An Overview of Control and Non-Control in ʔayʔaǰuθəm (Comox-Sliammon)[*]

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Abstract: A distinction between control and non-control has been described across many Salish languages (e.g., Thompson 1985; Bar-el et al. 2005). This paper builds on previous literature discussing the difference between control and non-control in ʔayʔaǰuθəm (Comox-Sliammon), a Central Salish language (e.g., Kroeber 1988; Watanabe 2003). We contribute original fieldwork that confirms previous findings while also probing the event structure of control and non-control transitives in more detail. Specifically, we confirm previous claims that predicates with the non-control transitivizer entail culmination, while predicates with the control transitivizer do not entail culmination, replicating tests for culmination from Watanabe (2003). We then probe event structure with additional tests adapted from Bar-el (2005). We find that predicates with the control transitivizer require the subject to have attempted to bring about the event described by the predicate, but that there need not be any overt result. Adverbs and negation target event initiation with this transitivizer. In contrast, predicates with the non-control transitivizer background the initiation of the event, so that adverbs and negation cannot target the initiation or process independently, but instead target the culmination of the event including any incremental change-of-state. We also present new data showing that agent animacy and prototypicality are not strict criteria for the use of control in ʔayʔaǰuθəm (as also discussed in Andreotti 2017; cf. Kroeber 1988; Bar-el et al. 2005). Finally, we discuss how control and non-control predicates combine with viewpoint aspects. Overall, this paper proposes an analysis where the semantic distinction between control and non-control is largely centered on (non-)culmination, while the other meanings attributed to these transitivizers arise pragmatically (as in Jacobs 2011).

Keywords: control, transitive, agentivity, culmination, Comox-Sliammon

1 Introduction

Control and non-control in Salish have been a topic of scholarly discussion for decades (i.e., Thompson & Thompson 1971; Thompson 1985; Demirdache 1997; Bar-el et al. 2005; Gerdts & Kiyosawa 2007; Jacobs 2011; Van Eijk 2011). This is also the case for ʔayʔaǰuθəm (Comox-Sliammon) (J. Davis 1973, 1978; Kroeber 1988; Watanabe 2003; Andreotti 2017), where the morphemes associated with these two labels are both transitivizers (1).[1] These combine with unaccusative roots to create transitive predicates.[2] Most unaccusative roots can be transitivized with

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[1] We follow Jacobs (2011) and Mellesmoen (2017) in assuming that the /xʷ/ found with the non-control transitive paradigm and a third person object in Central Salish languages is an overt third person object suffix -xʷ, though note that this is treated as part of the transitivizer itself in other descriptions. Additionally, we label the aspectual C_1 reduplication process (discussed in Section 9) as progressive, rather than imperfective, to better reflect its semantic contribution (cf. H. Davis et al. 2020).

[2] More rarely, the non-control occurs following the middle or causative suffix (Watanabe 2003:220, 230).

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either transitivizer (Watanabe 2003:202) with corresponding (often subtle) differences of interpretation.[3]

(1) a. təq-t
       get.closed-CTR
       'close it'

    b. təq-ə-xʷ
       get.closed-NCTR-3OBJ
       'have closed it'   (Watanabe 2003:213)

For ʔayʔaǰuθəm, it has been claimed that predicates with the control transitivizer do not entail culmination, while non-control transitivizers do (e.g., Davis 1978:237; Watanabe 2003:204), and that, in addition, non-control transitives are often associated with events that are accidental or accomplished with difficulty, but that cases are also found where the non-control transitivizers are for events accomplished with intention and ease (e.g., Watanabe 2003:212; Andreotti 2017:3). Though the generalizations proposed in previous literature are largely descriptive, the original fieldwork we present in this paper supports these generalizations and allows us to probe the event structure involved with each of these transitivizers in more detail.

1.1 Overview of the paper

In this paper, we provide a brief summary of the literature (Section 2.1), followed by a discussion of the function of control and non-control (Section 2.2) in Comox-Sliammon. In Section 3, we first examine the two transitivizers and whether they entail culmination, replicating findings from previous literature (Watanabe 2003; Andreotti 2017). We then turn to the interpretation of control and non-control transitives in the scope of čıgıtəm 'almost' (Section 4) and under negation (Section 5). While these tests give rise to event cancellation readings for both control and non-control transitives, varying the context shows that both čıgıtəm 'almost' and negation target event initiation in combination with control transitives, while they target the entire final transition including any incremental change-of-state in combination with non-control transitives. We then turn to adverbs of rate (Section 6), which target the entire event for both control and non-control transitives. We then present data showing that the external argument does not always need to be agentive for the control transitivizer to be used felicitously (Section 7). In Section 8, we synthesize the observations from the preceding sections in order to provide a formal analysis of each transitivizer. Finally, Section 9 explores the interpretation and compatibility of the two transitivizers with progressive and perfective viewpoint aspect. Ultimately, we conclude that the distinction between the control and non-control transitivizers in Comox-Sliammon lies in their aspectual differences with respect to entailing culmination, while observations about agentivity and intentionality arise pragmatically in part through competition between the two forms.

Before moving into the discussion of previous literature, we include a brief note on the terminology included in this paper.

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[3] The other two transitivizers found in the language, the -Vš and the causative, have quite different distributions. The -Vš transitivizer is lexically restricted to occur with only a small set of roots, while the causative is not generally used to transitivize unaccusative roots (an exception being ƛəčtsxʷ 'put to sleep' from ƛəčt 'fall asleep', Watanabe 2003:223), but rather to transitivize unergatives, statives and a number of other types of stems that are morphologically complex.

1.2 Terminology

This paper focuses on two suffixes in ʔayʔaǰuθəm, the control and non-control transitivizers. Transitivizers take an intransitive verb and make it transitive. An **intransitive** verb is a verb with one participant (individual involved in the action): *sleep* is an intransitive verb because it has just one participant — the person sleeping. *Melt* can also be an intransitive verb: *the ice melted.* *ǰɛχʷ* 'melt' in ʔayʔaǰuθəm is also intransitive (2a). **Transitive** verbs are verbs with two participants, the one doing the action and the one affected by the action. Like many verbs in English, *melt* can be used as a transitive without any change: *I melted the butter.* In *I melted the butter*, the doer is *I*, the speaker, and the thing affected by the action is the butter. Unlike in English, in ʔayʔaǰuθəm, the form of a verb changes when it goes from intransitive to transitive. For instance, in (2b), the suffix *-at* is added to the in-progress verb *ǰɛ́ǰɛχʷ* 'melting'. This makes it transitive. For this reason, the *-at* suffix is known as a **transitivizer**. At the end of the transitive verb, *č* 'I' is added marking the subject, the doer of the action.[4]

(2) a. Intransitive
     ǰɛ́ǰɛχʷ   tə pətə.
     ǰa~ǰaχʷ   tə=pətə
     PROG~get.melted   DET=butter
     'The butter is melting.'   (vf | EP.2021/07/16)

     b. Transitive
     ǰɛ́ǰɛχʷatč   tə pətə.
     ǰa~ǰaχʷ-at=č   tə=pətə
     PROG~get.melted-CTR=1SG.SBJ   DET=butter
     'I am melting the butter.'   (vf | EP.2021/07/16)

When the one participant of an intransitive verb is affected by the action, the verb is known as an **unaccusative** verb. Intransitive *melt* in English and *ǰɛχʷ* 'melt' in ʔayʔaǰuθəm are both unaccusative.

   We also frequently discuss event initiation and event culmination in this paper. Event **initiation** refers to the beginning of the event. With transitive verbs, the initiation occurs when the doer starts the action. Event **culmination** refers to the endpoint of the event. The endpoint for *melt*, for instance, is the point at which the affected participant, e.g., the butter, is entirely melted. Finally, the term **progressive** is used for the 'in progress' form of the verb, such as *ǰɛ́ǰɛχʷ* 'melting', while perfective refers to the base form, such as *ǰɛχʷ* 'melt'.

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[4] The abbreviations in this paper follow the Leipzig Glossing Rules with the additional abbreviations: AUT 'autonomous', CLDEM 'clausal demosntrative', CTR 'control transitivizer', CONJ 'conjunction, DPRT 'discourse particle', IND 'indirective', INT 'intensifier', NCTR 'noncontrol transitivizer', QUEX 'quexistential', and STAT 'stativizer'. Throughout this paper, the top line of examples is in the orthography, the second line shows underlying forms with morpheme breaks in APA, the third line presents the glosses, the fourth line is the translation. 'vf' stands for 'volunteered form', a form produced by the speaker, while 'sf' stands for 'suggested form', a form produced by one of the two authors and evaluated by the speaker.

2 Previous descriptions of control and non-control in Salish linguistics

2.1 Control and non-control in Salish

The distinction between control and non-control in Salish is largely based around early work by Thompson and Thompson (1971), Carlson and Thompson (1982), and Thompson (1985). J. Davis (1973:10) follows Thompson and Thompson's (1971) work on control in Clallam and states that control in Comox-Sliammon "implies that the action was done easily, with full control by agent". J. Davis (1973) distinguishes the control transitivizer from a "responsibility" transitivizer, which is associated with a "lack of control". The notion of responsibility comes from Thompson and Thompson (1971), which J. Davis (1973:11) describes as meaning "an entity is responsible in at least some measure for a situation or activity, but is not in control". Several years later, J. Davis (1978:237) hints at the importance of culmination and its role in the non-control and control distinction (in a note in the appendix of his paper). He further refines the possible translations of control transitives to include "try to", while emphasizing that non-control transitives describe an action that is accomplished.

Kroeber (1988:156–156) references unpublished work by John Davis, noting that non-control transitives tend to imply that completion has been achieved, while control transitives do not: "control may imply a failed attempt, while non[-]control tends to imply success and completion". He highlights that the control and non-control transitivizers in Comox-Sliammon encode valency and aspect. Control marks the subject of a transitive verb as a "prototypical agent"; this subject has a desire for the event to occur and is able to undertake the event. Kroeber (1988) discusses the subject of a non-control transitive as a departure from a "prototypical agent", noting that the event may be accidental or involve difficulty. This description fits the general tone of the literature: the control transitivizer is centred as a default, while the non-control is an alternative. This perspective is echoed by Watanabe (1996:3), who suggests that the contrast between control and non-control might be more accurately defined as a distinction between "neutral and non[-]control".

Like ʔayʔaǰuθəm, Sḵwx̱wú7mesh (Squamish) has an opposition between two transitivizers labelled control and non-control. Bar-el (2005) proposes that predicates transitivized with the control transitivizer in Sḵwx̱wú7mesh imply, but do not entail culmination. For the control transitives, an initiating event is encoded, and this initiating event leads to culmination under usual circumstances (in all inertia worlds), unless the unfolding of the event is disrupted. She treats non-control transitives as achievements (though she does not investigate these separately from other achievement predicates in the language), encoding a simple culminating event without an initiating event or process component. In arguing for these two different representations, she uses a variety of tests for event culmination, including explicit cancellation, compatibility with event continuation, and targeting the endpoint with *kilh* 'almost' and negation. We adapt a number of these tests in the following sections.

Kiyota (2008) also proposes the same distinction between control and non-control transitives in SENĆOŦEN (Saanich, Northern Straits Salish), adopting the culmination cancellation and 'almost' test from Bar-el (2005). Bar-el et al. (2005) also take the same approach in the analysis of control transitives in both Sḵwx̱wú7mesh and St'át'imcets (Lillooet, Northern Interior Salish). Jacobs (2011) builds on Bar-el (2005) and Bar-el et al. (2005), confirming the previous findings for control transitivizers in Sḵwx̱wú7mesh and expanding the documentation of non-control transitives (as well as investigating control and non-control unergative and reflexive suffixes). He finds that non-control transitives, unlike control transitives, entail culmination. He then discusses the range of readings associated with both the control and non-control transitivizers and proposes

that the opposition between the transitivizers contributes to bringing about these readings. He points out that most predicates can be transitivized with either the control or non-control transitivizer. Control transitivizers encode event initiation and assert that the event culminates given a normal course of events. Non-control transitivizers encode event culmination but nothing about whether a given course of events is normal. The contrast between control and non-control means that non-control transitivizers may be associated with a course of events that is not normal, such as when the culmination is accidental or is only managed with difficulty.

2.2 Control and non-control in ʔayʔaǰuθəm (Comox-Sliammon)

Watanabe (1996) addresses the labels "control" and "non-control" in Comox-Sliammon and notes that it is not enough to appeal to a distinction between volition and non-volition, which had been done previously in the literature. He states that control refers to an action that is intentional and both under the control of the actor and within their competence to undertake. The non-control transitivizer is discussed as "opposed to the control", and thus the non-control transitivizer is associated with unintentionality and actions that may only come to completion with difficulty (Watanabe 1996:2–3). This constellation of functions across the two transitivizers is, as Watanabe (1996) indicates, greater than just a split between volition and lack of volition. While the control transitivizer is used when an event is intentional or controlled by an agent, it does not need to reach the point of completion, and further, while the non-control entails that an event is completed, it does not need for an agent to intend for the eventual outcome or to have much control over the event (Watanabe 1994). Watanabe (2003:204–205) further specifies that the non-control requires the "completion or actualization of an event" and that it is considered contradictory to cancel this culmination. This contradiction does not arise when the culmination of a control transitive is cancelled.

In a more recent treatment of control and non-control transitivizers, J. Davis (2012) re-labels them as markers of "intent" and "result", respectively, which he argues are more appropriate for their function in Comox-Sliammon. He suggests that control is "an inaccurate and misleading label" because the control transitive *-t* may be used for something that an agent undertakes but ends up as an unsuccessful attempt or something outside of the control of the subject (J. Davis 2012:36). In a similar vein, the non-control transitivizer does not need an event to be accidental or out of the control of the agent: it may be done intentionally and with varying degrees of effort.[5]

Andreotti (2017) analyzes both the control and non-control transitivizers in Comox-Sliammon, arguing that an aspectual analysis such as that proposed in Watanabe (2003) and Jacobs (2011) is not sufficient to capture all aspects of the meaning of control and non-control predicates, but that an analysis that takes control to be a semantic primitive as in Bar-el et al. (2005) is too strong for ʔayʔaǰuθəm, as it wrongly predicts that control never occurs with inanimate subjects or accidental events. Instead, he takes up the idea of "prototypical" agents from Kroeber (1988), arguing that the control transitivizer requires a "prototypical" agent and the non-control transitivizer requires a "non-prototypical" agent. Since prototypicality exists on a cline, the existence of counterexamples to agent control with the control transitivizer are not considered problematic and the general preference for volitional agents with control transitivizers and non-volitional agents with the non-control transitivizers is captured. However, as Andreotti points out, under this analysis, the relationship between control and event initiation, and also between non-control and event

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[5] Davis (2012:38) states that "the context disambiguates intent and degree of effort" for non-control predicates.

culmination, is purely accidental. This is reflected in the denotations in (3) and (4). Briefly, the denotation provided in (3) for the control transitive means that a control transitive predicate will encode event initiation by a prototypical agent leading to culmination in all inertia worlds — that is, if things proceed normally or stereotypically. Culmination is not entailed, however, since it is always possible that the event does not take its normal course. The denotation given in (4) means that a predicate with the non-control transitivizer encodes an initiating event by a non-prototypical agent which culminates in the actual world. The (non)prototypicality of the agent and event (non)culmination are independent components of the analysis that are not related.

(3) $\llbracket CTR \rrbracket^w = \lambda P_{\langle s, \langle v,t \rangle \rangle} . \ \lambda x_e . \ \lambda e_v. \ \uparrow PAgent(e,x)$ in $w \wedge \square_{Inr(e,w)}^{w'} \exists e' \ P(w',e') \wedge Cause(e,e')$ in w'

(4) $\llbracket NCTR \rrbracket^w = \lambda P_{\langle v,t \rangle} . \ \lambda x_e . \ \lambda e_v. \ \downarrow PAgent(e,x)$ in $w \wedge \exists e' \ P(e') \wedge Cause(e,e')$ (Andreotti 2017:9)

Andreotti's analysis also does not predict any difference in terms of the acceptability of the progressive with control and non-control transitives, but in fact the combination of non-control transitives with the progressive is quite restricted, as shown in Watanabe (2003:206–208) and confirmed in our own fieldwork (see Section 8). In contrast, the control transitivizer can freely combine with the progressive. We therefore take a different approach to analyzing the control and non-control transitivizers where the prototypicality of the agent is not encoded but arises via implicature due to differences in the structure of the event encoded by predicates with control and non-control transitivizers.

2.3   Main claims

Following previous literature (e.g., Bar-el 2005; Bar-el et al. 2005; Kiyota 2008; Jacobs 2011), we argue that a predicate with the control transitivizer in ʔayʔaǰuθəm encodes the initiation but not completion of an event. We will show that an event must have been attempted for a control transitive to be used, but this attempt need not have had any perceivable effect. When targeted by higher semantic operators, it is the initiation rather than the completion of the event that is targeted. Under negation and *čɪgɪtəm* 'almost', we get a reading that the event has not (yet) been initiated. Because the control transitivizer foregrounds the initiation of the event, it is typically used when there is an intentional agent undertaking the event. However, since it is possible to use the control transitivizer without an agentive subject (as in Sḵwx̱wú7mesh, see Jacobs 2011:3, (3a)), we propose that the agentivity arises through implicature.

Predicates with the non-control transitivizer, on the other hand, entail culmination (Watanabe 2003; Bar-el 2005; Kiyota 2008; Jacobs 2011) and background the internal structure of the event. Under negation and *čɪgɪtəm* 'almost', we get a reading that the event did not occur, either because the subject accidentally failed to realize it or did not manage to bring it about. While this result is an event cancellation reading as for the control transitives (Bar-el 2005), the contexts in which each transitivizer is felicitous with these operators differ. We propose an analysis of the non-control transitivizer where the action of the subject is backgrounded through existential closure while the entire culminating event contributed by the unaccusative predicate, including any incremental change-of-state, remains in the foreground. We then show how the analysis of the control and non-control transitivizers proposed here is consistent with the interpretation and restrictions found when these transitivizers are combined with the progressive and perfective aspects.

3 Culmination

Perfective predicates with the control transitivizer in ʔayʔaǰuθəm do not require a successful completion of the event. This was discussed previously in J. Davis (1978) and Watanabe (2003) and we replicate the finding here (5–7). We find that predicates with the control transitivizer do not even require the event to have any tangible result (6–7).

(5)　*Context: Gloria was cooking some meat for a stir fry. When it was partially cooked, the power went out.*

čἐχatəs	tə mɪ̌ǰıθ	ʔi	xʷaʔ ʔot	hoǰʊxʷəs.	λ̓akʷ
č̓əx̣-at-as	tə=məǰəθ	ʔiy	xʷaʔ=ʔut	huǰ-ə-xʷ-əs.	λ̓akʷ
cook-CTR-3ERG	DET=meat	CONJ	NEG=EXCL	finish-NCTR-3OBJ-3ERG	go.out

tə nɪkʷayu.
tə=nikʷayu
DET=lights

'She cooked the meat, but she wasn't able to finish it. The lights went out.'

(sf | BW.2020/07/03)

(6)　*Context: Gloria was trying to cut up some material, but her scissors turned out to be too dull and weren't cutting it at all.*

łaχnεs	šε k̓ɪpayεs	Gloria.	k̓ɪptəs	šε yεwəp	ʔi	xʷaʔ
ɬəx̣-nis	šə=kəpaya-s	Gloria	kəp-t-as	šə=yawap	ʔiy	xʷaʔ
bad-tooth	DET=scissors	Gloria	get.cut-CTR-3ERG	DET=material	CONJ	NEG

čεməs	ʔi	k̓ɪp.
čəm̓=as	ʔiy	kəp
QUEX=3SBJV	CONJ	get.cut

'Gloria's scissors are dull. She cut the material, but it wouldn't cut.'

(sf | FL&HT.2021/07/12)

(7)　*Context: Marianne was planning to rip up a cover to make a rug. She tried to rip the cover, but the material was too strong, and she couldn't.*

hεhεw	χaχaλ̓εtstom	Malian.	pəpχtəs	ʔi	xʷaʔ
hihiw	x̣a~x̣aλ̓-it-stu-m	Malian	pə~pχ-t-as	ʔiy	xʷaʔ
really	PROG~want-STAT-CAUS-PASS	Malian	PROG~rip-CTR-3ERG	CONJ	NEG

čεmas	paχ.
čəm̓=as	pəx̣
QUEX=3SBJV	rip

'Marianne was having difficulty. She was ripping the cover, but it wouldn't rip.'

(vf | BW.2020/07/15)

Preliminary evidence suggests that, though control transitive predicates do not require the attempt to have any effect, they do require the event described by the predicate to have been attempted; the

event cannot be simply planned (8–9).[6]

(8) *Context: Gloria had been busy all day, but she finally got her pot out and her package of instant noodles. Just as she was about to cook, her phone rang, and she had to take the call.*

#čɛχatəs	šɛ noodles	ʔi	xʷaʔ	čɛχʊxʷəs.
čəχ̣-at-əs	šə=noodles	ʔi	xʷaʔ	čəχ̣-ə-xʷ-as
cook-CTR-3ERG	DET=noodles	CONJ	NEG	cook-NCTR-3OBJ-3ERG

'She cooked the noodles, but she didn't cook them.'
Consultant's comment: "čɛχatəs indicates that she's cooked it." (sf | BW.2020/07/03)

(9) *Context: Marianne was going to cut out some paper shapes to make a card. She had the paper and scissors ready and was about to start when visitors walked in preventing her from starting.*

# k̓ɪptəm	ʔə Malian	tə pipa	ʔi	xʷaʔ	k̓ɪpʊxʷəs.
k̓əp-t-əm	ʔə=Malian	tə=pipa	ʔiy	xʷaʔ	k̓əp-ə-xʷ-as
get.cut-CTR-PASS	OBL=Malian	DET=paper	CONJ	NEG	get.cut-NCTR-3OBJ-3ERG

'Marianne cut the paper, but she didn't cut it.'
Consultant's comment: "k̓ɪptəm means that Malian is cutting it." (sf | BW.2020/07/03)

Unlike predicates with the control transitivizer, predicates with the non-control transitivizer do require culmination of the event described by the predicate (10–11).

(10) *Context: Gloria was cooking some meat for a stir fry. When it was partially cooked, the power went out.*

# čɛχʊxʷəs	tə mɪ̌ɪθ	ʔi	xʷaʔ ʔot	hoǰʊxʷəs.
čəχ̣-ə-xʷ-as	tə=məǰəθ	ʔiy	xʷaʔ=ʔut	huǰ-ə-xʷ-əs
cook-NCTR-3OBJ-3ERG	DET=meat	CONJ	NEG=EXCL	finish-NCTR-3OBJ-3ERG

ƛ̓akʷ	tə nɪkʷayɛ.
ƛ̓akʷ	tə=nikʷaya
go.out	DET=lights

'She cooked the meat, but she wasn't able to finish it. The lights went out.'
Consultant's comment: "čɛχʊxʷəs indicates she got it cooked." (sf | BW.2020/07/03)

(11) *Context: Gloria was trying to cut up some material, but her scissors turned out to be too dull and weren't cutting it at all.*

# łaχnɛs	šɛ k̓ɪpayɛs	Gloria.	k̓ɪpʊxʷəs	šɛ yɛwəp
łəχ̣-nis	šə=k̓əpaya-s	Gloria	k̓əp-ə-xʷ-as	šə=yawap
bad-tooth	DET=scissors-3POSS	Gloria	get.cut-NCTR-3OBJ-3ERG	DET=material

ʔi	xʷaʔ	čɛməs	ʔi	k̓ɪp.
ʔiy	xʷaʔ	čəm̓=as	ʔiy	k̓əp
CONJ	NEG	QUEX=3SBJV	CONJ	get.cut

'Gloria's scissors are dull. She cut the material, but it wouldn't cut.'

(sf | FL&HT.2021/07/12)

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[6] To be completely parallel with the felicitous examples in (5–7) above, the examples in (8) and (9) should also be elicited with an unaccusative predicate in the second conjunct. We have no reason to think that this would improve them, however.

The contrast between control and non-control transitives with respect to culmination corresponds to differences in interpretation when these predicates are targeted by the adverbial *čıgıtəm* 'almost' and negation *xʷaʔ*. These contrasts are examined in the following two sections.

4   Interpretation with *čıgıtəm* 'almost'

Following Bar-el (2005), we adopt adverbial modification with *čıgıtəm* 'almost' as a test for initial and final points. *čıgıtəm* 'almost' targets the initiation of an event with a control transitivizer, giving rise to an interpretation where the event is about to be initiated (12). *čıgıtəm* typically targets the whole event with a non-control transitivizer, giving rise to an 'almost accidentally did x' or 'almost managed to do x' reading (13). With some predicates, it is also possible to get an 'almost finished x' reading, where the final stage of the transition is targeted, but this is much more restricted (14). Typically, speakers either add *ʔuk̓ʷ* 'all', giving rise to a reading where almost all of the theme has been affected/used up (15), or switch to using the predicate *hoǰuxʷ* 'finish s.t.' instead (16).

(12)   *In a storyboard, Daniel gets a piece of paper and a pencil to start a letter to Bruno.*
       čıgıtəm   namʔəmtəs.
       čəgətəm   nam-ʔəm-t-əs
       almost   write-IND-CTR-3ERG
       'He's about to write to him.'   (sf | BW.2020/08/12)

(13)   *In a storyboard, Daniel was about to start writing a letter to Bruno when Laura asks to borrow Daniel's pen, preventing him from writing the letter.*
       čıgıtəm   namʔəmʊxʷəs.
       čəgətəm   nam-ʔəm-ə-xʷ-əs
       almost   write-IND-NCTR-3OBJ-3ERG
       'He almost got the chance to write to him.'   (sf | BW.2020/08/12)

(14)   *Context: In a storyboard, Felipe calls Marianne for help rescuing a kitten from a tree. Marianne leaves the stove on and the soup nearly cooked. Gloria comes and turns it off, so it doesn't finish cooking. This is said to describe the situation:*
       čıgıtəm   čɛχʊxʷəs   tə qʷoqʷałkʷu.
       čəgətəm   čəχ-ə-xʷ-as   tə=qʷuqʷałkʷu
       almost   cook-NCTR-3OBJ-3ERG DET=soup
       'She almost had the soup cooked.'   (sf | BW.2020/07/03)

(15)   *Context: I catch my dog eating a cake we left out. There's only a little bit left.*
       a.   # čıgıtəm   mʊkʷʊxʷəs.
            čəgətəm   məkʷ-ə-xʷ-as
            almost   eat-NCTR-3OBJ-3ERG
            'He almost ate it.'   (sf | EP.2021/07/16)
       b.   *Volunteered instead:*
            čıgıtəm   **ʔuk̓ʷ**   mʊkʷʊxʷəs.
            čəgətəm   ʔəwk̓ʷ   məkʷ-ə-xʷ-əs
            almost   all   eat-NCTR-3OBJ-3ERG
            'He almost ate it all.'   (vf | EP.2021/07/16)

(16) *Context: Gloria is almost finished painting her house.*

    a. ?? čɪgɪtəm   jʊkʷʊxʷəs   tə ʔayɛʔs.

          čəgətəm   jəkʷ-ə-xʷ-as   tə=ʔayaʔ-s

          almost   paint-NCTR-3OBJ-3ERG   DET=house-3POSS

          'She's almost painted her house.'   (sf | EP.2019/05/12)

    b. *Volunteered instead:*

          kʷi   čɪgɪtəm   **hoǰuxʷəs**.

          kʷi   čəgətəm   huǰ-ə-xʷ-as

          CLDEM   almost   finish-NCTR-3OBJ-3ERG

          'She's almost finished it.'   (vf | EP.2019/05/12)

With the control transitivizer, *čɪgɪtəm* 'almost' can only give rise to 'about to start' readings. It is not possible to get an 'almost finished' (17), 'almost accidentally did x', or 'almost managed to' reading (18–20) for this combination. The non-control transitivizer must be used instead for these readings.

(17) *Context: In a storyboard, Felipe calls Marianne for help rescuing a kitten from a tree. Marianne leaves the stove on and the soup nearly cooked. Gloria comes and turns it off.*

   # čɪgɪtəm   čɛχatəs   tə qʷoqʷałkʷu.

    čəgətəm   čəx̣-at-as   tə=qʷuqʷałkʷu

    almost   cook-CTR-3ERG   DET=soup

    'She almost had the soup cooked.' (cf. 12 above)   (sf | BW.2020/07/03)

(18) *Context: A piece of plastic somehow fell into the soup. Gloria almost accidentally ate it but noticed in time.*

    čɪgɪtəm   {mʊkʷʊxʷəs / #mʊkʷtəs}.

    čəgətəm   {məkʷ-ə-xʷ-as / #məkʷ-t-as}

    almost   {eat-NCTR-3OBJ-3ERG / eat-CTR-3ERG}

    'She almost accidentally ate it.'   (sf | EP.2021/07/16)

(19) *Context: Gloria was making a craft project using scissors and almost accidentally cut her shirt.*

    čɪgɪtəm   {k̓ɪpʊxʷəs / #k̓ɪptəs}.

    čəgətəm   {k̓əp-ə-xʷ-as / #k̓əp-t-as}

    almost   {get.cut-NCTR-3OBJ-3ERG / get.cut-CTR-3ERG}

    'She almost cut it.'   (sf | EP.2021/07/16)

(20) *Context: A bird got loose in the house, and I almost managed to catch it to put it outside, but it got away from me.*

    čɪgɪtəmč   {maʔaxʷ / #mat}.

    čəgətəm=č   {maʔ-ə-xʷ / maʔ-t}

    almost=1SG.SBJ {get-NCTR-3OBJ / get-CTR}

    'I almost got it.'   (sf | EP.2021/07/24)

Similarly, it is not possible for *čɪgɪtəm* with a non-control transitivize to get an 'about to start' reading (21–22). Instead, a control transitive must be used.

(21) *Context: My niece is about to open her gift. I tell Felipe to get his attention,* qʷaga k̓ʷʊt
'Come see...':

kʷi	čɪgɪtəm	{gəq̓təs / #gaʔq̓ʊxʷəs}.
kʷi	čəgətəm	{gəq̓-t-as / gəq̓-ə-xʷ-as}
CLDEM	almost	{open-CTR-3ERG / open-NCTR-3OBJ-3ERG}

'Come look, she's about to open it.' (sf | EP.2021/07/24)

(22) *Context: I made Freddie a cake. He sits down with a piece, and Gloria calls me over to see how he likes it.*

čɪgɪtəm	{t̓aʔatəs / t̓aʔaxʷəs}	tə kiks.
čəgətəm	{t̓aʔ-at-as / t̓aʔ-ə-xʷ-as}	tə=kiks
almost	{try-CTR-3ERG / try-NCTR-3OBJ-3ERG}	DET=cake

'He's about to try the cake.' (sf | EP.2021/07/24)

These observations regarding *čɪgɪtəm* 'almost' with the control and non-control transitivizers are consistent with the finding that the control transitivizer entails only event initiation, while the non-control transitivizer entails event culmination. It is somewhat unexpected, however, that an 'almost completed x' reading is not freely available with the non-control transitivizer given that it encodes event completion. We return to this in Section 9.

5 Interpretation with negation

Under negation, predicates with the control transitivizer give rise to an interpretation where the event has purposefully not been attempted (23). In contrast, predicates with the non-control transitivizer under negation give rise to a reading where an agent was unsuccessful in bringing about the event or accidentally forgot to attempt it (24).

(23) *Context: She had planned to cook a fish but decided not to cook it after all.*

xʷaʔ	č̓ɛχatəs	tə ǰɛnxʷ.
xʷaʔ	č̓əx̣-at-as	tə=ǰanxʷ
NEG	cook-CTR-3ERG	DET=fish

'She didn't cook the fish.' (sf | BW.2020/07/15)

(24) *Context: She was unable to cook the fish because the oven broke.*

xʷaʔ	č̓ɛχʊxʷəs	tə ǰɛnxʷ.
xʷaʔ	č̓əx̣-ə-xʷ-as	tə=ǰanxʷ
NEG	cook-NCTR-3OBJ-3ERG	DET=fish

'She didn't cook the fish.' (sf | BW.2020/07/15)

Control transitivizes are felicitous with negation where the subject purposely does not attempt the event described by the predicate, but cannot be used when the event is accidentally not accomplished (25–26).

(25) ✓Context 1: There's a recipe that calls for melted butter, but I decided not to melt the butter
    on purpose because I wanted to try the recipe that way.
    ✗ Context 2: I forgot to melt the butter for the recipe and my baking didn't turn out.

xʷač	ǰɛχʷataṅoɬ	šɛ pətə.
xʷaʔ=č	ǰaxʷ-at=an-ʔuɬ	šə=pətə
NEG=1SG.SBJ	melt-CTR=1SG.SBJV-PST	DET=butter

'I didn't melt the butter.'   (sf | EP.2021/01/29)

(26) ✓Context 1: I had originally planned to cook a fish tonight, but then Felipe brought home
    sausages that needed to be cooked right away, so I decided to keep it for tomorrow.
    ✗ Context 2: I was supposed to cook a fish and make a salad tonight for a potluck
    tomorrow. I make the salad but forget to put the fish in the oven.

čkʷa	xʷaʔ	c̓ɛχətən	šɛ ǰɛnxʷ.
č=kʷa	xʷaʔ	c̓əx-at=an	šə=ǰanxʷ
1SG.SBJ=CLDEM	NEG	get.cooked-CTR=1SG.SBJV	DET=fish

'I didn't cook the fish.'   (sf | EP.2021/07/16)

Similarly, negation with non-control transitives is felicitous where the subject accidentally fails to
bring about the event because she forgot, but is infelicitous when the event is purposefully not
attempted or initiated (27–28).

(27) ✗ Context 1: There's a recipe that calls for melted butter, but I decided not to melt the butter
    on purpose because I wanted to try the recipe that way.
    ✓ Context 2: I forgot to melt the butter for the recipe and my baking didn't turn out.

xʷač	ǰɛχʷʊxʷaṅoɬ	šɛ pətə.
xʷaʔ=č	ǰaxʷ-ə-xʷ=an-ʔuɬ	šə=pətə
NEG=1S.SBJ	melt-NCTR-3OBJ=1S.SBJV-PST	DET=butter

'I didn't melt the butter.'   (sf | EP.2021/01/29)

(28) ✗ Context 1: I had originally planned to cook a fish tonight, but then Felipe brought home
    sausages that needed to be cooked right away, so I decide to keep it for tomorrow.
    ✓ Context 2: I was supposed to cook a fish and make a salad tonight for a potluck tomorrow.
    I make the salad but forget to put the fish in the oven.

čkʷa	xʷaʔ	c̓ɛχʊxʷən	šɛ ǰɛnxʷ.
č=kʷa	xʷaʔ	c̓əx-ə-xʷ=an	šə=ǰanxʷ
1SG.SBJ=CLDEM	NEG	get.cooked-NCTR-3OBJ=1SG.SBJV	DET=fish

'I didn't cook the fish.'   (sf | EP.2021/07/16)

The difference between the non-control and the control transitivizers under negation also relates to
the aspectual properties of the two transitivizers. Negation of a control transitive predicate results
in a reading where the event was not initiated, which entails that the entire event has not occurred,
but backgrounds the cancellation of the culmination. Focus on cancelling event initiation is
felicitous when discussing an individual's decision not to attempt it, but infelicitous when the focus
is on the absence of the desired or expected outcome of the event which is tied to its culmination.
Negation of a non-control transitive predicate results in a reading where the complete event did not

occur. This is consistent with both a reading where the event was unsuccessfully attempted but not accomplished and where the subject failed to even attempt to bring about the event (e.g., because they forgot about doing it).

6   Adverbs of rate

Given that control transitive predicates encode event initiation while non-control predicates encode event culmination, it is possible that adverbs of rate could target just the initiating event or process with control transitives. This is not the case, however. While both control transitives and non-control transitives are compatible with adverbs of rate, the adverbs of rate do not seem to be able to target just the process with either transitivizer (29–30).

(29)   ✗ *Context 1: There was a leak under my sink. The man who came to fix it worked quickly, but the problem was complicated, and it took a while for him to finish.*
   ✓ *Context 2: There was a leak under my sink. The man who came to fix it was rather slow, but the problem was simple, and the job was still quickly over.*

    a.   ƛ̓ɛmot   p̓ap̓ɛʔ-ʊxʷəs.
         ƛ̓i-mut   p̓ap̓iʔ-ə-xʷ-əs
         quickly-INT   fix-NCTR-3OBJ-3ERG
         'He fixed it quickly.'   (sf | BW.2020/10/01)

    b.   ƛ̓ɛmot   p̓ap̓ɛtəs.
         ƛ̓i-mut   p̓ap̓i-t-əs
         quickly-INT   fix-CTR-3ERG
         'He fixed it quickly.'   (sf | BW.2020/10/01)

(30)   ✗ *Context 1: The mouse ate quickly, but it was a big cake, so it took the mouse a while to finish it.*
   ✓ *Context 2: Roger eats rather slowly, but it was just a small cupcake that he was eating, and it was gone quickly.*

    a.   ƛ̓ɛmot   mʊkʷʊxʷəs   kiks.
         ƛ̓i-mut   məkʷ-ə-xʷ-əs   kiks
         quickly-INT   eat-NCTR-3OBJ-3ERG cake
         'He ate the cake quickly.'   (sf | BW.2020/10/01)

    b.   ƛ̓ɛmot   mʊkʷtəs   kiks.
         ƛ̓i-mut   məkʷ-t-əs   kiks
         quickly-INT   eat-CTR-3OBJ-3ERG   cake
         'He ate the cake quickly.'   (sf | BW.2020/10/01)

In these examples, the adverbs target the incremental change-of-state that leads to culmination, but cannot target the process component — the activity of the agent — on its own. This is surprising for the control transitives, since they do not entail that the final change-of-state occurs. Of course, it is difficult to tease apart the process from the change-of-state since they are typically incrementally related (Rothstein 2004), so this requires further investigation. The compatibility of the adverbs of rate with the non-control transitives suggests that non-control transitives involve a process component that can unfold quickly or slowly rather than encoding only an instant of final transition. We return to this in Section 9.

7 The control transitivizer and agentivity

While control transitives are typically used with an animate and intentional agent, this is not required for felicitous use of the control transitivizer. Particularly when passivized, the control transitivizer can be used without implying participation of an agent (31–34).[7]

(31) qaχmot   qʷoɬay   qʷoɬ̓   qʷəɬtəm.
     qəχmut   qʷəɬ-ay   qʷəɬ̓   qʷəɬ-t-əm
     lots-INT   washed.up-tree   come   washed.up-CTR-PASS
     'A lot of driftwood got washed up.'   (vf | FL.2019/04/01)

(32) *Context: I went wading in the river and the current washed my flipflop away.*
     hoč   qʷoqʷɬomoɬ   q̓ʷətəm.   ɬušɪniyišč
     hu=č   qʷu<qʷ>ɬ-um-ʔuɬ   q̓ʷatəm   ɬu-šən-iyiš=č
     go=1SG.SBJ   wade<DIM>-MD-PST   river   lose-foot-AUT=1SG.SBJ
              hoy   **gɪq̓ʷɛtəm**   tə q̓ʷətəm.
              huy   giq̓ʷ-it-əm   tə=q̓ʷatəm
              and   drift-CTR-PASS   DET=river
     'I went wading in the river. I lost my shoe and the river washed it away.'
                                                                (sf | FL.2021/06/07)

(33) *Context: We had the door open to increase airflow on a hot day. The door closes suddenly with a crash. Since I saw it happen, I call out to reassure you:*
     ʔi ʔot.   **puhotəm**   tə ʔɛmɛn   ʔi   təq.
     ʔəy=ʔut   puh-ut-əm   tə=ʔimin   ʔiy   təq
     good=EXCL   blow-CTR-PASS   DET=door   CONJ   get.closed
     'It's ok, the door got blown and it shut.'   (vf | EP.2021/06/12)

(34) *Context: We had the door open to increase airflow on a hot day. The door closes suddenly with a crash.*
     kʷaʔ   say   puʔəm   ʔi   **təqtəs**   tə ʔɛmɛn.
     kʷaʔ   say   puʔəm   ʔiy   **təq-t-as**   tə=ʔimin
     get.strong   extreme   wind   CNJ   close-CTR-3ERG   DET=door
     'A strong wind came up and closed the door.'   (sf | FL.2021/06/07)

For this reason, the agentivity of the external argument cannot be hard-wired into the semantics of the control transitivizer, though the aspectual properties of the control transitivizer mean that it is typically associated with agentive external arguments.

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[7] We have not checked whether culmination can be cancelled with control transitives that have non-agentive subjects. The Agent Control Hypothesis (Demirdache & Martin 2015) would predict that non-culminating readings are only possible with agentive subjects. See also Martin and Schäfer (2014) for discussion of the connection between agentivity and non-culmination.

8   Analysis of the control and non-control transitivizers

Having confirmed findings from literature and established some additional facts about event structure for control and non-control transitives, we now turn to an examination of the semantic contribution of the two transitivizers. As noted in the introduction, both types of transitivizer combine with unaccusative bare roots. These entail culmination (e.g., Bar-el et al. 2005, Huijsmans & Mellesmoen 2021). In what follows, we will argue for an analysis where the non-control transitivizer retains this culmination requirement, while the control transitivizer lifts it.

Control transitives encode an initiating event undertaken by the subject that leads to successful culmination in all inertia worlds. We formalize this in (35) using a denotation that is slightly adapted from the one proposed by Bar-el et al. (2005:8). The control transitive combines with an unaccusative root whose argument (the internal argument) is saturated and adds an external argument. It encodes that the external argument performs an event *e* at the reference time *t* in *w* that causes *e'*, the event denoted by the unaccusative predicate, in all inertia worlds *w'* with respect to the actual world *w* at the beginning of *e*. The *DO* predicate we employ is not meant to imply agentivity, but rather that its argument *x* exerts force (rather than being acted upon).

(35) $\llbracket CTR \rrbracket = \lambda f \in D_{\langle l, \langle st \rangle \rangle} . \lambda x . \lambda e \, [DO(e)(x)(w) \; \wedge \; \forall w'[w' \text{ is an inertia world}$
$w.r.t \; w \text{ at the beginning of } e \; \rightarrow \exists e' \, [f(e')(w') \wedge e \text{ causes } e' \text{ in } w']]]$
(l = events; Intensional Functional Application is used)

The denotation in (35) captures the fact that control transitives do not entail culmination but do require an initiating event be performed by the subject. They also strongly implicate culmination since culmination is claimed for all inertia worlds. For this reason, predicates with the control transitive can still be used for events that culminate, particularly when the doing of the event, rather than its effect on the world, is in focus. Because the event needs to lead to successful culmination in all inertia worlds, the initiation is typically undertaken by an intentional agent with the ability to 'control' the outcome of the event. Since agentivity is not encoded as part of the core semantics, however, we also predict the possibility of non-agentive subjects.

For the non-control transitivizer, we need to capture the fact that it entails culmination and is often associated with events done accidentally or with difficulty. We propose the denotation in (36) to capture this set of properties. Like the control transitivizer, the non-control transitivizer combines with an unaccusative predicate *f* with a saturated entity argument (the internal argument) and adds an external argument *x*. It then encodes that there is an event involving the external argument that causes *e*, the event described by the unaccusative predicate, in *w*. Since the unaccusative predicate is claimed to be realized in the actual world *w*, the denotation entails culmination. The participation of the external argument is backgrounded since the initiating event associated with the external argument is existentially closed.

(36) $\llbracket NCTR \rrbracket = \lambda f \in D_{\langle l, \langle st \rangle \rangle} . \lambda x . \lambda e . \lambda w . \exists e' \, [DO(e')(x) \; \wedge f(e)(w) \; \wedge e' \text{ causes } e \text{ in } w]$

The association of the non-control transitivizer with accidental events or events accomplished with difficulty arises through the backgrounding of the agent and foregrounding of the culmination of the event. This results in an accompanying indirectness between the participation of the agent and the bringing about of the event described by the unaccusative root. Unlike with the control transitivizer, the event performed by the agent need not lead to the successful completion of the

event described by the unaccusative predicate in all inertia worlds — it is not necessarily the prototypical outcome — but does lead to the culmination in the actual world.[8]

Since most unaccusative roots can be transitivized with either transitivizer, we propose that pragmatic effects associated with the choice of one of the transitivizers over the other play a role in giving rise to these implicatures (see also Jacobs 2011). The control transitivizer encodes the initiation of the event, bringing the action of the subject, typically an agent, to the foreground, and encoding that this action brings about culmination in all inertia worlds. The non-control transitive, in contrast, existentially closes the initiating event and foregrounds the culmination and (if there is one) the incremental change leading up to it. Choice of the non-control transitivizer over the control transitivizer implies that the action of the subject does not bring about the culmination in a prototypical way, while choice of the control transitivizer implies that the subject is agentive and 'in control' of the situation. These implicatures are easily overridden by context and never take precedence over the aspectual contribution of the transitivizers.

In (37a–b), for instance, it does not matter how likely the agent is to have control over the outcome: because the focus is on the culmination — whether the target was hit – the non-control transitivizer is used. The non-control transitivizer is also typically used for all kinds of events accomplished in the course of daily life where the event has culminated (37c).

(37)   The non-control transitivizer and agent control

   a.   *Context: At a shooting range, a sharpshooter hit the bullseye easily with one shot. For anyone else, it would have been really difficult. I tell you afterwards:*
       hɛhɛw   ʔaǰɛʔəq.   yɛq̇ałuxʷəs   tə *bullseye*.
       hihiw   ʔaǰaʔaq   yaq̇ał-ə-xʷ-as   tə=*bullseye*
       really   sharp.shooter hit.target-NCTR-3OBJ-3ERG   DET=bullseye
       'He's a sharpshooter. He hit the bullseye dead on.'   (vf | EP.2021/05/09)

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[8] Under the denotation we've proposed, the relationship between the subject's participation and culminating event may be too loose, predicting use of non-control predicates in contexts where they do not actually occur. A certain amount of indirectness between action of the subject and the outcome is definitely allowed, however. Breaking something by bumping into the table where it is sitting can be described with the following, for instance:

(i)   *Context: I bump into a table and a delicate glass sitting on it falls off and breaks.*
     qʷaq̇ʷʊxʷən   tə θewθɛtən   ʔi   **yɛp̓ʊxʷən**   tə k̓ʷasta.
     qʷaq̇-ə-xʷ-an   tə=θiwθitən   ʔiy   yəp̓-ə-xʷ-an   tə=k̓ʷasta
     bump-NCTR-3OBJ-1SG.ERG   DET=table   CONJ   break-NCTR-3OBJ-1SG.ERG   DET=cup
     'I accidentally bumped into the table and broke the glass.'   (vf | EP.2021/07/06)

We suspect there are limits on how indirect this relationship can be, though we have not fully tested the limits of this. One way to constrain the relationship between the action of the subject and the caused event might be to introduce an incremental relation linking the 'doing' of the agent with the gradual bringing about of the caused event (following Rothstein 2004 for accomplishments). We leave this for further research.

b. *Context: My friend is learning to shoot better and practices at the shooting range. Today for the first time he manages to hit the bullseye on his first try.*

χʷɛt ʔot   yɛq̇ałuxʷəs.
χʷit=ʔut   yaq̇ał-ə-xʷ-as
really=EXCL   hit.target-NCTR-3OBJ-3ERG
'He hit it right dead on.'   (vf | EP.2021/05/09)

c. *Context: You and I went to see a boat, and then I bought it. Today I went to get it, and then I tell you:*

čkʷa   maʔaxʷən   šɛ nuxʷɨł.
č=kʷa   maʔ-ə-xʷ-an   šə=nəxʷɨł
1SG.SBJ=CLDEM   get-NCTR-3OBJ-1SG.ERG   DET=boat
'I went and got the boat.'   (vf | EP.2021/07/10)

Similarly, in order to describe a non-culminating event, one must use a control transitivizer rather than the non-control transitivizer, even though these cases typically involve an agent that is not 'in control' of the event, as shown in Section 3 above.

The denotations for the control transitivizer and non-control transitivizer above predict their behaviour in combination with *čɪgɪtəm* 'almost' and negation. In the denotation for the control transitivizer, only the initiation of the event is entailed, meaning only this initiating event is available for further modification. We therefore expect this aspect of the event to be targeted by other at-issue semantic content, such as adverbs and negation. *čɪgɪtəm* is therefore predicted to give rise to an 'almost initiated' reading, while negation will specifically deny the occurrence of the initiating event with its subject participant, giving rise to readings where the subject decided not to undertake it. The denotation for the non-control transitivizer, in contrast, backgrounds the participation of the agent, but allows the event described by the unaccusative predicate it combines with to be modified. If the unaccusative predicate involves a change-of-state with an incremental process, this entire event will be targeted by other semantic operators such as negation. For this reason, negation and *čɪgɪtəm* typically give rise to event cancellation readings rather than cancelling only the final moment of transition.

The reading that arises with adverbs of rate is likewise unsurprising with non-control transitives. As predicted by our analysis, the event described by the unaccusative predicate is modified, but not the participation of the agent. When the non-control transitivizer combines with unaccusative predicates involving a change of state, as in (29–30), repeated here as (38–39), the entire change-of-state is asserted to happen slowly or quickly, but whether the subject is acting quickly is irrelevant.

(38) ✗ *Context 1: There was a leak under my sink. The man who came to fix it worked quickly, but the problem was complicated, and it took a while for him to finish.*

✓ *Context 2: There was a leak under my sink. The man who came to fix it was rather slow, but the problem was simple, and the job was still quickly over.*

a.   ƛ̇ɛmot   p̓ap̓ɛʔ-ʊxʷəs.
      ƛ̇i-mut   p̓ap̓iʔ-ə-xʷ-əs
      quickly-INT   fix-NCTR-3OBJ-3ERG
      'He fixed it quickly.'   (sf | BW.2020/10/01)

    b.   λ̓ɛmot   p̓ap̓ɛtəs.
         λ̓i-mut   p̓ap̓i-t-əs
         quickly-INT   fix-CTR-3ERG
         'He fixed it quickly.'   (sf | BW.2020/10/01)

(39) ✗ *Context 1: The mouse ate quickly, but it was a big cake, so it took the mouse a while to finish it.*

     ✓ *Context 2: Roger eats rather slowly, but it was just a small cupcake that he was eating, and it was gone quickly.*

    a.   λ̓ɛmot   mʊkʷʊxʷəs   kiks.
         λ̓i-mut   məkʷ-ə-xʷ-əs   kiks
         quickly-INT   eat-NCTR-3OBJ-3ERG cake
         'He ate the cake quickly.'   (sf | BW.2020/10/01)

    b.   λ̓ɛmot   mʊkʷtəs   kiks.
         λ̓i-mut   məkʷ-t-əs   kiks
         quickly-INT   eat-CTR-3OBJ-3ERG   cake
         'He ate the cake quickly.'   (sf | BW.2020/10/01)

The reading that arises with adverbs of rate with the control transitivizer is not straightforwardly predicted by our analysis. Here, we expect adverbs of rate to modify the participation of the agent — the 'doing' of the event — but examples (38–39) suggest that it is still the entire change-of-state including culmination that is targeted. Another possible interpretation is that the 'doing' of the event counts as quick if it takes a short amount of time, even if the motion of the subject is slow — and it counts as slow if it takes a long time, even if the motion of the subject is quick. This would give rise to the results above without requiring access to event culmination with the control transitives. Fully disentangling the interpretation of adverbs of rate will require further investigation beyond the scope of the present paper, however. We hope to undertake this in future fieldwork.

9   Interpretation and compatibility with viewpoint aspect

While up to this point, we have been focused on initial and final points within the events described by control and non-control transitive predicates, we now turn our attention to the compatibility and interpretation of the two transitivizers with viewpoint aspect. Since we have analyzed the transitivizers with a focus on aspectual differences, we might expect the two transitivizers to behave differently in combination with other morphemes contributing temporal meaning, in particular viewpoint aspect with which control and non-control predicates combine directly. This is the case; the control and non-control transitivizers contrast with each other in both compatibility and interpretation with progressive aspect. The interpretation of the control transitivizer with the perfective also exhibits important contrasts with parallel combinations in St'át'imcets and Sḵwx̱wú7mesh.

ʔayʔaǰuθəm has a null perfective aspect which alternates with C_1 reduplication that marks progressive aspect. Both control transitives and non-control transitives appear in the perfective, but non-control transitives are quite restricted with respect to the progressive. This restriction is

discussed at some length in Watanabe (2003:206–208), and we have replicated these findings in our own fieldwork (40–41).[9]

(40) *k̓ɪk̓poxʷən.
    kə~k̓p-ə-xʷ-an
    PROG~cut-NCTR-3OBJ-1SG.ERG
    'I'm cutting it.'   (sf | EP.2021/07/10, FL&HT.2021/07/05)

(41) *ǰuǰuθoxʷən.
    ǰu~ǰuθ-ə-xʷ-an
    PROG~push-NCTR-3OBJ-1SG.ERG
    'I'm pushing it.'   (sf | EP.2021/07/10)

In contrast, control transitives co-occur standardly with progressive aspect (42–43).

(42) k̓ɪk̓pt̓čɛn.
    kə~k̓p-t=čan
    PROG~cut-CTR=1SG.SBJ
    'I'm cutting it.'   (vf | EP.2021/07/10)

(43) ǰuǰuθotč.
    ǰu~ǰuθ-ut=č
    PROG~push-CTR=1SG.SBJ
    'I'm pushing it.'   (vf | EP.2021/07/10)

Bare roots — on which both types of transitives are built — also combine quite freely with the progressive (44–45), so the restriction on the combination of the progressive and non-control transitivizer must arise from the non-control transitivizer itself.

(44) qəǰi   č̓ɪč̓χ̣.
    qəǰi   čə~čx
    still   PROG~cook
    'It's still cooking.' (cf. 5, 14)   (vf | FL.2018/10/17)

(45) ǰɛǰɛχʷ   tə pətə.
    ǰa~ǰaxʷ   tə=pətə
    PROG~melt DET=butter
    'The butter is melting.' (repeated from (2b))   (vf | EP.2018/09/10)

Though progressive non-control transitives are clearly marked in comparison to progressive control transitives, the combination of the non-control and progressive is occasionally accepted, as

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[9] Non-control transitives frequently have ergative suffixes to realize subject agreement rather than indicative subject clitics (see also Watanabe 2003:218, fn. 186); either type of subject agreement is possible, and they can even co-occur if there is a pre-predicative element to host the indicative clitic. Ergative suffixes are otherwise restricted to object-centered relative clauses, so it is not clear why they occur on non-control transitives.

discussed in Watanabe (2003:208–211), and also replicated in our own fieldwork (46–48). Where accepted, these predicates are often associated with difficulty achieving the culmination of the event (46–47), but sometimes just place the focus on the final change-of-state (48).

(46)   tatayqʊxʷən   ḳʷaxʷa.[10]
        ta~tayq-ə-xʷ-an   ḳʷaxʷa
        PROG~move-NCTR-3OBJ-1SG.ERG   box
        'I moved the box slowly, having difficulty.' (translation volunteered)
                                                    (sf | FL&HT.2021/07/05)

(47)   ǰuǰuθʊxʷən.[11]
        ǰu~ǰuθ-əxʷ-an
        PROG~push-NCTR-3OBJ-1SG.ERG
        'I'm pushing it.'   (sf | FL&HT.2021/07/05)
        Consultant's comment: "You're making it move a little at a time... struggling with it."

(48)   hohoǰuxʷən.
        hu~huǰ-ə-xʷ-an
        PROG~finish-NCTR-3OBJ-1ERG
        'I'm finishing it.'   (sf | EP.2021/07/10, FL&HT.2021/07/05)

The fact that the non-control transitives entail culmination does not automatically predict their incompatibility with the progressive. After all, English accomplishments also entail culmination when not progressive (49a), yet standardly are compatible with progressive aspect (49b) (e.g., Dowty 1979).

(49)   a.   #I ate a cookie, but I didn't finish it.
        b.   I was eating a cookie.

One possible direction would be an analysis positing that the non-control transitivizer creates a punctual event from the root it combines with. The resulting predicates would be restricted from combining with the progressive because they do not have duration, as English achievements are (e.g., *#I was/am finding my glasses.*). The occasional co-occurrence of the non-control transitivizer with the progressive would then have to be explained through coercion. Non-control transitives are compatible with adverbs of rate, however, (50), also (29/38, 30/39) above.

(50)   hahays   gaq̓ʊxʷəs   tə Ɂɛmɛn.
        hahays   gəq̓-ə-xʷ-as   tə=Ɂimin
        slowly   open-NCTR-3OBJ-3ERG   DET=door
        'He slowly managed to get the door open.'   (sf | BW.2020/07/01)

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[10] This same form was rejected by another speaker: there seems to be interspeaker variation in terms of which of these are possible, possibly reflecting how easily speakers are able to recover a context in which the form could be used.

[11] This same form was also rejected by another speaker, as shown above in (41).

The acceptability of these examples is not predicted if they describe a punctual event. *He blinked quickly/slowly* or *he knocked quickly/slowly*, for instance, are generally only possible if the event is repeated. The adverbs cannot easily describe the actual eye-shutting action as quick or slow, nor the action of a single knock. Other events are more coercible: *I found my glasses quickly*, but often only in one direction: #*I found my glasses slowly*. Though this still requires further investigation, we have not found similar restrictions on adverbs of rate with non-control transitives, so we do not pursue this approach for the analysis of the non-control transitivizer.

Instead, we maintain the analysis of the non-control transitivizer that was proposed in the preceding section (36), restated in (51). Taking this as our starting point, we can examine what happens when the progressive combines with a non-control transitive.

(51) $[\![NCTR]\!] = \lambda f \in D_{\langle l, \langle st \rangle \rangle}. \lambda x. \lambda e. \lambda w. \exists e' [DO(e')(x) \wedge f(e)(w) \wedge e'$ *causes* e *in* $w]$

For simplicity, we focus only on the temporal component of the meaning of the progressive, which places the reference time within the interval during which the event unfolds (the temporal trace of the event $\tau(e)$): $\tau(e) \subset t$.[12] Since the unsaturated event argument in (51) is the event described by the unaccusative predicate, the reference time will be placed within the unfolding of this event. The progressive does not target the 'doing' event involving the subject as its participant. An example such as (52), then, will get roughly the interpretation as in (53) where the reference time t is placed within the unaccusative 'getting finished' event.[13]

(52) hohoǰuxʷən.
      hu~huǰ-ə-xʷ-an
      PROG~finish-NCTR-3OBJ-1ERG
      'I'm finishing it.'   (sf | EP.2021/07/10, FL&HT.2021/07/05)

(53) a. $[\![hoǰuxʷən]\!] = \lambda e. \lambda w. \exists e' [DO(e')(I) \wedge get.finished(it)(e)(w) \wedge e'$ *causes* e *in* $w]$
      b. $[\![PROG]\!] ([\![hoǰuxʷən]\!]) = \lambda e. \lambda t. \lambda w. \exists e' [DO(e')(I) \wedge get.finished(it)(e)(w) \wedge$
                                    $t \subset \tau(e) \wedge e'$ *causes* e *in* $w]$

We propose that placing the reference time within the 'getting finished' event, rather than within the 'doing' event that involves the external argument gives rise to an implicature that the participation of the subject does not straightforwardly result in the culmination of the event, often giving rise to readings where difficulty is involved.[14] We take the contexts supporting the use of

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[12] We abstract away from the possible world semantics of the progressive, which has been widely adopted since Dowty (1979).

[13] The denotation in (53b) is obviously an oversimplification since it would require the progressive event to culminate in the actual world, but there is always a possibility that an in-progress event will not reach culmination.

[14] If a more standard version of the progressive is adopted, such as (i), adapted from Dowty (1979), another problem emerges for the combination of the progressive with a non-control transitive.

(i) $[\![PROG]\!] = \lambda f \in D_{\langle l, \langle st \rangle \rangle}. \lambda e . \lambda t . \lambda w . \forall w' [w'$ is an inertia world w.r.t. w at the beginning of $e \rightarrow$
                    $\exists e' [f(e')(w') \wedge t \subseteq \tau(e)]]$ (adapted from Dowty 1979:149)

progressive non-control transitives to be unusual contexts, however: when speaking of ongoing actions involving a subject participant, the participation of the subject in the ongoing event is generally important. Typically, if the participation of the subject is really unimportant for the conversation, a passive or bare unaccusative should be used instead. This makes the use of the progressive with the non-control transitivizer marginal.

This reading contrasts with the contribution of the control transitive in combination with the progressive, which gives rise to a more canonical event-in-progress reading where the ongoing participation of the agent is directly tied to the progress of the event. When a predicate with the control transitivizer is combined with the progressive, it is the process — involving participation by the agent — that is made ongoing, since it is the process portion of the event that is unsaturated. The denotation for the control transitivizer is repeated from (35) as (54).

(54) $[\![CTR]\!] = \lambda f \in D_{\langle l,\langle st \rangle \rangle}.\lambda x.\lambda e\,[DO(e)(x)(w) \land \forall w'[w'\text{ is an inertia world}$
$w.r.t\ w\text{ at the beginning of }e \to \exists e'\,[f(e')(w') \land e\text{ causes }e'\text{ in }w']]]$
(l = events; Intensional Functional Application is used)

When combined with a predicate taking the control transitivizer, the progressive places the reference time *t* within the 'doing' event *e* initiated by the subject. This is illustrated for (55), repeated from (42), in (56b).

(55) k̓ɪk̓p̓tčεn.
    kə~k̓p-t=čan
    PROG~cut-CTR=1SG.SBJ
    'I'm cutting it.'   (vf | EP.2021/07/10)

(56) a. $[\![k̓ɪk̓ptčεn]\!] = \lambda e.\lambda w[DO(e)(I)(w) \land \forall w'[w'\text{ is an inertia world }w.r.t.w\text{ at the}$
$\text{beginning of }e \to [\exists e'\,[get.cut(e')(w') \land e\text{ causes }e'\text{ in }w']]]]$
     b. $[\![PROG]\!]([\![k̓ɪk̓ptčεn]\!]) = \lambda e.\lambda t.\lambda w[DO(e)(I)(w) \land \tau(e) \subset t \land$
$\forall w'[w'\text{ is an inertia world }w.r.t.w\text{ at the beginning of }e \to$
$\exists e'\,[get.cut(e')(w') \land e\text{ causes }e'\text{ in }w']]]$

Since both transitivizers are available with most predicates, progressives built on control transitives are generally preferred. The competition between the control and non-control forms likely also contributes to the 'difficulty' readings associated with the non-control transitivizer.

Before closing this section, we turn attention to the combination of control transitives with perfective aspect. While the combination of the perfective with the control transitivizer looks unremarkable, it gives rise to certain readings that are not found with English perfective accomplishments, nor with its perfective counterparts in St'át'imcets and Sḵwx̱wú7mesh. It can be used with a future translation when the subject is just beginning the action described by the

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While combining a non-control transitive with the progressive in (i) would correctly place the reference time with the unfolding of the event described by the unaccusative predicate, it would also displace the activity of the agent into inertia worlds, which seems to be on the wrong track since this should allow the agent to not participate in the event at all. While we haven't tested whether this is possible explicitly, it doesn't match the readings we have found. It is beyond the scope of this paper to resolve the issue, however. We hope to take this up in future research.

predicate (57, 58a). These are not true future uses, however, since they cannot describe a future event that is not yet initiated (57, 58b). Rather, they describe the event in the moments of initiation.

(57) √ *Context: You see me sitting down at a table that has a pile of roots on it and ask:* tatamčxʷ
       'What are you doing?' I reply:
   ✗   *Context: We were at an event together, and you ask me what I'll do when I go home:*
       tamsəm kʷʊθ yɛθot tiṅ kʷʊtayıtən? *I tell you:*
       šuʔotč   tətθ kʷaʔamnač.
       šəẇ-ut=č   tə=tθ=kʷaʔamnač
       sort-CTR=1SG.SBJ   DET=1SG.POSS=root
       'I'm gonna sort my roots.'   (sf | EP.2021/07/10)

(58) a.   *Context: My friend sees me starting to move about in my kitchen and asks:* tatamčxʷ
           'What are you doing?' I tell her that I'm going to cook the fish that's thawing in the
           sink.
           čɛχatč   tə ǰɛnxʷ.
           čəχ-at=č   tə=ǰanxʷ
           cook-CTR=1SG.ERG   DET=fish
           'I'm going to cook the fish.'
           Consultant's comment: "You're already hands on prepping the fish."
                                                                     (vf | EP.2021/07/16)
      b.   *Context: I have a plan for dinner since someone gave me a fish.*
         # čɛχatč   tə ǰɛnxʷ   snanat.
           čəχ-at=č   tə=ǰanxʷ   s=nanat
           cook-CTR=1SG.ERG   DET=fish   NMLZ=evening
           'I'm going to cook the fish tonight.'   (sf | EP.2021/06/19)

Future events require the use of the future clitic *səm* (which is combined with the first person singular subject to become *tθəm*), as shown in (59) and (60).

(59) *Context: We were at an event together and you ask me what I'll do when I go home:* tamsəm
       kʷʊθ yɛθot tiṅ kʷʊtayıtən? *I tell you:*
       šuʔottθəm   tətθ kʷaʔamnač.
       šəẇ-ut=tθəm   tə=tθ=kʷaʔamnač
       sort-CTR=1SG.SBJ+FUT   DET=1SG.POSS=root
       'I'm sorting my roots.'   (vf | EP.2021/07/10)

(60) *Context: I have a plan for dinner since someone gave me a fish.*
       čɛχattθəm   tə ǰɛnxʷ   snanat.
       čəχ-at=tθəm   tə=ǰanxʷ   s=nanat
       cook-CTR=1SG.SBJ+FUT   DET=fish   NMLZ=evening
       'I'm going to cook the fish tonight.'   (sf | EP.2021/06/19)

Perfective control transitives also lack one of the readings available to their counterparts in St'át'imcets (61) and Sḵwx̱wú7mesh (62): an ongoing action reading.

(61) q'wel-en-lhkán   ta   ts'í7-a,   t'u7 cw7aoy t'u7 kw-s   q'wel-s
     cook-TR-1SG.SBJ   DET deer-DET   but NEG   still DET-NMLZ cook-3POSS
     'I am cooking deer meat, but it isn't done yet.'   (St'át'imcets | Bar-el et al. 2005:5, ex. 20)

(62) na   mikw'-int-as   ta   lhxenptn lha Mary 7i   na7-xw   wa   mikw'-int-as.
     RL   wash-TR-3ERG DET   floor   DET Mary PART RL-still IPFV wash-TR-3ERG
     'Mary is washing the floor and she's still washing it.'

                                               (Sḵwx̱wú7mesh | Bar-el et al. 2005:5, ex. 22)

The ʔayʔaǰuθəm control transitive forms cannot be used with an ongoing action reading. The progressive form must be used instead, as in (63b) and (64b).

(63) *Context: I'm sitting at a table sorting my roots and you ask me:* tatamčxʷ? *'What are you doing?' I reply:*
   a. # šuʔotč   tət⁰ kʷaʔamnač.
        šəẇ-ut=č   tə=t⁰=kʷaʔamnač
        sort-CTR=1SG.SBJ   DET=1SG.POSS=roots
        'I'm sorting my roots.'   (ʔayʔaǰuθəm | sf | EP.2021/07/10)
   b. šɪšʔotč   tət⁰ kʷaʔamnač.
        šə~šẇ-ut=č   tə=t⁰=kʷaʔamnač
        PROG~sort-CTR=1SG.SBJ   DET=1SG.POSS=root
        'I'm sorting my roots.'   (ʔayʔaǰuθəm | vf | EP.2021/07/10)

(64) *Context: I'm about halfway through cooking a fish for dinner. My friend drops in and asks me* tatamčxʷ? *'What are you doing?' I tell her I'm cooking a fish.*
   a. # čɛχatč   tə ǰɛnxʷ.
        čəχ-at=č   tə=ǰanxʷ
        get.cooked-CTR=1SG.SBJ   DET=fish
        'I'm cooking a fish.'
   b. čɪčχatč   tə ǰɛnxʷ.
        čə~čx̱-at=č   tə=ǰanxʷ
        PROG~get.cooked-CTR=1SG.SBJ   DET=fish
        'I'm cooking a fish.'   (ʔayʔaǰuθəm | sf | EP.2021/07/16)

We propose that the contrast in the readings available for perfective control transitives in ʔayʔaǰuθəm and their counterparts in St'át'imcets and Sḵwx̱wú7mesh do not arise due to a difference in the meaning of the control transitivizer itself, but rather due to a difference between the interpretation of perfective aspect in these languages. Perfective activities in St'át'imcets (65) and Sḵwx̱wú7mesh (66) can also be interpreted as ongoing at the utterance time, whereas this is not possible in ʔayʔaǰuθəm (67); the progressive must be used instead.

(65) ít'-em-lhkan.
     sing-MD -1SG.SBJ
     'I sang. / I am singing.'   (St'át'imcets | Bar-el et al. 2005:3, ex. 7a)

(66) chen   7imesh.
      1SG.SBJ   walk
      'I walked. / 'I'm walking.'   (Sḵwx̱wú7mesh | Bar-el et al. 2005:3, ex. 8a)

(67) *Context: Talking about our consultant's cat.*
      ḳʷʊt gi   Patlik!   {#ʔɛɫtən / ʔɛʔɛɫtən}.
      ḳʷə-t=gi   Patlik   {#ʔiɫtən / ʔi~ʔiɫtən}
      see-CTR=DPRT   Patlik   {eat / PROG~eat}
      'Look at Patrick. He's eating.'   (ʔayʔaǰuθəm | (sf | JF.2019/06)

We assume a semantics for the perfective where the perfective places the time of the event (the temporal trace of the event $\tau(e)$) within the reference time t: $\tau(e) \subset t$. We propose that in ʔayʔaǰuθəm, the reference time is confined to the 'instantaneous present' when overlapping the utterance time — it places the event within the interval of making the utterance itself. Most events are too long to fit into this interval and so cannot be interpreted as present in the perfective aspect. English also shows this restriction, while St'át'imcets and Sḵwx̱wú7mesh do not, allowing the perfective to pick out a longer interval, even when overlapping the utterance time. It is beyond the scope of the present paper to speculate as to why the languages differ in this way.

10 Conclusion

In this paper, we have examined two transitivizers in opposition in ʔayʔaǰuθəm: the control transitivizer and the non-control transitivizer. In line with previous literature on ʔayʔaǰuθəm (e.g., J. Davis 1978; Watanabe 2003) and other Salish languages (e.g., Bar-el 2005; Bar-el et al. 2005; Kiyota 2008; Jacobs 2011) we argued that predicates transitivized with the control transitivizer do not entail culmination, while predicates transitivized with the non-control transitivizer do (e.g., Watanabe 2003 for ʔayʔaǰuθəm; Bar-el 2005, Jacobs 2011 for Sḵwx̱wú7mesh).

We presented a number of tests adopted from Bar-el (2005) which had not been previously applied in ʔayʔaǰuθəm. These tests also allowed us to gain more fine-grained information about the event structure of the two types of predicates. We find that adverbs and negation target event initiation with control transitives. For non-control transitives, these target the culmination plus any preceding incremental change-of-state, but not the initiation of the event. We propose an analysis of the control transitivizer following Bar-el (2005) and Bar-el et al. (2005) where control transitives encode that the external argument initiates the event, but it comes to completion only in all inertia worlds. For the non-control transitivizer, we proposed that the process part of the event initiated by the external argument is backgrounded (through existential closure) while the culmination and any incremental process leading up to it is entailed. We then discussed how the implicatures of agentivity arise for the control transitivizer and the implicature of difficulty or lack of intention arise for the non-control transitivizer. We proposed that these readings arise through pragmatics in part due to the opposition between these two forms. Finally, we probed the distribution and interpretation of the two transitivizers in combination with viewpoint aspect and suggested how our proposal for the semantics of the non-control transitivizer could give rise to its restricted distribution with the progressive.

In future work, we hope to provide a more thorough investigation of adverbial modification of control and non-control transitives, as well as a more detailed analysis of the interaction between the control and non-control transitivizers and viewpoint aspect. The nature of the pragmatics involved in the implicatures that arise with the two transitivizers also merits further attention. The

two transitivizers are not in competition in terms of their informativeness, since both contribute their own unique semantics to the derivation, so the implicatures cannot be arising as straightforward conversational implicatures of quantity (e.g., Grice 1975). We have not yet proposed any concrete mechanisms by which these implicatures would arise, however; this still clearly requires further investigation.

There is a deeper question underlying this work concerning why event initiation should be associated with agentivity, while event culmination is associated with non-agentivity — a pattern found cross-linguistically, not only in Salish languages (e.g., Martin & Schäfer 2014; Demirdache & Martin 2015). Fully exploring this connection is far beyond the scope of this paper, but we hope that the findings here will provide some empirical basis for further investigation of this topic.

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