CIRC *DET=NOM=John* *FOC*
s=qwatsáts=s *q'flhil*
NOM=leave=3POSS *run*
 ‘John stood up suddenly, and ran out of the room.’

b. *lep* *kw=s=tálh-lec=s* *s=John,* *nilh*
suddenly *DET=NOM=stand-AUT=3POSS* *NOM=John* *FOC*
s=q'flhil=s *úts'qa7* *lhél=ta=s-gáw'p=a*
NOM=run=3POSS *outside* *from=DET=NOM-meet=EXIS*
 ‘John stood up suddenly, and ran out of the meeting.’

Note that the consultant corrects (23a), which infelicitously contains *ka-...-a*, to (23b), which lacks it.

On the other hand, (24-25) show that it is possible to obtain an accidentally-but-*not*-suddenly reading for *ka-...-a*.

- (24) *Situation: You are trying to catch a mosquito and your movements as you are doing so look like dancing, so you accidentally dance.*

ts'íla=t'u7 kw=n=ka-q'wez-ílc-a
 like=ADD DET=1SG.POSS=CIRC-keep.time-AUT-CIRC
 'Looks like I'm almost dancing.'

- (25) *Situation: You were sitting in court being on the jury and you were not supposed to stand up until it's time to go. But you were trying to get something out of your pocket and your pocket was really tight and you had to wiggle and squirm and eventually you found that you had stood up by accident while you were trying to get that thing out of your pocket.*

ka-talh-lec=kán-a, nílh=t'u7 múta7
 CIRC-stand-AUT=1SG.SUBJ-CIRC then=ADD again
 n=s=xwem mítsa7q
 1SG.POSS=NOM=quick sit
 'I stood up by mistake, so I quickly sat down again.'

- (26) *Situation: You're playing a game where you draw with a blindfold on and then look and see how your drawing came out. When you take your blindfold off, you discover that you have accidentally written your name.*

ka-mets-s=kan-á=k'a ti=n-skwátsits=a
 CIRC-write-CAUS=1SG.SUBJ-CIRC=EPIS DET=1SG.POSS-name=EXIS
 'I drew my name by accident.'

These data suggest that it is the accidentally notion that is basic, and that the suddenly effect is a cancelable implicature. This conclusion is further supported by the fact that the language possesses a separate lexical item which expresses 'suddenly' (*lep*, as in example (23b) above), but there is no separate lexical item to express 'accidentally'.¹¹

Once we have unified the accidentally with the suddenly interpretation, it is but a small step to observe that the non-controllable cases share a fundamentally similar semantics. The core idea is that there is a lack of choice or control. In the accidentally cases, this is because an agent who *could* potentially be in control of the event is *not* actually in control; in the non-

¹¹ Furthermore, for one of our speakers, *lep* can itself be affixed with *ka-...-a*, yielding *ka-lép-a*, as in (i):

(i) *ka-lép-a=t'u7 k=máqa7=s*
 CIRC-suddenly-CIRC=ADD DET=snow=3POSS
 "It suddenly started to snow."

This is strong additional evidence that 'suddenly' cannot be the basic meaning of *ka-...-a*.

controllable cases, there was never any agent who is even *potentially* in charge. Note that just like the accidentally cases, the non-controllable cases often implicate suddenness, but they need not, as shown in (27).

- (27) a. skenkín=t'u7 kw=s=ka-t'ép=s-a
 slow=ADD DET=NOM=CIRC-dark=3POSS-CIRC
 'It gradually got dark.'
- b. t'ák=t'u7 ka-mág-a, ka-mág-a aylh
 go.along=ADD CIRC-get.light-CIRC CIRC-get.light-CIRC then
 'It got light gradually.'

We conclude from the data presented in this sub-section that the core meaning of all the non-ability-related interpretations of *ka-...-a* is that something happened – or rather, *had to happen* – without the choice of any agent. The suddenly aspect of meaning is merely a conversational implicature, deriving from the fact that accidents usually – but not necessarily – happen all of a sudden.

One further important point is worth making here. Though it is much more difficult to demonstrate, the no choice reading of *ka-...-a* lacks an actuality entailment, just like the ability ('manage to') reading. The reason it is so difficult to show this is that when an event *has to* happen, in the normal course of events, it *does* happen. So we need to find an *abnormal* course of events to demonstrate that the actuality of the event is cancelable. The following scenario is designed with this in mind:

- (28) qv| ta=s7exw7unám-s=a k=Gillian i=nátcw=as.
 bad DET=cold-3POSS=EXIS DET=Gillian when(PAST)=day=3CONJ
 'Gillian had a very bad cough yesterday.'

stexw wa7 n-tqép-leqs.
 really IMPF LOC-blocked-nose
 'Her nose was really plugged up.'

kens-q'á7 ku=t'ec szag' t'u7 ka-nsnán7-a
 try-eat DET=sweet bread but CIRC-sneeze-CIRC
 'She started to eat some sweet bread, but she had to sneeze.'

t'u7 t'eqwp-álts ti=tsítcw-s=a nílh=t'u7
 but explode-house DET-house-3POSS=EXIS FOC=ADD
 s=zuqw=s
 NOM=die=3POSS
 'But then her house exploded and she died.'

Interviewer: She never got to eat her sweet bread and she never got to sneeze? Consultant: Right.

In this scenario, we see that the actuality of the sneezing event is cancelable, when events take an unexpected (and tragic) course. This is important in that it shows that the no-choice reading of *ka-...-a* shares fundamental properties with the ability reading, suggesting that even these two apparently quite dissimilar interpretations should ultimately be unified.

This is precisely the task to which we turn in the next section. We provide an analysis according to which the ability reading is an existential circumstantial modal use, and the no-choice reading is a universal circumstantial modal use. Crucially, we do not analyze the two interpretations as a case of lexical ambiguity, but rather of non-specification or generality, following the approach we have taken to other modals in St'át'imcets (Rullmann et al. to appear). The fact that *ka-...-a* acts just like other modals in St'át'imcets in lexically specifying conversational background but not quantificational strength provides strong indirect evidence that the current analysis is on the right track, while at the same time reinforcing the generalizations that underpin our previous analysis of modality in St'át'imcets.

3 *Ka-...-a* as a circumstantial modal

We begin this section in 3.1 by briefly summarizing our previous work on modals in St'át'imcets (Rullmann et al. to appear, Matthewson et al. 2006), which is implemented within the formal framework of Kratzer (1977, 1981, 1991). We then introduce Kratzer's analysis of circumstantial modality in 3.2, before returning to our analysis of *ka-...-a*. We show in 3.3 that the ability interpretation of *ka-...-a* displays exactly the range of meanings which are predicted for an existential circumstantial modal, and in 3.4 that the no-choice interpretation displays the range of meanings which we expect a universal circumstantial modal to have.¹² In section 3.5 we turn to the formal analysis, which we implement along the lines of our previous choice function analysis of modals in St'át'imcets.

3.1 Quantificational strength and conversational background: modals in English and St'át'imcets

We start from the standard view that in English (and other familiar languages) modals are quantifiers over possible worlds. For example, *must* and *should* are universal quantifiers whereas *can*, *could*, *may*, and *might* are existential quantifiers. As is well known, English modals can have many different readings, including deontic, epistemic, and circumstantial. To account for this, Kratzer (1977, 1981, 1991) argued that the discourse context provides what she called a *conversational background* for the modal. (29) and (30) illustrate epistemic and deontic readings of *must*; here the phrase *in view of ...* specifies the conversational background, which is usually left implicit.

¹² In forthcoming work, Nauze (in prep.) also claims that *ka-...-a* is a circumstantial modal.

- (29) Michl must be the murderer. (In view of what is known about the crime.) EPISTEMIC (Kratzer 1991:643)
- (30) Jockl must go to jail. (In view of what the law provides.) DEONTIC (Kratzer 1991:640)

According to Kratzer, the conversational background consists of two components: the *modal base* and the *ordering source*. The modal base is a function which maps each world onto the set of worlds that are accessible from it. In any given world, the modal only quantifies over these accessible worlds. The ordering source ranks worlds in some contextually-determined way and further restricts the domain of quantification of the modal to worlds at one end of the ranking. (29), for example, has an epistemic modal base: *must* only quantifies over worlds which are compatible with our knowledge about the crime in the evaluation world. The set of worlds quantified over is narrowed down further by what Kratzer calls a stereotypical ordering source: only those worlds are considered which are closest to “the normal course of events” in the evaluation world. For example, it is not required that Michl is the murderer in unusual worlds where humans are routinely killed by aliens. In (30), *must* quantifies over worlds which are compatible with certain facts in the evaluation world (a circumstantial modal base), and which are closest to the ideal given by “what the law provides” (a normative ordering source).

In recent work (Rullmann et al. to appear, Matthewson et al. 2006) we have identified two important and systematic differences between the behaviour of modals in St’át’imcets and the behaviour of modals in English and other well-studied European systems. Firstly, in contrast to English, the distinction between different types of conversational backgrounds is lexically marked in St’át’imcets. That is, there is a set of “evidential” modals that allow only particular kinds of epistemic conversational backgrounds, and there is a different (“irrealis”) modal that allows deontic or counterfactual, but not epistemic backgrounds. This means that *must* in (29) and (30), for example, will be translated into two different modals in St’át’imcets:

- (31) nilh=k’a s=Michl na=wá7 k’azák7-am
FOC=EPIS NOM=Michl DET=IMPF murder-MID
‘Michl must be the murderer.’ (In view of what is known about the crime.)
- (32) cúz’=ka n-k’a7 kw=s=Jockl
going.to=IRR LOC-jailed DET=NOM=Jockl
‘Jockl must go to jail.’ (In view of what the law provides.)

The second difference concerns quantificational force. In English, the quantificational force of a modal is lexically fixed: *must*, for example, is always a universal quantifier over possible worlds, and *may* is always an existential

quantifier, even though their conversational backgrounds may vary. In contrast, St'át'imcets modals show variable force: the epistemic modal *k'a*, for example, can be translated as either *must*, as in (31) above, or *may*, as in (33) below; and the irrealis modal *ka* can be translated as *must*, *may*, or *can*, as in (34) below.¹³

- (33) wá7=*k'a* séna7 qwenúxw
 IMPF=*EPIS* COUNTER sick
 'He may be sick.' (*Context: maybe that's why he's not here.*)
- (34) lán-lhkacw=*ka* áts'x-en ti=kwtámts-sw=a
 already=2SG.SUBJ=*IRR* see-DIR DET=husband-2SG.POSS=*EXIS*
 'You must / can / may see your husband now.'

In Rullmann et al. (to appear) we proposed a unified formal analysis of the quantificational variability of St'át'imcets modals using choice functions over possible worlds. In 3.5 below we will extend this formal analysis to *ka*...*a*. First, however, we need to discuss its modal base, since one of our principal claims here is that *ka*...*a* is lexically specified as a pure circumstantial modal.

3.2 Circumstantial modality

Pure circumstantials have a circumstantial modal base (just like deontics), but a stereotypical ordering source rather than a normative one.¹⁴ In this section we illustrate the types of meanings we expect to find with this kind of modal.

Circumstantial conversational backgrounds are concerned with what is possible or necessary given certain facts about the way the world is. In other words, a circumstantial conversational background picks out a set of worlds in which some set of facts which hold in the evaluation world hold. As Kratzer (1991:646) puts it:

In using an epistemic modal, we are interested in what else may or must be the case in our world given all the evidence available. Using a circumstantial modal, we are interested in the necessities implied by or the possibilities opened up by certain sorts of facts.

Kratzer's example illustrating the contrast between epistemic and circumstantial modality is given in (35), along with her explanation below.

¹³ As discussed in Rullmann et al. (to appear), even though both existential and universal interpretations are available, there is a preference for default universal force for modals in St'át'imcets.

¹⁴ Future modals are also usually assumed to have circumstantial modal bases. See section 3.4.1 below for discussion of the close relationship between plain circumstantials and futures.

- (35) a. *existential circumstantial*:
Hydrangeas can grow here.¹⁵
- b. *existential epistemic*:
There might be hydrangeas growing here.

Suppose I acquire a piece of land in a far away country and discover that soil and climate are very much like at home, where hydrangeas prosper everywhere. Since hydrangeas are my favorite plants, I wonder whether they would grow in this place and inquire about it. The answer is [35a]. In such a situation, the proposition expressed by [35a] is true. It is true regardless of whether it is or isn't likely that there are already hydrangeas in the country we are considering. All that matters is climate, soil, the special properties of hydrangeas, and the like. Suppose now that the country we are in has never had any contacts whatsoever with Asia or America, and the vegetation is altogether different from ours. Given this evidence, my utterance of [35b] would express a false proposition. What counts here is the complete evidence available. And this evidence is not compatible with the existence of hydrangeas (Kratzer 1991: 646).

Another example illustrating the contrast between circumstantials and epistemics is given in (36).

- (36) a. *existential circumstantial*:
Cathy can make a pound of cheese out of this can of milk.
- b. *existential epistemic*:
Cathy might make a pound of cheese out of this can of milk.
(von Fintel and Heim 2005: 33, attributed to Angelika Kratzer)

(36a) says that it is consistent with certain facts (the size of this can of milk, Cathy's cheese-making abilities, and so on) that Cathy could make a pound of cheese out of this milk. In evaluating (36a) we do not take into account Cathy's current whereabouts or intentions, or the fact that the speaker is about to consume the can of milk before it can be made into cheese. (36b), on the other hand, claims that there is at least one possible world consistent with all the available evidence in which Cathy makes cheese out of this milk. If Cathy is

¹⁵ We prefer *could* to *can* here, as well as in (36a). This probably reflects the counterfactuality implied in the context (at least, if we know that hydrangeas are in fact *not* growing here). However, it does not affect the main point being made here. See von Fintel and Iatridou (to appear) for discussion of counterfactual marking on modals.

10,000 miles away at the time of utterance and the speaker is about to consume the can of milk, (36a) can be true but (36b) is false.

- (37) a. Sally can come along (because the car fits five).
PURE CIRCUMSTANTIAL
- b. Sally can swim (she is able to).
DISPOSITIONAL CIRCUMSTANTIAL (Lechner 2005:2)

- (38) *Impersonal modality*: Meaning of the proposition can be calculated by considering only the facts and circumstances of the background

So far we have only discussed circumstantial modals with existential force. Examples illustrating the circumstantial / epistemic contrast with universal modals are given in (39-40).

¹⁶ The dispositions / abilities / desires of the subject are also part of the facts and circumstances of the background, so this formulation requires some refinement.

¹⁸ Many speakers find *must* a little odd here; *have to* is fine. As above, we do not offer any analysis of such differences between different modals in English, as they do not affect the main point.

(40) *universal epistemic:*

- a. Jockl must be sneezing (in view of the evidence available to me).
- b. Jockl must have sneezed.

(39a) asserts that in all worlds in which the actual state of Jockl's nose, Jockl's respiratory tract, and the atmospheric conditions hold, Jockl sneezes. In other words, Jockl has no choice but to sneeze. We will show below that St'át'imcets *ka-...-a* also has this kind of use.

Note, however, that in both languages, universal circumstantial modals are relatively rare, particularly in future contexts. Even in situations where the facts absolutely force something to happen, future modals are usually preferred (e.g., *The bomb will / is going to / * must explode at 6pm.*). We return to this issue in 3.4.

3.3 The 'ability' interpretation of *ka-...-a* as an existential circumstantial reading

Recall that we have reduced the five interpretations associated with *ka-...-a* to two: ability and no-choice. Now, we take a closer look at the type of interpretations subsumed under ability, to convince ourselves that we are dealing with an existential circumstantial modal. Firstly, we see *ka-...-a* used for core cases of ability attributions, as in (41-42), along with their past tense versions, as in (43), which - as discussed above - are often translated as 'managed to'.

- (41) wá7=lhkan s-lheqw-mín ti=ts'qáx7=a, nilh
 IMPF=1SG.SUBJ STA-get.on.horse-RED DET=horse=EXIS FOC
 kw=en=s ka-tsiew-aká7-min-a
 DET=1SG.POSS=NOM CIRC-get.there-hand-RED-CIRC
 i=stsáqwem=a l=ki=kecmákst=a
 PL.DET=saskatoon=EXIS on=PL.DET=branch=EXIS
 'I was on the horse, so that I could reach the berries on the branches.'
 (Matthewson 2005:28)

- (42) wa7 xíl-em=wit ets7á kw=s=zwat-en-ítas swát=as
 IMPF do-MID=3PL this DET=NOM=know-DIR-3PL.ERG who=3CONJ
 ku=wá7 ka-xilh-tal'í-ha ku=xwém
 DET=IMPF CIRC-do(CAUS)-TOP-CIRC DET=fast
 'They did that to see who could do it the fastest.' (Matthewson 2005:88)

- (43) nilh (s-)sek-qw-án'-itas, aylh ka-zuqw-s-twítas-a
 FOCNOM-hit-head-DIR-3PL.ERG then CIRC-die-CAUS-3PL.ERG-CIRC
 '...so they hit them on the head and managed to kill them.'
 (Matthewson 2005:144)

The ability interpretations fall squarely into the personal sub-type of circumstantial modality introduced above. However, *ka-...-a* is not restricted to

personal modality interpretations: it also has impersonal readings, as illustrated in (44). The meaning of this proposition relies only on the facts and circumstances of the background, namely how big the bags were.

- (44) f7ez' kw=s=xzum=s kw=s=ka-k'úl'-a
 enough DET=NOM=big=3POSS DET=NOM=CIRC-make-CIRC
 ku=nkúp-s ku=pápla7 xzum úcwalmicw
 DET=mattress-3POSS DET=one big person
 'They [the bags] were big enough to make a mattress for one big person
 (i.e.: they were big enough that they could be made into a mattress for
 one big person) (Matthewson 2005:75)

Other clear cases of impersonal existential circumstantials are given in (45-46) below:

- (45) t'áq'em'kst úcwalmicw wa7 ka-n-lhám'-a
 six person IMPF CIRC-LOC-put.in-CIRC
 l=ti=káoh=a
 in=DET=car=EXIS
 'Six people can fit in that car.'
- (46) cúz'=t'u7 ka-xléq'-a ti=k'ét'h=a lh=kánmas=as
 going.to=ADD CIRC-roll-CIRC DET=rock=EXIS COMP=when=3CONJ
 'That rock could fall at any time.'

We also see *ka-...-a* used with St'át'imcets counterparts to Kratzer's circumstantial hydrangea example.

- (47) *Situation: The soil and climate are right, but the speaker knows no sagebrush actually grows here.*

wa7 ka-ríp-a ku=káwkew kents7á
 IMPF CIRC-grow-CIRC DET=sagebrush around.here
 'Sagebrush can grow around here.'

Consultant's comment: "If somebody brought some seeds it would grow here – it's just a possibility it would grow here."

(48) below shows that it is not contradictory to assert that no Douglas-firs *are* growing here, while at the same time asserting that it is circumstantially possible that they *can* grow here.

- (48) cw7aoz ku=wá7 sráp-7úl lts7a, t'u7 wa7 ka-ríp-a lts7a
 NEG DET=IMPF tree-real here but IMPF CIRC-grow-CIRC here
 'There are no Douglas-firs around here, but they can grow here.'

For comparison, (49) shows the epistemic half of the hydrangeas minimal pair. The consultant volunteers the epistemic modal $=k'a$ instead of $ka-...-a$ here.

- (49) *Situation: Not only are the climate and soil right, but you have reason to believe that it's actually possible there is some sagebrush growing here.*

wá7= $k'a$ kents7á sxek ku= $káwkew$
 be=*EPIS* around.here maybe DET=sagebrush
 'Sagebrush might be growing around here.'

Sentence (49) is not accepted in the (47) situation. This reflects the status of $=k'a$ as an unambiguously epistemic modal (see Matthewson et al. 2006 for analysis). Sentence (47) is accepted in the (49) situation. However, this does not mean that $ka-...-a$ has an epistemic reading. Rather, the situation for (47) states that the conditions for the circumstantial modal are also met in this case; hence, we would expect $ka-...-a$ to be licensed in this context. More generally, if it is epistemically possible that sagebrush grows here, it will also be circumstantially possible, but not necessarily vice versa.

As a final piece of evidence that we are dealing with an existential circumstantial modal, observe that English circumstantial *canis* distinguishable from epistemic *can* in that the latter is infelicitous if the speaker is witnessing the event. For example, a speaker who is looking at rain falling from the sky can felicitously utter (50a), but not (50b) (unless as a joke).

- (50) a. Hmm, it can really rain hard here. CIRCUMSTANTIAL
 b. Hmm, it could be raining hard here. EPISTEMIC

(51) shows that in St'át'imcets, $ka-...-a$ is good in this discourse context, while epistemic $=k'a$ is not, confirming the status of $ka-...-a$ as a circumstantial modal.

- (51) *Situation: You are looking outside and see that it is raining really hard.*

- a. u, kéla7= $t'u7$ $ka-kwís-a$ lts7a
 oh first=ADD CIRC-rain-CIRC here
 'Oh, it can really rain here.'
- b. * u, kela7= $k'á=t'u7$ kwis lts7a
 oh first=*EPIS*=ADD rain here
 'Oh, it could really be raining here.'

The data in this section lead us to conclude that $ka-...-a$ is used in all types of contexts that license existential circumstantial interpretations. We have not found any case of an existential circumstantial modal that cannot be rendered using $ka-...-a$.

3.4 The no-choice reading of *ka-...-a* as a universal circumstantial reading

In this section we argue that the range of uses of the no-choice reading are those predicted by an analysis of *ka-...-a* as having a universal circumstantial interpretation. Recall that the no-choice reading covers cases which translate into English as ‘accidentally’, as in (52) or ‘suddenly’, as in (53), as well as non-controllable cases, as in (54).

- (52) *ka-nk'méq'w=lhkan-a* aylh
CIRC-immersed=1SG.SUBJ-CIRC then
l=ti=n-gwáts'-cal-ten=a
in=DET=LOC-irrigate-ACT-thing=EXIS
 ‘I fell into the ditch.’ (Matthewson 2005:158)
- (53) *nilh láti7 ka-t'ál=s-a* ta=káoh-s=a
FOC there CIRC-stop=3POSS-CIRC DET=car-3POSS=EXIS
 ‘His car suddenly stopped.’ (Matthewson 2005:230)
- (54) *áts'x-en-as kw=s=plan=s* wa7
see-DIR-3ERG DET=NOM=already=3POSS IMPF
ka-péq-a ti=s-7ílacw-em=a
CIRC-white-CIRC DET=NOM-soak-MID=EXIS
 ‘He saw that the soaked fish had turned white.’ (Matthewson 2005:153)

In section 2.3 we argued that what all these readings have in common is a lack of choice on the part of the subject. The central idea is that if an event happens without any choice, then all the facts of the world conspire to make that event inevitable. The core semantics of no-choice thus correlates with the semantics of universal circumstantials as discussed by Kratzer (1991).

3.4.1 Universal circumstantials and the future

In this subsection we deal with a potential problem with the claim that the no-choice interpretation of *ka-...-a* corresponds to a universal circumstantial. When speakers of St'át'imcets are given more or less direct translations of English sentences such as (55) containing universal modals with a circumstantial interpretation, they do not generally accept *ka-...-a*, as shown in (56). Instead, they offer equivalents with a plain future auxiliary or enclitic, as in (57) (=39a)).

- (55) Jockl must sneeze (in view of the present state of his nose, etc.).

- (56) qv| ta=s-7exw7unám-s=a s=Gertie. stexw wa7
 bad DET=NOM-cold-3POSS=EXIS NOM=Gertie very IMPF
 n-tqép-leqs
 LOC-blocked-nose
 ‘Gertie has a bad cold. Her nose is really plugged up.’

ka-nsnán7-a
 CIRC-sneeze-CIRC
 = ‘She can sneeze.’
 ≠ ‘She must sneeze.’

- (57) cuz’ nsnána7 kw=s=Gertie
 going.to sneeze DET=NOM=Gertie
 ‘Gertie is gonna sneeze.’

We think that what is going on here is that with eventive predicates, a universal circumstantial is very similar to a future meaning. What does it mean for Gertie to sneeze in every possible world consistent with the relevant facts? It means she is going to sneeze. Recall that futures have circumstantial modal bases; they thus quantify over the same kinds of modal bases as plain circumstantials do. Futures and plain circumstantials also share an ordering source, namely a stereotypical one (cf. Kratzer 1991, Copley 2002). In both the sentences *Gertie has to sneeze* and *Gertie is going to sneeze*, we quantify over all worlds where the actual world facts about Gertie’s nose hold, and in which the normal course of events takes place. (For example, we do not in either case consider worlds where, one millisecond after the utterance, a nuclear attack takes place and Gertie is vapourized.) It may even be that the sentences *Gertie has to sneeze* and *Gertie is going to sneeze* differ only in that the latter explicitly specifies that the sneezing takes place after the utterance time. The simplified formulas in (58) and (59) illustrate the similarities between the two modals. (The subscript A in (58) means that we are considering only the universal interpretation of *ka-...-a* here.) Note that we will discuss the formal semantics of *ka-...-a* in more detail below, where we will revise (58). (In (59), *i* is the type of temporal intervals.)

- (58) $[[ka-...-a_A]]^c$ is only defined if *c* provides a circumstantial modal base *B* and a stereotypical ordering source
 If defined, $[[ka-...-a_A]]^c = \lambda p_{\langle s, t \rangle} \lambda w. \forall w' [w' \in B(w) \rightarrow p(w') = 1]$
- (59) $[[cuz']]^c$ is only defined if *c* provides a circumstantial modal base *B* and a stereotypical ordering source
 If defined, $[[cuz']]^c = \lambda p_{\langle s, \langle i, t \rangle \rangle} \lambda w. \lambda t. \forall w' [w' \in B(w) \rightarrow \exists t' [t < t' \ \& \ p(w')(t') = 1]]$

We thus propose that the absence of *ka-...-a* in sentences like (57) is not due to the absence of a universal circumstantial reading for *ka-...-a*, but instead reflects

k=Henry kens-7ucwalmícw-ts
 DET=Henry try-Indian-mouth
 'I have to laugh when I hear Henry try to speak Indian.'

3.4.2 Circumstantial imperatives with *ka-...-a*

Before turning to the formal implementation of our analysis, we would like to bring one more set of facts to light, which we believe strongly support our view of *ka-...-a* as a circumstantial modal. These involve a previously unexplained use of *ka-...-a* on imperatives. Examples are given in (63), from Davis (2006: Chapter 25).

- (63) a. *ka-xék-a*=malh!
 CIRC-be.ruled-*CIRC*=ADHORT
 'You better behave!'
- b. *ka-t'íl-a* láti7, kwís=kacw=kelh
 CIRC-be.still-*CIRC* there fall= 2SG.SUBJ=FUT
 'Stay still there, or you will fall.'
- c. *ka-t'ek'-a*=málha!
 CIRC-be.silent-*CIRC*=ADHORT
 'Be quiet!'

Imperatives with *ka-...-a* are used when the speaker wishes to express a particularly forceful command or admonition. We suggest that this is because *ka-...-a* in these cases is being used as a universal circumstantial – essentially, giving the addressee “no choice” as to what to do. (In contrast, the deontic/irrealis modal =*ka* ‘should, would’ has weaker force than an ordinary imperative, and is used to express a less forceful injunction.) The imperative use of circumstantial modality is thus an implicature, similar to that which holds with the (future) circumstantial modal in English, as in *You will go to bed this instant!*

The imperative use of *ka-...-a* is particularly striking because alternative accounts (either based on an aspectual analysis, or taking “control” to be an irreducible primitive) either have nothing to say about it, or must produce ad-hoc extensions to account for it. In contrast, on the modal analysis, the imperative use falls out quite naturally.

3.5 Unifying the existential and universal interpretations

We have now reduced the set of available interpretations of *ka-...-a* to two, as summarized in the table in (64).

(64)

	<i>existential = ability</i>	<i>universal = no-choice</i>
<i>able to</i>	√	
<i>manage to</i>	√	
<i>accidentally</i>		√
<i>suddenly</i>		√
<i>non-controllable</i>		√
<i>imperative</i>		√

The question now arises as to whether a further unification is possible. Can a semantics for *ka-...-a* be given that unifies the existential and universal interpretations, or should we simply be content with positing a lexical ambiguity?

Recall that in our previous work (summarized in 3.1 above), we have provided exactly such a unification for the existential and universal interpretations of epistemic and deontic modals. We will show in this section that this analysis can be extended quite naturally to *ka-...-a*, which has a fixed (circumstantial) modal base but variable quantificational force.

In Rullmann et al. (to appear) we accounted for the (apparent) quantificational variability of modals in St'át'imcets by presenting a unified formal analysis involving choice functions over possible worlds, which was inspired by previous work by Klinedinst (2005). Before we extend this analysis to *ka-...-a*, we need to address a difference between *ka-...-a* and other modals. As we have seen, *ka-...-a* attaches to the predicate, and therefore – unlike other St'át'imcets modals – does not take scope over the entire proposition. Furthermore, as we will see in section 4, it is sensitive to properties of the external argument. We will therefore assume it takes the predicate and its external argument to produce a proposition, i.e., it is of type $\langle\langle e, \langle s, t \rangle \rangle, \langle e, \langle s, t \rangle \rangle\rangle$. As a first pass, we give separate representations of the existential and universal interpretations of *ka-...-a* in (65–66). We are leaving the ordering source out of the truth conditions for reasons of simplicity.

- (65) $[[ka-...-a_E]]^c$ is only defined if *c* provides a circumstantial modal base *B* and a stereotypical ordering source
 If defined, $[[ka-...-a_E]]^c = \lambda P_{\langle\langle e, \langle s, t \rangle \rangle, \langle e, \langle s, t \rangle \rangle\rangle} . \lambda x . \lambda w. \exists w' [w' \in B(w) \ \& \ P(x)(w)]$
- (66) $[[ka-...-a_A]]^c$ is only defined if *c* provides a circumstantial modal base *B* and a stereotypical ordering source
 If defined, $[[ka-...-a_A]]^c = \lambda P_{\langle\langle e, \langle s, t \rangle \rangle, \langle e, \langle s, t \rangle \rangle\rangle} . \lambda x . \lambda w. \forall w' [w' \in B(w) \rightarrow P(x)(w)]$

In our previous work on other St'át'imcets modals (Rullmann, et al. to appear, Matthewson et al. 2006), we achieved a unification of the existential and universal interpretations by positing a choice function over possible worlds which selects a subset of *B*(*w*) (the set of worlds that are accessible from *w*). The basic schema is adapted in (67) for *ka-...-a*. This kind of analysis allows us to obtain the existential versus universal uses by varying the size of the set of

accessible worlds which are considered. If the entire set of accessible worlds constitutes the restrictor of the modal quantifier, the interpretation ends up equivalent to a universal modal. If a proper subset of accessible worlds makes up the restrictor of the modal quantifier, the interpretation is weakened to that of an existential modal. For more detailed discussion of this analysis, we refer to Rullmann et al. (to appear).

- (67) $[[ka\text{-}...\text{-}a]]^c$ is only defined if c provides a circumstantial modal base B and a stereotypical ordering source.
 If defined, $[[ka\text{-}...\text{-}a]]^c = \lambda P_{\langle e, \langle s, t \rangle \rangle} . \lambda x . \lambda w . \forall w' [w' \in f_x(B(w)) \rightarrow P(x)(w')]$

Note that in this analysis, the choice function f is relativized to the subject argument x . This reflects the fact that the choice of subset of possible worlds in the modal base may depend on certain properties (dispositions, abilities, and desires) of the subject. In other words, (67) captures what we have called the personal reading of $ka\text{-}...\text{-}a$. In section 4.5, we present a slightly different representation for the impersonal reading.

4 Restrictions on impersonal readings of $ka\text{-}...\text{-}a$

So far in our analysis, we have been operating under the assumption that – barring pragmatic effects – all interpretations of $ka\text{-}...\text{-}a$ are available with all predicates. However, as already noted in 2.2.5, this is not entirely true: non-controllable (impersonal universal) readings are missing for (causative) transitive predicates. In this section, we return to this restriction, and argue that it is part of a broader pattern: impersonal readings of $ka\text{-}...\text{-}a$ are systematically blocked for all predicates with external arguments. This generalization in turn forces us to slightly refine our formal analysis of circumstantial modality.

First, however, let us remind ourselves of the distinction between the personal and impersonal readings of circumstantial modals. In (68), we repeat the definition given in (38) above.

- (68) *Impersonal modality*: Meaning of the proposition can be calculated by considering only the facts and circumstances of the background

Personal modality: Interpretation is dependent upon properties of the subject (dispositions, abilities, desires) (cf. Lechner 2005:2)

Since “the facts and circumstances of the background” may include properties of the subject, it is not always an easy task to sort out the personal and impersonal readings.²⁰ Nevertheless, there is one interpretation of $ka\text{-}...\text{-}a$ that can *only* be

²⁰ In fact, it seems likely that a stronger relation holds: namely, that personal readings form a subset of impersonal readings. This would mean that the impersonal reading

impersonal: namely, the non-controllable sub-case of the no-choice (universal) reading. We can therefore use this as a probe to test for gaps in the distribution of impersonal readings. This is the task to which we now turn.

4.1 The missing non-controllable reading of causatives

As mentioned in 2.2.5 (and exemplified in (10-11)), *ka-...-a* fails to yield a non-controllable interpretation when affixed to transitive (causative) predicates with an inanimate subject. This is further illustrated in (65) with the predicate *sek-qw-s* 'hit somebody on the head'. In (65a), we see that with *ka-...-a* and an inanimate subject, only personal (accidental and manage-to) interpretations are available. Since these readings are pragmatically incompatible with inanimate subjects, incongruity results. When asked to provide the missing (and pragmatically felicitous) non-controllable interpretation for sentences such as (69a), speakers substitute a plain causative with no *ka-...-a*, as in (69b). (Recall that on its non-controllable interpretation *ka-...-a* does not make a contribution to the assertion expressed by the sentence, and therefore results in English translations with a simple verb.)

- (69) a. # *ka-sek-qw-s-túmc-as-a* ta=kecmáksta=a
CIRC-hit-head-CAUS-1SG.OBJ-3ERG-CIRC DET=branch=EXIS
'The branch hit me on the head by accident.'
'The branch managed to hit me on the head.'
* 'The branch hit me on the head.' (non-controllable interpretation
unavailable)
- b. *sek-qw-s-túmc-as* ta=kecmákst=a
hit-head-CAUS-1SG.OBJ-3ERG DET=tree=EXIS
'The branch hit me on the head.'

The absence of the non-controllable interpretation for (69a) is all the more surprising since this is the dominant interpretation of parallel intransitive cases such as (70):

- (70) *ka-kíts-a* láti7 ta=kecmákst=a
CIRC-lie-CIRC there DET=branch=EXIS
 ‘The branch fell down there.’ (Alexander et al. 2006)

It appears, then, that for some reason the impersonal interpretation of the universal circumstantial is unavailable for transitive predicates, though it is available for intransitives.

actually entails the personal reading, which makes it harder – though, as we shall see, not impossible – to demonstrate empirically that there is an ambiguity between the two.

However, it turns out the relevant distinction is not between transitive and intransitive predicates, but between those with and without an external argument. More specifically :

- (71) *Impersonal interpretations of ka-...-a are only available for predicates without an external argument*

What this means is that only *unaccusative* predicates allow non-controllable interpretations. If we look at the non-controllable cases we have examined so far (see the examples in 2.2.5 above), this is indeed the case. But we can make a stronger argument for the external argument-based generalization in (71) by looking at two cases which clearly distinguish it from a transitivity-based alternative. The first involves intransitive predicates which have an external argument (i.e., unergatives), the second transitive predicates which lack one (i.e., transitive unaccusatives). In the first case, (71) predicts impersonal interpretations should be blocked, while an explanation based on transitivity predicts they should be licit; in the second, (71) predicts the impersonal interpretation should be allowed, while the transitivity-based account predicts it will be blocked. We examine these cases in 4.2 and 4.3, respectively.

4.2 The missing non-controllable reading of unergatives

In order to test whether unergatives in St'át'imcets can ever have a non-controllable interpretation, we must fulfill two prerequisites: first, identify a set of criteria which distinguish unergatives from unaccusatives; and second, find a set of unergatives which allow inanimate subjects (since non-controllable interpretations are much easier to distinguish with inanimate subjects). The first of these tasks is relatively easy, since most unergative predicates in St'át'imcets are readily distinguishable from unaccusatives on the basis of morphology. More specifically, unergatives are usually suffixed with an intransitivizer, whereas unaccusatives never are (see Davis 1997, 2006 for extensive discussion).

The second is much more difficult, because unergatives in St'át'imcets are usually associated with animate subjects, which strongly favour a personal interpretation of *ka-...-a*. Nevertheless, it is possible to have an inanimate subject with unergative predicates, in cases where the external argument can still be construed as an "actor", even without the possibility of volition. For example, a disease spreads contagion, as in (72a), and a poison acts on its victim, as in (72b).

- (72) a. mel't-cál ti7 ku=s-7áołsem
 infected-ACT DEM DET=NOM-sick
 'That sickness is/was infectious, infects/infected people.'

- b. zúqw-cal ti7 ku=kál'wat
 die-ACT DEM DET=medicine
 'That medicine is/was poisonous, poisons/poisoned people.'
 (literally, 'kills/killed')

We can now ask whether predicates like *mel'tcál* or *zúqwcál* can yield a universal impersonal (non-controllable) interpretation when affixed with *ka-...-a*.

The answer is negative, as can be seen from the translations volunteered by the consultants for the examples in (73):

- (73) a. *ka-mél't-cal-a* ti7 ku=s-7áo|sem
 CIRC-infected-CIRC DEM DET=NOM-sick
 'That sickness is infectious, you can pass it on.' (*volunteered translation*)
Interviewer: 'Can it mean that the disease infected someone or something?'
Consultant: 'No...that disease is infectious, it doesn't say it infected that person.'
- b. *ka-zúqw-cal-a* ti7 ku=kál'wat
 CIRC-die-ACT-CIRC DEM DET=MEDICINE
 'That medicine can kill, will kill.' (*volunteered translation*)
Interviewer: 'Can it mean that the medicine killed someone or something, or did some poisoning?'
Consultant: 'No...you'd say *zúqwcál ti7 ku kál'wat* (=72b) because it had already killed.'

Note that the speaker specifically rejects translations for the examples in (73) where an event of infecting or poisoning has actually taken place, even though these interpretations *are* available for the same predicates without *ka-...-a*, as shown in (72). We take this as evidence that the impersonal reading of *ka-...-a* is blocked for unergatives, just as it is for causatives. This in turn means that what is crucial for the missing non-controllable reading is not transitivity, but the presence of an external argument.

4.3 The non-controllable reading of transitive unaccusatives

We now turn to the converse case: transitive predicates *without* an external argument. Once again, first we must find some. A plausible set of candidates consists of a class of unaccusative verbs which may be directly suffixed with the redirective transitivizer *-min*. Since *-min* simply adds an extra (oblique) internal argument (Davis 2006: Chapter 41), with unaccusative verbs, the surface subject of the transitive alternant with *-min* is the same as the surface subject of the intransitive alternant (i.e., an *internal* argument), while the surface object may have a variety of oblique functions.

As predicted by (71), these predicates *do* allow non-controllable interpretations with *ka-...-a*, as shown in (74a) and (75a); moreover, these interpretations are identical to those of the intransitive (unaccusative) verbs on which they are based, as can be seen in (74b) (repeated from (9b)) and in (75b)).

- (74) a. *ka-lhexw-min'-tumulh-ás-a* ta=snéqwem=a
CIRC-appear-RED-1SG.OBJ-3ERG-CIRC DET=sun=EXIS
 'The sun came out on us.'
- b. *ka-lhéxw -a* ta=snéqwem=a
CIRC-appear-CIRC DET=sun=EXIS
 'The sun came out.'
- (75) a. *ka-ts'q'ep-min'-ts-ás-a* ta=skéz'k=a
CIRC-stick-RED-1SG.OBJ-3ERG-CIRC DET=cactus=EXIS
 'The cactus (got) stuck to me.'
- b. *ka-ts'q'ép-a* ta=skéz'k=a l=ta
CIRC-stick-CIRC DET=cactus=EXIS on=DET
n-slhécwq=a
1SG.POSS-pants=EXIS
 'The cactus (got) stuck to my pants.'

4.3.1 Non-controllable readings with passives

Further evidence for the generalization in (71) is provided by passives. Recall that a causative predicate like *páqu7+s* 'to frighten' is incompatible with *ka-...-a* and an inanimate subject, due to the fact that only a personal interpretation is permitted for predicates with an external argument, yet personal interpretations are generally infelicitous with inanimate subjects:

- (76) # *ka-paqu7-s-túmc-as-a* ta=qvjalhtmicw=a
CIRC-afraid-CAUS-1SG.OBJ-3ERG-CIRC DET=storm=EXIS
 # 'The storm accidentally frightened me.'

However, when passivized, *páqu7+s* is compatible with *ka-...-a* and an inanimate causer, with an impersonal universal (non-controllable) interpretation, as can be seen in (77):

- (77) *ka-paqu7-s-túm-a* (e)=ta=qvjalhtmicw=a
CIRC-afraid-CAUS-PASS-CIRC (by)= DET=storm=EXIS
 'He was frightened by the storm.'

This provides striking support for the generalization that it is the lack of an external argument that allows a non-controlled reading for *ka-...-a*, particularly

in view of the fact that the St'át'imcets passive is of the impersonal type, which does not promote the internal argument to the syntactic subject position.

4.4 Impersonal existential readings

In the last three sections, we have shown that the non-controllable (impersonal universal) reading is systematically absent with predicates which have an external argument, irrespective of transitivity. By extension, we might expect that impersonal existential readings will also be absent in this environment. This is more difficult to demonstrate, however, in that there is no straightforward diagnostic for an existential impersonal circumstantial. Of the two main sub-types of existential interpretation we have identified – ability and manage-to – the latter is clearly associated only with personal readings (compare for example *It could get really hot in those days* with **It managed to get really hot in those days*). This is also arguably true of *be able to* (as evidenced by the oddness of *??It was able to get really hot in those days*) but it is clearly not true of *can/could*, which is equally felicitous with personal and impersonal readings. This means that it is often impossible to tell from translation alone whether a given instance of *ka-...-a* on its existential use is impersonal or personal. For example, sentences like (78-79), involving the unergative predicate *t'cum* 'win', appear at first sight to be paradigm cases of the impersonal existential interpretation. Indeed, they are modeled on English examples from Lechner (2005) which were deliberately constructed to illustrate impersonal circumstantial readings, since the ability to win at bingo is not a personal attribute of the winner, but a function of luck and the rules of the game.

- (78) *Situation: You are playing bingo and someone got upset because they didn't win.*

aoz	kw=s=tákem	swat	wa7	ka-t'cúm-a
NEG	DET=NOM=all	who	IMPF	CIRC-win-CIRC

'Not everyone can win.'

- (79) *Situation: It is possible for everyone to win, because everyone could be waiting for the same number and then when that number is called, they will all win and share the prize.*

tákem	swat	wa7	ka-t'cúm-a	lts7a
all	who	IMPF	CIRC-win-CIRC	here

'Everyone can win.'

Since unergatives are by definition predicates with an external argument, the examples in (78-79) appear to violate the generalization in (71).

However, on further examination, it is not so clear that the interpretation of these examples is necessarily impersonal – however minimal the personal ability needed to play bingo, it is still the case that the player must

show up, dab the numbers, and so on. Note also that in English, *Not everyone is able to win* and *Everyone is able to win* are acceptable alternatives to *Not everyone can win* and *Everyone can win*, in contrast to truly impersonal cases of existential circumstantials (such as those involving weather predicates) where only *can/could* is felicitous.

It is also the case that more clear-cut impersonal existentials in St'át'imcets (such as those with *-able* readings: see (5a), (6c), (17)) are all based on unaccusative predicates (see also (44-48), (51)). We conclude that though the evidence is more difficult to interpret with existential than with universal circumstantials, the generalization in (71) holds for both types.

4.5 Refining the analysis

We have now established that an impersonal interpretation for *ka-...-a* is possible just in case the predicate to which it attaches lacks an external argument. We will not attempt a full explanation for this generalization here, which cross-cuts the distinction between existential and universal interpretations of circumstantial modality, and raises many further questions about how properties of the subject interact with circumstantial modality. Instead, we will content ourselves here with revising our formal analysis of circumstantial modality to account for impersonal as well as personal interpretations.

Recall our formal analysis of *ka-...-a*, repeated below from (71):

- (80) $[[ka-...-a]]^c$ is only defined if c provides a circumstantial modal base B and a stereotypical ordering source.
 If defined, $[[ka-...-a]]^c = \lambda P_{\langle e, \langle s, t \rangle \rangle} . \lambda x . \lambda w . \forall w' [w' \in f_x(B(w)) \rightarrow P(x)(w')]$

Here, we have defined *ka-...-a* as a function from predicates to predicates (of type $\langle \langle e, \langle s, t \rangle \rangle, \langle e, \langle s, t \rangle \rangle \rangle$, abstracting away from events, for simplicity's sake). As noted above, this handles personal but not impersonal interpretations. In order to capture the latter, we need a separate formula, where *ka-...-a* is defined as a function from propositions to propositions (of type $\langle \langle s, t \rangle, \langle s, t \rangle \rangle$), as in (81):

- (81) $[[ka-...-a]]^c$ is only defined if c provides a circumstantial modal base B and a stereotypical ordering source.
 If defined, $[[ka-...-a]]^c = \lambda p_{\langle s, t \rangle} . \lambda w . \forall w' [w' \in f(B(w)) \rightarrow p(w')]$

Obviously, this is a somewhat provisional solution to the problem posed by the external argument restriction. We must leave a more explanatory account for future work.

5 Conclusion

In this paper, we have offered a radical reanalysis of the St'át'imcets

“out of control” circumfix *ka-...-a* as a circumstantial modal, in contrast to previous approaches, which have either treated it as part of a *sui generis* “control system”, or as an aspectual operator.

In doing so, we have also provided independent support for a striking generalization which distinguishes the St’át’imcets modal system from its counterparts in English and other familiar languages. English modals are lexically distinguished by quantificational force (existential versus universal) but are unselective with respect to the modal base. In contrast, as documented in Rullmann et al. (to appear) and Matthewson et al (2006), St’át’imcets modals show the opposite profile, being unselective with respect to quantificational force but lexically encoding distinctions in the modal base (e.g., epistemic versus deontic). In the present paper, we have extended this difference to circumstantial modality, by showing that the five interpretations associated with *ka-...-a* are associated with variable quantificational force (existential for the ability and manage-to interpretations, universal for the accidentally, suddenly, and non-controllable interpretations), but involve the same (circumstantial) modal base.

In addition, we have investigated a cross-cutting semantic distinction between personal (“dispositional”) and impersonal readings of *ka-...-a*. In particular, we have shown that impersonal interpretations are systematically blocked by external arguments. We suspect that it is this restriction which is behind the persistent intuition that *ka-...-a* should be characterized in terms of “agent control”, though obviously, much more work needs to be done here.

Our conclusions have implications that extend well beyond the grammar of St’át’imcets. To start with, our analysis invites comparison with control phenomena in other Salish languages, which have been regarded as comprising a unified “control system” (see Thompson 1979, 1985). Our work suggests otherwise: it seems unlikely that the modal treatment we have given here for *ka-...-a* will extend straightforwardly to more typical transitivity-based control alternations, or indeed, to other Salish “out-of-control” phenomena, as exemplified by *C*₂ reduplication (Carlson and Thompson 1982, Kinkade 1982). A systematic comparison is clearly warranted.

Beyond Salish, there is an intriguing resemblance between *ka-...-a* and the Austronesian “ability/involuntary action” (AIA) marker, which exhibits a parallel cluster of interpretations (see Dell 1983/4, Kroeger 1993, and Mills 2005 on Tagalog). It remains an open question how close the parallel is, and whether our modal analysis of *ka-...-a* can be extended to its Austronesian counterparts.

One way in which the interpretation of *ka-...-a* differs not only from Austronesian languages like Tagalog, but also from ability modals in more familiar Indo-European languages is with respect to the actuality entailment of the perfective ability reading. As mentioned in note 10, in both Tagalog and Malagasy, predicates in the perfective with the AIA morpheme have an entailment of culmination (Kroeger 1993, Travis 2000). And as argued by Bhatt (1999) and Hacquard (2006), existential modals in the perfective in a number of Indo-European languages (including French, Italian, Bulgarian, Greek, and

Hindi) have actuality entailments like English *manage to*. In contrast, as we have seen, the manage-to interpretation of *ka-...-a* only has a cancelable actuality implicature (see 2.3.1 above). We do not know whether this difference is primitive, or derivative from some other property of the languages in question; neither do we currently know of other systems with a St'át'imcets-type actuality implicature. Clearly, further investigation is needed.

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Appendix: *ka-...-a* and transitivizers

As mentioned in 2.1, *ka-...-a* is subject to the restriction that it may not co-occur with the directive (full control) transitivizer *-Vn*. It is tempting to conclude from this that *ka-...-a* is semantically incompatible with ‘full control’; our purpose in this appendix is to show on the contrary that the restriction is purely morphological, in line with our prediction that *ka-...-a* should not be restricted by predicate type.

Like all Salish languages, St'át'imcets morphologically distinguishes formally transitive from formally intransitive predicates through a special set of transitivizing suffixes. There are four principal St'át'imcets transitivizers, given in (82) below: see van Eijk (1997), Davis (2006) for extensive discussion:

(82)

<i>transitivizer</i>	<i>gloss</i>	<i>subject properties</i>	<i>object properties</i>
<i>-Vn</i>	directive	full control	direct
<i>-s</i>	causative	neutral	direct
<i>-min</i>	redirective	neutral	oblique
<i>-cit</i>	indirective	full control	oblique

These transitivizers may be cross-classified along two dimensions, as in (82). The first is the property of (agent) “control”. In Salish linguistics, control refers

to the ability of a conscious agent to initiate and influence the outcome of an event (as originally elucidated by Thompson 1979, 1985), and is characteristically encoded in the transitivity system. Thus, the directive and indirective transitivizers in St'át'imcets, which are classified as "full control", may not occur with subjects which are in principle incapable of conscious action, while the 'neutral' transitivizers are unrestricted with respect to their subject. (The second dimension – less relevant for our concerns – is whether the (morphologically licensed) object is direct (theme/patient) or indirect (recipient/goal/instrument/source).)

When *ka-...-a* attaches to a transitive predicate that normally takes the directive transitivizer, the causative transitivizer surfaces instead. This alternation is completely productive and regular, and is illustrated in (83).

- (83)
- | | | |
|----|---|---|
| a. | <i>áts'x-en</i> + <i>ka-...-a</i> → <i>ka-7áts'x-s-a</i>
<i>see-DIR</i>
'see x' | CIRC-see-CAUS-CIRC
'be able to see x, catch sight of x' |
| b. | <i>téq-en</i> + <i>ka-...-a</i> → <i>ka-téq-s-a</i>
<i>touch-DIR</i>
'touch x' | CIRC-touch-CAUS-CIRC
'be able to touch x, touch x by accident' |
| c. | <i>gwél-en</i> + <i>ka-...-a</i> → <i>ka-gwél-s-a</i>
<i>burn-DIR</i>
'burn x' | CIRC-burn-CAUS-CIRC
'be able to burn x, burn x by accident' |

As mentioned above, one possible conclusion from this is that *ka-...-a*, as an "out of control" marker, is incompatible with the directive, which encodes "full control". However, such a conclusion would be premature, since the indirective transitivizer *-cit*, which yields dative/benefactive predicates and also encodes full control, *is* compatible with *ka-...-a*:

- (84)
- | | | |
|------------------------|---|---|
| <i>tsilkst</i>
five | <i>s-q'ém'p-s=t'u7</i>
NOM-ten-3POSS=ADD | <i>ku=ka-nas-ci(t)-tsín-a</i>
DET=CIRC-go-IND-2SG.OBJ-CIRC |
|------------------------|---|---|
- 'I can only give you fifty (dollars).'

Furthermore, the morphological prohibition against *ka-...-a* appearing with the directive transitivizer may be overruled when a suffix *requiring* the directive is also present. This can be seen with the reflexive suffix *-tsut* in (85), which is morphologically incompatible with the causative transitivizer, and selects the directive instead.

- (85)
- | | |
|----|--|
| a. | <i>ka-paqw7-an-tsút=kan-a</i>
CIRC-afraid-DIR-RFL=1SG.SUBJ-CIRC
'I scared myself (by accident).' |
|----|--|

- b. *ka-tsiq-an-tsút=kan-a*
CIRC-stab-DIR-RFL=1SG.SUBJ-CIRC
'I stabbed myself (by accident).'

Ka-...-a in (85) yields a typical accidental interpretation, even though the predicate in each case is transitivity with directive ('full control') –*Vn*. This indicates that the prohibition against *ka-...-a* appearing with the directive is a superficial morphological constraint, not a deep-seated semantic one.

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