Deriving Eventuality Types in Kwak'wala*

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Abstract: Greene (2013) proposes that verbs in Kwak'wala fall into three lexical aspectual classes: States, Processes, and Transitions. In this paper, my aim is to extend this system by proposing that Kwak'wala possesses grammatical means for deriving these same three eventuality types. Below, I discuss three suffixes: *-ała* which derives States, *-la* which derives Processes, and *–xʔid* which derives Transitions.

Keywords: lexical aspect, event structure, verbs, semantics, Kwak'wala, Wakashan

1 Introduction

Greene (2013) proposes that verbs in Kwak'wala fall into three lexical aspectual classes: States, Processes, and Transitions. The general aim of this paper is to corroborate Greene's central insight that States, Processes, and Transitions are basic eventuality types within Kwak'wala grammar, in particular by proposing that the language possesses grammatical means for deriving these same three eventuality types. Here, I will focus on three especially common aspectual suffixes: *–ała* which derives States, *-la* which derives Processes, and *–xʔid* which derives Transitions. An implication of my analysis of these suffixes is that the three eventuality types posited in Greene (2013) turn out to be even more pervasive categories in Kwak'wala grammar than previously recognized.

My analysis of *–la* and *–xʔid* differs from the one proposed in Greene (2013), where *–la* is analyzed as a frozen pluractional and *–xʔid* as a (non-canonical) perfective. My first task in this paper, then, will be to demonstrate that my analysis accounts for those empirical generalizations reported previously in relation to *–la* and *–xʔid*. My second task will then be to demonstrate that my analysis is plausible. To do so, I'll show that the range of interpretations available for *duqʷ-* 'see' predicates containing *–ała*, *-la*, and *–xʔid* is consistent with these predicates being derived States, Processes, and Transitions, respectively. My hope is that this paper will both stimulate a new way of thinking about these suffixes' role in the grammar, and will draw renewed attention to the importance of Greene's three eventuality types.

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The rest of the paper proceeds as follows: Section 2 introduces Greene's (2013) theory of lexical aspectual classes; Section 3 provides background on the aspectual suffixes *–ała*, *-la*, and *–xʔid* and restates my analysis; Section 4 summarizes and critiques Greene's (2013) analysis of *–xʔid* and *-la*; Section 5 discusses the range of interpretations available for *duqʷ-* 'see' predicates with *–ała*, *-la*, and *–xʔid*, and how this range is explained by my analysis; and Section 6 summarizes and concludes by pointing out some implications of the analysis.

2 Greene (2013) on lexical aspectual verb classes

The study of lexical aspect[1] is concerned with the inner temporal structure of situations. Greene (2013) proposes that verbs in Kwak'wala fall into three classes with respect to lexical aspectual type: States, Processes, and Transitions. Greene's three proposed verb classes are summarized in Table 1, along with their associated verb templates and semantic features.[2]

Table 1: Lexical aspect classes in Kwak'wala (from Greene 2013)

	Verb class	Template	Semantic features
a.	States	λe.P(e)	[-telic, -stages/-dynamic]
b.	Processes	λe.(DO(P))(e)	[-telic, +stages/+dynamic]
c.	Transitions	λe.(BECOME(P))(e)	[+telic, -stages/-dynamic]

States are eventualities which do not develop or progress through time. Some examples of States listed in Greene (ibid.) include *c̓əxq̓a* 'to be sick', *p̓isa* 'to be hard', and *gəlt̓ǝ̓xst* 'to be tall'. In Kwak'wala, bare State predicates can be interpreted either in the present tense or the past tense, as shown by the two possible translations of the sentence in (1).[3] Since bare States do not possess an inherent initial point, they cannot receive an inchoative interpretation (2).

[1] Lexical aspect is also sometimes referred to as situation aspect or aktionsart.

[2] The templates for Processes and Transitions in Table 1 replicate Rothstein's (2004) templates for Activities and Achievements (in English), respectively. The operators DO and BECOME in Table 1 are from Dowty (1979); their definitions are given in Appendix A.

[3] Some of the glosses in Greene (2013) have been amended for presentation here. All data other than what is attributed to Greene (ibid.) are from fieldwork carried out during 2008-2018. Examples are presented in the APA (UVic variety) orthography. Abbreviations used in glosses include the following: 1 'first person', 2 'second person', 3 'third person', AUX 'auxiliary', ACC 'accusative case', BEC 'become, momentaneous/inchoative, transition marker', CONN 'connective', CONJ 'conjunction', DET 'determiner', DIST 'distal', FUT 'future tense', FV 'final vowel', GRAD.ADV 'gradual advancement', HG 'Hannah Greene', HYP 'hypothetical', IMP 'imperative', INST 'instrumental case', INV 'invisibility marker', KS 'Katie Sardinha', MED 'medial', NEG 'negation', NEG.EXIST 'negative existential', OST 'ostensive', PL 'plural', POSS 'possessive', PREP 'preposition', PROC 'process', REFL 'reflexive', STAT 'stative', VER 'verum focus', VIS 'visibility marker'.

(1) ṗisoxda dzəxʔən
ṗis =oǩ =da dzəxʔən
hard =3MED =OST metal
i. ‘The metal is hard’
ii. ‘The metal was hard.’ (Greene 2013:34)

(2) c̓əxq̓ən
c̓əxq̓ =ən
ill =1
i. ‘I’m ill.’
ii. *‘I became ill.’ (Greene 2013:35)

Greene considers States in Kwak’wala to be generally comparable to States in English (2013:110).

Processes are eventualities which unlike States, do develop and progress through time. Also, they are eventualities which are instigated by an Agent. Some examples of Processes investigated in Greene (2013) include *qas-* ‘to walk’, *kʷəmt-* ‘to smoke’, and *niǩ-* ‘to pull’. Like States, bare Processes may have either a present tense or past tense interpretation (3) and cannot receive inchoative interpretations on account of the fact that they lack inherent initial points (4). Another notable feature of Processes is that unlike their translational equivalents in many languages (including English), Processes consistently fail telicity tests. An example of this is shown in (5) with the Process verb stem *ʔəǩila* ‘to make, do’. This example illustrates how the culmination of a Process eventuality can be felicitously cancelled (unlike its English translation, which is infelicitous).

(3) niǩoǩ Hannah ǩa dənəm
niǩ =oǩ Hannah =ǩ =a dənəm
pull=3MED Hannah =ACC =DET rope

laǩa xʷak̓ʷəna
la =ǩ =a xʷak̓ʷəna
PREP =ACC =DET canoe

laǩa wa
la =ǩ =a wa
PREP =ACC =DET river

‘Hannah was pulling/pulled the rope of the canoe on the river.’
(Greene 2013:37)

(4) niǩən ǩa pəlawas
niǩ =ən =ǩ =a pəlawas
pull=1 =ACC =DET flower
i. ‘I am pulling the flower.’
ii. *‘I started to pull the flower.’ (Greene 2013:36-7)

(5) ʔəx̌ilox̌ Jen λox̌ Alexisax̌a
ʔəx̌-(g)ila =ox̌ Jen λəẇ= ox̌ Alexis =x̌ =a
do -make =3MED Jen CONJ =3MED Alexis =ACC =DET

xʷaḵʷəna x̌a hiʔənx̌
xʷaḵʷəna =x̌ =a hiʔənx̌
canoe =ACC =DET summer
'Jen and Alexis made a canoe during the summer time, and never finished.'
(Greene 2013:39)

The set of verbs which pattern as Processes in Kwak'wala are comparable to the combined set of Activities and Accomplishments in English (Greene 2013:41).

The third eventuality type, Transitions, are eventualities which consist of an interval of time in which a change of state occurs. Unlike Processes, Transitions do not develop over time or progress in stages, but are instantaneous, or at least nearly so. Some examples of Transitions given in Greene (2013) include *dulo* 'to win', *ċo-* 'to give', and *q̇a* 'to find'. Note that unlike States and Processes, Transitions do possess an inherent endpoint – namely, the moment that a change of state occurs – and therefore consistently do give rise to telic predicates. As such, bare Transitions can only receive a past tense interpretation, never a present progressive one (6). Greene notes, however, that with Transitions the interval of time containing the change of state is generally not accessible to the grammar for modification. Thus, Transitions cannot co-occur with initial bound modifiers like *galabənd* 'to start' (7) or final bound modifiers like *ʔox̌seṁ* 'still' (8).

(6) dulowida dzułtu gudan
dulo =i =da dzułtu gudan
win =3DIST =OST black horse
i. 'The black horse won the race.'
ii. *'The black horse is winning the race.' (Greene 2013:40)

(7) # ləm̓oǩ galabəndoǩ Catherine
lə =ʔm =oǩ galabənd =oǩ Catherine
AUX =VER =3MED start =3MED Catherine

q̓a ǩis wayas
q̓a =ǩ =is wayas
find =ACC =3REFL.POSS honey
Intended: 'Catherine has started to find her honey.'
Speaker: "You either have or you haven't found your wayas."
(Greene 2013:41)

(8) # ʔoǩsəm̓oǩda gənanəm q̓a ǩis
ʔoǩsəm̓ =oǩ =da gənanəm q̓a =ǩ =is
still =3MED =OST child find =ACC =3.REFL.POSS

cəya
cəya
chair
Intended: 'The child is still finding his chair.' (Greene 2013:48)

Greene notes that the class of Transitions in Kwak'wala is comparable to the class of Achievements in English, though she reports that (at least certain) Kwak'wala Transitions are more resistant than their English counterparts to receiving in-progress interpretations (Greene 2013:55).

In summary, Greene's (2013) theory of lexical aspectual classes takes Kwak'wala verbs to belong to three classes – States, Processes, and Transitions. These lexical aspectual classes differ in various ways, such as whether they develop or progress through time in stages (Processes do, States and Transitions don't) and whether they are telic (Transitions are, Processes and States are not).

3 The proposal: *-ała, -la,* and *–xʔid* derive eventuality types

Greene's (2013) analysis explains the aspectual classification of bare verbs – that is verbs without aspectual morphology. In this paper, I propose that Kwak'wala possesses morphological means for deriving these same three eventuality types. My claim is therefore that in addition to being lexical classes, the eventuality types States, Processes, and Transitions are capable of being grammatically derived. The three suffixes I will be concerned with are among the most frequent grammatical suffixes on Kwak'wala verbs. Their basic forms are *-ała*, *-la*, and *-xʔid*. In the rest of this section, I'll discuss background information on each suffix, followed by my analysis.

The suffix *-ała* is described in Boas (1911) as a 'continuative' suffix, which "indicates the continued position implied in an act, not the continued activity itself" (pg. 489). This definition is echoed in Boas (1947), where *-ała* is glossed as meaning 'to be in the position of performing some action' (pg. 291) and 'continued position'. Since the time of Boas' writing, I am not aware of additional research having been carried out on this suffix. However, in the course of my

own research, I have found *-ała* to have a general aspectual meaning. Rather than being specifically concerned with spatial position, as Boas' definition might suggest, *-ała* seems to indicate stativity in general. Some examples illustrating *-ała* as a stativizer are given in (9).

(9) Examples of verb stems containing *-ała*

a.	*dała*	'to hold something'	(√*da-* 'to be in hand')
b.	*quqała*	'to be crooked, tilted over'	(√*quq-* 'to tilt, list')
c.	*ẇənała*	'to be in hiding'	(√*ẇən-* 'to hide oneself')
d.	*λəxała*	'to be driving, steering'	(√*λəx-* 'to drive, steer')
e.	*tikʷała*	'to be hanging'	(√*tikʷ-* 'to hang')
f.	*dəxała*	'to have eyes wide open'	(√*dəx-* 'to open eyes')
g.	*q̓ʷəqała*	'to be on, be lit up'	(√*q̓ʷəq-* 'to light up, blink')

I propose analyzing *-ała* as an aspectual suffix for deriving States, and gloss it here as 'STAT'.

The suffix *-la* is described in Boas (1911) as a 'continuative' suffix which indicates the continuation of an activity itself (pg. 488–9). Boas (1947) provides some additional details about *-la*, noting that "it expresses actions that imply multiplicity, repetition or continuity. It is used when the action is continued, when the same actor performs the same action several times, when several objects are handled in the same way, or the whole action consists of many parts" (pgs. 291, 306). Some examples of verbs with this suffix are given in (10).

(10) Examples of verb stems containing *-la*

a.	*dala*	'to carry something'	(√*da-* 'to be in hand')
b.	*dzəlxʷəla*	'to run'	(√*dzəlxʷ-* 'to run')
c.	*dəɬʔəla*	'to laugh'	(√*dəʔɬ-* 'to laugh')
d.	*puƛəla*	'to be full from eating'	(√*puƛ-* 'to be full from eating')
e.	*nəɬəla*	'to shake'	(√*nəɬ-* 'to shake')
f.	*məlqʷəla*	'to remember'	(√*məlqʷ-* 'to remember')
g.	*yola*	'to be windy'	(√*yu-* 'to be windy')

Greene (2013) analyzes *-la* as a pluractional suffix. In addition, Greene's analysis centers on the claim that *-la* is no longer fully productive in modern Kwak'wala – a claim which I do not think is correct. I will return to discuss reasons for rejecting this claim in Section 4. In the meantime, I propose analyzing *-la* as an aspectual suffix for deriving Processes, and gloss it here as 'PROC'.

The suffix *-xʔid* is described in Boas (1911) as an 'inchoative' (pg. 486-8). In Boas (1947) the label 'momentaneous' is added to its description, and it is stated

that "*-xʔid* expresses fundamentally the change from one state to another" (pgs. 290, 365). Some examples with this suffix are provided in (11).

(11) Examples of verb stems containing *-xʔid*

a.	*daxʔid*	'to take, pick up'	(√*da-* 'to be in hand')
b.	*mənxʷʔid*	'to smile'	(√*mənxʷ-* 'to smile')
c.	*puɬʔid*	'to get full from eating'	(√*puƛ-* 'to be full from eating')
d.	*qəlxʔid*	'to get tired'	(√*qəlk-* 'to be tired')
e.	*təp̓id*	'to get broken, to break'	(√*təp-* 'to be broken')
f.	*kəɬʔid*	'to get scared'	(√*kəɬ-* 'to be scared')
g.	*q̓ʷaǩʔid*	'to turn on, light up'	(√*q̓ʷəq-* 'to light up, blink)

Depending on its phonological environment *-xʔid* can lose its initial velar segment and/or final coronal segment, thus appearing minimally as *-ʔi*. Moreover, when *-xʔid* attaches to verb stems containing lexical suffixes, it has an alternate set of realizations, appearing as *-d*, *-nd*, or *-ud* depending on its phonological environment (see Boas 1947:365 for details). Some examples of verb stems containing *–xʔid* as it is realized after lexical suffixes are given in (12).

(12) Examples of verbs containing *-xʔid* after lexical suffixes

a.	*ʔəǩstu**d***	'to open'	(√*ʔəǩ-* '∅', √*-ʔstu* 'round opening')
b.	*gəlc̓u**d***	'to crawl into container	(√*gəl-* 'crawl', √*-c̓u* '(to) inside')
c.	*ʔəǩstə**nd***	'to put in water'	(√*ʔəǩ-* '∅', √*-ʔsta* '(in) water')

Greene (2013) analyzes *-xʔid* as a marker of perfective aspect. It is a non-canonical perfective, however, because its use does not give rise to an entailment that the described eventuality culminated in totality, as canonical perfective aspect markers do. I propose here that *-xʔid* should be analyzed not as a marker of perfective aspect, but as an aspectual suffix for deriving Transitions. I gloss it as 'BEC' below. In Section 5, I will discuss the empirical evidence which led Greene to propose her analysis of *-xʔid*, and will argue that this evidence is also accounted for on my analysis.

The analysis I am proposing in this paper is summarized in Table 2, alongside each suffixes' gloss in Boas (1911, 1947) and its analysis in Greene (2013).

Table 2: Suffixes for deriving eventuality type in Kwak'wala

Suffix form(s)	**Eventuality Type derived by the suffix (my analysis)**	**Gloss in Boas (1911, 1947)**	**Analysis in Greene (2013)**
-ała	State	'continuative' 'continued position'	(not discussed)
-la	Process	'continuative'	frozen pluractional
-xʔid, -d/-nd/-ud	Transition	'inchoative' 'momentaneous'	non-canonical perfective

My claim, therefore, is that *-ała*, *-la*, and *-xʔid* are overt indicators of whether a verbal predicate is a State, Process, or Transition.[4] A tentative formal analysis of these suffixes is offered in Appendix B.

Note that the eventuality type of any verb stem which does not contain an aspectual suffix will correspond to the eventuality type of the verb itself (Greene 2013). Typically, verb stems lacking aspectual morphology surface with the stem completive final vowel *-a*, though this *-a* is often not apparent due to elision in the presence of determiners (Greene ibid.:7–8).

4 Greene's (2013) analysis of *-la* and *-xʔid*

The analysis of *-la* and *-xʔid* in Section 3 differs from the analysis of these suffixes in Greene (2013) (recall that Greene did not investigate *-ała*). It stands to be shown, then, that my analysis can account for the same empirical generalizations that Greene's analysis does. I'll begin by discussing Greene's analysis of *-xʔid* (4.1), and then will discuss her analysis of *-la* (4.2).

4.1 *-xʔid* as a non-canonical perfective

Greene (2013) analyzes *-xʔid* as a non-canonical perfective aspect marker. This analysis was proposed to account for two types of empirical generalizations: one related to the function of *-xʔid* in narratives, and the other related to the culmination properties of verbal predicates containing *-xʔid*.

Greene's first finding, which she uses to motivate the analysis of *-xʔid* as a type of perfective marker, is that *-xʔid* moves event time forward in narratives. An example illustrating this property of *-xʔid* from my own fieldwork is given in

[4] More precisely, the eventuality type of a verbal predicate is indicated by the leftmost aspectual suffix in cases where more than one is present on the stem. For simplicity in this paper, I will not discuss examples containing more than one aspectual suffix. As might be expected, there are co-occurrence constraints and ordering constraints on strings of aspectual suffixes. Spelling these constraints is a topic of ongoing research.

(13), where I provide an excerpt from a narrative where the speaker is describing her late relative's procedure for preparing cockles. The suffix *-xʔid* is present in lines (13a), (13c), (13d), and (13e), where each time it functions to introduce a new, sequential eventuality, thereby moving the narrative's event time forward.

(13) *Excerpt from a story about preparing cockles*:

a. ləʔəm ʔəx̌stu**d**ida
lə =ʔm ʔəx̌ -ʔstu **-xʔid** =i =da
AUX =VER do -round.opening **-BEC** =3DIST =OST

dzoli
dzoli
cockle
'Then the cockles open up.'

b. ləʔəm *15-minutes* lax̌
lə =ʔm *15-minutes* la =x̌
AUX =VER *15-minutes* PREP =ACC

mədəlkʷəlakənaʔɬ
mədəlkʷ -la =kənaʔɬ
boil -PROC =nice
'And they stay 15 minutes in the nice boiling (water).'

c. ləẇis Adi qəp̓**i**
lə =ʔm =(w)is Adi qəp **-xʔid**
AUX =VER =and.so Adi spill **-BEC**

sa ẇap
=s =a ẇap
=INST =DET water
'Then Adi poured out the water.'

d. ləʔəm ʔəx̌stus
lə =ʔm ʔəx̌ -stu =s[5]
AUX=VER do -round.opening =INST

laxada ẇəda
la =x̌ =a =da ẇəda
PREP =ACC =DET =OST cold

[5] It's likely that *-xʔid* is present underlying in this verb stem as well (*ʔəx̌stu**d**s*...), given that *-d* often gets elided in coda position, especially in quick speech.

qəs				ṫus**ʔid**eʔ				
q(a)	=is			ṫus	**-xʔid**	=eʔ		
PREP	=3REFL.POSS			cut	**-BEC**	=INVIS		
	ǩada				dzoli			
	=ǩ	=a	=da		dzoli			
	=ACC	=DET	=OST		cockle			

'Then she put them into the cold so that she could cut the cockles,'

e.

qəs			ʔəǩ**ʔid**eʔ					
q(a)	=s		ʔəǩ	**-xʔid**	=eʔ			
PREP	=3REFL.POSS		do	**-BEC**	=INVIS			
sada				q̇ʷəǩ	laǩ			
=s	=a	=da		q̇ʷəǩ	la	=ǩ		
=INST	=DET	=OST		flour	PREP	=ACC		
	λəẇida				*garlic*			
	λəẇ	=i	=da		*garlic*			
	CONJ	=3DIST	=OST		*garlic*			

'So then she could put flour in there, together with garlic.'

(20160728 VF)

The way *-xʔid* functions in narratives resembles the way canonical perfective markers function in other languages (Smith 2007).

The second finding, which motivates Greene's analysis of *-xʔid* as a 'non-canonical' perfective marker, is that unlike canonical perfectives, the presence of *-xʔid* does not entail total culmination of an eventuality. The presence of *-xʔid* does, however, entail that an initial transition into the eventuality has taken place, and thus that the eventuality has culminated *to some degree*. For instance, in an eventuality like the one described in (14), what is entailed is that Stacey began eating the apple when the speaker showed up; how much of the apple was eaten and whether the apple-eating was finished when the speaker showed up is left up to pragmatics.

(14)

həm̓**xʔid**oǩ		Stacey	ǩa		ʔabəls	gaǩən		
həm̓**-xʔid**	=oǩ	Stacey	=ǩ	=a	ʔabəls	gaǩ	=ən	
eat **-BEC**	=3MED	Stacey	=ACC	=DET	apple	come	=1	
nił'ida								
nił	-xʔid	-a						
show	-BEC	-FV						

'Stacey ate an apple when I showed up.' (Greene 2013:87)

The finding that *-xʔid* entails culmination to some degree, but not necessarily to a total degree, is what underlies Greene's decision to describe it as a 'non-canonical' perfective. Greene's (2013) formal analysis of *-xʔid* is given in (15).

(15) $[\![$xʔid$]\!] = \lambda P_{<v,<s,t>>}.\lambda t_i.\lambda w_s.\exists e.(\text{BECOME}(P))(e)(w)$ & $time(e) \subseteq t$ [6]
(Greene 2013:88)

On this analysis, *-xʔid* denotes a function which takes a property of events and returns an event with an initial transition, e_1 whose event time, $time(e_1)$, is included within reference time *t*. Significantly, the BECOME operator in (15) is the same operator that was used in defining Transition eventualities (see Table 1). This means that predicates with *-xʔid*, on Greene's analysis, are semantically very similar to lexical Transitions (Greene 2013:97).

The only difference between Greene's analysis of *-xʔid* and my own is that I'm not committed to *-xʔid* establishing a relation between event time and reference time, as canonical perfectives do (e.g. Kratzer 1998). One reason to be skeptical of *-xʔid* being a perfective, is that while the presence of *-xʔid* is indeed sufficient for expressing a perfective meaning, it is not necessary for such a meaning to arise. For one thing, predicates without *-xʔid* can also have perfective readings. For instance, (16) and (17) are interpreted as descriptions of culminated eventualities, even though *-xʔid* is not present in either example.

(16) **KS:** "Let's say Shelly did a hu:ge load of laundry. She didn't have time to finish hanging it to dry. So she asked Eddie to do it. So he started doing it, but then he got a phone call, and he only hung up some of the laundry. So, Shelly calls him later, and – she asks him – and he admits that he didn't finish it."
Speaker: "Mhm."
KS: "And she's like, 'Oh my gosh! Some things really need to get dry.'"
Speaker: "Mhm."
KS: "So she asks him, 'What got hung up, and what didn't?' […] And then he says, 'The shirts got hung up, but none of the pants did.'"

ğiǩʷaƛələn			ƛa	ǩa		q̇əsəneʔ,
ğiǩʷaƛ	-la	=ən	ƛa	=ǩ	=a	q̇əsəneʔ
hang.up	-PROC	=1	CONN	=ACC	=DET	shirt

k̇iʔsən		ğiǩʷaƛəla		ǩa		qəǩsis
k̇iʔs	=ən	ğiǩʷaƛ	-la	=ǩ	=a	qəǩ -(x)sis
NEG	=1	hang.up	-PROC	=ACC	=DET	ring -foot/leg

'I hung up the shirts, I didn't hang up the pants.' (20160708 VF)

[6] I have substituted '*v*' for '*l*' as the semantic type for eventualities; otherwise, the definition is identical to the one given in Greene (2013:88).

(17) Context: *The speaker and KS are talking about a character named Hope, who is getting prettied-up for a date*.

walas	ʔəx̌əla	sada		
walas	ʔəx̌ -la	=s	=a	=da
big/very	do -PROC	=INST	=DET	=OST

ʔixp̓alakənaʔɬ		lax̌is			
ʔix	-p̓ala	=kənaʔɬ	la	=x̌	=is
good	-smell	=nice	PREP	=ACC	=3REFL.POSS

q̓ʷəmdzuy̓u
q̓ʷəmdzuy̓u
dress

Speaker: "She put some nice smelly stuff on her dress." (20160728 VF)

The fact that *-xʔid* is not necessary for perfective readings casts some doubt on its analysis as a perfective. Another reason for doubt is that predicates with *-x̓ʔid* can be used to describe in-progress eventualities; this is shown with the verb *k̓at-* 'write' in (18) and *ƛ̓əp-* 'climb' in (19). (In this latter example, sentence (19a) was volunteered in the given context, and (19b), with *-xʔid*, was subsequently judged to be felicitous in the same context).

(18) *Context: Abby is Mabel's Kwak'wala language teacher*.

KS: "Um, she [Mabel] overhears Abby saying something kind of neat, so she [Mabel] writes it down. So how would we say, 'Mabel is writing down what Abby said'...?"

k̓at̓idux̌			Mabelx̌		wałdəmes		Abbi
kat	**-xʔid**	=ux̌	Mabel	=(ə)x̌	wałdəm	=s	Abbi
write	**-BEC**	=3MED	Mabel	=VIS	saying	=3POSS	Abby

'Mabel is writing down what Abby said.' (20160711 VF)

(19) *Context:* [HG shows the speaker a picture of Katie starting to climb a tree]

HG: "But now the situation I want you to describe just has her starting to climb the tree. She's taking her first step. So how would you say, 'Katie's starting to climb the tree.'"

a. ləm̓uǰ **galabənd**uǰ Ketiyəǰ
lə =ʔm =uǰ **galabənd** =uǰ Keti =(ə)ǰ
AUX =VER =3MED **start** =3MED Katie =VIS

ƛ̓əpaƛ xʷa λoʔsiǰ
ƛ̓əpa =ƛ =ǰ =w =a λoʔs =(ə)ǰ
climb =FUT =ACC =3MED =DET tree =VIS
'Katie's gonna start climbing the tree.' (20130618 VF)

b. ləm̓uǰ Ketiyəǰ **ƛ̓əp̓id**
lə =ʔm =uǰ Keti =(ə)ǰ **ƛ̓əp** **-xʔid**
AUX =VER =3MED Katie =VIS **climb** **-BEC**

xʷa λoʔsiǰ
=ǰ =w =a λoʔs =(ə)ǰ
=ACC =3MED =DET tree =VIS
'Katie's climbing the tree.' (20130618 JF)

Data like these suggest that *-xʔid* is not necessary for establishing a relation between event time and reference time. Kwak'wala appears, rather, to lack a grammatical perfective. This makes Kwak'wala similar to languages like Finnish which do not grammaticalize viewpoint aspect in their verbal morphology (Smith 1997).[7]

In any case, given that Greene's analysis of *-xʔid* and my own are very similar, I would like to suggest that Greene's empirical findings are accounted for on my analysis as well, where *-xʔid* derives Transitions. To begin with, Transitions are eventualities which include a change of state and thus do culminate (at least to a degree). Given this, we still predict *-xʔid* predicates should play a role in advancing event time in narratives. Secondly, the fact that *-xʔid* predicates need only culminate to a degree follows from the fact that *-xʔid* modifies eventualities which themselves can culminate by degree. For instance, the eventuality described using *həm̓-* 'eat' in (14) can culminate to various degrees, depending on how much of the apple is eaten. By comparison, the fact that lexical Transitions must culminate in totality follows from the type of eventualities they are – namely, ones which do not culminate by degree, but which culminate instantaneously. Thus, the fact that lexical Transitions culminate in totality while *-xʔid* predicates need only culminate by degree is not a sufficient reason for classifying lexical

[7] I argued as such in a presentation delivered at the 44th Meeting of the Berkeley Linguistics Society, February 10, 2018 entitled: "Kwak'wala and Finnish are semantically mirrored: Implications for a theory of viewpoint aspect". A paper on this topic is in preparation.

Transitions and *-xʔid* predicates as different eventuality types. They are, rather, both examples of Transition eventualities, the difference between them being that the former are lexical Transitions and the latter are grammatically derived ones.

Finally, Greene (2013) reports that *-xʔid* is found on States and Processes, but is ungrammatical on Transitions (Greene 2013:96–101). This pattern of ungrammaticality is illustrated in (20) with the Transition verb *gaǩ-* 'come'.

(20) a. *gaǩ**ʔid**ida dagʷada ǩʷa
gaǩ **-xʔid** =i =da dagʷada =ǩ =w =a
come **-BEC** =3DIST =OST doctor =ACC =3MED =DET

ṅala
ṅala
day

b. gaǩida dagʷada ǩʷa ṅala
gaǩ =i =da dagʷada =ǩ =w =a ṅala
come =3DIST =OST doctor =ACC =3MED =DET day
'A doctor came today.' (Greene 2013:97)

Greene proposes a semantic explanation for why *-xʔid* cannot be added to lexical Transitions. In particular, she surmises that modifying a Transition with *-xʔid* would give rise to a non-sensical property of times (namely, one "in which there is an instantaneous transition into an event, e.g. from not arrived to arrived, in addition to an instantaneous transition into the initial subevent of that embedded transition" pg. 98). This explanation carries over to my analysis, where *-xʔid* derives Transitions: for the same reason, we should expect semantic anomaly when trying to derive a Transition of a Transition.

In summary, I've suggested that the data which led to Greene's (2013) analysis of *-xʔid* as a non-canonical perfective can also be accounted for on an analysis where *-xʔid* derives Transitions.

4.2 *-la* as a frozen pluractional

In Greene (2013), *-la* is analyzed as a frozen pluractional. The label 'pluractional' is adopted, at least in part, because it is a label that fits the constellation of properties associated with *-la* reported in Boas (1911, 1947). On the other hand, Greene considers *-la* to be a frozen (that is, unproductive) on account of its limited distribution in the modern language. Thus according to Greene (2013:107), *-la* can never occur with States or Transitions, and can only occur with a subset of lexical Processes. This leads Greene to compare Kwak'wala *–la* to the old iterative suffixes *-er* and *-le* in English, found in lexical verbs such as *chatter, glitter, shimmer, crumble, twinkle,* and *wriggle* (Cusic 1981:244). In other words, Greene takes *-la* to be an historical remant.

Contrary to Greene, I believe *-la* to be productive in modern Kwak'wala, and have proposed here that it is used to derive Processes. Not only is *-la* very frequent in the language (as any dictionary will attest), but its distribution is not

obviously arbitrary. In order for my analysis to be tenable, then, the distributional restrictions on *-la* cited in Greene's study require explanation.

To begin with, why should *-la* be impossible on lexical States? A possible explanation for this is semantic: if lexical States are fundamentally non-dynamic eventualities, and if *-la* derives Processes which are fundamentally dynamic eventualities, then lexical States should indeed be unable to co-occur with *-la*. In fact, there are some apparently stative roots in Kwak'wala which do allow *-la*. For instance, I discuss *-la* on the root *duqʷ-* 'see' in the next section, and *kəɬ-* 'be scared' is another example (*kəɬəla* 'to be scared'). A more accurate generalization seems to be that States can in fact take *-la*, but only if the resulting predicate can be construed as a dynamic eventuality. How exactly this generalization fleshes out is a topic for future investigation.

Second, why should *-la* be impossible on lexical Transitions? A possible explanation for this is again semantic. Since lexical Transitions are eventualities which consist of a near-instantaneous change of state, it may just be impossible to modify one part of the change of state to turn the eventuality into a Process. On this note, recall Greene's (2013) finding, reported above, that Transitions cannot be modified by *galabənd* 'to start' or *ʔoxˇsemˈ* 'still'. In any case, I have not come across any clear exceptions to the generalization that lexical Transitions do not take *-la*.

Finally, why should *-la* be confined to occuring on only a subset of Processes? Greene (2013) reports that the set of Processes which can take *-la* are those "in which the repetitive nature of the process can be emphasized." (pg. 107) Greene then lists the following examples of Processes which are compatible with *-la*: *dənxˇəla* 'singing', *dzəlkʷəla* 'running', *dəxʷəla* 'jumping', *dəʔɬəla* 'laughing', *mədəlkʷəla* 'boiling', *duqʷəla* 'seeing'[8], and *dala* 'carrying' (pg. 105). One possibility is that Greene's generalization itself contains the seed of an explanation for why *-la* is restricted on lexical Processes. Namely, if *-la* derives Processes, as I propose it does, then we might expect *-la* to be redundant on lexical Processes. However, those lexical Processes which allow their repetitive nature to be emphasized could still be modified by *-la*, in which case the resulting predicate would denote a Process of a Process, of some sort. This, too, is a topic which deserves further attention.

In summary, I've argued that contrary to what is stated in Greene (2013), *-la* is productive in modern Kwak'wala. I've suggested that the distributional restrictions on *-la* noted in Greene (ibid.) could be explained on an anlysis where *-la* derives Processes.

5 Evidence from the interpretation of *duqʷ-* 'see' predicates

In this section, I turn to look at the interpretation of predicates involving the verb root *duqʷ-* 'to see' with the aspectual suffixes *-ała*, *-la*, and *-xʔid*. My aim in doing this is to show that the interpretation of these predicates is consistent with an

[8] I consider it more likely that *duqʷ-* 'see' is a lexical State, though because it occurs rarely without aspectual suffixes, this turns out to be hard to prove (on this, see footnote (9)).

analysis where these suffixes derive States, Processes, and Transitions, respectively.

I've chosen to look at *duqʷ*- 'see' predicates because they provide a particularly clear illustration of the meaning that is added by *-ała*, *-la*, and *-xʔid*. The verb *duqʷ*- readily occurs with all three aspectual suffixes (while for many verbs, this is not the case), and all three relevant verb forms – *duqʷała*, *duqʷəla*, and *duxˇʷʔid* – are fairly frequent and show relatively clear biases in how they are interpreted.

In Kwak'wala, the root *duqʷ*- 'to see' is used in forming the vast majority of expressions related to seeing.[9] To express nuances of meaning beyond the meaning of the bare root, Kwak'wala speakers make use of a wide array of suffixes, both lexical and grammatical.[10] Some examples illustrating the use of suffixes on *duqʷ*- are provided in (21), alongside the translations these predicates receive in the First Voices online dictionary (2009).[11]

(21) Examples of verb stems with the root *duqʷ*- 'see'

a.	*duqʷała*	'to watch'
b.	*duqʷəla*	'to see'
c.	*duxˇʷʔid*	'to look'
d.	*duxˇʷsiʔstala*	'looking around'
e.	*duǧʷət̓ala*	'look out to sea'
f.	*duqʷustoła*	'looking up'
g.	*duq̓ʷəxˇstənd*	'looking at the rear end'
h.	*duqʷəm*	'look in the face'
i.	*daduqʷəm̓a*	'attempting to look someone in the face'

The relevant forms here are the forms in (21a)–(21c), containing *-ała*, *-la*, and *-xʔid*. My purpose in the remainder of this section will be to show data that are consistent with *duqʷała* predicates being derived States, *duqʷəla* predicates being derived Processes, and *duxˇʷʔid* predicates being derived Transitions. I

[9] Interestingly, *duqʷ*- is very rarely volunteered without aspectual suffixes (with default *-a*). Example (i) is one of only a few examples of *duqʷa* predicates in my fieldwork data:

(i) *Context: Mabel heard a noise behind her, so she turned around to look at it.*

ləm̓isi				məlsiʔlela	**duqʷa**xˇ	
lə	=ʔm	=(w)is	=i	məlsiʔlela	**duqʷ-a**	=xˇ
AUX	=VER	=and.so	=3DIST	turning.around	**see-FV**	=ACC

'She turned around to look at it.'
Speaker: "She looked around." (20160712 VF)

[10] Some of these suffixes mutate a consonant in the stem they attach to, causing either lenition (e.g. $q \rightarrow ǧ$) or glottalization (e.g. $q \rightarrow q̓$). Sometimes, the final consonant of the stem spirantizes ($q \rightarrow xˇ$).

[11] Except for example (21h), which is from my own research.

confine myself below to examples involving at most one aspectual suffix, leaving a discussion of stems with multiple aspectual suffixes to future research.

First, it is important to note that it is usually the case that more than one verb form is possible, strictly-speaking, in a given context. For instance, take the simple context in (22) which describes a situation of looking out a window and seeing a bear. This context could be truthfully described using any of the four different English 'see' verbs in (22a)–(22c). Yet while all of these descriptions of the event are true, each description differs subtly in how it construes the event.

(22) *Context: An hour ago, a bear was rummaging through my trash. I looked out my window, and there was a bear.*

a. I **saw** a bear.
b. I **spotted** a bear.
c. I **glimpsed** a bear.
d. I **witnessed** a bear.

Likewise in Kwak'wala, it is often the case that one and the same seeing eventuality can be truthfully described using more than one of the verb stems *duqʷała*, *duqʷəla*, and *duǩʷʔid*. What I will be specifically interested in below, then, is what factors bias speakers towards choosing *duqʷała*, *duqʷəla*, or *duǩʷʔid* in a given context to express a certain type of meaning.

I'll begin with volunteered instances of *duqʷała* (5.1), followed by *duqʷəla* (5.2) and *duǩʷʔid* (5.3); I'll then summarize the findings (5.4).

5.1 *duqʷała* predicates

The verb stem *duqʷała*, containing the aspectual suffix *-ała*, is consistently volunteered in contexts where an action of seeing is sustained over a period of time. The most common English translation for *duqʷała* predicates is 'watch'. The interpretation of *duqʷała* predicates, I suggest, is consistent with them being derived States.

Four examples of *duqʷała* predicates are shown below. Examples (23), (24), and (25) each describe eventualities in which Mabel is maintaining a fixed gaze on something for an extended period of time; in each example, the corresponding English verb is 'watch'.

(23) *Context: Mabel thinks she heard something in the bushes. She keeps her eye on the bushes to see if it'll move again.*

ləm̓is			**duqʷała**		ǩada		
lə	=ʔm	=(w)is	**duqʷ**	**-ała**	=ǩ	=a	=da
AUX	=VER	=and.so	**see**	**-STAT**	=ACC	=DET	=OST

q̓ʷaǩmis	k̓əyosida			yaẇixa	
q̓ʷaǩmis	k̓əyos	=i	=da	yaẇix	-a
bushes	NEG.EXIST	=3DIST	=OST	move	-FV

'She watched the bushes, but nothing moved.' (20160712 VF)

(24) *Context: Mabel saw a black bear on the road, but then it disappeared. So she keeps her eye on the road to see if it re-appears.*

ləm̓is			**duqʷała**		ǩa		kənl̓as
lə	=ʔm	=(w)is	**duqʷ**	**-ała**	=ǩ	=a	kənl̓as
AUX	=VER	=and.so	**see**	**-STAT**	=ACC	=DET	road

qu	edaqa	laǩ
qu	edaqa	=lax
if	return	=HYP

'She's watching the road to see if it comes back.' (20160712 VF)

(25) **duqʷałuǩ** Mabeleǩis wəyugʷəmala

duqʷ	**-ała**	=uǩ	Mabel	=ǩ	=is	wəyugʷəmala
see	**-STAT**	=3MED	Mabel	=ACC	=3REFL.POSS	baby

ləʔəm		miǩaṅakʷəla			ċiċaṅiqəlabidu		
lə	=ʔm	miǩ	-a	=ṅakʷəla	ċiċaṅiqəla	=bidu	
AUX	=VER	sleep	-FV	=GRAD.ADV	cute	=DIM	

'Mabel's watching her baby as it goes to sleep, it's so cute.' (20160712 VF)

In example (26), the speaker uses *duqʷała* to describe an eventuality that involves 'looking at one's heart'. The intended meaning of the predicate in (26) is that in order to live a moral life, people should monitor themselves by looking inwards and sustaining this inner gaze. While *duqʷała* in this case is not translated as 'watch', the eventuality is still understood as sustained over time.

(26) **duqʷałaɬ̓a** ǩus noqeʔ qe
duqʷ **-ała** =ɬ̓a =ǩ =us noqeʔ q(a)
see **-STAT** =IMP =ACC =2POSS heart PREP

ʔikeʔsuǩ
ʔik =eʔ =s =uǩ
good =INVIS =3POSS =3MED
Speaker: "Look at your heart to be good." (20160712 VF)

In summary, *duqʷała* predicates are volunteered in contexts where what is being emphasized is a sustained action of seeing. This finding is consistent with *duqʷała* predicates denoting States, and with *-ała* being the grammatical source of this aspectual interpretation.[12]

5.2 *duqʷəla* predicates

Processes are eventualities which develop and progress over time and are instigated by an Agent. The verb stem *duqʷəla*, containing the aspectual suffix *–la*, is the most commonly volunteered *duqʷ*- stem for translating sentences with the English verb 'see' into Kwak'wala. Additionally, *duqʷəla* predicates are

[12] When a sustained seeing eventuality involves a high degree of agentivity, Kwak'wala speakers can also use *humoła* 'to watch, to be a spectator', which itself also appears to contain *-ała*. A use of this verb is shown in (ii). Note the appearance here of the word *humołaċ̓i* 'television', which is derived from the same stem. Example (iii) shows a context where either *humoła* or *duqʷała* is felicitous.

(ii) ʔoṁoǩ ṅəmċ̓aquǩ Annaǩ mənxʷała
ʔo =ʔm =oǩ ṅəm -ċ̓aq =uǩ Anna =(ə)ǩ mənxʷ -ała
so =VER=3MED one -hour =3MED Anna =VIS smile -STAT

leʔəǩ **humoła** ǩida **humołaċ̓i**
la =(ə)ǩ **humoła** =ǩ =i =da **humołaċ̓i**
PREP =VIS **watch** =ACC =3DIST =OST **television**
'Anna smiled for a whole hour while she watched the television.' (20160725 VF)

(iii) *Context: One evening, Mabel went out to the beach to relax.*

ṅəm ğanuƛ leʔ Mabel **humoła** / **duqʷała**
ṅəm ğanuƛ la =eʔ Mabel **humoła** / **duqʷ** **-ała**
one night PREP =INVIS Mabel **watch** / **see** **-STAT**

ǩida ƛ̓isəla kə̓yoxʷʔidaṅakʷəla
=ǩ =i =da ƛ̓is -la kə̓yoxʷʔid -a =ṅakʷəla
=ACC =3DIST =OST sun.shine -PROC disappear -FV =GRAD.ADV
'One evening, Mabel went out to watch the sun disappear.' (20160712 VF/JF)

I have found *duqʷała* to be possible in every context that *humoła* is (of those contexts I've tested). The reverse generalization is not true, however.

volunteered as translations for ‘look over (something)’ and ‘be looking at (something)’, and are usually the *duqʷ-* stem of choice when an abilitative, iterated, or habitual meaning is intended. This range of possible interpretations for *duqʷəla* predicates, I suggest, is consistent with them being derived Processes.

Example (27) contains two instances of *duqʷəla*. In the first clause, *duqʷəla* describes an eventuality in which Eddie is looking over an object, while in the second clause, *duqʷəla* describes an eventuality in which Eddie fails to see an object. Example (28) shows another instance of the ‘look over’ use of *duqʷəla*, and example (29) shows another instance of the basic ‘see’ use of *duqʷəla*. This ‘see’ use of *-la* is shown again in (30), this time with a sentential complement.

(27) *Context: Vicky drew a complicated picture of a garden. In it there was a butterfly. She asked Eddie if he could find the butterfly.*

duqʷəluǰ			Eddiyəǰ		ǰada		
duqʷ	**-la**	=uǰ	Eddi	=(ə)ǰ	=ǰ	=a	=da
see	**-PROC**	=3MED	Eddie	=VIS	=ACC	=DET	=OST

k̓atəmakʷ	k̓iʔsƛuǰ			**duqʷəla**	
k̓atəmakʷ	k̓iʔs	=ƛ	=uǰ	**duqʷ**	**-la**
picture	NEG	=FUT	=3MED	**see**	**-PROC**

ǰida		həmumu	
=ǰ	=i	=da	həmumu
=ACC	=3DIST	=OST	butterfly

‘Eddie looked over the picture, but he didn’t see the butterfly.’

(20160712 VF)

(28) *Context: Mabel woke up and looked out the window. She looked all over the sky, and didn’t see a single cloud.*

ləm̓i			Mabel	**duqʷəla**		ǰa	
lə	=ʔm	=i	Mabel	**duqʷ**	**-la**	=ǰ	=a
AUX	=VER	=3DIST	Mabel	**see**	**-PROC**	=ACC	=DET

ʔik̓i	k̓əyosƛa		ʔənwey̓a		
ʔik̓i	k̓əyos	=ƛa	ʔənweʔ	=a	
sky	NEG.EXIST	=but	cloud	=INVIS	

‘Mabel looked all over the sky, and there weren’t any clouds.’

(20160712 VF)

(29) *Context: Mabel was walking along the road, and happened to glance over her shoulder. She saw a black bear.*

ləm̓is				qasʔid				
lə	=ʔm	=(w)is		qas	-xʔid			
AUX	=VER	=and.so		walk	-BEC			
laxada					kənl̓as	ləm̓is		
la	=x	=a	=da		kənl̓as	lə	=ʔm	=(w)is
PREP	=ACC	=DET	=OST		road	AUX	=VER	=and.so
məlsʔi		ləʔəm		**duqʷəla**				
məls	-xʔid	lə	=ʔm	**duqʷ**	**-la**			
turn	-BEC	AUX	=VER	**see**	**-PROC**			
xada				ƛ̓eʔ				
=x	=a	=da		ƛ̓aẏi				
=ACC	=DET	=OST		black.bear				

'She was walking down the road, then she turned, and she saw a black bear.' (20160712 VF)

(30) *Context: Mabel looks out her window one morning and sees that the eagle living in the tree out there had made a nest.*

ləm̓isi				**duqʷəl**		=i	
lə	=ʔm	=(w)is	=i	**duqʷ**	**-la**	=i	
AUX	=VER	=and.so	=3DIST	**see**	**-PROC**	=3DIST	
Mabelx		leʔeda				kʷikʷ	
Mabel	=(ə)x	la	=aʔ	=i	=da	kʷikʷ	
Mabel	=VIS	PREP	=INVIS	=3DIST	=OST	eagle	
ʔəxila		xa		kʷigʷac̓i			
ʔəx	-(g)ila	=x	=a	kʷigʷac̓i			
do	-make	=ACC	=DET	eagle.nest			

'Mabel saw that the eagle had made a nest.' (20160712 VF)

These data show that the semantics of *duqʷəla* must allow for both 'look over' and 'see' interpretations. The fact that *duqʷəla* can have a 'look over' interpretation is consistent with this predicate being a derived Process, as the activity of 'looking over' something is obviously dynamic in nature. On the other hand, an eventuality in which someone simply 'sees' something is not as obviously a Process, since it is not dynamic in nature. Basic seeing eventualities do, however, satisfy another criterion for being a Process – namely, the criterion of being instigated by an Agent, the one who is doing the seeing. If we assume that instigation by an Agent is enough to qualify the predicate *duqʷəla* as a Process, then we arrive at an explanation for why *duqʷəla* can simply mean 'see'.

There is a potential problem, however, with the explanation in the previous paragraph, which is that all seeing eventualities are presumably instigated by an Agent – not just ones involving *duqʷəla* – and should thereby qualify as Processes. Why, then, are some seeing eventualities described using verb stems other than *duqʷəla*? The reason, I suggest, may be that other *duqʷ*- predicates, such as *duqʷała* and *duxʷʔid*, are preferred when the speaker wishes to express a more specific meaning. On this point, it's worth pointing out that *duqʷəla* is the most basic 'see' verb in the language, in the sense that it is volunteered the most frequently and is found in the widest range of contexts. The fact that *duqʷəla* functions as the language's default 'see' verb may follow from the fact that all that is required for an eventuality to qualify as a Process (and hence, appear with *-la*) is agentivity, whereas more than mere agentivity is required to qualify a given seeing eventuality as a State or as a Transition.

The next two examples show *duqʷəla* predicates with abilitative meanings; in (31) the verb has an object, while the verb in (32) does not.

(31) ḵiʔsuǩ Mebəlǩ ʔoləḵal **duqʷəla**
kiʔs =uǩ Mebəl =(ə)ǩ ʔoləḵal **duqʷ** **-la**
NEG =3MED Mabel =VIS truly **see** **-PROC**

ǩa kənlḁs ƛumeʔ ṗədəkəla
=ǩ =a kənlḁs ƛum =eʔ ṗədək -la
=ACC =DET road really =INVIS dark -PROC
'Mabel could barely see the road, it was so dark.' (20160712 VF)

(32) ƛumida dəkdəxəluɬ **duqʷəla**
ƛum =i =da dəkdəxəluɬ **duqʷ** **-la**
really =3DIST =OST owl see -PROC

laǩa ṗədəkəla
la =ǩ =a ṗədək -la
PREP =ACC =DET dark -PROC
'Owls see really well in the dark.' (20160712 VF)

As in (27), (29) and (30), the seeing eventualities described in (31)–(32) are instigated by an Agent; therefore, they too qualify as Processes.

Finally, I present some data which complicate things somewhat – namely, data in which *duqʷəla* is used to describe an eventuality that consists of multiple 'seeing' subevents. Example (33) describes a seeing eventuality which is interpreted as iterated via the quantifying phrase *ʔoʔəm həyulis* 'always', while (34) describes a seeing eventuality with an iterated interpretation (i.e. Mabel saw the baby eagle on multiple occasions) in which there is no overt quantifying phrase.

(33) *Context: Every morning Mabel looks out her window and sees an eagle sitting in the tree there.*

ʔoṁi			həyulisi		Mabel	**duqʷəla**	
ʔo	=ʔm	=i	həyulis	=i	Mabel	**duqʷ**	**-la**
so	=VER	=3DIST	continue	=3DIST	Mabel	**see**	**-PROC**

ǩida			kʷikʷ	laǩa			λoʔs
=ǩ	=i	=da	kʷikʷ	la	=ǩ	=a	λoʔs
=ACC	=3DIST	=OST	eagle	PREP	=ACC	=DET	tree

laǩida				ǧəʔala
la	=ǩ	=i	=da	ǧəʔala
PREP	=ACC	=3DIST	=OST	morning

'Mabel always sees an eagle in the tree in the morning.' (20160712 VF)

(34) *Context: The eagle has a baby eagle. Mabel watches the eagle's nest over a series of days, and sees it get bigger and bigger.*

ləṁi			Mabel	**duqʷəla**	
lə	=ʔm	=i	Mabel	**duqʷ**	**-la**
AUX	=VER	=3DIST	Mabel	**see**	**-PROC**

ǩida			wəyugʷəmala	kʷikʷbidu	
=ǩ	=i	=da	wəyugʷəmala	kʷikʷ	=bidu
=ACC	=3DIST	=OST	baby	eagle	=DIM

q̇ʷaǩən̓akʷəla		
q̇ʷaǩ	-a	=n̓akʷəla
grow	-FV	=GRAD.ADV

'Mabel saw the baby eagle grow.' (20160712 VF)

The problem that these examples highlight is that it is not obvious from data like these whether *-la* is a source of iterative meaning or not. On the one hand, recall that Boas (1911, 1947) takes *-la* to be associated with 'multiplicity' and 'repetition'. On the other hand, it could be that *-la* does not actually add meaning related to multiplicity and repetition, and that the iterative meaning in these examples could instead come from *ʔoʔəm həyulis* in (33) and from pragmatics in (34).[13] Thus, a listener encountering (34) could infer that for Mabel to see an eagle-baby grow, practically speaking she must have seen it on multiple occasions; hence, the eventuality being described must have involved iterated seeing subevents (note that the alternative would be for Mabel to have kept her eyes constantly on the eagle for a series of days – a very unlikely scenario in the real world!). In short, it is not at all clear from data like these whether *-la* actually

[13] Note that if this is true, it has repercussions for my explanation in Section 4.2 concerning why *-la* can only occur on certain Processes.

does give rise to meanings of 'multiplicity' and 'repetition'. Ultimately, more work is needed to know whether *-la* contributes this type of meaning under any particular circumstances. For now, it's worth noting that *duqʷəla* is the verb stem (of the three looked at here) which tends to be volunteered in contexts involving multiplicity or repetition. While for the moment unexplained, this generalization is not obviously inconsistent with *duqʷəla* predicates denoting Processes.

In summary, *duqʷəla* describes eventualities which qualify as Processes, either because they are clearly dynamic or because they involve agentivity. These findings are consistent with *duqʷəla* predicates denoting Processes, where *–la* is the grammatical source of this aspectual interpretation.

5.3 *duǩʷʔid* predicates

Recall that Transitions are telic eventualities. They consist of an interval of time containing a near-instantaneous change of state. The most common English translations for *duǩʷʔid* predicates are 'look at' and 'glance at', though it is not uncommon for them to also be translated simply as 'see'. This range of possible interpretations for *duǩʷʔid* predicates, I'll suggest, is consistent with them being derived Transitions.

Example (35), which should be compared against example (27), contains two *duqʷ-* predicates. In the first clause, *duǩʷʔid* is used to describe glancing at a picture, while in the second clause, *duqʷəla* is used to describe seeing a butterfly.

(35) *Context: Vicky drew a complicated picture of a garden. In it there was a butterfly. Shelly walks into the room, glances at the picture, and right away sees the butterfly.*

gaṁi			Shelli	**duǩʷʔi**		ǩa	
ga	=ʔm	=i	Shelli	**duqʷ**	**-xʔid**	=ǩ	=a
come	=VER	=3DIST	Shelly	**see**	**-BEC**	=ACC	=DET

k̓atəmakʷ	ʔoṁis			hixʔidaʔəm	**duqʷəla**	
k̓atəmakʷ	ʔo =ṁ	=(w)is		hixʔidaʔəm	**duqʷ**	**-la**
picture	so =VER	=and.so		suddenly	**see**	**-PROC**

ǩada			həmumu
=ǩ	=a	=da	həmumu
=ACC	=DET	=OST	butterfly

'Shelly came and {looked at, glanced at, saw} the picture, and just right away she saw the butterfly.' (20160712 VF)

In comparison with (27) which contains *duqʷəla* in the first clause, the presence of *duǩʷʔid* in the first clause of (35) emphasizes a quick transition into seeing ('look at', 'glance at', 'see'), rather than a process of seeing ('look over'). Two additional examples of the use of *duǩʷʔid* to indicate a quick transition into seeing are shown in (36)–(37).

(36) *Context: The speaker is telling a story about paying her hydro bill at the bank. The bill was for an absurdly small sum.*

ləm̓i			da	c̓ədaq	**duǰʷʔi**
lə	=ʔm	=i	=da	c̓ədaq	**duqʷ**	**-xʔid**
AUX	=VER	=3DIST	=OST	woman	**see**	**-BEC**

ǰən		*bill*	ləʔəm		dəʔɬʔi	
=ǰ	=ən	*bill*	lə	=ʔm	dəʔɬ	-xʔid
=ACC	=1POSS	*bill*	AUX	=VER	laugh	-BEC

'Then the woman saw/looked at my bill, and laughed.' (20150527 VF)

(37) *Context: The speaker is describing something that just happened in the elicitation session.*

ʔom̓isuǰ			la	**duǰʷʔi**		
ʔo	=ʔm	=(w)is	=uǰ	la	**duqʷ**	**-xʔid**	
so	=VER	=and.so	=3MED	AUX	**see**	**-BEC**	

ǰuǰ		Ketiyəǰ		luǰ		Ketiyəǰ	
=ǰ	=uǰ	Keti	=(ə)ǰ	lə	=uǰ	Keti	=(ə)ǰ
=ACC	=3MED	Katie	=VIS	AUX	=3MED	Katie	=VIS

duǰʷʔiǰ			ləm̓uǰ			ʔoʔəm	
duqʷ	**-xʔid**	=ǰ	lə	=ʔm	=uǰ	ʔo	=ʔm
see	**-BEC**	=ACC	AUX	=VER	=3MED	so	=VER

didəʔɬəla	
Ci~ dəʔɬ	-la
PL~ laugh	-PROC

'She just looked at Katie, and Katie looked at her, and they just laughed.' (20150629 VF)

In each of these examples, *duǰʷʔid* is used to express the initial moment of a seeing eventuality. The eventualities thus described are inchoative states, a fact which is consistent with them being derived Transitions.

In summary, *duǰʷʔid* describes eventualities which involve near-instantaneous transitions into seeing eventualities. This finding is consistent with *duǰʷʔid* predicates denoting Transitions, with *-xʔid* being the grammatical source of this aspectual interpretation.

5.4 Interpretations of *duqʷ-* predicates: Summary

In this section, I've presented data involving *duqʷ-* predicates in order to illustrate that the analysis in Section 3 is plausible. The findings from this section are summarized in Table 3.

Table 3: Summary of *duqʷ-* predicates

***duqʷ-* 'see' predicate**	**Eventuality type**	**English translation(s)**	**Description**
duqʷała	derived State	'watch'	sustained action of seeing
duqʷəla	derived Process	'look over', 'see'	action of seeing
duxʷʔid	derived Transition	'look at', 'glance at', 'see'	inchoative; transition into seeing

I also pointed out that more research is needed to discover whether or not *-la* is semantically associated with multiplicity and iterativity, as claimed in Boas (1911, 1947).

6 Conclusion

In this paper, I proposed an analysis of three common aspectual suffixes in Kwak'wala that builds upon several key insights in Greene (2013). I began by introducing Greene's analysis of lexical aspectual verb classes in Kwak'wala, in which verbs belong to three eventuality types: States, Processes, and Transitions. I then proposed that Kwak'wala possesses grammatical means of deriving these three eventuality types: *-ała* derives States, *-la* derives Processes, and *-xʔid* derives Transitions. After this, I discussed how my analysis accounts for previously reported generalizations about *-xʔid* and *-la* reported in Greene (2013). Finally, I looked at the interpretation of *duqʷ-* 'see' predicates containing *-ała*, *-la,* and *-xʔid* in order to illustrate the plausibility of my analysis. While I don't feel I've provided enough evidence in this paper to establish my analysis with great certainty, I have at least tried to frame a new way of thinking about the semantics of *-ała*, *-la*, and *-xʔid*. Along the way, I have also made note of some open questions and avenues for future work.

A significant implication of analyzing *-ała*, *-la*, and *-xʔid* as morphemes for deriving eventuality types is that it shows the three aspectual categories of States, Processes, and Transitions to have even greater significance within the grammar of Kwak'wala than previously thought. In essence, this means that Greene's (2013) insights into aspectual organization in Kwak'wala were more far-reaching than she herself realized. Future research on aspect in Kwak'wala should take into account the central importance of these three eventuality types.

The analysis proposed above also has important implications for teaching Kwak'wala. If the three categories of State, Process, and Transition are indeed as pervasive within the grammar of Kwak'wala as I've claimed they are, then it will be important going forward to come up with intuitive ways of teaching these concepts to students of Kwak'wala.

Appendix A: Definitions of DO and BECOME from Dowty (1979)

Greene's (2013) templates for lexical Processes and Transitions make use of two semantic operators from Dowty (1979), DO and BECOME. The denotations of these operators are given in (38) and (39), respectively, accompanied by notes regarding their truth conditions from Dowty (ibid.).

(38) a. $DO(\alpha, \varphi) \leftrightarrow \varphi$ & u.t.u.c.o.a.(φ)

b. "…the abbreviation [u.t.u.c.o.a.] stands for "is under the unmediated control of the agent (individual denoted by α)" and is this is of course a blatant fudge since I have no way of giving a standard (explicit model-theoretic) interpretation for this notion." (pg. 118)

(39) a. [BECOME φ] is true at *I* iff there is an interval *J* containing the initial bound of *I* such that ¬φ is true at *J* and there is an interval *K* containing the final bound of *I* such that φ is true at *K*.

b. Interval: Let *T* be the set of real numbers. Let $\prec$ be the standard dense linear ordering of *T*. *I* is an interval iff $I \subset T$ and for all moments *t1, t2, t3,* if $t3 \in I$, and $t1 \prec t2 \prec t3$, then $t2 \in I$.

c. Initial and final bound: *t* is an initial bound for *I* iff *t* is the latest moment just before *I*. Final bound is defined similarly.

In her discussion of these operators and their application to modeling lexical aspectual classes in Kwak'wala, Greene (ibid.) suggests that the DO operator may be in need of revision in order to make it based on a property like [+ stages] (Landman 1992) or [+dynamic], rather than on agentivity alone.

Appendix B: Formal analysis of *-ała, -la,* and *-xʔid*

A tentative formal analysis of *-ała*, *-la*, and *-xʔid* is given in (40)–(42).

(40) $[\![\text{-}ała]\!] = \lambda P_{<v,<s,t>>}.\lambda e.(\text{STATE}(P))(e)$

(41) $[\![\text{-}la]\!] = \lambda P_{<v,<s,t>>}.\lambda e.(\text{DO}(P))(e)$

(42) $[\![\text{-}xʔid]\!] = \lambda P_{<v,<s,t>>}.\lambda e.(\text{BECOME}(P))(e)$

The analysis in (40)–(42) treats *-ała*, *-la*, and *-xʔid* as event modifiers. On this analysis, each suffix denotes a function from properties of events, to properties of events which correspond to a particular eventuality type: a State in the case of *-ała*, a Process in the case of *-la*, and a Transition in the case of *-xʔid*.

The analysis is stated as "tentative" only because I am unsure at this time whether these suffixes are also responsible for binding the event variable.

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