Degree Constructions in Two Salish Languages*

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Abstract: In this paper we undertake a systematic comparison of degree-related constructions in St’át’imcets (a.k.a. Lillooet: Northern Interior Salish) and ?ayʔajuθəm (a.k.a. Comox-Sliammon: Central Salish). We conclude that both languages instantiate the positive setting of all three degree parameters in Beck et al. (2009): the Degree Semantics Parameter, which introduces degree arguments into the syntax via gradable property-denoting predicates of type \langle d, \langle e,t \rangle \rangle; the Degree Abstraction Parameter, which allows abstraction over the degree argument; and the Degree Phrase Parameter, which allows a degree phrase to be overtly expressed. We provide a preliminary compositional semantics for degree-related constructions in the two languages. Finally, we examine one speaker’s use of conjoined comparatives in ?ayʔajuθəm: we show that in spite of surface appearances, they too must be given a semantic treatment which makes crucial use of degrees.

Keywords: Salish, St’át’imcets/Lillooet, ?ayʔajuθəm/Comox-Sliammon, syntax, semantics, degree constructions, conjoined comparatives

1 Introduction

Until very recently, there has been no work explicitly addressing comparative constructions in Salish; what little we knew had to be gleaned from descriptive grammars and dictionaries, which provide no detailed syntactic or semantic information, or extracted from textual materials, which give us at best a fragmentary picture of the relevant constructions. This is an unfortunate gap in documentation, which needs to be remedied, both for linguistic and pedagogical reasons, while we still have the opportunity to work with fluent first language speakers.

Lo and Reisinger (2018; henceforth L&R) have made a promising start to this endeavor. Their work on comparatives in the Central Salish language ?ayʔajuθəm (Comox-Sliammon) follows a line of cross-linguistic research initiated by the parametrization of degree semantics in Beck et al. (2009). More specifically, L&R claim that ?ayʔajuθəm exemplifies the negative setting of the Degree Semantics Parameter (DSP), meaning that the language lacks property-denoting predicates of type \langle d, \langle e,t \rangle \rangle, where \( d \) is the semantic type of degrees.

However, L&R also acknowledge that the negative setting of the DSP may not hold for all Salish languages. In particular, they suggest that St’át’imcets (Northern Interior Salish)

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exemplifies the *positive* setting of the parameter. This entails that two related and geographically adjacent Salish languages have different settings of a rather radical semantic parameter. While such a situation is logically possible, it invites closer examination.

Accordingly, in this paper, we re-evaluate the claim that ʔayʔajúθəm is degreeless. We show that once morphosyntactic properties of the language are taken into account and methodological difficulties are overcome, the grammar of ʔayʔajúθəm comparatives is very close to that of the St’át’imcets system. In fact, both are not only [+DSP] languages, but also test positively for the two other degree parameters proposed by Beck et al. (2009): the Degree Abstraction Parameter (DAP), which regulates quantification over the degree argument, and the Degree Phrase Parameter (DegPP), which regulates overt expression of a degree phrase. In addition, we explore one particularly interesting pattern in ʔayʔajúθəm, involving *conjoined comparatives*, which have previously been assumed to be diagnostic for [-DSP] status. We show that in spite of surface appearances, this pattern also tests as [+DSP] in ʔayʔajúθəm.

The paper is organized as follows. We begin in Section 2 by briefly introducing relevant aspects of the literature on degree semantics, focusing on the parametric approach in Beck et al. (2009) which serves as a framework for our investigation. We then turn in Section 3 to a description of degree-related morphology in the two languages under investigation, before undertaking a systematic comparison of degree-related syntactic constructions in Section 4. Section 5 provides an outline of the degree semantics we propose for both languages. Section 6 explores the grammar of conjoined comparatives in ʔayʔajúθəm, and Section 7 concludes.

2 The Semantics of Degree and Comparison

The grammar of comparatives has been of interest to compositional theories of the syntax-semantics interface for nearly half a century. Central to most approaches has been the postulation of *degrees* — intervals on a scale. The basic idea behind the degree-based analysis of gradable predicates and comparatives (as first proposed by Cresswell 1976, and then developed by von Stechow 1984, Heim 1985, 2000, Kennedy 1997, inter alia, employing syntactic generalizations first discovered by Bresnan 1973), is that gradable predicates contain an extra degree argument of type \(d\), and are therefore of type \(⟨d,⟨e,t⟩⟩\). This argument may be quantified over or modified by degree operators such as measure phrases, comparative ‘-er/ more’, superlative ‘-est/ most’, and equative ‘as’, as in (1)–(4):

1. Marianne is **nearly six feet** tall.

2. Marianne is **taller** than Henry.

3. Marianne is the **tallest** of us.

4. Gloria is not **as** tall as Henry.

To give an idea of the degree-based approach, an example like (2) can be paraphrased as ‘The maximum degree on the scale of tallness which characterizes Marianne is greater than the degree of tallness which characterizes Henry.’

Not all approaches to comparison have been degree-based: there are competing analyses which treat gradable predicates as vague and context-dependent. These theories, of which the best known is that of Klein (1980, 1991), work by partitioning the domain of discourse so that in a given context a gradable predicate is true of one set of individuals and false of another. Under
such an approach, (2) could be paraphrased as ‘In the context under consideration, Marianne is tall and Henry is not tall’.

Though arguably more economical, the pragmatic analysis has problems with difference or differential comparatives such as ‘three feet taller’, which do not simply partition individuals into comparison classes, but need an arithmetical operation of subtraction over degrees, as famously pointed out by von Stechow (1984).

However, in a cross-linguistic context, the pragmatic approach has recently undergone a revival due to the possibility that there may be a parametric difference between “degreeful” and “degreeless” languages. Under this view, both types of theory may be correct, but for different types of languages: degreeful languages have property-denoting predicates containing a degree argument and operators which range over it, while degreeless languages treat property-denoting predicates as vague and have operators which manipulate comparison classes of individuals rather than degrees. Languages which have been claimed to be degreeless in this sense include Motu (Beck et al. 2009), Fijian (Pearson 2009), Washo (Bochnak 2013; 2015), Warlpiri (Bowler 2016), and Nez Perce (Hohaus and Deal 2019).

2.1 Degree Parameters

Like L&R, for the purposes of this paper we will assume the framework set forth in Beck et al. (2009), who propose three parameters that determine the presence of degree arguments and how they are expressed in the grammar. The first of these is the DSP (5), which specifies whether a language has lexical items that introduce degree arguments, and in particular gradable predicates of type \(d,(e,t)\). The second parameter is the DAP (6), which either allows or prohibits degree variables from being bound in the syntax (e.g., by WH-operators, as in ‘how tall’). The final parameter is the DegPP (7), which determines the possibility of overt material in the degree argument position of a gradable predicate (e.g., ‘three feet tall’, ‘that wide’).

(5) The Degree Semantics Parameter (DSP)
A language \(\{\text{does/does not}\}\) have gradable predicates (type \(d,(e,t)\) and related), i.e. lexical items that introduce degree arguments. (Beck et al. 2009:19)

(6) The Degree Abstraction Parameter (DAP)
A language \(\{\text{does/does not}\}\) have binding of degree variables in the syntax. (Beck et al. 2009:11)

(7) The Degree Phrase Parameter (DegPP)
The degree argument position of a gradable predicate \(\{\text{may/may not}\}\) be overtly filled. (Beck et al. 2009:24)

Of these three parameters, the most radical (and the one we will focus on here) is the DSP, which is a classic macroparameter, in the sense that it constitutes a single “switch” set on the basis of positive evidence during the process of language acquisition, with multiple ensuing effects on the grammar. The DSP is what distinguishes a degreeless (i.e., \([-\text{DSP}]\)) language from a degreeful (i.e., \([+\text{DSP}]\)) language, while the settings of the DAP and the DegPP subsequently constrain the syntactic instantiation of degree expressions in a \([+\text{DSP}]\) grammar. A \([-\text{DSP}]\) language is expected to lack both morphological and syntactic exponents of degrees. The former include comparative, superlative, and equative morphemes, as well as items meaning ‘too’ and ‘enough’; the latter include measure phrases, comparisons with degrees, differential comparatives, degree questions, and degree equatives.
It is worth noting that the morphological and syntactic reflexes of the DSP have a somewhat different status. The presence of a dedicated comparative morpheme, for example, does not preclude a degreeless analysis, as emphasized by Hohaus and Deal (2019), who provide a pragmatic analysis of the Nez Perce comparative morpheme *getu* ‘more’, while treating the language as a whole as a [-DSP] system. Conversely, nothing forbids a [+DSP] language from lacking degree morphology, as long as the syntax can support the compositional mechanisms which will derive degree semantics. In fact, it is not uncommon for languages to lack degree morphology outright (Kennedy 2007), and cross-linguistically, dedicated degree morphemes like English -*er* and -*est* are far more common in European languages than elsewhere (Stassen 2013). In other words, neither the presence nor absence of dedicated degree morphology constitutes sufficient evidence for either a negative or positive setting of the DSP.

While many of the syntactic reflexes of a [+DSP] system can also be successfully modeled in a [-DSP] system using a pragmatic theory, at least one syntactic diagnostic, the existence of differential comparatives, appears to be a sufficient condition for [+DSP] status. Accordingly, we will place special emphasis on this construction in the following discussion.

3 The DSP in ?ayʔajuʔəm and St’át’imcets

ʔayʔajuʔəm (a.k.a. Comox-Sliammon; ISO 363-3: coo) is the northernmost Central Salish language, traditionally spoken by the K’ómoks, Tla’amin, Klahoose, and Homalco communities in southwestern coastal British Columbia. There are approximately 47 L1 speakers. St’át’imcets (a.k.a. Lillooet; ISO 363-3: lil) is a Northern Interior Salish language spoken in southwestern interior British Columbia by fewer than 50 remaining L1 speakers.

In their investigation of comparative structures in the two languages, L&R run through a subset of the diagnostic tests in Beck et al. (2009) for ʔayʔajuʔəm, and then compare them to parallel structures in St’át’imcets. Their conclusions are summarized in the table in (8). Their claim is that while all the relevant structures are possible in St’át’imcets, they are either impossible or questionable in ʔayʔajuʔəm.

(8) Degree semantics in Salish according to Lo and Reisinger (2018)

<table>
<thead>
<tr>
<th></th>
<th>ʔayʔajuʔəm</th>
<th>St’át’imcets</th>
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<tbody>
<tr>
<td>Measure phrase constructions</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Comparison with degrees</td>
<td>?</td>
<td>Yes</td>
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<td>Differential comparatives</td>
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<td>Degree Questions</td>
<td>No</td>
<td>Yes</td>
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<td>Subcomparatives</td>
<td>No</td>
<td>Yes</td>
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<td>Degree Equatives</td>
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They conclude that ʔayʔajuʔəm is best characterized as instantiating the negative setting of the [DSP], in contrast to St’át’imcets, which is a [+DSP] language.

In the following sections, we revisit this conclusion. We begin in 3.1 with an examination of the morphology of degrees in the two languages, pointing out some significant differences which make the two grammars look rather different. However, these differences turn out to be superficial: in Section 4, we provide a systematic comparison of degree constructions in the two languages, showing that they behave virtually identically in the syntax.
3.1 Degree Morphology

In this section, we provide a survey of degree morphology in the two languages, beginning in 3.1.1 with St’át’imcte, which shows a more extensive inventory of degree-related morphemes, and then turning to ʔayʔajuθəm in 3.1.2.

3.1.1 Degree-related morphology in St’át’imcte

St’át’imcte has free and bound morphemes marking both comparatives and superlatives (though the bound form of the comparative is confined to a few lexical items).

The comparative is usually expressed by the predicate Ḵatx̱ ‘more’ followed by a nominalized subordinate clause, which is optionally introduced by the determiner/complementizer (D/C) kʷ(ʔu)=.¹ Comparison with Ḵatx̱ is not limited to gradable adjectives: it may be over any gradable property, including amounts (usually with xʷʔit ‘much, many’), times, distances, and even desires.²

(9) Ḵatx̱ s=záx-alʔəm=sts ta=sqáyxʷ=a ləl=ta=smúla=.

more NMLZ=long-appearance=3POSS DET=man=EXIS from=DET=woman=EXIS

‘The man is taller than the woman.’

(10) xʷuy, lhun-un-ʔ=mal kʷu=xʷʔatx̱ səl l=ki=kʷíkʷə=a pátkʷa.

okay attach-DIR.PL.IMP=ADHORT DET=more string on=PL.DET=small=EXIS needle

‘Okay, put some more string on the little needles.’

¹ St’át’imcte examples are taken from an unpublished English-Upper St’át’imcte dictionary (Nqwal’uttenl̓ihk̓álh: Davis et al. 2019) and an unpublished Upper St’át’imcte Teaching Grammar (Davis in prep.), as well as via direct elicitation by the first author. Unless otherwise indicated, ʔayʔajuθəm examples are from original fieldwork by both authors. Examples are given in the ‘northwestern’ version of the APA used traditionally in the literature on Salish languages. We use the following abbreviations: ABSN = absent, ACT = active intransitive marker, ADHORT = adhortative, AUT = autonomous intransitive marker, CAUS = causative transitivizer, CHAR = characteristic, COMP = complementizer, COP = copula, CTR = control transitivizer, D/C = determiner/complementizer, DEM = demonstrative, DET = determiner, DIR = directive (full control) transitivizer, EPSIS = epistemic modal, ERG = ergative (transitive subject), EXCL = exclusive, EXIS = existential, FEM = feminine, INCH = inchoative, INDP = independent pronoun, INS = instrument, INTS = intensifier, INV = invisible, IPFV = imperfective, LOC = locative, MID = middle, NCT = non-control (limited control) transitivizer, NMLZ = nominalizer, OBL = oblique, PASS = passive, PL = plural, PN = proper noun, POSS = possessive, PST = past tense, REC = reciprocal, RFLX = reflexive, RLT = relational transitivizer, SG = singular, SIV = subjunctive subject, STAT = stative, SUP = superlative, VIS = visible. A hyphen (-) is used to mark an affix, an equals sign (=) a clitic, a bullet (*) a reduplicant, and angle brackets (< >) for inflexion into the root; + is used where two or more morphemes are fused and cannot be linearly separated, as with e.g., D/C+NMLZ+IPFV=3POSS.

² The Upper dialect of St’át’imcte also has a comparative predicate huʔ which is confined to amounts, as in (i):

(i) waʔ sawlen=wiʔ=ti=wáʔ cunáin=xl kʷu=huʔ sqlaw.

IPFV ask=3PL PL.DET=IPFV teach-ACT DET=more money

‘The teachers are asking for more money.’
(11) ʔpaʔ̕xʷ=ʔuʔ?  s=xʷʔiʔ=t=s ʔi=šćúqʷaʔ =a  sʔústək-s  s-John
more=EXCL NMLZ=many=3POSS PL.DET=fish=EXIS NMLZ-catch-3POSS NMLZ-John
ləl=s-Bill.
from=NMLZ-Bill
‘John caught more fish than Bill.’

(12) ʔpaʔ̕xʷ kʷənswá cixʷ ʔákʷuʔ  sáʔ=a
more  D/C+1SG.POSS+NMLZ+IPFV get.there to.there.INV Lillooet=EXIS
ləl=ta=n-səmʔám=a.
from=D/1SG.POSS-wife=EXIS
‘I go to Lillooet more (often) than my wife.’

(13) ʔàʔ=tiʔ  llátiʔ  kʷas  ʔpaʔ̕xʷ  ləlkʷʔú
NEG=DEM from.there.VIS D/C+NMLZ+IPFV+3POSS more from.there.INVIS
two mile=ka llátiʔ  Clinton=a.
Clinton=EXIS
‘It can’t be more than about two miles from Clinton!’

(14) ʔpaʔ̕xʷ kʷənswá  šáʔ̕-miːn  kʷənswá  ləp-xál
more  D/C+1SG.POSS+NMLZ+IPFV desire-RLT  D/C+1SG.POSS+NMLZ+IPFV bury-ACT
ləl=kʷənswá məys-áwə̓l.
from=D/C+1SG.POSS+NMLZ+IPFV fix-vehicle
‘I like gardening more than fixing cars.’

The examples above also serve to illustrate the standard of comparison in St’át’imcets, which
is introduced by a proclitic preposition, usually ləl= ‘from’, though l= ‘at’ is also sometimes
used, with ʔə= ‘to’ being preferred in equatives. The standard may be either phrasal, as in (9),
(10), and (11), or clausal, as in (12), and generally appears in the surface string following the
target or associate of the comparison, as in English.

With gradable adjectives (including those which specify quantity, such as xʷʔiʔ ‘much,
many’), the standard of comparison alone can induce a comparative reading, as in (15)–(17).

(15) ʔāx-ʔâɬʷəm̓iːn  kʷ=s-Fred  ləl=s-Bill.
long-appearance PN.DET=NMNZ-Fred from=NMLZ-Bill
‘Fred is taller than Bill.’

(16) ʔâwən̓ lus  ʔi<ʔ=p̕  ʔi=maɬíƞɬp̕=a
low COMP+IPFV+3SIV grow<INCH> PL.DET=subalpine.fir=EXIS
ləl=ki=čəkáʔ=a.
from=PL.DET=whitebark.pine=EXIS
‘Subalpine fir trees grow lower down than whitebark pine trees.’

(17) xʷʔiʔ  ʔi=kʷukʷʔiʔ=a  ləl=kiʔuxʷəlmiːn̓=a
many PL.DET=chief=EXIS from=PL.DET=indigenous.person=EXIS around.here-exactly
kənčʔá-wna!
‘There are more chiefs than Indians around here!’

This possibility is only available for gradable adjectives, however, and thus acts as a sufficient
though not necessary condition for identifying the syntactic category Adj(ective); see H. Davis
(2011). Compare for example (14a) and (14b), both based on the root ʔzaʔ̕ʷ ‘melt’, the first with
an adjective derived via reduplication, the second with a verb derived by infixation of the inchoative marker -ʔ.

melt*CHAR DET=whistler-liquid=EXIS from=DET=bear-liquid=EXIS
‘Whistler (hoary marmot) grease is more runny (‘meltcy’) than bear grease.’

melt<INCH> DET=whistler-liquid=EXIS from=DET=bear-liquid=EXIS

Aside from comparatives formed with paʔx, St’át’ímcets also has a suffixal comparative morpheme -ám which is restricted to a few lexical items such as kʷiʔs-ám ‘smaller’ and twiwt-ám ‘younger, more youthful’.

(19) kʷiʔs-ám ta=kʰáʔ=waʔ s-tqáɬk-s-as s-Carl
small-er DET=car=EXIS IPFV STAT-drive-CAUS-3ERG NMLZ-Carl
ləl=s-Teresa.
from=NMLZ-Teresa
‘Carl drives a smaller car than Teresa.’

(20) plán=ʔəɬ s=zaxt=s cʔa kʷu=sʔáp ləl=ta=núk?=a,
already=now NMLZ=long=3POSS this DET=tree from=DET=other=EXIS
ʔuʔ? twiwt-ám.
but young-er
‘This tree is already taller than that one, even though it’s younger.’

Turning to superlatives, St’át’ímcets employs two main strategies, one of which involves the general purpose intensifier -ʔul ‘real, authentic, truly, too (much)’, and the other the dedicated superlative morpheme combination n-ʔul-ʔəɬ.

The general purpose strategy is more common. Typical examples are given below.

(21) snúwa ta=kəʔa-mx-ʔul=a qátsk-kal.
2SG.INDP DET=first-person-INTS=EXIS older.brother-1PL.POSS
‘You are our oldest brother.’
(Literally: ‘You are truly the first amongst our older brothers.’)

(22) swat kʷu=ʕəɬ-ʕəɬ-ʔul ləl=wi=snuláp?
who DET=strong*CHAR-INTS from=PL=2PL.INDP
‘Who is the strongest of you folks?’
(Literally: ‘Who is the truly strong one from among you folks?’)

Notice there is nothing specifically superlative about -ʔul in these cases: its usual intensifying function yields a quasi-superlative reading when combined with a gradable adjective and an optional standard of comparison.3

3 One of our St’át’ímcets consultants, however, does use a variant of -ʔul which appears to be a dedicated superlative morpheme, namely -ʔuləɬ, which consists of -ʔul plus an -əɬ accretion of uncertain origin.
In contrast, the dedicated morphological superlative \textit{n-\ldots-\textit{tan} only} attaches to gradable adjectives, and only yields superlative meanings. Morphosyntactically, it is also distinctive in that it is noun-creating, with the target of comparison marked as the possessor of the derived noun. Examples are given in (23)–(25):

(23) nil ti? n-cáʔ-tan-s (kʷ=s=žáx-alqʷəmín=s) kʷu=syáp.
COP that SUP-high-SUP-3POSS (DET=NMLZ=long-appearance=3POSS) DET=tree
‘That is the tallest tree around here.’

(24) nil s-Bill ta=n-lóx·ləx-tan-s=a ləl=ki=tákəm=a
COP NMLZ-Bill DET=SUP-smart•CHAR-SUP-3POSS=EXIS from=PL.DET=all=EXIS
l=ta=n-cunám-xal-tan=a.
in=DET=LOC-teach-ACT-INS=EXIS
‘Bill is the smartest kid in the school.’

(25) lkʷúnsa kákʷuʔ n-qámp-tan-s ta=sqít=a l=ta=spípánck=a.
now around.INV SUP-hot-SUP-3POSS DET=day=EXIS in=DET=summer=EXIS
‘Today is the hottest day of the summer.’

The productivity of this construction seems to vary: some speakers use it with only a few lexical items, whereas others employ it with any gradable adjective. The provenance of superlative \textit{n-...-\textit{tan} is something of a mystery: it is homophonous with a locative combination meaning ‘setting’, as in \textit{n-lám-xal-tan} ‘church’ (LOC-pray-ACT-INS), \textit{n-lám-tan} ‘container’ (LOC-contain-INS) (see also ‘school’ in (24)), but this seems to be an accident; more likely, it is related to Squamish \textit{-tan}, which also yields a superlative nominal with possessive morphology, according to Kuipers (1967:125).\footnote{There are reports of superlative constructions in other Salish languages, though these are mostly given as isolated forms and it is therefore unclear if they function in a parallel manner to superlative \textit{n-...-\textit{tan} in Stát’imcets or \textit{-est} in English. These include: \textit{CIC2} reduplication applied to the predicate \textit{hičim} ‘more’ in Sechelt (Beaumont 2011:287); the word \textit{tím} ‘most’ in Cowlitz (Kinkade 2004:264), and the suffix \textit{-wins} ‘superlative’ in Tillamook (Edel 1939).}

### 3.1.2 Degree-related morphology in \textit{ʔayʔajuθəm}

Before presenting the morphological exponents of comparison in \textit{ʔayʔajuθəm}, we begin by providing some more general remarks about its morphology, which at least superficially looks...
rather different from that of its Salish neighbours and relatives.

More specifically,ʔayʔajuθəm has lost non-redundicative prefixes, and has a strong tendency to omit proclitics.\(^5\) The result is that some important pan-Salish morphemes have either been lost or obscured. Most strikingly, the nominalizing prefix s- has gone, and its proclitic analogue s= is either fused with possessive subjects (in first and second person) or omitted altogether (in third person).

Proclitic determiners are also more frequently dropped in ʔayʔajuθəm than in neighbouring languages, though for the most part they can be restored in elicitation contexts (Huijsmans et al. 2018, Mellesmoen 2018). And finally, the single proclitic preposition/oblique marker ʔə= typical of Central Salish languages of the Georgia Strait region (including Halkomelem, Northern Straits, and Sechelt) has either been obscured or lost altogether, depending on the speaker. The overall result is that ʔayʔajuθəm often looks superficially distinct from other Salish languages, even when its underlying syntax is largely identical.

Turning to explicitly degree-related morphology, we note first of all that ʔayʔajuθəm, like St’át’imcets, has a predicate meaning ‘more’ (kʷihit). Examples are given below.

(26) kʷihit ʔəxəl Tony ʔu Gloria.
    more tall Tony go Gloria
    ‘Tony is taller than Gloria.’

(27) kʷihit tih tə kʷakʷaju ʔu tə qʷisqʷis.
    more big DET squirrel go DET Stellar’s Jay
    ‘The squirrel is bigger than the Stellar’s Jay.’ (L&R:121)

(28) kʷihit saʔa ʔuʔəxʷ niʔ-ul=ʔē nəpət.
    more two day be-PST=3POSS lie
    ‘It’s been there for more than two days.’

(29) kʷihit qəx max-əxʷ-axʷ.
    more many get-NCT-2SG.ERG
    ‘You got more.’

Like St’át’imcets pəʔəxʷ, kʷihit can be used for comparison over any scalar property, including amounts (usually with qəx ‘much, many’), times, and distances.

Morphosyntactically, ʔayʔajuθəm comparatives show two obvious differences from those in St’át’imcets. First, subordinating morphology, including the D/C element, the proclitic nominalizer, and the enclitic third person possessive subject =s are more often than not missing on the complement to kʷihit. As we will see below, all three do sporadically show up, indicating

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\(^5\) This is almost certainly due to influence from the neighbouring Northern Wakashan language Kwak’ala (J. Davis 1970), which, like other members of its family, differs from all Salish languages except ʔayʔajuθəm in two relevant respects: first, it lacks complex onsets; and second, it has no non-redundicative prefixes. Both of these traits now also characterize ʔayʔajuθəm; however, it remains unclear in individual cases how the Kwak’ala influence played out, since, for example, a consonantal prefix like the nominalizer s- could either have been eliminated indirectly by the phonology (since it forms complex onsets with a following C-initial stem) or directly by the morphology (since it is prefixal).
that they are underlyingly present, though the D/C element is noticeably less common than the other two.\footnote{Neighbouring and closely related Sechelt, whose inflectional morphology has not undergone the same kind of erosion as in ?ayʔajuθəm, also has a lexical item meaning ‘more’, hičim (Beaumont 2011:286). Interestingly, there appear to be two ways to use hičim syntactically: one resembles the St’át’imcets pattern, with a nominalized complement introduced by a D/C element, as in (i), and the other looks like the ?ayʔajuθəm pattern, with a bare complement, as in (ii):}

The second difference is in the standard of comparison. In contrast to St’át’imcets, which uses prepositions to mark the standard, ?ayʔajuθəm employs the predicate hu~θu ‘go’, thus qualifying as an “exceed-type” comparative language (Stassen 2013). There are language-internal reasons for this. Because it only has a single, evanescent preposition ?ə, ?ayʔajuθəm employs verb serialization in locative constructions with hu~θu, as in (30):

\begin{verbatim}
(30) ʔə=t=ʔə=ʔə=qaya.  
    push-CTR-3ERG go OBL=DET=water  
    ‘He pushed it into the water.’  \hspace{1cm} (Kroeder 1999:46)
\end{verbatim}

Given that elsewhere in Salish (e.g., in St’át’imcets) locative prepositions mark the standard of comparison, the replacement of prepositions by motion verbs in locative contexts naturally extends to comparatives, accounting for the development of exceed-type standards with hu~θu.

As observed by L&R, ?ayʔajuθəm lacks affixal morphology relating to degrees, including both comparatives and superlatives.\footnote{One of our ?ayʔajuθəm consultants (JF) also produces and recognizes a prosodic contrast associated with superlative semantics, in the form of a glottal stop infixed into gradable adjectives such as titul ‘small’, to yield tiʔ<ʔ>ɬə ‘really small/the smallest’. The same pattern is found with tilumut ‘big’ and ʃəxəɬal ‘tall’. The contrast manifests itself acoustically as a sudden drop of pitch in the initial syllable of the word, resulting in a very strong HL contour. However, it is currently unclear if the meaning associated with this process is specific to superlatives, as opposed to being a general-purpose strategy of emphasis.} English superlatives are translated into ?ayʔajuθəm in a number of ways, sometimes without any explicit marking at all (31), sometimes with kʷihiθ ‘more’ (32), and sometimes with the intensifier -mut, with or without kʷihiθ (33). A standard of comparison containing the universal quantifier ?uθ= ‘all/any’ may also be supplied to limit the contextually defined partition imposed by kʷihiθ to a unique individual (34).

\begin{verbatim}
(i)   hičim tə=s=ʔiy=s   lə=Stella cuʔt  ʔə=caliyu.  
    more DET=NMLZ=good=3POSS FEM.DET=Stella go OBL=DET=1SG.INDP  
    ‘Stella is better than me.’

(ii)   ʔə=ʔə=hiθay,  
    smart ABSN.DET=1SG.POSS-father OBL=INV.DET=make.canoes  
    qam hičim ʔə=n-čič.  
    but more smart ABSN.DET=1SG.POSS-older.brother  
    ‘My father is good at making canoes, but my older brother is better.’
\end{verbatim}
In this section we turn to a systematic inventory of degree constructions in the two Salish languages under consideration, more or less following L&R, who in turn base their survey on Beck et al. (2009). For each construction, we first give an English equivalent by way of introducing the relevant syntactic characteristics, and then compare its St’át’imcets and ?ay?ajuθəm counterparts.

4 Degree Constructions

4.1 Measure Phrase Constructions

The English example in (35) shows a measure phrase construction. It has three parts: a number, a unit of measurement, and a gradable predicate.

(35) The lake is six feet deep.

Note that a language with measure phrases must not only be valued [+DSP], but also [+DegPP], since the DegP Parameter (8) specifically refers to the expression of an overt measure phrase (which is impossible in, e.g., Russian and Japanese, even though these are [+DSP] languages).

Measure phrases are attested in both St’át’imcets and ?ay?ajuθəm. In St’át’imcets, the unit of measurement may either be a traditional one based on dimensions of the body, such as tł-áxan-am, literally ‘stretched out arm’, a direct translation from English (e.g., sə’cəxʷ, literally ‘foot’), or a borrowing (e.g., English ‘miles’).

For most speakers, jajaʔəm is the plural of jaja ‘tree’; however, the consultant (JF) who produced (34) uses both forms indiscriminately to refer to either ‘tree’ or ‘trees’.
In terms of syntax, the number and the unit of measurement together form a complex nominal predicate, which then takes a nominalized subordinate clause containing the gradable adjective and its argument.

The aktaqamnéme measure phrase construction is similar (after making allowances for missing morphology). Nominalization of the adjectival complement may be signaled by the presence of the third person possessive enclitic =s on its adjectival head, as in (39) and (41).

(39) saʔa čayiš šaqt=s paʔa yawup.
    two hand long=3POSS one fabric
    ‘One piece of fabric is two hands long.’

(40) saʔa laplaš piq tə=ʔstəm.
    two plank wide DET=river
    ‘The river is two planks wide.’

(41) čalas məm*miraw šx̣al=s Marianne.
    three PL.cat tall=3POSS Marianne
    ‘Marianne is three cats tall.’

Notice that none of the units of measurement used here (with the possible exception of ‘hands’) are conventionalized. Unlike St’át’imcets speakers, more conservative aktaqam speakers resist using unassimilated English terms such as ‘miles’ or ‘pounds’ in their measure phrase constructions, and since traditional measures seem to have largely dropped out of the language, the result is a lexical semantic gap in the domain of measure words. This is undoubtedly one of the reasons L&R concluded that aktaqam lacked measure phrase constructions altogether, particularly since they were working with the oldest of our consultants, who are particularly resistant to employing non-traditional terms.

Younger and more innovative speakers, however, do readily accept nonce measure terms such as ‘planks’, and even ‘cats’ in elicitation contexts; an analogy can be made to the use of measure functions with mass nouns, as in ‘piles of dirt’, ‘pots of water’, or ‘handfuls of gold’. Furthermore, even the oldest of our aktaqam consultants is able to use measure phrase constructions with demonstratives such as tiʔi ‘this (much)’, even though she generally rejects measure phrases containing English borrowings or nonce measure words:
The construction in (42) is syntactically parallel to the cases in (39)–(41), with the gradable property term in a nominalized subordinate clause, and the degree predicate θəxʷi ‘how (much)’ in main predicate position.\(^9\)

### 4.2 Comparison with Degrees

In this construction, the standard of comparison is a degree rather than an entity, as illustrated by the English example in (43), where the degree to which the lake is deep exceeds the degree of depth denoted by ‘six feet’.

(43) The lake is more than six feet deep.

Comparison with degrees is possible in both St’át’imcets and ?ayʔajuʔam. St’át’imcets examples are given in (44)–(45).

(44) ṭaʔxʷ ləl=kʷu=šʷ?úcin sʔʷaxt s=zaxt=s tiʔ kʷu=sčúqʷaʔ.  
more from=DET=four foot NMLZ=long=3POSS that DET=fish  
‘That fish is more than four feet long.’

(45) ṭaʔxʷ=ʔa l=kʷu=pálaʔ sʔʷaxt s=zaxt=s ?i=sxʷʔúʔ=t=a  
more=EPIS at=DET=one foot NMLZ=long=3POSS PL.DET=hoar.frost=EXIS  
waʔ s-taʔxʷ l=ki=syɾáp=a kiktaʔ-s=a ?i=caʔal=ʔ.  
IPFV STAT-hang at=PL.DET=tree=EXIS near-3POSS=EXIS PL.DET=lake=EXIS  
‘The hoar frost hanging from the trees next to the lakes must have been more than a foot long.’

Notice that the standard of comparison immediately follows ṭaʔxʷ when it directly denotes a degree, in contrast to examples where it does so indirectly via an entity, in which case it is extraposed (cf., e.g., (9), (12), and (14) above).

Parallel examples from ?ayʔajuʔam are given in (46)–(47):

(46) kʷʔiłhit ʔiyačís miles níji Maple Ridge.  
more five miles far Maple Ridge  
‘It is more than five miles to Maple Ridge.’

\(^9\) It is important to emphasize that the nominalization in (42) is not noun-creating (in spite of the speaker’s translation): rather, it yields a nominalized subordinate clause. We can tell this because lexical nominalization (which marks nouns and NPs, as opposed to clauses) is completely absent in ?ayʔajuʔam, due to the elimination of all prefixes in the language. The s= here is therefore a proclitic, which is used generally in Salish to introduce a clause-level nominalization (see, e.g., Kroeker 1999).

\(^{10}\) Thanks to Daniel Reisinger for this example.
(47) kʷihit saʔa tintin ʔakt Daniel.
    more two bell sleep Daniel
    ‘Daniel slept for more than two hours.’

Once again, missing morphology here belies the fundamental similarity of the ?ayʔajuθəm degree system to its St’át’imcets counterpart: word order, for example, is identical in the two languages, though both nominalization and the standard marker ḥuʔ-θu are absent in the ?ayʔajuθəm examples.

4.3 Differential Comparatives

Differential (or difference) comparatives involve a comparison of degrees, whereby two or more sets of degrees are compared along the same scalar dimension. An English example is given in (48), where the (degree of) depth of a lake is compared to the (degree of) depth of a creek. The difference between the two totals is six feet.

(48) The lake is six feet deeper than the creek.

As mentioned above, differential comparatives provide crucial evidence for a degree-based semantics, since they do not simply partition the domain of gradable properties, but specify the difference between them via an explicit operation of subtraction over degrees.

Differential comparatives are found in both St’át’imcets and ?ayʔajuθəm. The examples in (49)–(51) illustrate the construction in St’át’imcets.

(49) kalás sqʷaʔt s=paʔxʷ=s s=zαxt=s cʔa kʷu=laplás
    three foot NMLZ=more=3POSS NMLZ=long=3POSS this DET=plank
    lαl=ti=nükʷ=a.
    from=DET=other=EXIS
    ‘This plank is three feet longer than the other one.’

(50) pάlaʔ sqʷaʔt s=zαx-αlqʷəm=s s-Tony lαl=s-Mary.
    one foot NMLZ=long-appearance=3POSS NMLZ-Tony from=NMLZ-Mary
    ‘Tony is a foot taller than Mary.’

(51) ʔάnwas s=zánuxʷ=s s=kαlʔá-mx=s s-Mary lαl=s-Peter.
    two NMLZ=year=3POSS NMLZ=first-person=3POSS NMLZ-Mary from=NMLZ-Peter
    ‘Mary is two years older than Peter.’

As in examples with simple measure phrases (4.1) the number and the unit of measurement together form a complex nominal predicate, followed optionally by a nominalized clause headed by paʔxʷ ‘more’, which in turn takes another nominalized clause containing the gradable adjective, the target, and the standard of comparison. As (50) and (51) show, paʔxʷ is more often than not omitted in these cases, with the standard of comparison alone inducing a comparative meaning, just as in ordinary comparisons with gradable adjectives.

Examples of differential comparatives in ?ayʔajuθəm are given in (52)–(54):
4.4 Degree Questions

Degree questions involve explicit quantification over the degree argument of a gradable predicate, and are thus relevant not only to the DSP but also to the Degree Abstraction Parameter (DAP) given in (6) above. Languages like Japanese and Mandarin, which are [+DSP] but [-DAP], do not permit genuine degree questions, though some care must be taken to distinguish them from look-alike constructions involving e.g., degree-denoting nouns. The distinction can be illustrated with the English examples in (55):

(55) a. How (many feet) deep is the lake?
   b. What is the depth (in feet) of the lake?

According to the DAP, (55a) is a genuine degree question, while (55b) is not. Accordingly, Japanese and Mandarin lack type (a) questions, and employ variants of the strategy in (b).

Degree questions can be formed in St’át’imcets in two ways. The first involves the “approximative” adverb čila ‘(be) like, resembling’ together with the general purpose WH-predicate nkaʔ ‘(be) where, which’, with the adjectival complement of the predicate nominalized.

(56) čila nkaʔ s=̕āparim=s ta=sxštq=a?
    like which NMLZ=deep=3POSS DET=hole=EXIS
    ‘How deep is the hole?’

(57) cwas-ən-fnas ta=Rex Mountain čila s=nkaʔ s=xəʔ=s.
    measure(DIR)-3PL.ERG DET=Rex Mountain like NMLZ=which NMLZ=high=3POSS
    ‘They measured Rex Mountain to see how high it was.’

The likelihood is that this is not a genuine case of quantification over the degree argument of a gradable adjective, but an “extent” question of a type also attested in Japanese (Beck et al. 2009): i.e., ‘To what extent is the hole deep?’ rather than ‘How deep is the hole?’.
The second type of St’át’ímcets degree question is a better candidate for genuine WH-quantification over degrees. It involves the WH-word skankán ‘how (much)’ which also quantifies over portions of mass nouns. As usual with degrees expressions, the complement of the WH-predicate is nominalized, and may optionally also be preceded by the D/C element kʷ(u)=.

(58) skankán kʷ=s=xii=s  kʷálap mamáws?
  how  D/C=NMLZ=long=3POSS  D/C+NMLZ+IPFV+2PL.POSS  couple
  ‘How long have you been a couple/married?’

(59) skankán s=pəm-p=s  l=as  n-qa'y-ləx
  how  NMLZ=fast-INCH=3POSS  COMP=IPFV+3SJv  LOC-jump-AUT
  NMLZ-Mary?
  s-Mary
  ‘How fast does Mary swim?’ (Literally ‘How fast is Mary when she swims?’)

There are also two ways of expressing degree questions in ?ayʔaǰuθəm. The first employs the question word θəxʷin, ‘(be) how’. This word is not a typical Salish WH-predicate: it has a basic meaning of ‘be like this, be this way’, and appears in equatives with this meaning (see 4.6 below). Its use as a WH-word therefore appears to be an innovation. When used as a degree quantifier, it takes a nominalized complement clause (signaled by both the nominalizer and possessive morphology) containing the gradable predicate whose degree argument it quantifies over.

(60) əxʷin s=ƛəp=s  tə  qaya?
  how  NMLZ=deep=3POSS  DET  water
  ‘How deep is the water?’

(61) əxʷin s=pɨq=s  ə=qaƛ?
  how  NMLZ=wide=3POSS  2SG.POSS=want
  ‘How wide do you want it?’

The second type of ?ayʔaǰuθəm degree question employs the pan-Salish WH-quantifier kʷin ‘how many’, which is also present in St’át’ímcets. Questions with kʷin in ?ayʔaǰuθəm always contain a measure phrase as well as a gradable property, which is unsurprising if kʷin only quantifies over countable entities (including degrees).

(62) kʷin əqyiš  piq=s  tə  yawup?
  how.many hand  wide=3POSS  DET  fabric
  ‘How many hands wide is the fabric?’

11 More generally, the syntax and semantics of gradable properties is very similar to that of mass nouns in both St’át’ímcets and ?ayʔaǰuθəm. This is unlikely to be an accident, and invites more detailed investigation: see Schwarzschild (2005) for observations on this relationship in English.

12 Sechelt has a direct cognate of θəxʷin: c(a)xʷin, glossed by Beaumont (2011:286) as ‘equal, identical, similar to s.o./s.th., including the way s.th.is done, is supposed to be, etc.’. However, Beaumont gives no indication that the Sechelt term can be used as a WH-predicate.
4.5 Subcomparatives

Subcomparative constructions involve the explicit comparison of two different dimensions: the degree to which one thing is X is compared to the degree to which another is Y. An example from English is given in (64), where the degree to which the lake is deep is compared to the degree to which the creek is wide. The parenthesized measure phrase shows that it is also possible to create a differential subcomparative.

(64) The lake is (six feet) deeper than the creek is wide.

Subcomparatives are only possible in languages where the standard of comparison may be clausal. For example, Nez Perce, which only allows phrasal comparatives, disallows subcomparatives altogether (Hohaus and Deal 2019).

Both Salish languages under investigation permit subcomparatives. St’át’imcets examples are given in (65)–(66).

(65) $\hat{\text{p}}\hat{\text{a}}\hat{\text{x}}\hat{\text{w}}\hat{\text{s}}=$zaxt=$s$ ta=$s\acute{\text{y}}\acute{\text{a}}p=$a $\text{l}l=l=ta=s l\acute{\text{q}}=s=a$
more NMLZ=long=3POSS DET=tree=EXIS from=D/C=NMLZ=wide=3POSS=EXIS
ta=scwâwx=a.
DET=creek=EXIS
‘The tree is taller than the creek is wide.’

(66) $\hat{\text{p}}\hat{\text{a}}\hat{\text{x}}\hat{\text{w}}\hat{\text{s}}=$xsum=$s$ ta=$\acute{\text{x}}\acute{\text{c}}\acute{\text{e}}m=a $\text{l}l=l=ta=\hat{\text{x}}\hat{\text{p}}\acute{\text{m}}=s=a$
more NMLZ=big=3POSS DET=box=EXIS from=D/C=NMLZ=deep=3POSS=EXIS
ta=sxâtx=q=a.
DET=hole=EXIS
‘The box is bigger than the hole is deep.’

It is typical in St’át’imcets for the clausal standard of a subcomparative to be overtly introduced by a D/C element (here, $ta=\ldots=a$) as well as the nominalizer.

The same is partially true of ?ayʔajuθəm; as shown in (67), the clausal standard of subcomparatives is one of the few places (along with degree equatives) where we have recorded an initial D/C element in ?ayʔajuθəm degree constructions. In addition, remnants of nominalization may appear both on the target and the standard.

(67) kʷihit $\hat{\text{j}}aq=t=s$ $\text{i}w\text{ʔ}i\text{tan}$ $\theta u$ kʷ=ʔiʔ=q=s.
more long=3POSS table go D/C=wide=3POSS
‘The table is longer than it is wide.’

(68) kʷihit $\hat{\text{pi}}\hat{\text{q}}$ $\text{i}w\text{ʔ}i\text{tan}$ hə $\text{tih}=s$ $\theta \text{k}^*=\text{naʔt}ən.$
more wide table go big=3POSS chair
‘The table is wider than the chair is tall.’
4.6 Degree Equatives

Degree equatives are constructions that assert that two measurements are the same. The English example in (69) can be paraphrased as ‘the degree to which the creek is deep is the same as the degree to which the lake is deep’.

(69) The creek is as deep as the lake.

As with degree questions, it is important to distinguish degree equatives from vague similarity predicates (‘like’, ‘the same as’) which do not specifically refer to degrees, and provide no evidence for or against a positive setting of the DSP. It is not easy, however, to tell them apart; here we rely on syntactic parallels with other clearly degree-related constructions to diagnose degree-related equatives, without excluding the possibility that they can be as easily analyzed without invoking degrees.

Equatives in St’át’imcets employ the predicate číla ‘(be) like, resembling’, which we have already seen in the formation of degree questions in 4.4. In equatives, číla (usually accompanied by the exclusive enclitic =ʔu ‘just’) takes a nominalized complement clause, with the standard of comparison introduced by the proclitic preposition ʔə ‘to’.

(70) číla=ʔu? s=zax-alqʷam=s s-Peter ʔə=s-Tony.
like=EXCL NMLZ=long-appearance=3POSS NMLZ-Peter to=NMLZ-Tony
‘Peter is as tall as Tony.’

(71) číla=ʔu? s=pəm-p=s n-ʔəy-ləx=s=a s-Peter
like=EXCL NMLZ=fast-INCH=3POSS LOC-jump-AUT=3POSS=EXIS NMLZ-Peter
ʔə=s-Tony.
to=NMLZ-Tony
‘Peter swims as fast as Tony.’

Equative constructions in ?ayʔaʔłəm are based on the predicate θəxʷin ‘same, alike’, which is also found in degree questions (see 4.4). In equatives, θəxʷin usually undergoes plural C₁ reduplication and ablaut to yield ʔəθəxʷin, which may either then take a nominalized subordinate clause, as in (72), or be further suffixed with the non-control transitivizer -(n)xʷ followed by the non-control reciprocal suffix -igas to yield the derived predicate ‘like each other’, as in (73). Note, however, that (73) contains no gradable predicate, and is thus most likely to represent a vague (non-degree) equative.

(72) ʔəxʷit=ʔət=ʔut to=ʔams=θəa<0>xʷin tams=ʔəxəxə.
really=1PL.SUBJ=EXCL DET=1PL.POSS=alike<PL> DET+1PL.POSS=tall
‘We are the same height.’

13 It is surely not an accident that degree questions in both St’át’imcets and ?ayʔaʔłəm use “approximative” predicates with a basic meaning of ‘like’ or ‘same’ (číla nkaʔ and θəxʷin, respectively), though the reason is far from obvious. Further investigation is warranted.
14 Alternatively, under the analysis of Mellesmoen (2017:192) the non-control transitivizer is simply -(n)xʷ and the non-control reciprocal is -(xʷ)igas.
15 This example is additionally interesting because it appears to involve copy raising of the first person
4.7 Conclusion: Degree constructions in St’át’ímcets and ?ayʔajuθəm

Our re-examination of degree constructions in St’át’ímcets confirms L&R’s conclusion: it tests unequivocally as [+DSP] (and also as [+DAP] and [+DegPP]).

However, our results for ?ayʔajuθəm differ from those of L&R: we find that once the relative morphological opacity of the language is taken into account, and methodological issues with eliciting measure phrases are dealt with, ?ayʔajuθəm also tests positively for the DSP, DAP, and DegPP. Our conclusions are summarized in the table in (74): compare table (4) above.

(74) Degree semantics in two Salish languages (revised)

<table>
<thead>
<tr>
<th></th>
<th>?ayʔajuθəm</th>
<th>St’át’ímcets</th>
</tr>
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<tbody>
<tr>
<td>Measure phrase constructions</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Comparison with degrees</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Differential comparatives</td>
<td>Yes</td>
<td>Yes</td>
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<td>Degree Questions</td>
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<td>Subcomparatives</td>
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<td>Degree Equatives</td>
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<td>Yes</td>
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</tbody>
</table>

In terms of the DSP, this is probably good news. While it is not logically impossible for closely related languages to differ along macroparametric lines, a macroparametric split raises the issue of triggering evidence: in particular, how can a language learner set the parameter, if two syntactically similar languages differ radically on an abstract semantic level? This problem obviously does not arise if both systems have the same parameter setting.

With the basic facts established, we now turn to analysis: Section 5 provides a preliminary sketch of degree semantics in the two languages, focusing on measure phrases and subcomparatives.

5 Degree Semantics

Given what we have established in the preceding sections, we begin here with two assumptions: first, in spite of superficial morphological differences, the grammar of comparison in St’át’ímcets and ?ayʔajuθəm is fundamentally similar in both syntactic design and semantic interpretation; and second, since both exemplify the positive value of the DSP, comparison in both languages involves degrees of semantic type $d$, and more specifically, gradable predicates of type $\langle d, (e, t) \rangle$.

Before proposing an explicit analysis, however, we need to make one more empirical point. It is usual in the literature on degree semantics to distinguish between clausal and phrasal standards of comparison; as their names indicate, clausal standards involve an embedded CP constituent, while phrasal standards simply contain a DP. English examples of both are given in (75):

plural possessive subject of the nominalized complement clause into the matrix clause, whose predicate is impersonal *it ‘really’.*
The example in (75a) is obviously clausal (with the auxiliary do controlling an obligatory VP ellipsis site). The usual assumption in such cases is that the comparative operator takes two arguments, the first of type \( d \) (a degree), the second of type \( \langle d, t \rangle \) (i.e., a set of degrees). A lexical entry for the clausal comparative morpheme is given in (76), from Heim (2000):

\[
(76) \quad \llbracket -er_{(\text{clausal})} \rrbracket = \lambda d, \lambda D(\langle d, t \rangle). \text{MAX}(D) > d
\]

Applied to (75a), this says that the comparative morpheme -er takes a degree (the value of the standard = the degree to which the car that Teresa drives is small) and a set of degrees (the value of the gradable predicate = the set of degrees of smallness of the car that Carl drives) and yields a value of true iff the maximal degree in the set of degrees denoted by the predicate exceeds the degree denoted by the standard.

Both Salish languages under consideration clearly permit clausal standards, as evidenced, for example, by the existence of subcomparatives (4.5), so some variant of (76) will be necessary: we return to clausal comparatives in 5.2.

The question as to how to characterize phrasal standards such as that in (75b) is more complex, since there are several possible analyses, distinguished by quite subtle tests that are not always easy to apply cross-linguistically. One possibility (argued by Lechner 2004 and Bhatt and Takahashi 2011 for English) is that phrasal standards are disguised clauses, with ellipsis responsible for the missing material. An obvious advantage of this analysis is that the comparative operator will have a single lexical entry, though obviously, much of the empirical force of the analysis depends on independent motivation for the ellipsis processes which drive it.

Alternatively, several different non-clausal analyses have been proposed for phrasal comparatives. All of them involve a comparative operator which takes two individual arguments of type \( e \) and a gradable predicate over degrees of type \( \langle d, \langle e, t \rangle \rangle \), but they differ in the order of composition, with non-trivial empirical consequences, as detailed in Beck et al. (2012). Of particular relevance is the distinction between internal and external readings of the phrasal standard. For example, (75b) has both an (absurd) internal and an external reading: on its internal reading, Carl’s car is smaller than Teresa; on its external reading, Carl’s car is smaller than the one that Teresa drives. Under a phrasal analysis, the external reading must be derived by LF raising of the target (‘Carl’) followed by “parasitic” raising of the standard ‘than Teresa’ to create a derived predicate of degrees (Bhatt and Takahashi 2011). This cannot be achieved (at least under normal assumptions about LF movement) via a comparative operator which takes the gradable predicate as its first argument, such as that proposed by Kennedy (1997), shown in (77).

However, a Heim-style analysis which takes the standard of comparison as its first argument, as in (78), does combine the arguments in the required order.

\[
(77) \quad \llbracket -er_{(\text{Kennedy})} \rrbracket = \lambda x, \lambda y, \lambda d, \lambda D(\langle d, t \rangle). \text{MAX}(\lambda d'.\text{Adj}(d'))(y) > \text{MAX}(\lambda d'.\text{Adj}(d'))(y)
\]

\[
(78) \quad \llbracket -er_{(\text{Heim})} \rrbracket = \lambda x, \lambda y, \lambda d, \lambda D(\langle d, t \rangle). \text{MAX}(\lambda d'.\text{Adj}(d'))(y) > \text{MAX}(\lambda d'.\text{Adj}(d'))(y)
\]

This means that if phrasal standards yield only internal readings (as reported for e.g., Greek and Russian genitive comparatives: see Beck et al. 2012), an analysis like (77) is appropriate, but if external readings are possible, (77) is out, and either a clausal analysis like (76) with ellipsis or a non-clausal analysis like (78) is required.
As it turns out, both St’át’îmcets and ?ayʔajuθəm allow external readings of phrasal standards. This is shown for St’át’îmcets in (79), repeated from (19) above, which is a direct equivalent of the English example in (75):

(79) \[ k^\text{ik}s\text{-ám} \quad \text{ta}=\text{kāh}=\text{a} \quad \text{waʔ} \quad \text{s-tqálk}=\text{s-as} \quad \text{s=Carl} \]
\[ \text{small-er} \quad \text{DET}=\text{car}=\text{EXIS} \quad \text{IPFV} \quad \text{STAT}=\text{drive}=\text{CAUS}=3\text{ERG} \quad \text{NMLZ}=\text{Carl} \]
\[ \text{lōl}=\text{s-Teresa} \text{.} \]
\[ \text{from}=\text{NMLZ}=\text{Teresa} \]

‘Carl drives a smaller car than Teresa.’

(i) Carl drives a smaller car than Teresa does.

(ii) Carl drives a smaller car than Teresa (is).

An ?ayʔajuθəm example is given in (80).

(80) \[ k^\text{ihit} \quad \text{tīh} \quad \text{čanu} \quad k^\text{ēn=}[\text{n}]\text{x}=\text{-om}=\text{ul} \quad \text{Marianne} \quad \text{hu} \quad \text{Gloria} \]
\[ \text{more big dog see}=\text{-NCT}=\text{PASS}=\text{PST} \quad \text{Marianne} \quad \text{go} \quad \text{Gloria} \]

‘Marianne saw a bigger dog than Gloria.’

(i) Marianne saw a bigger dog than Gloria did.

(ii) Marianne saw a bigger dog than Gloria (is).

The existence of external readings eliminates a phrasal analysis like that in (77), but not one like that in (78). In order to choose between (78) and a reduced clausal analysis based on (76), we then need to find other tests to distinguish clausal and non-clausal comparatives, such as the arguments based on binding and scope in Bhatt and Takahashi (2011). We have not yet found a way to adapt their tests to the languages under investigation; pending further research, we will therefore sidestep these questions for now and assume a uniformly clausal analysis.

In the following two subsections we give a brief sketch of what a degree semantics might look like for the two Salish languages under investigation, using measure phrases (5.1) and subcomparatives (5.2) to exemplify our approach. For reasons of exposition, we use data from St’át’îmcets to illustrate the analysis; however, as argued above, ?ayʔajuθəm behaves in exactly the same way once superficial morphological differences are taken into account.

5.1 Composition of a Measure Phrase Construction

Consider the St’át’îmcets measure phrase construction in (37), repeated below as (81):

(81) \[ k^\text{ʔlás} \quad \text{s}=\text{ʔm}=\text{s} \quad \text{sqʷaʔ}=\text{s} \quad \text{xāʔ}=\text{s}=\text{a} \quad \text{ta}=\text{syåp}=\text{a} \]
\[ \text{three} \quad \text{NMLZ}=\text{ten}=\text{POSS} \quad \text{foot} \quad \text{NMLZ}=\text{high}=\text{POSS}=\text{EXIS} \quad \text{DET}=\text{tree}=\text{EXIS} \]

‘The tree is thirty feet high.’

We assume the standard account of gradable adjectives (here \( x\text{aʔ} \) ‘high’) as functions from degrees to predicates of individuals, of type \( \langle d,\langle e,t⟩ \rangle \), and treat measure phrases (here, \( k^\text{ʔlás} \quad \text{sqʷmps} \quad \text{sqʷaʔ} \) ‘thirty feet’) as predicates of degrees, of type \( \langle d,t⟩ \).

Next, we propose that nominalization of a clausal constituent containing a gradable predicate creates an abstraction over its degree argument: therefore \[ s=x\text{aʔ}=s \quad \text{ta}=\text{syåp}=a \]
\[ \text{NMLZ}=\text{high}=3\text{POSS DET}=\text{tree}=\text{EXIS} = \lambda d, [\text{the tree is } d, \text{high}], \text{also of type } (d,t). \]

This gives us two predicates of degrees.

We then convert the second of these predicates to an argument (of type \( d \)) via a determiner (which is elided in (81), but detectably present via the existential enclitic \( =a \) on \( s-xa?=s=a \)).\(^{17}\) We propose that determiners be allowed to range over predicates of degrees as well as predicates of individuals, in which case they are of type \( \langle\langle d, t \rangle, d \rangle \). On the analysis of Matthewson (2008), Salish determiners pick out the unique/maximal individual in a local context: this analysis will extend to determiners of degrees, whose effect will be then equivalent to von Stechow’s (1984) \( \text{Max} \) operator, defined here in the form used by Alrenga and Kennedy (2014:11).

(82)  For any degree property \( C \), \( \text{max}(C) = \text{id}(C(d) \wedge \exists d'[C(d') \wedge d' > d]) \)

We can now represent the LF of (81) as in (83):

\[
\begin{array}{c}
\langle d,t \rangle \\
\langle d,t \rangle \\
\langle e,t \rangle \\
d
\end{array}
\]

This will allow us to derive the correct meaning, which can be paraphrased as ‘the degree to which the tree is high is equal to thirty feet’.

5.2  Composition of a Subcomparative

Next, we turn to subcomparatives, illustrated by the St’át’imcets example in (84), repeated from (65) above.

\[
\begin{array}{c}
páʔəxʷ \\
s=zaxt=s \\
ta=syá̱p=a \\
\lambda l=ta=s=lâ̱q=s=a \\
more \\
\text{NMLZ}=\text{long}=3\text{POSS} \\
\text{DET}=\text{tree}=\text{EXIS} \\
\text{from}=\text{D/C}=\text{NMLZ}=\text{wide}=3\text{POSS}=\text{EXIS} \\
\text{ta}=\text{scwấwx}=a. \\
\text{DET}=\text{creek}=\text{EXIS} \\
\text{‘The tree is taller than the creek is wide.’}
\end{array}
\]

Following Heim’s analysis of clausal comparatives in (76), we treat the comparative morpheme \( \text{páʔəxʷ} \) ‘more’ as a predicate of type \( \langle d,\langle\langle d,t \rangle, t \rangle \rangle \) taking two arguments, the first (the clausal

\(^{16}\) More broadly, we make the assumption that syntactic nominalization always marks abstraction, but can differ in the argument that is abstracted over (including at least situations, degrees, and entities). This is — we suspect — the likeliest route to provide a unified analysis of nominalization in Salish.

\(^{17}\) ‘Assertion-of-existence’ determiners such as \( ta= \) are always accompanied by the existential enclitic \( =a \) in St’át’imcets (Matthewson 1998), which attaches to the end of the first prosodic word in the DP.
standard of comparison) of type \(d\), the second (the nominalized clause containing the gradable predicate) of type \(\langle d, t \rangle\). (We treat the preposition that introduces the standard as semantically vacuous, in line with most work on comparative *than*.) This gives us the lexical entry in (85).

(85) \[[p'əxʷ]=\lambda. d, \lambda D(\langle d, 0 \rangle \cdot \text{MAX}(D) > d\]

As with measure phrases, we will assume nominalization marks lambda abstraction over the degree argument in both clauses to yield derived predicates of type \(\langle d, t \rangle\), and a determiner on the first argument (the standard of comparison) then saturates the resulting derived predicate to yield an argument of type \(d\).\(^{18}\) The result will be an LF such as (86); note that as in English, the standard of comparison will extrapose to yield surface word order.

(86)

\[
\begin{array}{c}
\text{\langle (d, t), t \rangle} \\
\text{\langle d, t \rangle} \\
\text{\langle e, t \rangle} \\
\text{s}=\lambda_d \\
\text{t} \\
\text{s}=\lambda_d \\
\text{t} \\
\text{d'} \\
\text{zxt}=s \\
\text{d} \\
\end{array}
\]

The resulting meaning can be paraphrased as ‘the maximum degree in the set of degrees to which the tree is tall is greater than the degree to which the creek is wide’.

6 Conjoined Comparatives in ?ayʔajuθəm

One of our ?ayʔajuθəm consultants, JF, shows a particularly interesting grammatical pattern in comparatives, as first reported by L&R. In addition to using regular structures with \(k\);\(‘\)hit ‘more’ and a standard of comparison introduced by *hu ‘go’*, she also frequently employs *conjoined comparatives*, as shown in (87)–(88).\(^{19}\)

\(^{18}\) The distribution of determiners in subcomparatives in both St’át’imcets and ?ayʔajuθəm supports the proposed analysis, in which the first (standard) argument of the comparative morpheme denotes an individual degree \(d\), but the second (target) argument denotes a set of degrees \(\langle (d, t) \rangle\). As noted in 4.5, a referential (assertion of existence) determiner \((ta=...=a)\) marks the standard in St’át’imcets, whereas the target either lacks a determiner altogether, as in (84), or (more marginally) takes the non-referential D/C element \(k\). In ?ayʔajuθəm, the standard is one of the few places where an overt determiner \(k\) is volunteered, as in (67); the target is never introduced by a determiner.

\(^{19}\) It is important to emphasize that though JF is one of our younger consultants, her conjoined comparatives are not the result of language attrition or disuse; she is a fully fluent L1 speaker who still uses the language every day at home. In fact, her grammar is noticeably distinct from that of other contemporary ?ayʔajuθəm
As the examples show, conjoined comparatives consist of two clauses in apposition, with or without an overt conjunction. The first clause contains the positive value of a gradable adjective, the second either its antonym or its negation (both are possible for JF).

Conjoined comparatives were first identified in the typological literature by Stassen (1985). They have a wide cross-linguistic distribution, with a geographical concentration along the Pacific rim; in the WALS survey, about a fifth (34/167) of the languages sampled employ conjoined comparatives (Stassen 2013).

Of particular interest to us is the fact that all previous detailed descriptions of conjoined comparatives have argued that they represent a negative setting of the [DSP] parameter. These include studies of Motu (Beck et al. 2009), Fijian (Pearson 2009), Washo (Bochnak 2015), Warlpiri (Bowler 2016), and (old) Samoan (Hohaus 2018). This body of work suggests that the availability of a conjoined comparative construction may be a sufficient diagnostic for identifying a [-DSP] language.

Such a conclusion raises immediate questions for the comparative system of ?ay?ajuʔom, which we have argued above must be analyzed at [+DSP]. Logically, three possibilities arise for a speaker like JF:

(i) She has a uniformly [-DSP] system, in which case her grammar differs radically from those of other ?ay?ajuʔom speakers.

(ii) She has a uniformly [+DSP] system, in which case her conjoined comparatives, in spite of appearances, must be analyzed as involving degrees.

(iii) She has two grammars, one [+DSP], for regular comparatives, one [-DSP], for conjoined comparatives.

As far as (i) is concerned, we have already come to the general conclusion that ?ay?ajuʔom comparatives with k=ihit involve degree semantics; but more specifically, JF herself produces structures which are diagnostic of degrees, including measure phrases (89), differential comparatives (90), and subcomparatives (91).

(87) źaŋaŋ Tony, titul Laura.
tall Tony small Laura
‘Tony is taller than Laura.’ (Literally: ‘Tony is tall, Laura is small.’) (JF)

(88) ćiečiʔa, jaʔa, źaŋaŋ paʔa jaʔaʔom.
short tree tall one tree
‘This tree is shorter than the other.’ (Literally: ‘The tree is short, one tree is tall.’) (JF)

As far as (i) is concerned, we have already come to the general conclusion that ?ay?ajuʔom comparatives with k=ihit involve degree semantics; but more specifically, JF herself produces structures which are diagnostic of degrees, including measure phrases (89), differential comparatives (90), and subcomparatives (91).

(89) čaλas mam•mimaw źaŋaŋ=s Marianne.
three PL•cat tall=3POSS Marianne
‘Marianne is three cats tall.’ (JF)

speakers in ways which lead us to suspect that her conjoined comparatives are an archaism rather than an innovation.
We can therefore dismiss the possibility that JF’s grammar is just [-DSP]. This leaves possibilities (ii) and (iii), which require further examination of JF’s conjoined comparatives. As a first step, we observe that in addition to producing conjoined comparatives and standard degree comparatives, she regularly produces hybrid structures between them, with $k^{	ext{wi}^2}$hit in the first conjunct of a conjoined structure and an antonym in the second, as shown in (92) and (93).

(92) **Context: picture of two bonsai trees**

more tall one tree small one tree
‘This tree is bigger than that one.’ (Literally, ‘One tree is taller, one tree is small.’)  (JF)

(93) **Context: picture of two tall trees**

$k^{	ext{wi}^2}$hit $titul$ $p^a$?a  $ja$?a$\bar{\epsilon}m$, _mexal $p^a$?a  $ja$?a$\bar{\epsilon}m$.
more small one tree tall one tree
‘This tree is shorter than that one.’ (Literally, ‘One tree is smaller, one tree is tall.’)  (JF)

Furthermore, we find the same structure with measure phrases, as in (89).

(94) **Context: picture showing Marianne as three cats tall, Gloria as two cats tall**

a. $p^a$?a mimaw $\text{\textasciitilde x\textasciitilde a\textasciitilde l}$=s Marianne, $titul$ Gloria.
one cat big=3POSS Marianne small Gloria
‘Marianne is one cat taller than Gloria.’

*Consultant’s comment (to Gloria): ‘Marianne is one cat bigger and you are smaller.’*

b. $p^a$?a mimaw $\text{\textasciitilde x\textasciitilde a\textasciitilde l}$=s Marianne, $\text{x}^a$ $\text{\textasciitilde x\textasciitilde a\textasciitilde l}$=as Gloria.
one cat big=3POSS Marianne NEG big=3SJV Gloria
‘Marianne is one cat taller than Gloria.’

*Consultant’s comment (to Gloria): ‘Marianne is still taller by one cat, Gloria is still small.’*

Note that without the first conjunct, the second conjuncts in (94a) and (94b) would be translated simply as ‘Gloria is small’ and ‘Gloria is not big’, respectively, with normative (positive form) readings; and without the second conjuncts, the first conjunct in both cases would mean ‘Marianne is one cat tall’, without a comparative reading. In fact, the two halves of the conjoined comparative can be elicited in isolation with exactly these interpretations, as shown in (95) and (96).

---

20 A negated form of the first predicate is also possible in the second conjunct.
This provides clear evidence that the conjoined comparative structures employed by JF are more than just the conjunction of two independent clauses. In fact, the examples in (94) are conjoined versions of differential comparatives, which are diagnostic for degree semantics (see 4.3 above).

We conclude that JF’s grammar (including conjoined as well as ordinary comparatives) is uniformly [+DSP], just like that of other ?ayʔajuθəm speakers, and therefore that possibility (ii) above is the correct option. This has implications for the status of conjoined comparatives in the wider cross-linguistic context: in particular, it is no longer possible to automatically assume that conjoined comparatives are a sufficient diagnostic for [-DSP] status.

It also sets an agenda for future work on the syntax-semantics interface of conjoined comparatives. In particular, how can a standard degree semantics be derived from what looks on the surface to be a simple conjunction of two clauses? We will not attempt to pursue an answer to this question here, though we do note that previous syntactic work on comparatives has identified certain properties of clausal standards that are characteristic of coordination rather than subordination: for example, they tolerate operations such as gapping and right node raising that are otherwise confined to coordinate structures, and they allow across-the-board movement in order to avoid apparent Coordinate Structure Constraint violations (Lechner 2004).

7 Conclusion

We conclude that both Salish languages investigated here (St’át’imctcets of the Northern Interior sub-branch and ?ayʔajuθəm of the Central branch) instantiate the positive values of the Degree Semantics Parameter, the Degree Abstraction Parameter, and the Degree Phrase Parameter of Beck et al. (2009). In addition to comparatives with subordinate syntax, conjoined comparatives also test as [+DSP] in ?ayʔajuθəm, showing that the language is uniformly degreeful, in spite of having two separate types of comparative construction.

These conclusions are important both in a Salish context and more broadly for the cross-linguistic typology of degree constructions. As far as Salish is concerned, the current study establishes for the first time that two languages from separate branches of the family show similar degree-based syntax and semantics, in spite of superficial morphological differences.

In cross-linguistic terms, our work adds to the growing body of research on parametric variation in the expression of comparatives and other degree expressions. Of particular interest in this respect are our conclusions regarding the degreeful status of conjoined comparatives in ?ayʔajuθəm. since conjoined comparatives have often implicitly assumed to be diagnostic for [-DSP] status in the typological literature.

References


