Maximal and non-minimal change in Salish event structure

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Main Claim

Secwepemctsín aspectual (control) morphology restricts the range of the degree of change encoded by the predicate to being maximal or non-minimal

1. Background

Secwepemctsín (Shuswap, ISO: `shs`);

- Interior Salish language;
- At most 166 fluent L1 speakers remaining (Ignace and Ignace, 2017; Gessner et al., 2022).

Control and limited control in Secwepemctsín and across Salish
Implicated in two areas of the grammar:

(i) Agency

Limited control expresses that an subject of the verb did something (a) accidental or non-intentional, or (b) "accomplished it at the expense of special effort, time, or trouble" (Thompson 1985: 391).
Control expresses the converse set of meanings: the agent is acting deliberately, and is in "full control" (Kuipers, 1992).

(ii) Event structure

- Control and limited control have been associated with event structure and *non-culminating accomplishments* (NCAs; Bar-el et al. 2005; Bar-el 2005, see also Martin 2019)
- Secwepemctsín has four distinct control/limited control forms
- This is the largest set of control distinctions in Salish (shared with neighbouring Nłeʔkepmxcín)

Four-way morphological distinction

	Transitive	**Middle**
Control	*-n-t-*	*-em-*
Limited Control	*-nwéṅ-t-*	*-nwéllṅ-*

Table 1: Control paradigm in Secwepemctsín

Middles in Salish
• An intransitive suffix *-em*, which has a variety of uses across Salish (see e.g., Davis 1996; Gerdts and Hukari 1998, 2006);
• Particular use: Intransitive but theme-oriented;
• Theme-oriented middles are formally intransitive, but they semantically entail a theme argument.
• Theme-oriented middles have "objects" but they are introduced by the oblique determiner *te*

Four-way distinction in event development:

	Transitive	**Middle**
Control	*Implicate Culmination*	*Implicate partial Change of State*
Limited Control	*Entail Culmination*	*Entail partial Change of State*

Table 2: Four-Way Contrast of Control in Secwepemctsín

Proposal

Degree-based analysis in which (limited) control morphology introduces a measure function that measures the degree of change undergone by object. This degree of change is oriented towards the maximal point (transitives) or the minimal point (middles) on the scale.

2.1. Transitive verbs marked for control

- Implicates **culmination** of the event
- If culmination fails to hold, implicature must be explicitly canceled

Culmination is cancelable

(1) *Context*: Bruce has a very blunt knife for cutting off the fins of the sockeye

*Bruce níḵ-**en-[t]**-s re te∼tétxmen-s ḵémell re te∼tétxmen-s*
Bruce get.cut-CTR-TR-3ERG D/C PL∼fin-3POSS however D/C PL∼fin-3POSS
ta7 k s-niḵ-s
NEG IRR NMLZ-get.cut-3POSS

'Bruce cut their fins but the fins didn't get cut.'
(vf | GD | 02.07.2022)

(2) *re Henry c-tsíq-**en-[t]**-s re tsípwen, ell w7ec ey*
D/C Henry LOC-dig-CTR-TR-3ERG D/C root.cellar and PROG still
c-tsíq-m=es te c-tsípwen-s
LOC-dig-MID=3SBJV D/C LOC-root.cellar-3POSS

'Henry dug a root cellar and is still making his root cellar.'
(sf | MJ | 02.23.2022)

(3) *Context:* Hannah worked on making a new basket but she ran out of material. So the basket isn't done yet.

*Hannah ḵúl-**en-[t]**-s re miṁc, ḵémell ta7 k*
Hannah make-CTR-TR-3ERG D/C basket however NEG D/C
s-wi7-s ey
NMLZ-finish-3POSS still

'Hannah made a basket but she still hasn't finished.'
(vf | DC; LC | 10.15.2021)

Failure to cancel the implicature when it does not hold is infelicitous

(4) *Context:* Hannah worked on making a new basket but she ran out of material. So the basket isn't done yet

*#Hannah ḵúl-**en-[t]**-s re miṁc*
Hannah make-CTR-TR-3ERG D/C basket

'Hannah made a basket.' (sf | DC; LC | 10.15.2021)

2.2. Transitive verbs marked for limited control

- Entails **culmination** of the event

Cancelation of culmination is infelicitous

(5) *# re Henry c-tsíq-**enwéṅ-[t]**-s re tsípwen, ḵémell ta7 k*
D/C Henry LOC-dig-LC-TR-3ERG D/C root.cellar however NEG D/C
s-wi7-s
NMLZ-finish-3POSS

Intended: 'Henry dug an root cellar but has not finished.'
Consultant's comment: 'You can't say *ctsiqenwéṅs* if he's not finished yet.'
(sf | MJ | 02.23.2022)

(6) *# tluḻqw-**enwéṅ-[t]**-s re sunéc re Sander ell w7ec ey*
pull.feathers-LC-TR-3ERG D/C grouse D/C Sander and PROG still
s-tlúḻqw-em=es te sunéc
NMLZ-pull.feathers-MID-3SBJV D/C grouse

Intended: 'Sander plucked feathers from a grouse and is now still pulling the feathers off.'
Consultant's comment: 'This is odd.' (sf | MJ | 03.14.2022)

(7) *Context*: Bruce has a very blunt knife for cutting off the fins of the sockeye

a. *#Bruce níḵ-**enwéṅ-[t]**-s re te∼tétxmen-s ḵémell re*
Bruce get.cut-LC-TR-3ERG D/C PL∼fin-3POSS however D/C
te∼tétxmen-s ta7 k s-niḵ-s
PL∼fin-3POSS NEG D/C NMLZ-get.cut-3POSS

Intended: 'Bruce managed to cut their fins but the fins didn't get cut.'
(vf | GD | 02.07.2022)

2.3. Middle verbs marked for control

- No culmination inference
- **Partial change-of-state** implicature
- Change-of-state can be canceled

Lack of culmination is asserted with *ell* 'and', instead of *ḱémell* 'but'
• Indicates that conjoined assertion does not contrast with the inference of the prejacent

(8) *re Bruce q̓7es s-cwiḱ-**em**-s te sqlelten-7úẇi, ell ta7 k*
D/C Bruce long NMLZ-dry-CTR.MID-3POSS D/C salmon-real and NEG D/C
s-wi7-s ey
NMLZ-finish-3POSS still

'Bruce dried the sockeye for a long time and he hasn't finished yet'
(sf | GD | 12.27.2021)

It is possible to cancel a change-of-state, typically with *ḱémell* 'however'
• Indicates that cancelation contrasts with the inference of the prejacent

(9) *Henry mekwmékw re seḱwmíṅ-s. Henry níḱ-**em** te te∼tétxmen*
Henry dull D/C knife-3POSS Henry cut-CTR.MID D/C PL∼fin
ḱémell ta7 k s-ts-<nik>níḱ-s re te∼tétxmen.
however NEG D/C NMLZ-STAT<PL>cut-3POSS D/C PL∼fin

'Henry's knife is dull. Henry was cutting some fish fins but none of the fins got cut.' (sf | volunteered translation | MJ | 02.16.2022)

(10) *re Julia níḱ-**em** te lekelét ḱémell ts-cets-7úy re lekelét*
D/C Julia cut-CTR.MID D/C bread but STAT-scorch-EMPH D/C bread
es ts-n<7>íḱ-s
GDIR STAT-cut<INCH>-3POSS

'Julia cut the bread but it was too burnt to get cut.'
(sf | MJ | 06.15.2022)

(11) *Sander q̓wl-**em** te peták, ḱémell re c-ḱweltsenélten-s*
Sander roast-CTR.MID D/C potato however D/C LOC-stove-3POSS
q̓uwúp-ekwe. Ye-rí7 wel peták ts-xiw ey
broken-EVID DEM-DIST so potato STAT-raw still

'Sander roasted some potatoes, but his stove was broken. That's why the potatoes are still raw.'
Consultant's comment: 'This makes sense, but not when you say it in English' (sf | GD | 08.24.2022)

2.4. Middle verbs marked for limited control

- No culmination inference
- Entails a **partial change-of-state**

Lack of culmination is asserted with *ell* 'and', instead of *ḱémell* 'but'
• Indicates that conjoined assertion does not contrast with the inference of the prejacent

(12) *re Bruce q̓7es s-cwiḱ-**enwéllṅ**-s te sqlelten-7úẇi, ell ta7 k*
D/C Bruce long NMLZ-dry-LC.MID-3POSS D/C salmon-real ell NEG D/C
s-wi7-s ey
NMLZ-finish-3POSS still

'Bruce dried the sockeye for a long time and he hasn't finished yet'
Consultant's comment: 'Makes sense' (sf | GD | 12.13.2021)

(13) *re Sander tluḷ̓qw-**enwéllṅ** te ṯémen-s re sunéc, ell*
D/C Sander pull.feathers-LC.MID D/C feather-3POSS D/C grouse and
w7ec ey tlúḷ̓qw-em-es te sunéc
PROG still pull.feathers-MID-3SBJV D/C grouse

'Sander managed to pull the feathers of a grouse and is now still pulling the feathers off' (sf | MJ | 03.09.2022)

Cancelation of partial change-of-state is infelicitous

(14) # *Henry mekwmékw re sek̓wmín̓-s. Henry nik̓-**enwéllṅ** te*
Henry dull D/C knife-3POSS Henry cut-LC.MID D/C
te∼tétxmen k̓émell ta7 k s-ts-<nik>nik̓-s re
PL∼fin however NEG D/C NMLZ-STAT-<PL>cut-3POSS D/C
te∼tétxmen.
PL∼fin

Intended: 'Henry's knife is dull. Henry was cutting some but none of the fins got cut.'
Consultant's comment: 'You are contradicting yourself here, because you are saying that some fins got cut' (sf | MJ | 02.16.2022)

(15) # *Sander q̓wl-**enwéllṅ** te peták, k̓émell re c-k̓weltsenélten-s*
Sander roast-LC.MID D/C potato however D/C LOC-stove-3POSS
q̓uwúp-úke7. Ye-rí7 wel peták ts-xiw ey
broken-EVID DEM-DIST so potato STAT-raw still

Intended: 'Sander roasted some potatoes, but his stove was broken. That's why the potatoes are still raw.'
Consultant's comment: 'No, they cannot all be raw still, because you say he was able to' (sf | GD | 08.24.2022)

(16) # *re Henry tsiq-**enwéllṅ** re tsípwen, k̓émell sul-t ey*
D/C Henry dig-LC.MID D/C root.cellar however freeze-ADJV still
re llúqw-lecw. Ye-rí7 wel ta7 k s-tsíq-enwéṅ-[t]s re
D/C earth-soil DEM-DIST so NEG D/C.IRR NMLZ-dig-LC-TR-3ERG D/C
tsípwen
root.cellar

Intended: 'Henry dug an root cellar but the soil was frozen. That's why he couldn't dig the root cellar.'
Consultant's comment: 'This doesn't sound right. You could say he tried to' (sf | GD | 03.14.2022)

Overview

	Culmination	Partial change-of-state
Implicated	*control transitive*	*control middle*
Entailed	*limited control transitive*	*limited control middle*

Table 3: Secwepemctsín Control and Limited Control in Context

3. A note on the object DP

Krifka (1989, 1998): whether or not a predicate is telic largely depends on whether the theme DP is quantized or cumulative.

The determiner heading the DP does not affect the aspectual composition of the predicate

Determiner selection in Secwepemctsin is syntactically driven (Gardiner 1993: 20)
• Core determiner *re* appears in argument positions where it is cross-referenced with verbal agreement, e.g., **subject, direct object**
• Oblique determiner *te* appears in positions not cross-referenced with verbal agreement, e.g., **indirect object, agent of passive**

• The objects of middle verbs – which test as atelic – may be quantized

(17) *Sander 7íllen-∅ te nek̓u7 ṫucw te sxúxsem*
Sander eat-CTR.MID D/C one only D/C soapberry
'Sander ate only one soapberry' (vf | GD | 12.12.2022)

• The objects of transitive verbs – which test as telic – may be non-quantized

(18) *re sgwesgwes xwew-en-t-és re s<peq>péq*
D/C sunshine dry-CTR-TR-3ERG D/C berry<PL>
'The sun dried berries' (vf | GD | 06.2022)

4. Analysis: maximal and non-minimal events

Proposal

Degree-based analysis in which control morphology introduces a measure function that measures the degree of change undergone by the object. This degree of change is oriented towards the maximal point (transitives) or the minimal point (middles) on the scale.

Measure function

(19) For any measure function **m**, $\mathbf{m}_{\Delta}$ = $\lambda x.\lambda e.\lambda w.\mathbf{m}^{\uparrow}_{\mathbf{m}(x)(\mathit{init}(e))(w)}(x)(\mathit{fin}(e))(w)$

$\mathbf{m}_{\Delta}$ is the degree of difference between the degree of x at the beginning and the degree measured by **m** at the end of e.

(adapted from Kennedy and Levin 2008: 18)

Maximal and (non)-minimal points

• (in)transitivizing (limited) control morphology restricts the orientation of the degree to specific points on the scale of $\mathbf{m}_{\Delta}$.

(20) $\mathbf{max}(\mathbf{S}_{\mathbf{m}_{\Delta}}) = \iota d\ [d \in \mathbf{S}_{\mathbf{m}_{\Delta}} \wedge \forall d' \in \mathbf{S}_{\mathbf{m}_{\Delta}}\ [d' \leq d]\ ]$

(21) $\mathbf{min}(\mathbf{S}_{\mathbf{m}_{\Delta}}) = \iota d\ [d \in \mathbf{S}_{\mathbf{m}_{\Delta}} \wedge \forall d' \in \mathbf{S}_{\mathbf{m}_{\Delta}}\ [d \leq d']\ ]$

(adapted from Morzycki 2016: 128-129)

Deriving culmination and partial change-of-state

Culmination

Culmination of an event e with theme x

$\mathbf{m}_{\Delta}(x)(e) = \mathbf{max}(\mathbf{S}_{\mathbf{m}_{\Delta}})$

The degree to which *x* changes as a result of participating in *e* equals the maximal point on the scale of $\mathbf{m}_{\Delta}$

Culmination follows from the degree of change being oriented towards and equal to the maximal value on the scale of $\mathbf{m}_{\Delta}$

Partial change-of-state

Partial change-of-state of theme x in an event e

$\mathbf{m}_{\Delta}(x)(e) > \mathbf{min}(\mathbf{S}_{\mathbf{m}_{\Delta}})$

The degree to which *x* changes as a result of participating in *e* exceeds the minimal point on the scale of $\mathbf{m}_{\Delta}$]]
Partial change-of-state follows from the degree of change being oriented towards and exceeding to the minimum value on the scale of $\mathbf{m}_{\Delta}$

Deriving the entailment-implicature contrast

The evaluation world and inertia worlds

Inertia worlds *w'* are worlds whose history is identical to evaluation world *w*, but may branch off at the *beginning* of the event (Bar-el et al., 2005, cf. Dowty, 1979; Landman, 1992; Portner, 1998).

Implicating culmination & partial change-of-state

Implicating culmination of an event e with theme x

$\forall w'$. *w'* is an inertia world w.r.t *w* at the beginning of $e \rightarrow \mathbf{m}_{\Delta}(x)(e)(w') = \mathbf{max}(\mathbf{S}_{\mathbf{m}_{\Delta}})$

In all inertia worlds *w'*, the degree to which *x* changes as a result of participating in *e* equals the maximal point on the scale of $\mathbf{m}_{\Delta}$

Implicating partial change-of-state of theme x in an event e

$\forall w'$. *w'* is an inertia world w.r.t *w* at the beginning of $e \rightarrow \mathbf{m}_{\Delta}(x)(e)(w') > \mathbf{min}(\mathbf{S}_{\mathbf{m}_{\Delta}})$

In all inertia worlds *w'*, the degree to which *x* changes as a result of participating in *e* exceeds the minimal point on the scale of $\mathbf{m}_{\Delta}$

Entailing culmination & partial change-of-state

Entailing culmination of an event e with theme x

$\lambda w.\ \mathbf{m}_{\Delta}(x)(e)(w) = \mathbf{max}(S_{\mathbf{m}_{\Delta}})$

In the evaluation world *w*, the degree to which *x* changes as a result of participating in *e* equals the maximal point on the scale of $\mathbf{m}_{\Delta}$

Entailing partial change-of-state of theme x in an event e

$\lambda w.\ \mathbf{m}_{\Delta}(x)(e)(w) > \mathbf{min}(S_{\mathbf{m}_{\Delta}})$

In the evaluation world *w*, the degree to which *x* changes as a result of participating in *e* exceeds the minimal point on the scale of $\mathbf{m}_{\Delta}$

Control

In **control** verbs, culmination and partial change-of-state are implicated because $\mathbf{m}_{\Delta}$ returns a degree of change in all inertia worlds *w'*, which may not include the evaluation world

(22) a. *Bruce níḱ-**en-[t]**-s re te∼tétxmen*
Bruce cut-CTR-TR-3ERG D/C PL∼fin culmination implicature

b. *Bruce níḱ-**em** te te∼tétxmen*
Bruce cut-CTR.MID D/C PL∼fin change-of-state implicature
'Bruce cut fish fins'

Deriving control forms

$\lambda P_{\langle e,vt\rangle}.\lambda x.\lambda e.\lambda w.\forall w'[P(x)(e)(w) \wedge w'$ is an inertia world w.r.t w at the beginning of $e \rightarrow \{\mathbf{m}_{\Delta}(x)(e)(w') \{= \mathbf{max}(S_{\mathbf{m}_{\Delta}})\} / \{ > \mathbf{min}(S_{\mathbf{m}_{\Delta}})\}\ ]$

Culmination implicature (22a):
e is a cutting event of fins ∧ in all inertia worlds *w'* w.r.t. *w* at the beginning of *e*, then the degree of change to the **fins** as a result of participating in the **cutting** event is maximal.

Partial change-of-state implicature (22b):
e is a cutting event of fins ∧ in all inertia worlds *w'* w.r.t. *w* at the beginning of *e*, then the degree of change to the **fins** as a result of participating in the **cutting** event exceeds the minimum point on its scale.

Limited control

In **limited control** verbs, culmination and partial change-of-state are entailed because $\mathbf{m}_{\Delta}$ returns a degree of change in the evaluation world *w*

(23) a. *Bruce níḱ-**enwéṅ-[t]-s** re te∼tétxmen-s*
Bruce cut-LC-TR-3ERG D/C PL∼fin culmination entailment

b. *Bruce níḱ-**enwélln̓** te te∼tétxmen*
Bruce cut-LC.MID D/C PL∼fin change-of-state entailment
'Bruce managed to cut fish fins'

Deriving limited control forms

$\lambda P_{\langle e,vt\rangle}.\lambda x.\lambda e.\lambda w[P(x)(e)(w) \wedge \mathbf{m}_{\Delta}(x)(e)(w) \{= \mathbf{max}(S_{\mathbf{m}_{\Delta}})\} /$
$\{ > \mathbf{min}(S_{\mathbf{m}_{\Delta}})\}\ ]$

Culmination entailment (23a):
e is a cutting event of fins ∧ in the evaluation world *w*, the degree of change to the **fins** as a result of participating in the **cutting** event is maximal.

Partial change-of-state implicature (23b):
e is a cutting event of fins ∧ in the evaluation world *w*, the degree of change to the **fins** as a result of participating in the **cutting** event exceeds the minimum point on its scale.

5. Conclusion

Four-way distinction in Secwepemctsín event development:

	Transitive	**Middle**
Control	*Implicate Culmination*	*Implicate partial Change of State*
Limited Control	*Entail Culmination*	*Entail partial Change of State*

Table 4: Four-Way Contrast of Control in Secwepemctsín

Reflection

While different analyses would be capable of accounting for culmination vs. non-culmination, the parallelism reflected between transitive and middle verbs is reflected in the analysis

It accounts for the the restrictions on the degree of change of the predicate, i.e., culmination and partial change-of-state

Future work

• Extend to **Degree Achievements**: this analysis uses DA semantics, but the degree variable does not come from the root.

• The nature of the **verb root**: the semantics of the verb root is unclear: in other Salish languages they are telic unaccusatives (Davis, 1996, 2022).

• Division of labour between **control** and **(in)transitivity**, as the morphemes are largely decomposable.

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Abbreviations and glossing conventions

Abbreviations: 'vf' stands for volunteered form by consultant; 'sf' stands for supplied form by the elicitor.

Glossing conventions: ADJV = adjectivizer, CTR = control, D/C = determiner/complementizer, DEM = demonstrative, DIST = distal, EMPH = emphatic, ERG = ergative, EVID = evidential, GDIR = goal-directed, INCH = inchoative, IRR = irrealis, LC = limited control, LC.MID = limited control intransitive, LOC = locative, MID = middle, NEG = negative, NMLZ = nominalizer, PL = plural, POSS = possessive, PROG = progressive, SBJV = subjunctive, STAT = stativizer, TR = transitive.

References

Bar-el, Leora. 2005. Aspectual distinctions in Skwxwú7mesh. Doctoral Dissertation, University of British Columbia.

Bar-el, Leora, Henry Davis, and Lisa Matthewson. 2005. On non-culminating accomplishments. In *Proceedings of North East Linguistics Society*, volume 35, 87.

Davis, Henry. 1996. Deep unaccusativity and zero syntax in St'át'imcets. In *Papers for the 32st International Conference on Salish and Neighbouring Languages*, 39–58. Vancouver, B.C.

Davis, Henry. 2022. Going radical in Salish. In *Proceedings of WCCFL 39*.

Dowty, David R. 1979. *Word meaning and Montague grammar: The semantics of verbs and times in generative semantics and in Montague's PTQ*, volume 7. Springer Science & Business Media.

Gardiner, Dwight Gordon. 1993. Structural asymmetries and preverbal positions in Shuswap. Doctoral Dissertation, Simon Fraser University.

Gerdts, Donna, and Thomas Hukari. 1998. Inside and outside the middle. In *Papers for the 33rd International Conference on Salish and Neighbouring Languages*, 166–200.

Gerdts, Donna, and Thomas Hukari. 2006. The Halkomelem middle: a complex network of constructions. *Antrophological linguistics* 44–81.

Gessner, Suzanne, Tracey Herbert, and Aliana Parker. 2022. *Report on the status of B.C. First Nations languages*. First Peoples' Cultural Council.

Ignace, Marianne, and Ronald Ignace. 2017. *Secwépemc people, land, and laws: Yerí7 re stsq'ey's-kucw*, volume 90. McGill-Queen's UP.

Kennedy, Christopher, and Beth Levin. 2008. Measure of change: the adjectival core of degree achievements. In *Adjectives and adverbs: Syntax, semantics and discourse*. Oxford University Press.

Krifka, Manfred. 1989. Nominal reference, temporal constitution and quantification in event semantics. *Semantics and contextual expression* 75:115.

Krifka, Manfred. 1998. The Origins of Telicity. In *Events and grammar*, ed. Susan Rothstein, Studies in Linguistics and Philosophy. Springer.

Kuipers, Aert Hendrik. 1992. The Shuswap complex transitivizers. In *Precedings of the Conference on Salish and Neighbouring Languages*, 49–53.

Landman, Fred. 1992. The progressive. *Natural Language Semantics* 1:1–32.

Martin, Fabienne. 2019. Non-culminating accomplishments. *Language and Linguistics Compass* 13.

Morzycki, Marcin. 2016. *Modification*. Cambridge University Press.

Portner, Paul. 1998. The progressive in modal semantics. *Language* 760–787.

Thompson, Laurence C. 1985. Control in Salish grammar. In *Relational typology*, 391–428. De Gruyter Mouton.

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