1. Introduction

The so-called ‘out-of-control’ circumfix *ka-…-a* in St’át’imcets (Lillooet Salish) expresses an initially puzzling cluster of meanings, including ‘be able to’, ‘manage to’, ‘suddenly’, ‘accidentally’, and ‘non-controllable’. These are illustrated in (1a-e) respectively.

(1) a. ‘be able to’

\[
\text{wä7=t lhkalh=t’u7 } \text{ka-nás-a ekw7úna } \text{Sát’=a snímulh}\]

\text{IMPF=1PL.SUBJ=ADD } \text{KA-go-A right.over.there Lillooet=EXIS us}

‘We can go to Lillooet by ourselves.’

(Frank et al. 2002)

b. ‘manage to’

\[
\text{ka-qám’t-s=kan-a } \text{ta=wá7 } \text{ts’áq’-n-an}\]

\text{KA-hit-CAUS=1SG.SUBJ-A DET=IMPF throw-DIR-1SG.ERG}

‘I managed to hit the target.’

(Alexander et al. 2006)
In this paper, we present a detailed analysis of the semantics of this morpheme. Our central hypothesis is that \textit{ka-...-a} encodes circumstantial modality, and that its 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. (2007). According to standard formal semantic analyses of Indo-European systems, modals are quantifiers over possible worlds whose quantificational strength is lexically specified as e.g., universal or existential, while 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, leading to quantificational variability between existential and universal readings. The current paper extends this analysis by demonstrating that \textit{ka-...-a} lexically encodes circumstantial modality, but does not encode differences in quantificational strength. The close semantic parallels between \textit{ka-...-a} and other uncontroversially modal elements in St’át’imcets provide support for our modal analysis of \textit{ka-...-a}, in contrast to previous accounts, which treat it as either an ‘out-of-control’ marker (van Eijk 1997) or an event structure operator (Demirdache 1997, Davis and Demirdache 2000, Davis 2006).

The structure of the paper is as follows. Section 2 outlines the basic morphosyntactic properties of \textit{ka-...-a}. In section 3 we provide a detailed examination of its five possible interpretations, before going on in Section 4 to reduce these five interpretations to two: \textit{ability} and \textit{no-choice}. Section 5 contains the core of our analysis: after introducing the essentials of the Kratzerian framework we employ, we argue that the ability interpretation is that of an existential circumstantial modal, and that the no-choice interpretation is that of 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. Section 6 contains a comparison of our analysis to previous approaches to \textit{ka-...-a}. Section 7 concludes.

\textit{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 data from both dialects. \textit{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 from English to \textit{St’át’imcets} and vice-versa. See Matthewson (2004) for further discussion of the methodology employed here.

2. \textit{Introducing the St’át’imcets marker \textit{ka-...-a}}

The discontinuous morpheme \textit{ka-...-a} is glossed as ‘resultative’ in van Eijk (1997) and as ‘out of control’ in Demirdache (1997) and Davis and Demirdache (2000). We gloss it from now on as ‘circumstantial’, in anticipation of our own circumstantial modal analysis.

Morphologically, \textit{ka-...-a} is unique in \textit{St’át’imcets}, and unusual cross-linguistically, in consisting of a discontinuous affix. Both the prefixal and suffixal parts of the morpheme are probably historically related to independent elements: \textit{ka-} to the modal \textit{ka} ‘deontic/irrealis’, and \textit{-a} to the ‘reinforcing’ or ‘existential’ enclitic \textit{=a}.\footnote{For a semantic analysis of \textit{ka}, see Rullmann et al. (to appear). For discussion of \textit{=a}, see Matthewson (1998).} However, synchronically, both parts of \textit{ka-...-a} are clearly affixal, as shown in particular by the ‘mobility criterion’ (Davis 2000): in contrast to clitics, affixes remain fixed to the main predicate in clauses containing pre-predicative auxiliaries. This is illustrated in (2-4). In (2) and (3), we see that the enclitics \textit{=ka} and \textit{=a} obligatorily attach to the auxiliary \textit{huz’} ‘going to’, rather than to the main predicate \textit{nas} ‘go’. In contrast, as shown in (4), both elements of circumstantial \textit{ka-...-a} remain attached to the main predicate, irrespective of the presence of the auxiliary.

\begin{equation}
\begin{array}{ll}
(2) & a. \quad \begin{array}{l}
\text{\textit{huz’}=lhkan=\textit{ka}=\textit{hem’}=t’u7}
\text{\textit{nas}}
\end{array}
\text{\textit{going.to}=1SG.PRS=IRR=ANTI=ADD=go}
\text{\textit{‘I should go.’}} \\
& b. \quad \begin{array}{l}
\text{\textit{huz’}=lhkan=\textit{hém’}=t’u7}
\text{\textit{nas}=\textit{ka}}
\end{array}
\text{\textit{going.to}=1SG.PRS=ANTI=ADD=go=IRR}
\text{\textit{‘I should go.’}} \\
\end{array}
\end{equation}

\begin{equation}
\begin{array}{ll}
(3) & a. \quad \begin{array}{l}
\text{\textit{ti}=\textit{húz’}=a}
\text{\textit{nas}}
\end{array}
\text{\textit{DET}=\textit{going.to}=EXIS=go}
\text{\textit{‘the one who is going to go’}} \\
& b. \quad \begin{array}{l}
\text{\textit{ti}=\textit{húz’}}
\text{\textit{nas}=a}
\end{array}
\text{\textit{DET}=\textit{going.to}=EXIS=go=EXIS}
\end{array}
\end{equation}
‘the one who is going to go’

(4) a. * \text{ka-huz’} = \text{lhkan-á} = \text{hem’} = t’u7 \text{næs} \\
\text{CIRC-going.to} = \text{1SG.SUBJ-CIRC} = \text{ANTI=ADD} \text{ go} \\
‘I’ll be able to go.’

b. \text{huz’} = \text{lhkan=hém’} = t’u7 \text{ka-nás-a} \\
\text{going.to} = \text{1SG.SUBJ=ANTI=ADD} \text{ CIRC-go-CIRC} \\
‘I’ll be able to go.’

The affixal status of \text{ka-…-a} distinguishes it from other modals in St’át’imcets, which are all second position clitics (or occasionally, main predicates). This reflects a structural difference: \text{ka-…-a} is in the c-command domain of the subject, whereas other modals have sentential scope.

By and large, the distribution of \text{ka-…-a} is free. It attaches to nouns and adjectives as well as to both transitive and intransitive verbs, and it is unrestricted by argument structure. However, unlike other modals, it is subject to certain morphological co-occurrence restrictions. These do not affect the main thrust of the argumentation given here, but they have influenced previous accounts of \text{ka-…-a}; we will therefore defer discussion of them until Section 6, when we compare our own account to competing analyses.

3. The interpretations of \text{ka-…-a}

As mentioned above, there are five salient interpretations associated with \text{ka-…-a}; see van Eijk (1997:51), Davis (2006: Chapter 25), and Demirdache (1997) for previous discussion. These are listed in (5). We use the term ‘interpretation’ here in order to avoid the presumption that \text{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 \text{ka-…-a}.

(5) Interpretations of \text{ka-…-a}:

a. ability
b. manage-to
c. accidentally
d. suddenly
e. non-controllable

In this section we provide further exemplification of each of these five interpretations. We then reduce the five interpretations to two, which we will argue in Section 4 correspond to existential and universal circumstantial modal uses.

3.1 The ability interpretation

The ability interpretation is illustrated in (6-7); it covers typical ability attributions, which in

\footnote{Davis (2006) and Demirdache (1997) claim that there are four interpretations; we have added the fifth ‘non-controllable’ one.}
English use can or be able to.

(6) a. cúy’=lhkdwa=ha  ka-cwák-a  lh=ma7g’úlm’ecw=as
    going.to=1SG.SUBJ=YNQ  CIRC-wake-CIRC  COMP=daybreak=3CONJ
    ‘Are you going to be able to wake up at dawn?’    (Davis 2006)

b. wá7=lhkána  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’=lhkana  kw=en=s=wa
    COMP=some=3CONJ  want-RED=1SG.SUBJ  DET=1SG.POSS=NOM=IMPF
    syé’qtsa7  múta7 …
    girl  again
    ‘Sometimes, I want to be a girl again…’

(7) a. cw7áoz  k=wa=s  ka-gwél-a
    NEG  DET(NOM)=IMPF=3POSS  CIRC-burn-CIRC
    i=nesnús=a  sp’ams
    PL.DET=damp=EXIS  firewood
    ‘The damp firewood can’t be burned.’

b. lh=as  pipántsek,  cw7áoz  kwhlkálh
    COMP=(IMPF)3CONJ  summer  NEG  DET+ NOM+ IMPF+ 1PL.Poss
    ka-gwél-cal-a,  nilh  t=s=k’ac=7dál=s=a
    CIRC-burn-ACT-CIRC  FOC  DET=NOM=dry-really=3POSS=EXIS
    ta=tmícw=a
    DET=land=EXIS
    ‘We can’t burn in the summer because the land is too dry.’

c. cw7áoz  kw=s=ka-gwél-s-tum’-a  i=sp’áms=a

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 of ka-…-a distinguishes it from aspectual affixes, which only attach to non-nominal predicates (e.g., the inchoative marker –7/-p, as discussed by van Eijk and Hess 1986). This distinction in turn provides an argument against an aspectual account of ka-…-a, and in favor of the modal approach taken here, where neither the distribution of ka-…-a nor its interpretations are directly restricted by event structure. See 6.2 below for further discussion.
NEG DET=NOM=CIRC-CAUS-1PL.ERG-CIRC PL.DET=firewood=EXIS
‘We can’t get the firewood to burn.’

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

3.2. The manage-to interpretation

The manage-to interpretation is illustrated in (8); these examples indicate that there was some extra effort required to ensure that the event happened.

(8) a. \textit{ka-gwel-s=kan-a}
CIRC-burn-CAUS=1SG.SUBJ-CIRC
‘I managed to get it lit.’ (van Eijk 1997:51)

b. \textit{ka-cwák-s=kan-a} \hspace{1cm} na=wá7 \hspace{1cm} xúq’wleqs=n-snúk’wa7
CIRC-wake-CAUS=1SG.SUBJ-CIRC DET=1MPF snore 1SG.POSS-friend
‘I managed to wake up my snoring friend.’ (Davis 2006)

c. \textit{ka-t’ál-a=ha} \hspace{1cm} ta=káoh-sw=a \hspace{1cm} l=ta=kwézkwzem=a \hspace{1cm} s7a0l7
CIRC-stop-CAUS=YNQ DET=car-2SG.POSS=EXIS 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. \textit{qwenúxw=kan inátcwas, t’u7} \textit{ka-tsunam’-cal=lhkán-a=t’u7}
sick=1SG.SUBJ yesterday but CIRC-teach-ACT=1SG.SUBJ-CIRC=ADD
‘I was sick yesterday, but I still managed to teach.’ (Davis 2006)

3.3 The accidentally interpretation

The examples in (9) illustrate the accidentally reading. The English translations do not always contain the word ‘accidentally’ (see for example (9e)), but the meaning is that the action was not on purpose.

(9) a. \textit{ka-gwel-s=kan-a} \hspace{1cm} ta=n-gúy’tten=a
CIRC-burn-CAUS=1SG.SUBJ-CIRC DET=SG.POSS-bed=EXIS
‘I accidentally set my bed on fire.’ (Davis 2006)

b. \textit{ka-gúy’t=kan-a} \hspace{1cm} xúq’wleqs-kan \hspace{1cm} aylh,
CIRC-sleep=1SG.SUBJ-CIRC snore-1SG.SUBJ then
\textit{ka-cwák-s=kan-a} \hspace{1cm} na=n-snúk’w7=a
CIRC-wake-CAUS=1SG.SUBJ-CIRC DET=1SG.POSS-friend= EXIS
‘I fell asleep, started snoring, and accidentally woke up my friend.’

\footnote{For work on aspectual classes in St’át’imcets, see Bar-el et al. (2005) and references therein.}
c. \textit{ka-mul-aká7=lhkan-a} \hspace{1cm} l=ta=slhúm’=a
\textit{CIRC-dip-hand=1SG.SUBJ-CIRC} \hspace{1cm} in=DET=soup=EXIS
‘I dipped my hand in the soup by accident.’   \hfill (Davis 2006)

d. \textit{ka-sék’w-s-as-a} \hspace{1cm} ta=nk’wanústen’=a \hspace{0.5cm} ta=twéww’et=a
\textit{CIRC-break-CAUS-3ERG-CIRC} \hspace{0.5cm} DET=window=EXIS \hspace{0.5cm} DET=boy=EXIS
‘The boy broke the window accidentally.’   \hfill (Davis 2006)

e. \textit{ka-nk’méq’w=lhkan-a} \hspace{1cm} aylh \hspace{0.5cm} l=ti=n-gwáts’-cal-ten=a
\textit{CIRC-immerse=1SG.SUBJ-CIRC} \hspace{0.5cm} in=DET=LOC-irrigate-ACT-thing=EXIS
‘I fell into the ditch.’   \hfill (Matthewson 2005:158)

\section{3.4 The \textit{suddenly} interpretation}

The \textit{suddenly} interpretation is illustrated in (10). The meaning is that the event happened suddenly or abruptly.

\begin{itemize}
\item[(10) a.] \hspace{1cm} \textit{ka-q’ek’w-ts=kán-a}
\textit{CIRC-close-mouth=1SG.SUBJ-CIRC}
‘My mouth got closed suddenly.’   \hfill (Alexander et al. in prep.)

\item[(10) b.] \hspace{1cm} \textit{ka-lhexw-min-ts=kácw-a}
\textit{CIRC-come.up-RED-1SG.OBJ=2SG.SUBJ-CIRC}
‘You came up to me all of a sudden.’   \hfill (Alexander et al. 2006)

\item[(10) c.] \hspace{1cm} \textit{ni..lh s=cuy’=s} \hspace{1cm} \textit{ka-tígw} \hspace{1cm} \textit{i=tíntin=a} \hspace{1cm} \textit{kentákem}
\textit{FOC NOM=start=3POSS CIRC-ring-CIRC PL.DET=bell=EXIS everywhere}
‘And suddenly bells started ringing everywhere.’   \hfill (Matthewson 2005: 454)

\item[(10) d.] \hspace{1cm} \textit{qwaqwx-mín=lhkan} \hspace{0.5cm} \textit{ta=scwelálhp=a},
nightmare-RED=1SG.SUBJ DET=ghost=EXIS
\textit{ka-cwák=kan-a} \hspace{1cm} \textit{aylh}
\textit{CIRC-wake=1SG.SUBJ-CIRC}
then
‘I had a nightmare about a ghost, then I woke up suddenly.’   \hfill (Davis 2006)

\item[(10) e.] \hspace{1cm} \textit{nilh} \hspace{0.5cm} \textit{láti7} \hspace{0.5cm} \textit{ka-i’ál=s-a} \hspace{0.5cm} \textit{ta=káoh-s=a}
\textit{FOC there CIRC-stop=3POSS-CIRC} \hspace{0.5cm} \textit{DET=car-3POSS=EXIS}
‘His car suddenly stopped.’   \hfill (Matthewson 2005:230)
\end{itemize}

\section{3.5 The \textit{non-controllable} interpretation}

The \textit{non-controllable} interpretation arises when an event is in principle not controllable by an animate agent. This interpretation occurs with many unaccusative predicates, including weather verbs, as in (11a-b), verbs of appearance, as (11c), and change-of-state verbs, as in (11d). In (11d), the only argument of the predicates \textit{lhot} ‘get squished’ and \textit{teqw} ‘get dented’ is the theme. The
raspberries and the pot are in principle not in control of whether they get squished or dented. Note that there is often no explicit rendering of the ‘non-controllable’ aspect of meaning in the English translations.

(11) a. \( ka\-t\acute{a}l\-a \quad ta=sk\acute{e}xem=a \quad kek\acute{a}w\quad kent7\acute{u} \quad ku=sz\acute{e}nk \)  
CIRC-stop-CIRC DET=wind=EXIS far around DET=circle
‘The wind stopped blowing, far around that circle.’  (Davis 2006)

b. \( ka\-lh\acute{e}xw\-a \quad ta=sn\acute{e}qwem=a \)  
CIRC-come.up-CIRC DET=sun=EXIS
‘The sun came out.’  (Davis 2006)

c. \( lts7a \quad sek\acute{w}el\acute{w}\acute{a}s=a \quad lh=t\acute{a}kem=at \quad ka\-h\acute{a}l\acute{h}\-a \)  
here Cayoose.Creek=EXIS COMP=all=1PL.CONJ CIRC-show-CIRC
‘We were all born here at Cayoose Creek.’  (Matthewson 2005:96)

d. \( ka\-lh\acute{o}t\-a \quad aylh \ i=s7\acute{a}y\acute{t}sqw=a \quad nilh \)  
CIRC-get.squished-CIRC then PL.DET=raspberry=EXIS FOC
\( ka\-t\acute{e}qw=s\-a \quad ti=n\-tsq\-
\acute{u}s\-in=a \)  
CIRC-dent=3POSS-CIRC DET=LOC-put.down-face-thing=EXIS
‘The raspberries got squished and the pot got dented.’  (Matthewson 2005:73)

The non-controllable interpretation also shows up on transitive predicates with a non-agentive causer as subject (typically, a natural phenomenon, such as the weather). The non-control/causative transitivizer –s is employed in these cases.

(12) a. \( ka\-nl\acute{i}g\acute{w}\-ts-s-as \quad ta=sk\acute{e}xem=a \quad ta=\acute{s}\acute{e}ps=a \)  
CIRC-open-mouth-CAUS-3ERG-CIRC DET=wind=EXIS DET=door=EXIS
‘The wind opened the door.’

b. \( wa7 \quad ka\-paqu7-s-t\acute{u}mc-as \quad ta=qvlalhtm\acute{m}icw=a \)  
IMPF CIRC-afraid-CAUS-1G.OBJ-3ERG-CIRC DET=storm=EXIS
‘That storm scares me.’

Some unaccusative predicates with a non-controllable interpretation show variation between the \( ka\-\ldots\-a \) version and a bare root intransitive (13a-b), or between the \( ka\-\ldots\-a \) version and a form containing the inchoative morpheme (14a-b) or \(-(V)C_2\) (‘out-of-control’) reduplication (15a-b). In these cases, there is no detectable difference in meaning between the two forms.  

(13) a. % \( lan \quad wa7 \quad ka\-kw\acute{i}s-a \quad i=p\acute{e}t\acute{k}selh-ts=a \quad i=s\acute{r}\acute{a}p-a \)  
already IMPF CIRC-fall-CIRC PL.DET=leaf-3POSS=EXIS PL.DET=tree=EXIS
‘The leaves have already fallen from the trees.’

b. \( lan \quad wa7 \quad kw\acute{i}s \quad i=p\acute{e}t\acute{k}selh-ts-a \quad i=s\acute{r}\acute{a}p=a \)
already IMPF fall PL.DET=leaf-3POSS=EXIS PL.DET=tree=EXIS
‘The leaves have already fallen from the trees.’

(14) a. \[ xwém=t’u7 \ kw=s=ka-máq=s-a \]
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=INCH=bright=3POSS
‘It got bright quickly.’

(15) 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-RED 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 for
some speakers they only occur with \[ ka-…-a \], as shown in (16), while still others have been
lexicalized so that they fail to occur with \[ ka-…-a \] altogether, as shown in (17).

(16) 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.’

(17) a. % \[ xwém=t’u7 \ kw=s=ka-máq7=s-a \]
fast=ADD DET=NOM=CIRC-snow=3POSS-CIRC
‘It suddenly snowed.’

b. \[ xwém=t’u7 \ kw=s=máq7=s \]
fast=ADD DET=NOM=snow=3POSS
‘It suddenly snowed.’

Variation also occurs with non-controllable causatives. Some speakers reject \[ ka-…-a \] with non-
agentive subjects on certain predicates, in favor of causativized inchoatives (18) or bare causatives
(19):

(18) a. % \[ ka-záxw-s-as-a \]
\[ ta=k’ímal’ts=a \]
\[ ta=snéqwem=a \]

\[ ^8 \] Again, there is speaker variation here. One of our consultants accepts (17a), while another rejects it.
The sun melted the ice.

Speaker’s comment: “Sounds like it was by accident.”

b. za-7-xw-s-ás ta=k’ímal’ts=a ta=snéqwem=a
melt(INCH)-CAUS-3ERG DET=ice=EXIS DET=sun=EXIS
‘The sun melted the ice.’

(19) a. % stám’=as=k’a ku=ka-qwenuxw-s-túmc-ás-a
what=3CONJ=EPIS DET=CIRC-sick-CAUS-1SG.OBJ-3ERG-CIRC
‘Something or other made me sick.’

b. stám’=as=k’a ku=qwenuxw-s-túmc-as
what=3CONJ=EPIS DET=sick-CAUS-1SG.OBJ-3ERG
‘Something or other made me sick.’

However, in many cases, non-controllable causatives with and without ka-…-a are in free variation, with no detectable difference in meaning:

(20) a. ka-zík-s-as-a ta=sráp=a ta=qvlalhtmícw=a
CIRC-topple-CAUS-3ERG-CIRC DET=tree=EXIS DET=storm=EXIS
‘The storm toppled the tree.’

b. zík-t-s-as ta=sráp=a ta=qvlalhtmícw=a
topple-IMM-CAUS-3ERG DET=tree=EXIS DET=storm=EXIS
‘The storm toppled the tree.’

In other cases, some speakers even reject non-controllable causatives without ka-…-a:

(21) b. ka-sek-qw-s-túmc-as-a ti=kecmákst=a
CIRC-hit-head-CAUS-1SG.OBJ-3ERG-CIRC DET=branch=EXIS
‘The branch hit me by accident (as we were passing by).’

a. % sek-qw-s-túmc-as ti=kecmákst=a
hit-head-CAUS-1SG.OBJ-3ERG DET=branch=EXIS
‘The branch hit me by accident (as we were passing by).’

These data contrast with the findings of Demirdache (1997), Davis and Demirdache (2000), Davis (2006), and an earlier version of the current paper (Davis et al. 2007), all of whom claim that the (a) examples in (18-21) should be strictly ungrammatical. Investigation of a wider range of predicates with a larger sample of speakers has convinced us that the incompatibility of ka-…-a with non-controllable causatives is in fact a tendency, at best.
We suspect 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. See 5.4.1 below for further discussion.

It is also worth noting that 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, (9d) 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 interpretation is very general and applies even to unaccusatives, yielding the equivalent of English -able. One example of this interpretation was given in (7a) above; another is given in (22):

(22) cw7aonz kw=a=s ka-tis’áqw-a
NEG DET(NOM)=IMPF=3POSS CIRC-get.eaten-CIRC
i=qwenálhp=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]!’

4. Unifying the interpretations

In this 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 we combine the accidentally, the suddenly and non-controllable interpretations.

4.1. 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 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 (23).

(23) John managed to sit through the Chinese opera.
   a. Assertion: John sat through the Chinese opera.

As predicted by this analysis, the assertion does not project when manage is in the scope of negation, but the conventional implicature does. Thus, the truth of (24) entails the falsity of (23a), but not of (23b):
(24) 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, (25a) is a contradiction, but (25b) is not.

(25) 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 (26–27). (26a) yields a typical manage-to interpretation; (26b) uses the same predicate and shows that there is no contradiction when the event is asserted not to have taken place.10

(26) 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)

Similarly in (27), we see clear evidence that ka-…-a has a pure ability interpretation, rather than a manage-to one. The assertion that I was able to swallow my medicine is, without contradiction, followed by the assertion that I did not in fact swallow it. This would not be possible if ka-…-a meant ‘manage to’.

(27) aols=em=lhkán=tu7, páw-alhq’wel’t=kan nilh s=cw7ay=s
    sick=1SG.SUBJ=then swollen-throat=1SG.SUBJ FOC NOM=NEG=3POSS
   kw=en=s=ka-q’ém-cal-a
   DET=1SG.POSS=NOM=CIRC-swallow-ACT-CIRC 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.’

10 An anonymous reviewer asks whether the additive particle in (26a) and/or the irrealis marking in (26b) contribute to the (im)possibility of canceling the implicature. It turns out that both particles are optional; the consultant accepts (26a,b), on their respective interpretations, with the particles omitted. However, irrealis marking would be incompatible with the interpretation in (26a) where the teaching actually happened.
These data indicate that what we have been calling the manage-to interpretation does not carry an actuality entailment, but an actuality implicature that arises in a past episodic context.\(^{11}\) We thus follow Davis (2006) in arguing that the ability and the manage-to interpretations are reducible to the ability reading.\(^{12}\)

4.2. **Accidentally = suddenly = non-controllable = ‘no-choice’**

Davis (2006) argues that the accidentally and the suddenly interpretations of \textit{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) that is critical for this unified reading, not the suddenness. We will therefore name the unified interpretation \textit{no-choice}.

Evidence that the accidental (= lack of choice) aspect of meaning is basic to \textit{ka-…-a} comes from the fact that the suddenly aspect is often cancelable, but the accidental aspect is not. In other words, \textit{ka-…-a} never yields a deliberate-but-sudden reading, only an accidental – and possibly, but not necessarily, sudden – reading. This is shown in (28-29), where a deliberate but sudden action does not license \textit{ka-…-a}.

\(^{11}\) St’át’imcets does not obligatorily encode a past / present tense distinction. Imperfective aspect is overtly marked by the auxiliary \textit{wa7}, but perfective aspect is unmarked: therefore, crucially, the sentences in (25-27) are perfective. See Matthewson (2006) for analysis of the St’át’imcets temporal system.

\(^{12}\) 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 \textit{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):

\begin{description}
\item[(i)] \textbf{AIA.IMPF.eat} \textit{nakakain} \textit{ko} \textit{ang} \textit{lamok} \textit{1SG.CASE} \textit{mosquito} \textit{1SG.CASE} \textit{NOM} \textit{mosquito}  \\
\textit{‘I am able to eat the mosquito.’}
\item[(ii)] \textbf{AIA.PERF.eat} \textit{nakain} \textit{ko} \textit{ang} \textit{lamok} \textit{1SG.CASE} \textit{mosquito} \textit{1SG.CASE} \textit{NOM} \textit{mosquito}  \\
\textit{‘I managed to eat / accidentally ate the mosquito.’}
\end{description}

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.
(28) 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-cítf=kan-a
i=sk’wemk’á̱k’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.’

The consultant corrects (29a), which infelicitously contains ka-…-a, to (29b), which lacks it.

(29) 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 s=qwatsáts=s q’ílhil
CIRC-stand-AUT-CIRC DET=NOM=John FOC 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’ílhil=s úts’qa7 lhel=ta=s-gáw’p=a
NOM=run=3POSS outside from=DET=NOM-meet=EXIS
‘John stood up suddenly, and ran out of the meeting.’

On the other hand, (30-31) show that it is possible to obtain an accidentally-but-not-suddenly reading for ka-…-a.

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

tsíla=t’u7 kw=n=ka-q’wez-ilc-a
like=ADD DET=1SG.POSS=CIRC-keep.time-AUT-CIRC
‘Looks like I’m almost dancing.’

(31) 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-tálh-lec=kán-a, nilh=t’u7 múta7 n=s=xwem mútsa7q
CIRC-stand-AUT=1SG.SUBJ-CIRC then=ADD again 1SG.POSS=NOM=quick sit
‘I stood up by mistake, so I quickly sat down again.’

(32) 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.

\[
\begin{align*}
ka\text{-}mets-s=kan\text{-}á=k'a & \quad ti=n\text{-}skwátsits=a \\
CIRC\text{-}write\text{-}CAUS=1SG\text{.SUBJ}\text{-}CIRC\text{=}EPIS & \quad DET=1SG\text{.POSS}\text{-}name=EXIS
\end{align*}
\]

‘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 no separate lexical item to express ‘accidentally’ (although it does possess a separate lexical item which expresses ‘suddenly’ - lep, as in example (29b) above).\textsuperscript{13}

Once we have unified the accidentally with the suddenly interpretation, we can take a further step and 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-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 (33).

\[
\begin{align*}
(33) \quad a. \ & \text{skenkín}=t'u7 \ kw=s=ka\text{-}t'ép=s-a \\
& \quad \text{slow=ADD} \quad \text{DET=NOM=CIRC}\text{-}dark=3POSS\text{-}CIRC \\
& \quad \text{‘It gradually got dark.’} \\
b. \ & t'ák=t'u7 \ ka\text{-}mág-a, \ \ ka\text{-}mág-a \ \ aylh \\
& \quad \text{go.along=ADD} \quad \text{CIRC}\text{-}get.light\text{-}CIRC \ CIRC\text{-}get.light\text{-}CIRC \ \text{then} \\
& \quad \text{‘It got light gradually.’}
\end{align*}
\]

We conclude from the data presented in this sub-section that the core meaning of all the non-ability-related interpretations of \(ka\text{-}…\text{-}a\) is that something happened – or rather, \textit{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 more difficult to demonstrate, the no-choice reading of \(ka\text{-}…\text{-}a\) lacks an actuality entailment, just like the ability (‘manage to’) reading. The reason it is difficult to show this is that when an event \textit{has to} happen, in the normal course of events, it \textit{does} happen. So we need to find an \textit{abnormal} course of events to demonstrate that the actuality of the event is cancelable. The following scenario is designed with this in mind:

\[
(34) \quad qvl \ ta=s7\text{exw7unám-s}=a \\
& \quad k=Gillian \quad i=nátcw=as \\
& \quad \text{bad} \quad \text{DET=cold-3POSS=EXIS} \quad \text{DET=Gillian} \quad \text{when(PAST)=day=3CONJ} \\
& \quad \text{‘Gillian had a very bad cold yesterday.’}
\]

\textsuperscript{13} Furthermore, for one of our speakers, lep can itself be affixed with \(ka\text{-}…\text{-}a\), yielding \(ka\text{-}lép-a\), as in (i):

\[
(i) \quad ka\text{-}lép-a=t'u7 \\
& \quad k=máqa7=s \\
& \quad CIRC\text{-}suddenly\text{-}CIRC=ADD \quad \text{DET=snow=3POSS} \\
& \quad \text{‘It suddenly started to snow.’}
\]

This is strong additional evidence that ‘suddenly’ cannot be the basic meaning of \(ka\text{-}…\text{-}a\).
stexw wa7 n-tqép-leqs
really IMPF LOC-blocked-nose
‘Her nose was really plugged up.’

kens-q’á7 ku=t’éc szaq’ 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 s=zuqw=s
but explode-house DET-house-3POSS=EXIS FOC=ADD 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 (Matthewson et al. 2007, 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.

5. Ka-…-a as a circumstantial modal

We begin this section by briefly summarizing our previous work on modals in St’át’imcets (Matthewson et al. 2007, Rullmann et al. to appear), which is implemented within the formal framework of Kratzer (1977, 1981, 1991). We then introduce Kratzer’s specific discussion of circumstantial modality in 5.2, before returning to our analysis of ka-…-a. We show in 5.3 that the ability interpretation of ka-…-a displays exactly the range of meanings that are predicted for an existential circumstantial modal, and in 5.4 that the no-choice interpretation displays the range of meanings which we expect a universal circumstantial modal to have.14 In section 5.5 we turn to the formal analysis, which we implement along the lines of our previous choice-function analysis of modals in St’át’imcets.

5.1 Quantificational strength and conversational background: Modals in English and St’át’imcets

14 Nauze (2006) also claims that ka-…-a is a circumstantial modal.
We start from the standard view within formal semantics that modals are quantifiers over possible worlds. For example, English *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 interpretations, including deontic, epistemic, and circumstantial. To account for this, Kratzer (1977, 1981, 1991) argues that the discourse context provides a *conversational background* for the modal. (35) and (36) illustrate epistemic and deontic readings of *must*; here the phrase *in view of …* specifies the conversational background, which is usually left implicit.

(35) Michl must be the murderer. (In view of what is known about the crime.)
EPISTEMIC
(Kratzer 1991:643)

(36) 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 that 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. (35), 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 (36), *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 (Matthewson et al. 2007, Rullmann et al. to appear) we have identified two important and systematic differences between the behavior of modals in St’át’imcets and the behavior 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 (35) and (36), for example, will be translated into two different modals in St’át’imcets:

(37) nilh=k’ə s=Michl k’azāk7-am
FOC=EPIS NOM=Michl murder-MID
‘Michl must be the murderer.’ (In view of what is known about the crime.)

(38) 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 (37) above, or *may*, as in (39) below; and the irrealis modal *ka* can be translated as *must, can, or may*, as in (40) below.\(^{15}\)

\[
\text{(39)} \quad \text{wá7} = \text{k’a} \quad \text{séna7} \quad \text{qwenúxw}
\]

\[
\text{IMPF} = \text{EPIS} \quad \text{COUNTER} \quad \text{sick}
\]

‘He may be sick.’ (Context: maybe that’s why he’s not here.)

\[
\text{(40)} \quad \text{lán} = \text{lhkwacw} = \text{ka} \quad \text{ást’x-en} \quad \text{ti} = \text{kwtámts-sw} = \text{a}
\]

\[
\text{already} = \text{2SG.SBJ} = \text{IRR} \quad \text{see-DIR} \quad \text{DET=husband-2SG.POSS=EXIS}
\]

‘You must / can / may see your husband now.’

In Rullmann et al. (to appear) we propose a unified formal analysis of the quantificational variability of St’át’imcets modals using choice functions over possible worlds. In 5.5 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.

### 5.2 Circumstantial modality

Pure circumstantials have a circumstantial modal base (just like deontics), but a stereotypical ordering source rather than a normative one.\(^{16}\) 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 (41), along with her explanation below.

\[
\text{(41)} \quad \text{a.} \quad \text{existential circumstantial:}
\]

> Hydrangeas can grow here.\(^{17}\)

---

\(^{15}\) 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.

\(^{16}\) Future modals are also usually assumed to have circumstantial modal bases. See section 5.4.1 below for discussion of the close relationship between plain circumstantials and futures.

\(^{17}\) We prefer *could* to *can* here, as well as in (42a). This probably reflects the counterfactuality implied in the context (at least, if we know that hydrangeas are in fact *not* growing here). However, this does not affect the main point being made here. See von Fintel and Iatridou (to appear) for
b. \textit{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 [41a]. In such a situation, the proposition expressed by [41a] 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 [41b] 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 (42).

\begin{enumerate}
  \item \textit{existential circumstantial:} 
  Cathy can make a pound of cheese out of this can of milk.  
  \item \textit{existential epistemic:} 
  Cathy might make a pound of cheese out of this can of milk. 
\end{enumerate}

(42a) 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 (42a) 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. (42b), 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 10,000 miles away at the time of utterance and the speaker is about to consume the can of milk, (42a) can be true but (42b) is false.

In the literature, various subtypes of circumstantial modality have been distinguished. Ability attributions (as in (42a)) are usually analyzed as existential circumstantial modals (e.g., Kratzer 1991, Hackl 1998, but see Bhatt 1999 for a different analysis). However, existential circumstantials need not ascribe abilities per se. Thus, in (41a) we would not say that hydrangeas ‘have the ability’ to grow here. Many authors make a distinction between ‘dispositional’ readings, which talk about the subject’s abilities, desires, or dispositions, and pure circumstantials, which are not relativized to a subject. This distinction is further illustrated in (43).

\begin{enumerate}
  \item Sally can come along (because the car fits five). \textit{pure circumstantial} 
  \item Sally can swim (she is able to). \textit{dispositional circumstantial} 
\end{enumerate}

(Lechner 2005:2)

discussion of counterfactual marking on modals.
We will henceforth refer to the pure circumstantial reading as the *impersonal* reading and the dispositional reading as the *personal* reading. The two readings are spelled out in (44):

(44)  

**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)\(^{18,19}\) (cf. Lechner 2005:2)

So far we have only discussed circumstantial modals with existential force. Examples illustrating the circumstantial / epistemic contrast with universal modals are given in (45-46).

(45)  

universal circumstantial:

a. Jockl must sneeze (in view of the present state of his nose, etc.).\(^{20}\) (Kratzer 1991)

b. Jockl had to sneeze.

(46)  

universal epistemic:

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

b. Jockl must have sneezed.

(45a) 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 5.4.

5.3  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 (47-48), along with their past tense versions, as in (49), which – as discussed in 4.1 above – are often translated as ‘managed to’.

(47)  

\[\text{wa7=lhkan s-lheqw-mín ti=ts’qáx7=a, nilh kw=en=s}\]

---

\(^{18}\) The dispositions / abilities /desires of the subject are also part of the facts and circumstances of the background, so this formulation requires some refinement.

\(^{19}\) Lechner argues that impersonal readings correlate with raising structures, while dispositional readings correlate with control structures (in the syntactic sense). Wurmbrand (1999) argues on the contrary that in German, Icelandic and English, all modals are raising predicates. Since *ka-…-a* does not take any kind of clausal complement, all such arguments are moot for St’át’imcets.

\(^{20}\) Many speakers find *must* a little odd here, although (45b) is fine. As above, we do not offer an analysis of such differences between modals in English, as they do not affect the main point.
‘I was on the horse, so that I could reach the berries on the branches.’ (Matthewson 2005:28)

‘They did that to see who could do it the fastest.’ (Matthewson 2005:88)

‘…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 (50), where meaning of the proposition clearly does not depend on any property of the subject.

‘Six people can fit in that car.’

We also see ka-…-a used with St’át’imcets counterparts to Kratzer’s circumstantial hydrangea example:

‘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.”

(52) 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.
For comparison, (53) shows the epistemic half of the hydrangeas minimal pair. The consultant volunteers the epistemic modal *k’a* instead of *ka-…-a* here.

(53)  *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.*

\[ \text{wá7} = k’a \quad \text{kents7á} \quad \text{sxek} \quad \text{ku} = \text{kwkew} \]

be=EPIs around.here maybe DET=sagebrush

‘Sagebrush might be growing around here.’

Sentence (53) is not accepted in the (51) situation. This reflects the status of *k’a* as an unambiguously epistemic modal (see Matthewson et al. 2007 for analysis). Sentence (53) is accepted in the (53) situation. However, this does not mean that *ka-…-a* has an epistemic reading. Rather, the situation for (51) 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 *can* is distinguishable from epistemic *can* in that the latter is infelicitous if the speaker is witnessing the event (see von Fintel and Gillies 2007). For example, a speaker who is looking at rain falling from the sky can felicitously utter (54a), but not (54b) (unless as a joke).

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

(55) shows that in St’át’imcs, *ka-…-a* is good in this discourse context, while epistemic *=k’a* is not, confirming the status of *ka-…-a* as a circumstantial modal.

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

a.  \[ o, \quad \text{kél7a} = \text{t’u7} \quad \text{ka-kwis-a} \quad \text{lts7a} \]

oh first=ADD CIRC-rain-CIRC here

‘Oh, it can really rain here.’

b.  *\[ o, \quad \text{kél7a} = \text{k’a-t’u7} \quad \text{kwis} \quad \text{lts7a} \]

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*.

5.4.  **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 correlate with what we expect from a universal circumstantial interpretation. Recall that the no-choice reading covers cases
which translate into English as ‘accidentally’ (56) or ‘suddenly’ (57), as well as in non-controllable cases (58). Recall also that we showed that the ‘suddenly’ interpretation is an implicature which arises from an underlying ‘accidentally’ semantics.

(56) \textit{ka-nk’méq’w=lhkan-a} aylh \textit{l=ti=n-gwáts’-cal-ten=a} \\
\textit{CIRC-immerse=1SG.SBJ-CIRC} \textit{then in=DET=LOC-irrigate-ACT-thing=EXIS} \\
‘I fell into the ditch.’ (Matthewson 2005:158)

(57) \textit{nilh láti7 ka-t’ál=s-a} \textit{ta=káoh-s=a} \\
\textit{FOC there CIRC-stop=3POSS-CIRC} \textit{DET=car-3POSS=EXIS} \\
‘His car suddenly stopped.’ (Matthewson 2005:230)

(58) \textit{áts’x-en-as kw=s=plan=s} wa7 \textit{ka-péq-a} \\
\textit{see-DIR-3ERG DET=NOM=already=3POSS IMPF CIRC-white-CIRC} \\
\textit{ti=s-7líacw-em=a} \textit{DET=NOM-soak-MID=EXIS} \\
‘He saw that the soaked fish had turned white.’ (Matthewson 2005:153)

In section 4.2 we argued that what these interpretations have in common is a \textit{lack of choice} on the part of an agent. Now, if an event happens without any choice on the part of an agent, what that means is that the facts of the world conspire to make that event inevitable. Put another way, something happens with ‘no choice’ if it happens in all stereotypical worlds consistent with the facts. The core semantics of no-choice thus correlates with the semantics of universal circumstancials as discussed by Kratzer (1991).

5.4.1 Universal circumstancials and the future

In this subsection we deal with a potential problem with the claim that the no-choice interpretation of \textit{ka-…-a} corresponds to a universal circumstantial. When St’át’ímcets speakers are given St’át’ímcets translations of English sentences such as (59) (=(45a)), containing universal modals with a circumstantial interpretation, they do not generally accept \textit{ka-…-a}, as shown in (60). Instead, they offer equivalents with a plain future auxiliary or enclitic, as in (61).

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

(60) \textit{qvl} ta=s-7exw7unám-s=a s=Gertie \\
\textit{bad DET=NOM-cold-3POSS=EXIS NOM=Gertie} \\
‘Gertie has a bad cold.’

\textit{stexw wa7 n-tqép-legs} \\
\textit{very IMPF LOC-blocked-nose} \\
‘Her nose is really plugged up.’

\# \textit{ka-nsnán7-a} \\
\textit{CIRC-sneeze-CIRC} \\
= ‘She can sneeze.’ \\
≠ ‘She must sneeze.’
We think that what is going on here is that with eventive predicates, a universal circumstantial is very similar in its semantics to a future. 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 vaporized.) 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 (62) and (63) illustrate the similarities between the two modals. (The subscript A in (62) means that we are considering only the universal interpretation of *ka-* here.) Note that we will discuss the formal semantics of *ka-* in more detail below, where we will revise (62). (In (63), *i* is the type of temporal intervals.)

\[(62) [\text{ka-} a_i]^w is only defined if c provides a circumstantial modal base B and a stereotypical ordering source.\nIf defined, \[ [\text{ka-} a_i]^w = \lambda p_{<s,t>}. \forall w'[w' \in B(w) \rightarrow p(w') = 1] \]

\[(63) [\text{cuz'}]^{c,w} is only defined if c provides a circumstantial modal base B and a stereotypical ordering source.\nIf defined, \[ [\text{cuz'}]^w = \lambda p_{<s,<i,t>}. \lambda t. \forall w'[w' \in B(w) \rightarrow \exists t'[t < t' \& p(w')(t') = 1]] \]

We thus propose that the absence of *ka-* in sentences like (63) is not due to the absence of a universal circumstantial reading for *ka-* , but instead reflects a temporal issue with eventive predicates. Either Gertie is already sneezing (in which case a simple present tense (imperfective) form will be used), or she is not sneezing yet but she has to sneeze. In the latter case, it follows that she is going to sneeze, and speakers prefer to use an explicit future. Of course, this does not explain the difference between St’tát’l’mcets, where a future is required in these cases, and English, where it is not. However, as observed above, the universal circumstantial use of *must* is very restricted in English as well, being often absent when its truth conditions would be satisfied.\[^{21}\]

The idea that the problem with (61) results merely from interference from the future, rather than with an absence of a universal circumstantial reading for *must* is very restricted in English as well, being often absent when its truth conditions would be satisfied.\[^{21}\]

\[^{21}\] In English, *have to* is more commonly used in universal circumstantial contexts than *must*. We suspect that this is because *have to* favors a personal over an impersonal interpretation, which differentiates it more sharply from a plain future.
stexw wa7 n tqép-leqs
very IMPF stuck-nose
‘Her nose was really plugged up.’

kens-7ílhen ku=t’éc szaq’, t’u7 ka-nsmán7-a
try-eat DET=sweet bread but CIRC-sneeze-CIRC
‘She wanted to eat a cookie, but she suddenly had to sneeze.’  (volunteered gloss)

Another past episodic case of universal ka-...-a is given in (65).

(65) ka-wat’k’=kán-a i=ts’áqw-an’-an ti=qvl-wúl’c=a
CIRC-vomit=1SG.SUBJ-CIRC when.PAST=eat-DIR-1SG.ERG DET=bad-become=EXIS
  ts’úqwaz’
  fish
‘I had to throw up after eating that rotten fish.’

Further confirmation is provided by (present) habitual contexts, where, again, there is no
interference from the future, and the universal circumstantial interpretation surfaces once more:

(66) kán=t’u7 ka-q’sán’k-a lh-en qan’ím-ens
1SG.SUBJ=ADD CIRC-laugh-CIRC COMP=(IMPF)=3CONJ hear-DIR
  k=Henry kens-7ucwalmícw-ts
  DET=Henry try-Indian-mouth
‘I have to laugh when I hear Henry try to speak Indian.’

5.4.2 Circumstantial imperatives with ka-...-a
In this sub-section we 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 (67), from Davis (2006: Chapter 25).

(67) 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=málh=a!
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.22 We suggest that this is because ka-...-a in these cases is being used as a

22 In contrast, the deontic/irrealis modal ka ‘should, would’ has weaker force than an ordinary
universal circumstantial. Literally, then (67a) expresses ‘You must behave’ with circumstantial ‘must’, similar to the use of ‘must’ in ‘Jockl must sneeze’ ((45a, 59) above). 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 problematic for alternative accounts (either those based on an aspectual analysis, or those taking ‘control’ to be an irreducible primitive: see section 6 below). Such alternative accounts either have nothing to say about the imperative use of ka-…-a, or must produce ad-hoc extensions to account for it. In contrast, on the modal analysis, the imperative use falls out quite naturally.

5.5 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 (68).

(68)

<table>
<thead>
<tr>
<th></th>
<th>existential = ability</th>
<th>universal = no-choice</th>
</tr>
</thead>
<tbody>
<tr>
<td>able to</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>manage to</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>accidentally</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>suddenly</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>non-controllable</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>imperative</td>
<td>✓</td>
<td></td>
</tr>
</tbody>
</table>

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?

In our previous work on other St’át’imcets modals (Matthewson et al. 2007, Rullmann et al. to appear), 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. Before we present and extend our general modal analysis to ka-…-a, however, 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. We will therefore assume that it takes the predicate and its external argument to produce a proposition.23 As a first pass, we give separate representations of the existential and universal interpretations of ka-…-a in (69-70). We are leaving the ordering source out of the truth conditions for reasons of simplicity.

(69) \[[ka-…-a_E]^{\conw}\] is only defined if c provides a circumstantial modal base B and a stereotypical ordering source.

\[
\text{If defined, } [[ka-…-a_E]]^{\conw} = \lambda P_{\text{st},<s,t,d>}, \lambda x . \exists w' [w' \in B(w) & P(x)(w')] \]

imperative, and is used to express a less forceful injunction.

23 An anonymous reviewer asks whether the predicted scope differences between ka-…-a and other modals are detectable from e.g., interactions with other scope-bearing elements. At present, we do not know the answer to this question, which will have to await future work.
(70) \[\text{[[ka-\ldots-a]]}^\text{c,w} \text{ is only defined if } c \text{ provides a circumstantial modal base } B \text{ and a stereotypical ordering source.} \]

If defined, \[\text{[[ka-\ldots-a]]}^\text{c,w} = \lambda P_{\leq,\leq,\geq,\geq} . \lambda x . \forall w'[w' \in B(w) \rightarrow P(x)(w')] \]

In our previous work on modals in St’át’imcets, we accounted for their (apparent) quantificational variability within a unified analysis (inspired by previous work by Klinedinst 2005). The analysis utilizes a choice function over possible worlds, which selects a subset of \(B(w)\) (the set of worlds that are accessible from \(w\)). As shown in (73), where the basic schema is adapted for \(ka-\ldots-a\), the quantification is uniformly universal.

(71) \[\text{[[ka-\ldots-a]]}^\text{c,w} \text{ is only defined if } c \text{ provides a circumstantial modal base } B \text{ and a stereotypical ordering source.} \]

\[\text{[[ka-\ldots-a]]}^\text{c,w} = \lambda P_{\leq,\leq,\geq,\geq} . \lambda x . \forall w'[w' \in f(B(w)) \rightarrow P(x)(w')] \]

The existential versus universal uses are then obtained 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). 24,25

6. Previous Analyses

The modal analysis of \(ka-\ldots-a\) presented here represents a radical departure from previous accounts. In this section, we will briefly compare our analysis to its two principal competitors: the ‘control’-

24 An anonymous reviewer raises three interesting questions about the choice function analysis, which unfortunately go beyond the scope of the current paper (although see Rullmann et al. to appear for more detailed discussion). The first observation is that we are using choice functions in a slightly non-standard way, in that our functions select a subset rather than an individual from a set. However, we do not believe it is a problem to use functions of this type. The reviewer’s second comment concerns the functional similarity between our choice functions and the ordering source of a standard analysis. Technically, of course, the two differ in that the ordering source imposes an ordering on the set of accessible worlds, whereas the choice functions simply pick out a subset (which imposes a very trivial ordering). The question of whether the two notions could be combined is a fair one, but the answer will have to wait for future research.

Finally, the reviewer asks how exactly the context-dependence of \(ka-\ldots-a\) (i.e., which interpretation will arise in any given discourse context) is captured by our formal analysis. However, we regard this as the same type of problem as the determination of the reference of deictic pronouns; formal analyses of pronouns do not spell out exactly how salience is determined by context.

25 In Rullmann et al. (to appear) we show that in certain cases the choice function \(f\) can get existentially bound. In that paper we therefore treat \(f\) as a pronoun-like variable that is present in the LF representation.

6.1 *Ka-...-a* as an ‘out-of-control’ morpheme

Van Eijk (1997) adopts the notion of (agent) control as a primitive from Thompson’s (1979, 1985) work on Thompson (River) Salish (*nēʔkepmxcin*), a close relative of St’át’imcets within the Northern Interior subgroup of Salish. Van Eijk characterizes control as ‘the degree to which a state or action is controlled by the one involved in it’ (1997: 140), and claims that the underlying notion of *ka-...-a* is that of ‘a lack of control: something just happens suddenly or by accident without a person controlling the event, or a person manages to achieve something’ (1997: 51).

Most of the motivation for van Eijk’s control-based account of *ka-...-a* comes not directly from semantics, but from a morphological co-occurrence restriction between *ka-...-a* and the directive or ‘full control’ transitivizer –*Vn*. (As in nearly all Salish languages, transitivity in St’át’imcets is formally marked by a set of transitivizing suffixes which license object agreement.) When *ka-...-a* is affixed to a verb stem which is normally transitivized by –*Vn*, the causative (‘non-control’) transitivizer shows up instead, as shown in the table in (72):

<table>
<thead>
<tr>
<th>root</th>
<th>+ -<em>Vn</em> (directive / ‘full control’)</th>
<th>+ -<em>Vn</em> + <em>ka-...-a</em></th>
<th>+ -s (causative) + <em>ka-...-a</em></th>
</tr>
</thead>
<tbody>
<tr>
<td>gwél</td>
<td>gwél-en ‘burn something’</td>
<td>* ka-gwél-en-a</td>
<td>* ka-gwél-s-a</td>
</tr>
<tr>
<td>i’al</td>
<td>i’al-an’ ‘stop something’</td>
<td>* ka-i’al-an’-a</td>
<td>* ka-i’al-s-a</td>
</tr>
</tbody>
</table>

The basic idea behind van Eijk’s account of this restriction is that the directive transitivizer and *ka-...-a* have incompatible control properties: *ka-...-a* requires that an event be out of the agent’s control, while the directive requires that it be under the agent’s control. On the other hand, the causative transitivizer is specified as non-control, so it is compatible with *ka-...-a*.

Aside from the lack of a precise semantic definition of exactly what ‘control’ is, there are several empirical problems with this account. To start with, not every environment in which –*Vn* is replaced by –*s* can be characterized in control terms: transitives prefixed with the stative marker (e)s-, for example, always take the causative transitivizer, even with an agent in full control, as with predicates such as ‘hold’ or ‘watch’ (73):

<table>
<thead>
<tr>
<th>root</th>
<th>+ -<em>Vn</em> (DIR)</th>
<th>+ -<em>Vn</em> + (e)s-</th>
<th>+ -s (CAUS) + (e)s-</th>
</tr>
</thead>
<tbody>
<tr>
<td>téq</td>
<td>téq-en ‘touch something’</td>
<td>* s-téq-en</td>
<td>* s-teq-s ‘hold something’</td>
</tr>
<tr>
<td>áts’x</td>
<td>áts’x-en ‘see something’</td>
<td>* s-7áts’x-en</td>
<td>* s-7áts’x-s ‘watch (over) something’</td>
</tr>
</tbody>
</table>

26 Note that the notion of ‘agent control’ as employed in the literature on Salish languages bears no relation to syntactic control, as developed in the generative literature on Equi-NP deletion.
It might just be possible to argue, as van Eijk (1997:126) does, that a stative predicate inherently implies lack of control, and that this explains the incompatibility of the directive transitivizer with the stative prefix. However, if so, it is hard to understand why statives can themselves be affixed with \( ka-\ldots-a \), yielding an ability reading, as in the example in (74).\(^\text{27}\)

\[
\text{(74)} \quad \begin{array}{l}
\text{áy=t'u7} \\
\text{kw=n=s=ka-s-téq-s-a} \\
\text{NEG=ADD} \\
\text{DET=1SG.POSS=NOM=CIRC-STA-touch-CAUS-CIRC} \\
\text{this} \\
\text{ku=ntsqústen} \\
\text{DET=saucepan} \\
\text{gemp-7úl} \\
\text{DET=superlative} \\
\text{ts7a} \\
\end{array}
\]

\text{‘I can’t hold this saucepan—it’s too hot!’}

A complementary problem with the control account of transitivizer alternations is posed by the fact that \( \text{–V}_n \) is not the only full control transitivizer in St’át’ímctets, yet it is the only one that alternates with \( \text{–s} \). The ‘indirective’ transitivizer \( \text{–cit} \), which derives applicatives with a goal or recipient object, also entails an agent in full control of the event it denotes, yet is fully compatible with \( ka-\ldots-a \):

\[
\text{(75)} \quad \begin{array}{l}
\text{tsilkst} \\
\text{s-q’ém’p-s=t'u7} \\
\text{five} \\
\text{ku=ka-nas-ci(t)-tsín-a} \\
\text{DET=10SG.POSS=ADD DET=CIRC-go-IND-2SG.OBJ-CIRC} \\
\text{‘I can only give you fifty (dollars).’} \quad \text{28}
\end{array}
\]

In short, the control account of transitivity alternations with \( ka-\ldots-a \) is both too restricted and not restricted enough: it fails to account for transitivity alternations where control is not at issue (such as with statives), and it predicts transitivity alternations where none are found (such as in indirective contexts).\(^\text{29}\)

---

\(^{27}\) Note that van Eijk (1997:140) explicitly denies this possibility; nevertheless, \( ka-\ldots-a \) is possible with both transitive (74) and intransitive statives; an example of the latter is given in (i):

\[
\text{(i)} \quad \begin{array}{l}
\text{áy=t'u7} \\
\text{kw=n=s=ka-s-táh-lec-a} \\
\text{NEG=ADD} \\
\text{DET=1SG.POSS=NOM=CIRC-STA-stand-AUT-CIRC} \\
\text{muúta7} \\
\text{more} \\
\text{‘I can’t stay standing up any longer!’}
\end{array}
\]

\(^{28}\) Jan van Eijk (p.c. 2007) argues that \( \text{–cit} \) lacks a non-control counterpart, and therefore only the control form is available with \( ka-\ldots-a \). However, in that case we would expect \( ka-\ldots-a \) to be simply ungrammatical with the indirective transitivizer, contrary to fact. In order to implement van Eijk’s idea, we would have to postulate a systematic ambiguity in the semantics of \( \text{–cit} \), to the effect that it would be specified as non-control with \( ka-\ldots-a \), and full control without. We find such a move undesirable.

\(^{29}\) Of course, this still leaves open the question of how to account for the co-occurrence restriction between the directive transitivizer and \( ka-\ldots-a \) - if, indeed, a synchronic account is even possible. Note that aside from \( ka-\ldots-a \) and the stative prefix, the directive is also incompatible with a number of other stem-level morphemes, including the inchoative marker, \( -(V)C_2 \) reduplication, and the ‘immediate’ suffix \( \text{–t} \): stems containing any of these morphemes must be transitivized with \( \text{–s} \), though they have little in common as far as control properties are concerned. It is possible to characterize them all as aspectual (although in the case of \( \text{–t} \), which is highly lexicalized and semantically bleached, the aspectual effect is obscure at best: see van Eijk 1997: 72); the fact that \( ka-\ldots-a \) forms part of this group could then be taken as an argument that its core meaning is also
Nevertheless, this is not the most serious problem with the control analysis. More telling is that it characterizes only part of the semantic range of ka-…-a: in particular, it does not cover the ability interpretation (which, recall, cannot be derived from the manage-to interpretation, because unlike English ‘manage to’, ka-…-a lacks an actuality entailment (4.1)). Given that the ability interpretation is the least marked and most pervasive of all the interpretations of ka-…-a, this seems to us to constitute a fatal weakness for a control-based account.

6.2 **Ka-…-a as an operator on event structure**

The second previous analysis of ka-…-a, that of Demirdache (1997), attempts to reduce its semantics to an operation on the event structure of predicates (see also Davis and Demirdache 2000, Davis 2006). Demirdache adopts the aspectual calculus of Pustejovsky (1991, 1995), in which complex events are composed from atomic subevents consisting of states and simple transitions. Her crucial claim is that (in spite of morphological appearances) all eventive predicates in St’át’imcets are derived from underlyingly dyadic (causative) event structures, with both initial and final subevents. This enables her to characterize ka-…-a uniformly as an ‘event structure passive’, whose effect is to suppress either the initial subevent of a complex event, or (in the case of accomplishments) the lexical content (‘the name’) associated with the initial subevent. This enables her to characterize ka-…-a uniformly as an ‘event structure passive’, whose effect is to suppress either the initial subevent of a complex event, or (in the case of accomplishments) the lexical content (‘the name’) associated with the initial subevent.

Assuming a four-way division of predicates into states, activities, achievements and accomplishments, the event-structure passive analysis of ka-…-a makes the following predictions for each aspectual class:

(i) States should be incompatible with ka-…-a (they have a simplex event structure).
(ii) Activities will yield a stative reading with ka-…-a, since suppressing their initial subevent will yield a state. According to Demirdache, this shows up as the ability interpretation.
(iii) Achievements will yield an instantaneous transition (‘suddenly’) reading with ka-…-a, since their initial causing subevent is suppressed.
(iv) Accomplishments will yield a non-control causative reading, whereby the association of the lexical content of the predicate with its initial subevent is suppressed.

aspectual, along the lines of Demirdache (1997). However, as we have argued throughout this paper, there are good reasons to choose a modal over an aspectual account of ka-…-a, leaving the status of these co-occurrence restrictions obscure.

The ability interpretation also distinguishes ka-…-a from ‘limited control’ forms in Salish (transitivizers, intransitivizers, and reflexives), which are absent in St’át’imcets except for relic forms, but widespread elsewhere in the family. These have a manage-to interpretation which entails event completion, like English ‘manage to’ as opposed to ‘be able to’ (Kiyota 2008).

More accurately, it is the association of the lexical content of the root with the initial subevent that is suppressed.

Suppressing the initial subevent of an accomplishment, as opposed to its lexical content, will yield a simple transition, which is identical to the effect of ka-…-a on an achievement. Adopting the claim that all roots are lexically specified as achievements from Davis (1997), Demirdache suggests that the output of ka-…-a on achievements blocks the identical output on accomplishments built from achievements.
While Demirdache’s account is both systematic and ingenious, it turns out that there are empirical problems with each of (i-iv). As far as (i) is concerned, the prediction is simply false: as illustrated in (74) and footnote 27, statives are in fact compatible with *ka-…-a*. The ability of statives to co-occur with *ka-…-a*, and the fact that the meanings of statives with and without *ka-…-a* are clearly distinct, also argues against (ii), since the meaning of ‘to be able to be in state x’ cannot be reduced to the meaning of ‘to be in state x’. As for (iii), we have already shown in 4.2 that of the two typical interpretations of achievements affixed with *ka-…-a*, ‘suddenly’ and ‘accidentally’, it is the latter which is basic, contrary to Demirdache’s predictions. And finally, as far as (iv) is concerned, the non-control causative meaning is not the only one associated with *ka-…-a* on accomplishments: the ability and manage-to interpretations are if anything more prominent (see 3.1 and 3.2).

In more general terms, the event structure hypothesis is based on the idea that the various interpretations of *ka-…-a* will be restricted to particular aspectual classes. But as we have seen, this is not the case: the ability interpretation (of which the manage-to interpretation turns out to be a subtype) is clearly available for all event types, and the same is true for the accidentally, suddenly and non-controllable interpretations once we have unified them into a single (‘no-choice’) interpretation (4.2). This, of course, is exactly what is predicted by a modal analysis, which does not involve an operation on lexically specified subclasses.

7. 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. Our analysis remains true to van Eijk’s (1997:51) original insights about the various interpretations available for the morpheme, but departs from van Eijk’s description of *ka-…-a* as fundamentally a marker of ‘lack of control’. For us, the ‘lack of control’ aspect of *ka-…-a* is only one instantiation of its status as a circumstantial modal. The analysis presented here also contrasts significantly with the aspectual analysis of Demirdache (1997), Davis and Demirdache (2000), and Davis (2006).

In providing an analysis of *ka-…-a* as a circumstantial modal, we have also supplied independent support for a striking generalization that 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 (2007), 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.

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 sometimes been regarded as comprising a unified ‘control system’ (see Thompson 1979, 33) It is also unclear why suppressing the initial subevent of a process, which in Pustejovsky’s model consists of a series of identical transitions, should yield a state rather than a transition.

31
Our work suggests otherwise: it seems unlikely that the modal treatment we have given here for \textit{ka-...-a} will extend straightforwardly to more typical transitivity-based control alternations, or indeed, to other Salish ‘out-of-control’ phenomena, as exemplified by $-(V)C_2$ reduplication (Carlson and Thompson 1982, Kinkade 1982, van Eijk 1990). A more systematic comparison is clearly warranted.

Beyond Salish, there is an intriguing resemblance between \textit{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 \textit{ka-...-a} can be extended to its Austronesian counterparts.

One way in which the interpretation of \textit{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 footnote 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 \textit{manage to}. In contrast, as we have seen, the manage-to interpretation of \textit{ka-...-a} only has a cancelable actuality implicature (see 4.1 above). We do not know whether this difference is primitive, or may be derived 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.

References


\footnote{See footnote 12. Gerdts (1979), on Ilokano, appears to have been the first person to observe the parallels between Austronesian and Salish control systems; Van Eijk (1997:264, note 10) also observes that a Salish-like notion of control is an important category in Ulu Muar Malay and Javanese.}


Mills, J. 2005. Events in the middle; the syntax of middles seen through the morphology of Tagalog. Undergraduate Honour’s Thesis, McGill University.

Appendix: conversion chart from St’át’ímcets practical orthography to IPA

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