The Good, the 'Not Good', and the 'Not Pretty': Negation in the Negative Predicates of Tlingit [1]

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ABSTRACT: This paper develops and defends a formal syntactic and semantic analysis of a curious set of negative gradable predicates in Tlingit (Na-Dene; Alaska, British Columbia, Yukon), and shows that the analysis has important consequences for our understanding of various phenomena surrounding gradable predicates across languages. In Tlingit, certain negative gradable predicates are formed by negating a positive root and then applying an additional (unproductive) morphological operation: *e.g. k'éi* 'good', *tlél uk'é* 'not good', *tlél ushké* 'bad'. A variety of facts show that (i) the negation in forms like *tlél ushké* 'bad' is VP-external, clausal negation, and is not an incorporated negative prefix like *un-* in English, and (ii) the meaning of these forms is indeed that of a gradable negative predicate, and is not simply the propositional negation of the positive predicate (unlike *tlél uk'é* 'not good'). Under the proposed analysis, the additional morphological operation observed in these forms is the reflex of a special degree relativizer, one that is not found in English and must undergo movement to Spec-NegP. In addition, Tlingit differs from English and other languages in that degree operators – like *POS* and comparative operators – can be adjoined relatively high in the clause, above negation. In addition to capturing a variety of facts concerning these negative predicates, the proposed analysis has consequences for our understanding of more general issues surrounding gradable predicates, particularly so-called 'Cross-Polar Nomalies' (CPNs) (Büring 2007a,b; Heim 2008) and intervention effects in the movement of degree operators (Heim 2001). Regarding the former, I show that Tlingit exhibits CPNs directly parallel to those in English. However, due to idiosyncrasies of Tlingit morphosyntax, Büring's (2007a,b) analysis of these phenomena has an advantage over Heim's (2008) account.

1.   Introduction: The Puzzle of Negation in Tlingit Negative Gradable Predicates

The primary focus of this paper is a puzzle concerning the morphosyntax of certain negative predicates in Tlingit, a Na-Dene language of Alaska, British Columbia, and the Yukon. We will see, however, that a proper understanding of these forms holds broader consequences for our understanding of seemingly unrelated puzzles in the semantics of adjectives and degree constructions, and provides indirect support for the view that negative adjectives like *short* can underlyingly contain a negative operator (Rullmann 1995; Büring 2007a,b; Heim 2008).

To begin by laying out the central puzzle, there is in Tlingit a small but highly frequent set of stative, gradable antonym pairs, where the negative antonym is formed from (i) the root of

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the positive antonym, (ii) the negation marker (*tlél*, or *hél*), and (iii) an additional (unproductive) morphological operation. Some illustrative examples are collected below.

(1)   **Negation and Negative Antonyms in Tlingit** [2]

a.	yak'éi	b.	**tlél** ushk'é	c.	**tlél** uk'é	
	0CL.good		**NEG** IRR.**shCL**.good		**NEG** IRR.**0CL**.good	
	It is good.		*It is bad.*		*It is not good.*	

d.   yaa ḵu**dzi**gei   e.   **tlél**   yaa ḵoo**sh**gé   f.   **tlél**   yaa ḵoosgé.
       sCL.smart   **NEG** IRR.**shCL**.smart   **NEG** IRR.**sCL**.smart
       He is smart.   *He is dumb / foolish.*   *He is not smart.*

g.   **li**ẋéitl   h.   **tlél**   ushẋéitl   i.   **tlél**   ulẋéitl
       lCL.lucky   **NEG** IRR.**shCL**.lucky   **NEG** IRR.**lCL**.lucky
       She is lucky.   *She is unlucky.*   *She is not lucky.*

j.   yanéek'   k.   **tlél**   ushnéek'   l.   **tlél**   unéek'
       0CL.tidy   **NEG** IRR.**shCL**.tidy   **NEG** IRR.**0CL**.tidy
       It is tidy.   *It is messy.*   *It is not tidy.*

m.   **ḵ'a****si**góo   n.   **tlél**   ẋ'ei**sh**gú   o.   **tlél**   ḵ'eisgú
       sCL.fun   NEG IRR.**shCL**.fun   **NEG** IRR.**sCL**.fun
       It is fun.   *It is boring.*   *It is not fun.*

p.   li**ts**een   q.   **tlél**   ul**ch**een   r.   **tlél**   ultseen
       lCL.strong   **NEG** IRR.lCL.strong   NEG IRR.lCL.strong
       She is strong.   *She is weak.*   *She is not strong.*

In the examples above, (1a, d, g, j, m, p) provide the positive Tlingit predicates meaning 'good', 'smart', 'lucky', 'tidy', 'fun', and 'strong', while (1b, e, h, k, n, q) provide their negative antonyms meaning 'bad', 'dumb/foolish', 'unlucky', 'messing', 'boring', and 'weak'. For comparison, sentences (1c, f, i, l, o, r) provide the Tlingit translations of 'not good', 'not smart', 'not lucky', 'not tidy', 'not fun', and 'not strong'.

      Looking across the rows above, it's apparent that the negative antonyms in (1b, e, h, k, n, q) and the negated positive predicates in (1c, f, i, l, o, r) share the negation marker *tlél*. However, the negative antonyms also exhibit additional morphological operations that are not found in either the positive predicates or their (pure, propositional) negations. For example, in (1a, d, g, j, m), the so-called 'verbal classifier' of the positive predicate – 0CL, sCL, or lCL in the glosses – changes to the so-called 'sh-series' verbal classifier in the negative predicate. This yields the key

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surface contrast between the forms *tlél uk'é* 'it is not good' (1c) and *tlél ushk'é* 'it is bad' (1b). While this 'verbal classifier shift' is the predominant morphological operation distinguishing negative predicates from negated positive predicates, other consonantal mutations can also take place alongside it or in place of it. For example, in (1m-o), the so-called 'thematic prefix' *k'a*- undergoes mutation to *x'a*- in the negative antonym, while in (1p-r) the onset of the root *tseen* 'strong/strength' undergoes mutation to *cheen* in the antonym meaning 'weak'.

These facts obviously raise the following overarching question: what is the morphosyntax and morphosemantics of the negative antonyms in (1b, e, h, k, n, q)? That is, what is their morphosyntactic structure, and how does that structure get mapped on to their observed meaning? Although these questions will be our central focus, we will also consider a number of related matters, including two additional puzzles in Tlingit that bear obvious connections to the facts in (1). The first is that there are in Tlingit negative gradable predicates that are formed with negation, but which contain lexemes that cannot appear in a positive form. For example, sentence (2a) is one way of expressing in Tlingit that someone is mean, grumpy, irritable. Sentence (2a) appears to be the negation of a predicate that would be pronounced as in (2b), if that predicate could appear without negation. But, it cannot. Sentence (2b) does not have any recognizable meaning to the speakers I work with.

(2)   **Obligatorily Negated Predicates in Tlingit**

    a.   **tlél**   chaa x'eití.   b.   * chaa x'ayatee.
        NEG   IRR.0CL.nice(?)   0CL.nice(?)
        He's mean / grumpy / irritable.

The second related puzzle is that there are in Tlingit a few positive gradable predicates whose antonyms are expressed by simply negating the positive predicate. For example, the way in Tlingit to express that something is 'cheap' is with the form in (3b), which appears to simply be the negation of (3a), meaning 'it is expensive'.

(3)   **Antonyms Expressed Purely with Negation in Tlingit [3]**

    a.   x'alitseen   b.   **tlél**   x'eiltseen
        lCL.expensive   **NEG**   IRR.lCL.expensive
        It is expensive (dear).   *It is cheap (low value).*

    c.   naaléi   d.   **tlél**   unalé
        0CL.far   **NEG**   IRR.0CL.far
        It is far.   *It is near.*

    e.   shigéek̲   f.   **tlél**   ushgéek̲.
        shCL.stingy   **NEG**   IRR.shCL.stingy
        He is stingy.   *He is generous.*

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[3] For some speakers, the roots in (3c,d) are pronounced as *-lée* and *-lí*, respectively. Similarly, for some speakers the roots in (3e,f) are pronounced as *-géik̲*.

g.	kayahéil'k	h.	**tlél**	koohéil'k
	0CL.strong		**NEG**	IRR.0CL.strong
	He is strong.			*He is weak.*

The facts in (2)-(3) raise the following questions. First, regarding lexemes like *chaa x̱'a-tee* in (2), why are they unable to appear without negation? Secondly, regarding the negated forms in (3), can we show that such forms truly have strong, antonymic readings, and that they aren't always just semantically the propositional negation of the positive roots? That is, can we show that (3b) can truly mean 'cheap', and not just 'not expensive'? And, if this is indeed the case, how do those negated forms in (3) get those stronger, antonymic readings? Ideally, of course, we should hope that an analysis of the key pattern in (1) would shed some light onto these intuitively related matters.

To facilitate the subsequent discussion, I will introduce here the term 'NEG antonym', defined as in (4).

(4)   **Special Terminology: 'NEG Antonym'**
       The term 'NEG antonym' applies to (i) the negative predicates in (1b, e, h, k, n, q), and the negated predicates in (2a) and (3b, d, f, h).

We will see that a particular formal syntactic and semantic analysis of these NEG antonyms holds consequences for our understanding of some seemingly unrelated facts in other languages. To begin, both Büring (2007a,b) and Heim (2008) propose that negative gradable adjectives in English can be derived from a structure containing (i) the positive antonym, and (ii) a negation.[4] Thus, a negative adjective like (5a) might underlyingly have the structure in (5b).

(5)   **Negation in Negative Predicates of English (Büring 2007a,b; Heim 2008)**

       a.   *Pronounced Form:*   'short'
       b.   *Underlying Structure:*   [NOT LONG]

One major motivation for this analysis comes from the phenomenon of 'Cross-Polar Nomalies', illustrated below (Büring 2007a,b; Heim 2008)

(6)   **Cross-Polar Nomalies in English (Büring 2007a,b)**

       a.   (i)   * This book is **wider** [than it is **short**]
             (ii)   * This book is **longer** [than it is **narrow**]

       b.   (i)   This book is **shorter** [than it is **wide**]
             (ii)   This book is **narrower** [than it is **long**]

We will later review these facts in detail, as well as the way in which they provide support for the general in view in (5). In brief, however, Büring (2007a,b) and Heim (2008) develop rather

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[4] Following Rullmann (1995), both Büring and Heim refer to this negation as 'LITTLE', on analogy to the use of 'little' in constructions like 'he is little amused'. However, semantically, their 'LITTLE' operator is simply a negation operator, and so I will refer to it as 'NOT' or 'NEG' throughout this paper.

distinct analyses of the contrasts in (6), but both rest crucially on the assumption in (5) that negative adjectives like *short* can be derived from a structure akin to [NOT LONG]. Interestingly, we will see that these same contrasts can also be observed in Tlingit. However, we will also see that not every analysis of the English facts in (6) generalizes as easily to the Tlingit data. That is, I will argue that Büring's 'PF-Movement' analysis of (6) offers a better handle on the Tlingit facts than Heim's (2008) 'negation ellipsis' account.

The remainder of this paper is structured as follows. In the following section, I will provide some key background on the Tlingit language and the methodology used in this study. Section 3 then presents some basic interactions between Tlingit NEG antonyms and degree modifiers. These data will provide an important basis for certain empirical arguments in Sections 4 and 5. In Section 4, I present the evidence that the negation found in the negative predicates of (1b, e, h, k, n, q) is VP-external, clausal negation, and is not some form of incorporated negation like the English prefixes *un-* and *non-*. In Section 5, I examine the licensing conditions of the special morphological operations observed in the NEG antonyms of (1), *i.e.*, the verbal classifier shift and the consonantal mutations. We will see that those morphological operations are only licensed by clausemate clausal negation. Section 6 then turns to the NEG antonyms in (2)-(3). I show that the NEG antonyms in (3) do indeed receive strong, antonymic readings, and that the negation in these forms and in forms like (2a) is VP-external (clausal, non-incorporated) negation. In Section 7, I present the formal syntactic and semantic analysis of Tlingit NEG antonyms, one that builds upon the key devices introduced by Rullmann (1995), Büring (2007a,b), and Heim (2006, 2008), and I explore a number of further predictions the analysis makes regarding Tlingit degree constructions. I also identify some potential consequences of the analysis for our understanding of intervention effects in the movement of degree operators. Finally, in Section 8, I turn to the puzzle of Cross-Polar Nomalies in English and Tlingit. I review the basic facts, as well as Büring's and Heim's analyses of them. I then show how certain idiosyncrasies of negation in Tlingit lend support to Büring's (2007a,b) analysis over Heim's (2008) account.

2.   Linguistic and Methodological Background

The Tlingit language (Lingít; /ɬin.kít/) is the traditional language of the Tlingit people of Southeast Alaska, Northwest British Columbia, and Southwest Yukon Territory. It is the sole member of the Tlingit language family, a sub-branch of the larger Na-Dene language family (Campbell 1997, Mithun 1999, Leer *et al.* 2010). It is thus distantly related to the Athabaskan languages (e.g., Navajo, Slave, Hupa), and shares their complex templatic verbal morphology (Leer 1991). As mentioned in Footnote 2, I will largely be suppressing this complex structure in my glossing of Tlingit verbs.

Tlingit is a highly endangered language. While there has been no official count of fully fluent speakers, it is privately estimated by some that there are less than 200 (James Crippen (Dzéiwsh), Lance Twitchell (X̱'unei), p.c.). Most of these speakers are above the age of 70, and there is no known individual below the age of 50 who learned Tlingit as their first language. There are extensive, community-based efforts to revitalize the language, driven by a multitude of Native organizations and language activists too numerous to list here. Thanks to these efforts, some younger adults have acquired a significant degree of fluency, and some of their children are acquiring Tlingit alongside English as their first languages.

Unless otherwise noted, all data reported here were obtained through interviews with native speakers of Tlingit. Seven fluent Tlingit elders participated: Lillian Austin (Yax̱dulák̲t), George Davis (Kaxwaan Éesh), Margaret Dutson (Shak'sháani), Selena Everson (Kaséix̲), William Fawcett (Kóoshdaak'w Éesh), Carolyn Martin (Ḵ'altseen), and John Martin (Keihéenák'w). All seven were residents of Juneau, AK at the time of our meetings, and are speakers of the Northern dialect of Tlingit (Leer 1991). Two or three elders were present at each of the interviews, which were held in classrooms at the University of Alaska Southeast in Juneau, AK.

The linguistic tasks presented to the elders were straightforward translation and judgment tasks. The elders were presented with various scenarios, paired with English sentences that could felicitously describe those scenarios. The scenarios were described orally to the elders, all of whom are entirely fluent in English, and a written (English) description was also distributed. The elders were asked to freely describe the scenarios, as well as to translate certain targeted English sentences describing them. In order to more systematically study their semantics – and to obtain negative data – Tlingit sentences were also examined using truth/felicity judgment tasks, a foundational methodology of semantic fieldwork (Matthewson 2004). The elders were thus asked to judge the 'correctness' (broadly speaking) of various Tlingit sentences relative to certain scenarios. Unless otherwise indicated, all speakers agreed upon the reported status of the sentences presented here.

3. Interactions Between NEG Antonyms and Degree Modifiers

As we will see later, the behavior of NEG antonyms with degree modifiers in Tlingit can provide some important insights into the morphosyntax and morphosemantics of these structures. In this section, I will simply lay out the key data, establishing the generalization in (7).

(7)   **Scope/Word-Order Generalization for Negation and Degree Modification**

   a.   If a NEG antonym is to be modified by a degree modifier, the degree modifier must precede the negation in the NEG antonym.
   b.   If a positive predicate modified by a degree modifier is to be negated, the negation must precede the degree modifier.

To begin unpacking this, generalization (7a) is illustrated by the data in (8)-(12) below. Each of these examples pairs the degree modification of a positive predicate with the degree modification of its NEG antonym. In each of these examples, the degree modifier at play is the comparative modifier *yáanáx̲* 'more than'. Note that in every sentence where the NEG antonym is modified by *yáanáx̲*, the degree modifier precedes the negation marker *tlél* (8b)-(12b).

(8)   a.   **A yáanáx̲**   áwé   yak'ei   yáat'aa
               3O.more.than   FOC   0CL.good   this.one
               This one is better than it.   (MD) [5]

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[5] Throughout the remainder of this paper, I will indicate whether a Tlingit sentence was (i) constructed by myself and judged by the elders to be acceptable, or (ii) actually constructed and offered by the elders themselves. In the former case, the sentence will be followed by a '(C)', for 'constructed'. In the latter case, I will write the initials of

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b. **A yáanáx̱**   **tlél**   ushk'é
3O.more.than   **NEG**   IRR.shCL.good
It is worse than it.   (JM)

(9)   a.   Wéit'aa   áwé   **a yáanáx̱**   litseen
that.one   FOC   **3O.more.than**   lCL.strong
That one is stronger than him.   (WF)

b.   **A yáanáx̱**   áwé   **tlél**   ulcheen
3O.more.thanFOC   **NEG**   IRR.lCL.strong(+RootChange)
He is weaker than him.   (CM)

(10)   a.   **Ax̱ yáanáx̱**   yaa kudzigéi
1sgO.more.than   sCL.smart
She is smarter than me.   (MD)

b.   **Héit'aa yáanáx̱**   **hél**   yaa ḵooshgé
that.one more.than   **NEG**   IRR.shCL.smart
He's dumber than that one.   (MD)

(11)   a.   Kúnáx̱   **a yáanáx̱**   naalée
very   3O.more.than   0CL.far
It's a lot farther than that.   (MD)

b.   **A yáanáx̱**   **tlél**   unalí
3O.more.thanNEG   IRR.0CL.far
It's closer than that.   (MD)

(12)   a.   Yáat'aa   **a yáanáx̱**   x̱'alitseen
this.one   **3O.more.than**   lCL.expensive
This one is more expensive than that.   (WF)

b.   **A yáanáx̱**   áwé   ḵúnáx̱   **tlél**   x̱'eiltseen   yáat'aa
3O.more.thanFOC   very   **NEG**   IRR.lCL.expensive   this.one
This one is much cheaper than that.   (MD)

The generalization in (7b) is illustrated by sentences (13)-(19) below. Each sentence expresses the negation of a positive predicate modified either by *yáanáx̱* 'more than' or *tlax̱* 'very', and in each sentence the negation marker *tlél* precedes the degree modifier.

(13)   **Tlél**   **a yáanáx̱**   uk'é
NEG   **3O.more.than**   IRR.0CL.good
It's not better than that. (*cf.* (8b))   (MD)

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(14) **Tlél   tlax̱** uk'é
     NEG   very IRR.0CL.good
     It's not very good.   (MD)

(15) **Tlél   tlax̱   a yáanáx̱**   x̱'eiltseen
     NEG   very   3O.more.than   IRR.lCL.expensive
     It's not much more expensive. (*cf.* (12b))   (MD)

(16) **Tlél   a yáanáx̱**   unalí
     NEG   3O.more.than IRR.0CL.far
     It's not farther than that. (*cf.* (11b))   (MD)

(17) **Tlél   tlax̱**   unalí
     NEG   very   IRR.0CL.far
     It's not very far.   (MD)

(18) **Hél   tlax̱**   ut'á.
     NEG   very   IRR.0CL.hot
     It's not very hot.   (MD)

(19) **Hél   a yáanáx̱**   ut'á
     NEG   3O.more.than IRR.0CL.hot
     It's not hotter than that.   (MD)

The generalizations in (7) are further supported by the judgment data in (20)-(21). In the scenario under (20), only the negation of a comparative construction would be true. Because the food is equally good, the comparative a negative predicate (*e.g.,* "this is worse than that") would be false. Importantly, speakers agree that in this scenario only sentence (20a) – where negation precedes the degree modifier – is true.

(20) <u>Scenario:</u>   We have two plates of food that are equally good.

     a. **Tlél   a yáanáx̱**   uk'é
        NEG   3O.more.than IRR.0CL.good
        It's not better than that.
        <u>Judgment:</u>   Acceptable in this scenario

     b. **A yáanáx̱   tlél**   ushk'é
        3O.more.than NEG IRR.shCL.good
        It's worse than that.
        <u>Judgment:</u>   *Not* acceptable in this scenario

Similarly in the scenario under (21), only the negation of a comparative would be true. Because the hats are equally expensive, the comparative of a negative predicate (*e.g.,* "this is cheaper than

that") would be false. Speakers again agree that in this scenario, only sentence (21a) – where negation precedes *yáanáx̲* 'more than' – is true.

(21)   Scenario: We have two hats that are equally expensive.

      a.   **Tlél   a yáanáx̲**   x̲'eiltseen
            NEG   3O.more.than   IRR.lCL.expensive
            It's not more expensive than that.
            Judgment: Acceptable in this scenario

      b.   **A yáanáx̲**   **tlél**   x̲'eiltseen
            3O.more.than   **NEG**   IRR.lCL.expensive
            It's cheaper than that.
            Judgment: *Not* acceptable in this scenario.

In summary, the linear order of negation and a degree modifier can have important effects upon the interpretation of a Tlingit sentence. We'll see later in Section 7 that the formal syntactic and semantic analysis proposed here predicts the data above, as well as the overarching generalization in (7). Prior to presenting that analysis, though, we will first examine a few other empirical matters concerning NEG antonyms. The first of these, detailed in the following section, concerns the morphosyntactic status of the negation marker in these predicates.

4.   Negation in Negative Predicates: Incorporated or Clausal?

From a certain perspective, it's not very surprising that some negative predicates in Tlingit seem to contain a negation marker. After all, it is not unusual for languages to form negative predicates via some kind of incorporated negation. Consider, for example, the English negative predicates in (22), each of which is derived from a positive predicate via a prefixal negation.

(22)   a.   **un**happy   b.   **in**eligible   c.   **non**-syntactic

Furthermore, in some languages, this morphologically incorporated negation can be lexically identical to VP-external clausal negation. For example, this has been reported for Malay (Kroeger 2014), as illustrated below.

(23)   a.   **tidak** adil   (ii)   Mereka   **tidak** menolong   kami
           NEG fair   3PL   **NEG** help   1PL
           unfair   *They didn't help us.*   (Kroeger 2014)

Therefore, one might naturally wonder whether the NEG antonyms in (1) are structurally akin to such negative predicates as those in (22) and (23a). That is, perhaps the key structural difference between the NEG antonyms in (1b, e, h, k, n, q) and the negations of the positive predicates in (1c, f, i, l, o, r) is simply that in the former, the negation marker *tlél* is morphologically incorporated into the predicate, as in (22)-(23a). More precisely, under this view, the structure of the NEG antonyms in (1b, e, h, k, n, q) would be akin to that in (24a) below – where the negation occupies a position internal to the verb complex – while the structure

of the negated predicates in (1c, f, i, l, o, r) would be akin to (24b) – where the negation occupies a projection outside the maximal projection of the verb.

(24)   **Incorporated Versus Non-Incorporated Negation**

      a.   <u>Incorporated Negation (22)-(23a):</u>   [$_{VP}$ [$_V$ NEG [$_V$ PREDICATE]]]
      b.   <u>Non-Incorporated Negation:</u>   [$_{NegP}$ NEG [$_{VP}$ [$_V$ PREDICATE]]]

In this section, I will present a variety of arguments against this view. We will see evidence that the NEG antonyms of (1b, e, h, k, n, q) have a structure like that in (24b), where the negation occupies the same high, clausal, VP-external position as the negation in the negated sentences of (1c, f, i, l, o, r). Consequently, a formal syntactic/semantic analysis of Tlingit NEG antonyms cannot straightforwardly mirror that of the negative predicates in (22) and (23), which have the structure in (24a).

      Before I present this evidence, however, I will first put aside a line of argumentation that might at first seem appealing. Note that in the Tlingit NEG antonyms in (1), the negation marker *tlél* appears to the left of all the inflectional prefixes on the verb. Indeed, there are no verbal prefixes or proclitics that ever precede the negation in a NEG antonym. One might object that an incorporated – and thus derivational – negation marker should rather appear to the right of the inflectional prefixes, at a position closer to the verbal stem itself. However, although it is true that derivational morphology tends across languages to be linearly closer to the stem/root than inflectional morphology, in Na-Dene languages like Tlingit, this generalization is massively violated (Rice 2000). Indeed, incorporated nouns in Tlingit themselves appear to the left of certain inflectional prefixes, as illustrated in (25).

(25)   A**sha**awax̱ích
       a-**sha**-wu-∅-ya-x̱ich
       3O-**head**-PRV-3S-0CL-club
       He clubbed him on the head.   (Dauenhauer & Dauenhauer 1987, 76: 102)

For this reason, the simple surface linear position of the negation marker in (1) is not especially strong evidence against its being morphologically incorporated into the NEG antonym, and having an underlying structure like that in (24a). In the following subsections, however, I will present stronger evidence against this possibility.

4.1   NEG Antonyms and 'Irrealis' Morphology

A first, relatively minor indication that the negation of a NEG antonym is not incorporated concerns the distribution of so-called 'irrealis mode'. If a clause in Tlingit is negated, the verb must appear within this irrealis mode, as illustrated by the contrast in (26). The principle exponent of irrealis mode is the verbal prefix *u-*, but there are also concomitant changes in the realization of aspectual inflection, and there can sometimes be effects on the length and tone of the verb stem (Leer 1991).

(26)   **Clausal Negation in Tlingit Triggers Irrealis Mode**

      a.   Tlél **uk'é**   b.   * Tlél   **yak'éi**
              NEG **IRR**.0CL.good   NEG 0CL.good
              It is not good.

Furthermore, the presence of irrealis morphology requires there to be a negation, as shown by the contrast in (27).

(27)   **Irrealis Mode Requires Negation**

      a.   **Yak'éi**   b.   * **Uk'é**
              0CL.good   **IRR**.0CL.good
              It is good.

With this in mind, let us note the following crucial fact: the NEG antonyms in (1) all obligatorily appear in the irrealis mode. This is reflected in the glosses for (1b, e, h, k, n, q), and is illustrated by contrasts like the one in (28).

(28)   **NEG Antonyms Require Irrealis Mode**

      a.   Tlél **ushk'é**   b.   * Tlél   **shik'éi**
              NEG **IRR**.**shCL**.good   NEG **shCL**.good
              It is bad.

       Thus, the negation in a NEG antonym triggers irrealis mode just like regular, VP-external propositional negation; this provides some initial indication that the former is not incorporated. After all, if the negative marker *tlél* in (1b, e, h, k, n, q) were some kind of incorporated, derivational morpheme – like the English prefix *un* – it would not be expected to have such effects on the realization of inflectional morphology, such as aspect and mood. That is, even though Na-Dene languages exhibit unexpected orderings of inflectional and derivational affixes (Rice 2000), the two morphological systems do seem to otherwise be independent of one another (Kari 1992).
       On the other hand, it is of course controversial how fundamental the divide between 'inflectional' and 'derivational' morphology is, and what interactions between those systems should and should not occur. Consequently, facts like those in (28) are not on their own very strong evidence regarding the morphosyntactic status of negation in NEG antonyms. The following subsections, however, provide more striking evidence that these negative markers are not incorporated.

4.2   The Separability of Negation in NEG Antonyms

If the negation in NEG antonyms like (1b, e, h, k, n, q) were incorporated into the verb (24a), then it should not be possible for phrasal arguments of the verb to intervene between that negation and the rest of the verbal predicate. However, as shown below, this is indeed possible.

That is, just as with clear instances of VP-external propositional negation, the negative marker in a NEG antonym can be separated from the rest of the verbal predicate by an NP argument.

In sentence (29), for example, the indefinite *daa sá* 'anything' appears between the negation-marker *tlél* and the remainder of the NEG antonym in (1b), *ushk'é*. The resulting sentence can be translated as 'Everything is bad', or – mirroring the surface syntax a bit more closely – 'Not anything is any good'. Similarly, in (34), the indefinite NP *dóosh* 'cat(s)' appears between *tlél* and *ushk'é*, yielding a sentence that can be translated as 'Cats are bad' or (perhaps) 'No cat is any good'. This same pattern can be observed below for the NEG antonyms *tlél x'eishgú* 'boring', *tlél yaa kooshgé* 'dumb', *tlél ulcheen* 'weak', and *tlél ushx̱éitl* 'unlucky'.

(29) Tlél **daa sá**   ushk'é
   NEG **anything** IRR.shCL.good
   Everything is bad. (~ Not anything is any good)   (C)

(30) Hél **daa sá**   x̱'eishgú
   NEG **anything** IRR.shCL.fun
   Everything is boring. (~ Not anything is any fun.)   (LA)

(31) Tlél **aadóo sá** yaa ḵooshgé
   NEG **anyone**   IRR.shCL.smart
   Everyone is dumb. (~ Not anyone is any smart.)   (GD)

(32) Tlél **aadóo sá** ulcheen
   NEG **anyone**   IRR.lCL.strong(+RootChange)
   Everyone is weak. (~ Not anyone is any strong.)   (C)

(33) Tlél **aadóo sá** ushx̱éitl
   NEG **anyone**   IRR.shCL.lucky
   Everyone is unlucky. (~ Not anyone is any lucky.)   (C)

(34) Hél **dóosh**   ushk'é
   NEG **cat**   IRR.shCL.good
   Cats are bad. (~ No cat is any good.)   (C)

(35) Hél **dóosh**   x̱'eishgú
   NEG **cat**   IRR.shCL.fun
   Cats are boring. (~ No cat is any fun)   (C)

(36) Hél **dóosh**   ushx̱éitl
   NEG **cat**   IRR.shCL.lucky
   Cats are unlucky. (~ No cat is any lucky.)   (C)

(37) Hél **dóosh**   ulcheen
   NEG **cat**   IRR.lCL.strong(+RootChange)
   Cats are weak. (~ No cat is any strong.)   (C)

Importantly, the NP arguments in (29)-(37) are not incorporated into the verb. This can be concluded on the grounds that (i) Tlingit does not have productive noun incorporation, (ii) the NPs *dóosh* 'cat', *daa sá* 'anything', and *aadóo sá* 'anyone' have never been independently observed to undergo (unproductive) noun incorporation in Tlingit, and (iii) incorporated nouns in Tlingit do not appear to the left of verbal proclitics like *yaa* in (31) (Leer 1991). Given that the NPs in (29)-(37) are not incorporated, it follows that the negation markers in those sentences are not incorporated either. Consequently, the negation in those NEG antonyms is verb-external.

It was stated above that sentences like (29) can be translated as 'Everything is bad'. This claim is based on both the meta-linguistic comments of native speakers, as well as judgment data like the following. Speakers report that there is a semantic contrast between sentences like (29) – repeated below as (38a) – and sentences where an NP argument occurs below the negation of a positive predicate, as in (38b). Speakers report that sentence (38b) best fits scenario (38c), while sentence (38a) is the best for scenario (38d).[6] Note furthermore that these judgments coincide with those for their putative English translations, 'Nothing is good' and 'Everything is bad', respectively.

(38)　**Semantic Contrast Between NEG Antonym and Negated Positive Predicate**

　　a.　**Tlél**　daa sá　　ush k'é
　　　　NEG　anything　IRR.**shCL**.good
　　　　Everything is bad.

　　b.　**Tlél**　daa sá　　uk'é
　　　　NEG　anything　IRR.**0CL**.good
　　　　Nothing is good.

　　c.　(i)　<u>Scenario:</u> None of the food at the party is really good. Some of it is so-so, and so it's not really *bad*. But nothing is good.

　　　　(ii)　<u>Judgment:</u> Sentence (38b) is the most acceptable.

　　d.　(i)　<u>Scenario:</u> The entire beach has become contaminated by the cruise ships, leaving no spots decent for life.

　　　　(ii)　<u>Judgment:</u> Sentence (38a) is the most acceptable.

We will see in Section 7 that the proposed formal analysis of NEG antonyms is able to capture these contrasting judgments.

4.3　Two NEG Antonyms Under a Single Negation

The interactions between NEG antonyms and the disjunction marker *ḵach'u* 'or' in Tlingit provide further evidence that negation in the former is VP-external. To begin, in English and

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[6] The scenario in (38d) and the observation that only (38a) is acceptable in it were brought to my attention by Tlingit elder John Martin.

many other languages, it is possible for clausal negation to scope over a disjunction of two predicates. Sentence (39a) below illustrates such a structure in English.

(39)   a.   Dave is **not** [happy or friendly].
         b.   * Dave is **un-** [happy or friendly].

Notice, however, that it is never possible for a morphologically incorporated negation, like the English prefix *un-*, to scope over such a disjunction. The reason for this, illustrated in (39b), is simply that a morphologically incorporated negation must be part of a single verb, and so cannot combine with a complex phrase, like the disjunction *happy or friendly*.

      With this in mind, it is quite revealing that some (though not all) speakers of Tlingit accept structures like the one in (40).

(40)   **Two NEG Antonyms Disjoined Under a Single Negation**

        Tlél   aadóo sá [**ulcheen**   k̲ach'ú   **ushk'é**   ]
        NEG   anyone   IRR.lCL.strong**(+RootChange)**   or   IRR.**shCL**.good
        Everyone is weak and bad. (~ Not anyone is any strong or any good.)   (C)

In this sentence, there is a single negation marker *tlél*, scoping over both the negative polarity item *aadóo sá* 'anyone' and the disjunction of *ulcheen* and *ushk'é*, key subcomponents of the NEG antonyms *tlél ulcheen* 'weak' and *tlél ushk'é* 'bad'. Thus, given the reasoning just laid out, it follows that Tlingit speakers who accept sentences like (40) must analyze the negation in a NEG antonym as an instance of VP-external, clausal negation (24b).

      But, what about speakers who reject sentences like (40)? Importantly, their rejection of (40) is simply be due to a broader rejection of VP disjunction. That is, speakers who rejected structures like (40) also all rejected ones like (41), which don't contain any NEG antonyms.

(41)   **Tlél**   aadóo sá   [**ool'éix̲**   k̲ach'u   **at ushí**   ]
      NEG   anyone   IRR.IMP.3S.dance   or   IRR.IMP.3S.sing
      Nobody is dancing or singing.   (C)

This suggests that the speakers who reject (40) do so because they reject *any* structure where two verbs are disjoined below a single sentential negation, and not because they analyze NEG antonyms as containing a verbally incorporated negation.

4.4   Negating a NEG Antonym in Tlingit

If the negation in a Tlingit NEG antonym were structurally akin to incorporated negative prefixes like English *un-*, *in-*, *non-*, then there should be no syntactic incompatability between that negation and a VP-external sentential negation. That is, as illustrated in (42) below, it is generally possible to directly negate a negative predicate, even one that is formed via an incorporated, prefixal negation.

(42)   a.   He is **not un**lucky.   b.   This is **not im**possible.
         c.   It's **not non-**denominational.

However, it is *not* possible in Tlingit to directly negate a NEG antonym. None of the sentences in (43) are reported to be acceptable.

(43) a. * Tlél tlél u**sh**k'é
          NEG NEG IRR.**sh**CL.good
          <u>Judgment:</u>   Ill-formed; not meaningful; does not mean 'not bad'

      b. * Tlél tlél yaa ḵoo**sh**gé
          NEG NEG IRR.**sh**CL.smart
          <u>Judgment:</u>   Ill-formed; not meaningful; does not mean 'not dumb'

      c. * Tlél tlél u**sh**x̱éitl.
          NEG NEG IRR.**sh**CL.lucky
          <u>Judgment:</u>   Ill-formed; not meaningful; does not mean 'not unlucky'

One might wonder, though, whether the rejection of these sentences is simply due to speakers disliking the haplology created by the adjacency of the two negation markers. This possibility can be ruled out by the fact that speakers reject such sentences even when other phrasal material intervenes between the negations. Recall, for example, that NEG antonyms can be modified by degree modifiers (44a), and that positive predicates modified by degree modifiers can be negated (44b). Nevertheless, it is not possible to directly negate a structure where a NEG antonym is modified by a degree modifier (44c). Similar facts are shown in (45).

(44) a. A yáanáx̱ **tlél** u**sh**k'é
          3O.more.than **NEG** IRR.**sh**CL.bad
          It's worse than it.   (MD)

      b. **Tlél** **a yáanáx̱** uk'é
          NEG 3O.more.than IRR.0CL.good
          It's not better than that.   (MD)

      c. * **Tlél** a yáanáx̱ **tlél** u**sh**k'é
          NEG 3O.more.than **NEG** IRR.**sh**CL.bad
          <u>Judgment:</u>   Ill-formed; not meaningful; does not mean 'it's not worse than it'

(45) a. Tlax̱ kúnáx̱ áwé **hél** u**sh**k'é
          very really FOC **NEG** IRR.**sh**CL.good
          It's really very bad.   (MD)

      b. **Tlél** **tlax̱** uk'é
          NEG very IRR.0CL.good
          It's not very good.   (MD)

      c. * **Hél** ḵúnáx̱ **hél** u**sh**k'é
          NEG really **NEG** IRR.**sh**CL.bad
          <u>Judgment:</u>   Ill-formed; not meaningful; does not mean 'it's not really bad'

Given the well-formedness of structures like (44a,b) and (45a,b), the ill-formedness of (44c) and (45c) must be due to the presence of the two negation markers within a single clause, even though those markers are not directly adjacent to one another.

  Of course, this inability to directly negate NEG antonyms raises the question of how Tlingit speakers are able to express the intended meanings of these sentences. How does one in Tlingit say 'he is not unlucky'? As illustrated below, one strategy speakers employ is to use a biclausal construction, akin to 'it is not so that he is unlucky'.

(46) Tlél yéi utí   tlél ushx̱éitl
    NEG thus IRR.IMP.3S.is NEG IRR.shCL.lucky
    He's not unlucky. (Lit., *It's not so that he's unlucky.*) (*cf.* (43c))   (C)

For other NEG antonyms, there are idiomatic ways of expressing their negation. For example, the preferred means for expressing the negation of *tlél ushk'é* 'bad' is via the idiom in (47).

(47) Tlél wáa sá   utí
    NEG how   IRR.IMP.3S.is
    It's not bad. (Lit, *It's not in any way*)   (WF)

  The overall pattern of facts in (43)-(45) would not be expected if the negation in these NEG antonyms were simply an incorporated verbal affix, as in (42). However, it would be expected if NEG antonyms were formed from VP-external clausal negation, as in (24b). After all, many languages disallow multiple instances of VP-external clausal negation (de Clercq & Wyngaerd 2016). For example, to the extent that English sentences like (48a,b) are possible, the second negation must be construed as a lower, predicate-level 'constituent negation'.

(48) a. ?? Dave is not not lucky.
    b. ?? Joe didn't not see Sue.

Consequently, the ill-formedness of the Tlingit structures in (43)-(45) provides further indication that the negation marker in a NEG antonym is the same VP-external, clausal negation as is found in simple negated sentences.

5. The Licensing of the Morphological Operations in NEG Antonyms

Accepting the conclusion of the preceding section – that the negation in the NEG antonyms of (1) is VP-external, clausal negation (24b) – it follows that the additional morphological operations found in (1b, e, h, k, n, q) are in some way licensed by that negation. This, then, raises the question of what that licensing relationship is. What, exactly, are the licensing conditions governing the appearance of the verbal classifier shift in (1b, e, h, k, n) and the consonantal mutations in (1n) and (1q)?

  In considering this question, one might at first be attracted to a potentially parallel construction in English: the modification of adjectives by the negative polarity item (NPI) *any*. That is, as shown in (49), it is possible in English for the NPI *any* to modify a predicate; indeed, such constructions were used as free English translations of the Tlingit NEG antonyms in (29)-(37) and (40).

(49) a. This is not **any** good. b. This is not **any** fun.

Furthermore, the appearance of the NPI *any* in these sentences appears to strengthen the meaning of the overall sentence, to the point that their truth-conditions seem rather close to those of the corresponding antonymic sentences in (50).

(50) a. This is **bad**. b. This is **boring**.

One might therefore wonder whether the special morphological changes at play in the NEG antonyms of (1) have at base a syntax and semantics akin to the NPI *any* in sentences like (49). Under such a view, the licensing of those morphological operations would operate by the same mechanisms that govern such NPIs generally. Consequently, we should find that the verbal classifier shift and consonantal mutations observed in (1) are licensed not just by clausemate clausal negation, but by other downward entailing (DE) environments, such as in the antecedent of a conditional (51). We should also find that those operations can be licensed by a negation sitting in a superordinate clause (52).

(51) **English '*Any*+Predicate' Licensed in Conditional Antecedents**

[If this food is **any** good], then my father will eat it.

(52) **English '*Any*+Predicate' Licensed by Superordinate Negation**

a. I **don't** think this food is **any** good.
b. I **don't** want this food to be **any** good.

To explore these predictions for Tlingit, let us begin by noting that as in many languages, interrogative pronouns in Tlingit can function as NPIs. That is, if an interrogative pronoun is in an upward entailing (UE) environment like (53a), the sentence can generally only be construed as a *wh*-question.[7] However, if the interrogative pronoun is in a DE environment (53b), then the sentence can only be construed with declarative force, and the interrogative pronoun appears to have the contribution of an NPI indefinite like English *any*.

(53) a. **Aadóo sá**   tá?   b. Tlél **aadóo sá** utá
         who   IMP.3S.sleep   NEG   anyone   IRR.IMP.3S.sleep
         Who is sleeping?   *Not anyone is sleeping.*

With this in mind, consider the contrast in (54) below. In sentence (54a), a conditional antecedent contains (i) an interrogative pronoun, and (ii) the root *k'éi* 'good' bearing the (basic) '0-series' classifier. As expected from the data in (53), the sentence is well-formed, and the interrogative pronoun has the contribution of an indefinite NPI. Sentence (54b) is nearly identical, except that the predicate *k'éi* 'good' has undergone the verbal classifier shift in (1), and so bears the '*sh*-series' classifier of (1b). The resulting sentence is ill-formed and not meaningful.

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[7] Some speakers also allow interrogative pronouns to function as indefinites in UE environments. When they occupy UE environments, however, such indefinites seem to carry 'epistemic' inferences that are not present when the indefinites occupy DE environments, akin to those discussed by Alonso-Ovalle & Menéndez-Benito (2015).

(54)   a.   **Daa sá**   k'éiyi,   ax   éeshch   yax ayaguxsaxáa.
                anything **0CL**.good.SUB 1sg.POSS father.ERG   3O.FUT.3S.eat.EXH
                *If **anything** is good, my father will eat it all up.*   (WF)

    b.   * **Daa sá**   **sha**k'éyi,   ax   éeshch   yax ayaguxsaxáa.
                anything **shCL**.good.SUB 1sg.POSS father.ERG 3O.FUT.3S.eat.EXH

We find, then, that the verbal classifier shift observed in the NEG antonym *tlél ushk'é* 'bad' is not licensed in a conditional antecedent, even though this is an environment where NPIs are licensed in Tlingit (54a).

        Furthermore, it appears that unlike the NPI licensing in (52), the verbal classifier shift of a Tlingit NEG antonym cannot be licensed across clauses. This can be seen from the contrasts in (55)-(56).

(55)   a.   Yéi xwaajée **tlél**   u**sh**k'éyi
                1sgS.think   **NEG**   IRR.**shCL**.good.SUB
                I think that it's bad.   (JM)

    b.   * **Tlél**   yéi xwají   u**sh**k'éyi
             NEG IRR.1sgS.think   IRR.**shCL**.good.SUB

(56)   a.   **Tlél**   ax tuwáa ushgú   **tlél**   xat u**sh**k'é.
                NEG IRR.1sgS.want   **NEG** IRR.1sgS.**shCL**.good
                I don't want to be bad.   (JM)

    b.   * **Tlél** ax tuwáa ushgú   xat u**sh**k'é.
             NEG IRR.1sgS.want   IRR.1sgS.**shCL**.good

The ill-formed sentences in (55b) and (56b) differ from the well-formed sentences in (55a) and (56a) only in that a clausal boundary separates the negation *tlél* from the root *k'éi* 'good' undergoing the verbal classifier shift. We find, then, that unlike NPI licensing (52), the morphological operation seen in (1b) is not licensed by negation across clauses.

        In summary, then, we find that the morphological operations that form the NEG antonyms in (1) have a rather stringent licensing requirement: they are only licensed by clausemate clausal negation. In Section 7, I will put forth a formal syntactic and semantic analysis of these NEG antonyms that captures this licensing behavior. But, before we come to that analysis, we will turn our attention to the puzzles regarding the NEG antonyms in (2)-(3).

6.   The Structure and Meaning of Other NEG Antonyms in Tlingit

Thus far, our empirical discussion has focused upon the NEG antonyms in (1), where there is a clear three-way contrast between (i) the positive predicate, (ii) the negation of the positive predicate, and (iii) the NEG antonym. In this section, we will consider the NEG antonyms in (2)-(3), where one of those key contrasts is missing. For example, we have cases such as (2) – repeated in (57) – where the NEG antonym appears to lack a positive correlate, and we have

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cases as in (3) – repeated in (58) – where the putative NEG antonym appears to be surface identical to the negation of the positive predicate.

(57) a. **tlél** chaa x'eití. b. * chaa x'ayatee.
          NEG IRR.0CL.nice(?)   0CL.nice(?)
          He's mean / grumpy / irritable.

(58) a. x'alitseen b. **tlél** x'eiltseen
          lCL.expensive **NEG** IRR.1CL.expensive
          It is expensive (dear). *It is cheap (low value).*

      c. naaléi d. **tlél** unalé
          0CL.far **NEG** IRR.0CL.far
          It is far. *It is near.*

      e. shigéek f. **tlél** ushgéek.
          shCL.stingy **NEG** IRR.shCL.stingy
          He is stingy. *He is generous.*

      g. kayahéil'k h. **tlél** koohéil'k
          0CL.strong **NEG** IRR.0CL.strong
          He is strong. *He is weak.*

These structures raise two main empirical questions. First, can we show that the negation in these NEG antonyms is also VP-external clausal negation (24b), like the negation in the NEG antonyms of (1)? Secondly, can we show that the putative NEG antonyms in (58b, d, f, h) can truly have strong, antonymic meanings? That is, can we show that these structures don't just always express simply the propositional negation of the positive sentences? These questions are addressed in the subsections below.

6.1   The Morphosyntactic Status of Negation in the Other NEG Antonyms

The negation found in the NEG antonyms of (57)-(58) does not seem to differ morphosyntactically from the negation in the NEG antonyms of (1). That is, the negation in these forms does not behave like an incorporated negative prefix akin to English *un*. For example, we again find that the NEG antonyms in (57)-(58) must obligatorily appear in irrealis mode.

(59) **Irrealis Mode Required for NEG Antonyms in (57)-(58)**

      a. (i) **Tlél** chaa x'eití. (ii) * **Tlél** chaa x'ayatee.
               NEG **IRR**.0CL.nice(?)   **NEG** 0CL.nice(?)
               He's mean / grumpy / irritable.

      b. (i) **Tlél** unalé (ii) * **Tlél** naaléi
               NEG **IRR**.0CL.far   **NEG** 0CL.far
               It is near.

As mentioned in Section 4.1, we would not immediately expect such effects on inflectional morphology from an incorporated negative prefix akin to English *un-*. Furthermore, just as with the NEG antonyms of (1), the negation in (57)-(58) can be separated from the predicate by nominal arguments.

(60)   **Syntactic Separability of Negation in NEG Antonyms (57)-(58)**

  a.   (i)   Tlél   **aadóo sá**   chaa x̱'eití
           NEG   **anybody**   IRR.0CL.nice(?)
           Everyone is mean (~ Not anybody is any nice.)   (LA)

       (ii)   Hél   **dóosh**   chaa x̱'eití
           NEG   **cat**   IRR.0CL.nice(?)
           Cats are mean. (~ No cat is any nice)   (C)

  b.   Hél   **dóosh** koohéil'k
       NEG   **cat**   IRR.0CL.strong
       Cats are weak. (~ No cat is any strong)   (C)

Thus, for the reasons detailed in Section 4.2, we can conclude that the negation in (57a) and (58b, d, f, h) has not been syntactically incorporated to form a single, negative lexeme like those in (22) and (23a). Rather, it seems to have the same VP-external syntax as the negation found in regular propositional negation like (1c, f, i, l, o, r), and so we will henceforth assume that it likewise occupies the same VP-external position, as in (24b).

6.2   The Strong 'Antonymic' Readings of the NEG Antonyms in (58)

Although Tlingit speakers often translate the negative forms in (58b, d, f, h) via English negative predicates like *cheap, near,* and *weak* (and *vice versa*), these expressions might not necessarily be truth-conditionally equivalent. That is, it could be that the Tlingit language (or the individual varieties spoken by the elders in question) simply lacks lexical items equivalent to those English predicates, and so the closest approximation to them available in Tlingit is simply the negation of their positive antonyms, *i.e.,* 'not expensive', 'not near', 'not stingy', 'not strong'.

In this section, I will present evidence against this possibility. In the two subsections below, we will see evidence that the negative forms in (58b, d, f, h) do indeed have strong, antonymic readings equivalent to English *cheap, near, generous,* and *weak*.

6.2.1   Modification by Degree Modifiers

One important piece of evidence that the forms in (58b, d, f, h) do have strong, antonymic interpretations concerns their interactions with degree modifiers. To begin, let us observe that – just as in English – it is not generally possible in Tlingit for degree modifiers like *yáanáx̱* 'more than' to modify a negated predicate.

(61) a. * A yáaná<u>x</u>   tlél   uk'é
           3O.more.than   NEG   IRR.0CL.good

      b. * A yáaná<u>x</u>   tlél   ut'á
           3O.more.than   NEG   IRR.0CL.hot

      c. * <u>K</u>úná<u>x</u>   tlél   ut'á
           very   NEG   IRR.0CL.hot

As shown above, it is as anomalous in Tlingit as it is in English to say things like 'This is more not good' or 'This is more not hot' or 'This is very not hot'. Let us also recall here that the reason for this anomaly is likely semantic – more specifically, type-theoretic. That is, degree modifiers like *yáaná<u>x</u>* 'more than' are generally analyzed as being of type <<d,t>, t> (see Section 7). They must combine syntactically with (and so semantically take as argument) a degree predicate, of type <d,t>. However, the negation of a positive proposition – such as 'This is not hot' – will be of propositional type (that is, of type t). Consequently, such negated structures do not project the type d degree argument that is required by the degree modifier, resulting in a semantic type mismatch in sentences like those in (61).

With this in mind, let us observe the following striking fact: unlike the negated structures in (61), the putative NEG antonyms in (58) can indeed combine with degree modifiers. That is, unlike (61a,b,c), all the following are entirely well-formed and interpretable in Tlingit.

(62) a. **A yáaná<u>x</u>**   tlél   unalí
          3O.more.than   NEG IRR.0CL.far
          It's closer than that.   (MD)

      b. **<u>K</u>úná<u>x</u> a yáaná<u>x</u>**   tlél   unalí
          very   3O.more.than   NEG   IRR.0CL.far
          It's much closer than that.   (MD)

      c. **A yáaná<u>x</u>**   áwé   **<u>k</u>úná<u>x</u>** tlél   <u>x</u>'eiltseen   yáat'aa
          3O.more.than FOC   **very**   NEG   lCL.expensive this.one
          This one is way cheaper than it.   (MD)

      d. Tléix'aa   **yáaná<u>x</u>**   áwé   tlél   ushgée<u>k</u>
          one.PART   **more.than**   FOC   NEG   IRR.shCL.stingy
          He's more generous than one of them.   (GD)

      e. Héit'aa **yáaná<u>x</u>**   áwé   tlél   ushgéi<u>k</u>
          this.one more.than   FOC   NEG   IRR.shCL.stingy
          He's more generous than this one.   (LA)

The well-formedness of the sentences above indicates that the negated forms in (58b, d, f, h) do indeed project the degree argument required by the degree modifier *yáaná<u>x</u>* 'more than'. This would follow if those negated forms can – unlike the ones in (61) – indeed be interpreted as gradable predicates like English *cheap, near, generous,* and *weak*.

21

Furthermore, it is important to note in this context that Tlingit does not seem to permit the kind of 'metalinguistic comparison' structures that are (marginally) allowable in English. That is, some English speakers do (with sufficient context) permit sentences like those in (63), where a degree modifier seems to be combining with an expression that typically does not project a degree argument (Morzycki 2011).

(63)   **Metalinguistic Comparison Structures in English**

   a.   ?? This is more of a totem pole than that.
   b.   ?? Dave is very not tall.
   c.   ?? Dave is more not tall than John is.

One might wonder, then, whether the Tlingit sentences in (62) simply involve some kind of similar 'metalinguistic comparison' structure. However, such a view would of course fail to explain the reported contrast between the sentences in (62) and those in (61). It would also wrongly predict the general possibility in Tlingit of metalinguistic comparison structures like the one in (64) (*cf.* (63a)).

(64)   * A yáanáx̱   kootéeyaax̱   sitee
           3O.more.than   totem.pole   IMP.3S.is
        Judgment: Ill-formed; not meaningful; does not mean anything like (63a) in English

We find, then, that the ability of NEG antonyms in (58) to combine with degree modifiers provides evidence that they can be interpreted as gradable predicates, and are not always interpreted as just the propositional negation of a positive predicate.

6.2.2   Behavior in Downward Entailing Environments

Further evidence that the negated forms in (58) truly have strong, antonymic interpretations can be found by examining their behavior in downward entailing (DE) environments. Let us begin by noting that in a DE environment, like the underlined structure in (65) below, a weaker predicate (65a) will lead the sentence to have a stronger interpretation than a sentence with a stronger predicate in the same position (65b).

(65)   a.   He went to all the towns that were **not far**.
         b.   He went to all the towns that were **nearby**.

To see this, note that in the scenario in (66) below, only the sentence in (65b) is true; sentence (65a) can only be interpreted as false in that scenario. It follows, then, that the meaning of sentence (65a) rules out the scenario in (66), while the meaning of (65b) does not.

(66)   Scenario:
        Some towns are very far away from Juneau: Seattle, San Francisco, Anchorage. Some towns are very close: Douglas and Thane. However, other towns aren't really far but aren't really close either: Sitka and Yakutat, for example. Dave went to Douglas and Thane, **but didn't go to any of the other towns**.

With this in mind, let us observe that Tlingit speakers report that the sentence in (67) below – which contains the NEG antonym in (58d) – can be interpreted as true/felicitous in scenario (66).

(67) Ldakát yá **hél unalí** aandé <u>k</u>oowateen.
      all DEM **NEG IRR.0CL.far** town.to PRV.3S.visit
      He went to all the towns that are near. (MD)
      <u>Judgment:</u> Does fit the scenario in (66).

The acceptability of sentence (67) in scenario (66) therefore suggests that the negated form in (58d), *tlél unalí*, can receive the strong antonymic interpretation of English *near*, and needn't always be interpreted as simply the negation of *far*.

A similar argument can be made regarding the interpretation of the NEG antonym in (58b), *tlél x'eiltseen* 'cheap'. Note that the exhaustive predicate *buy up* (in conjunction with a definite determiner) in English creates a DE environment, and so the sentence in (68a) is stronger than that in (68b).

(68) a. <u>He bought up the hats that were **not expensive**</u>.
      b. <u>He bought up the hats that were **cheap**</u>.

Again, the relative strength of these statements can be observed from the fact that only sentence (68b) is true in the scenario under (69). Thus, the meaning of (68a) is inconsistent with (69), while the meaning of (68b) is not.

(69) <u>Scenario:</u>
      A hat maker has three kinds of hats on display. She has some expensive hats, which are $600. She has some cheap hats, which are $5. And, she has some average-priced hats, which are about $30. Dave bought all the $5 hats, **but didn't buy any other hats.**

Let us then note that the Tlingit sentence in (70) below is reported to be acceptable in scenario (69). This suggests that (70) can have the meaning of English (68b), and so the negated form *tlél x'eiltseen* can indeed be interpreted as meaning 'cheap', and not simply 'not expensive'.

(70) **Tlél x'eilitseeni** s'áaxw ya<u>x</u> ayawsi.óo
      NEG IRR.lCL.expensive.REL hat 3O.PRV.3S.buy.EXH
      He bought up (all) the hats that were cheap. (LA)
      <u>Judgment:</u> Does fit the scenario in (69).

In summary, then, Tlingit sentences where the NEG antonyms of (58) appear in DE environments seem to allow weak interpretations that could only be generated if the negated forms themselves received strong, antonymic interpretations. Combined with the fact that these negated forms can combine with degree modifiers (Section 6.2.1), it is fair to conclude that these structures truly can be interpreted as negative gradable predicates. In the following section, I will put forth an analysis of how these structures can end up receiving these strengthened antonymic interpretations.

7. A Formal Syntactic and Semantic Analysis of Tlingit NEG Antonyms

This section presents a formal syntactic and semantic analysis of the NEG antonyms of Tlingit. The analysis builds upon the analytic insights and tools developed by Heim (2006, 2008) and Büring (2007a,b) for positive and negative gradable adjectives in English. I begin in the following subsection by introducing certain key assumptions, via a treatment of the English antonym pairs *good/bad* and *lucky/unlucky*. I then show how, given certain parametric differences between English and Tlingit, this approach can be extended to Tlingit NEG antonyms like *tlél ushk'é* 'bad', which (as shown in Section 4) are formed from VP-external negation.

7.1 Some Basic Formal Assumptions: Positive and Negative Antonyms in English

Following Heim (2006, 2008) and Büring (2007a,b) (*inter multa alia*), I assume that (positive) gradable predicates denote downward monotonic relations between entities and degrees. For example, the denotations of such basic lexemes as *good* and *lucky* are as in (71) below.

(71)   **Gradable Predicates are Relations Between Degrees and Entities**

    a.   [[good]]   = $[\lambda d : \lambda x : \text{goodness}(x) \geq d]$
    b.   [[lucky]]   = $[\lambda d : \lambda x : \text{luck}(x) \geq d]$

As stated in (71a), the denotation of *good* is a relation that holds between a degree d and an entity x if and only if x's degree of goodness is greater than (or equal to) the degree d. Similarly, the relation denoted by *lucky* holds between d and x if and only if x's degree of luck is greater than (or equal to) d.

    Under this semantics, gradable predicates project a degree argument in addition to an entity argument. Thus, these predicates must combine with something that either saturates or quantifies over this degree argument. Consequently, in simple predication sentences like (72a) – where the only overt argument is the entity argument – we must assume the presence of a phonologically null degree operator (Cresswell 1976; Bogal-Allbritten 2013). This operator, commonly dubbed *POS* (for 'positive'), takes the Adjective Phrase as complement and projects a Degree Phrase, as shown in (72b) (Kennedy 1997).

(72)   **The *POS* Operator: Syntax**

    a.   <u>Sentence:</u>   Dave is good.
    b.   <u>Syntax (First Pass):</u>   [$_{TP}$ Dave$_1$ [$_{TP}$ 1 [$_{TP}$ is [$_{VP}$ ... [$_{DegP}$ *POS* [$_{AP}$ t_1 good] ...]
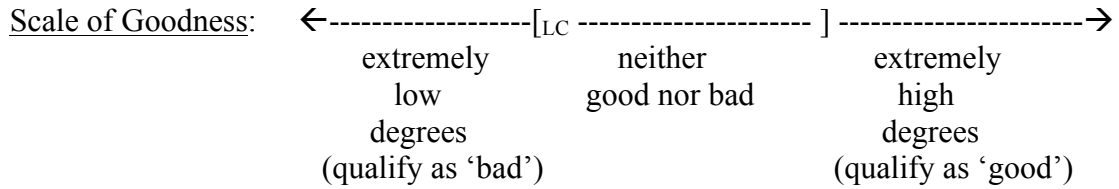
Furthermore, as shown in (72b), I assume that the entity argument is base-generated within the maximal projection of the (adjectival) predicate, undergoing movement to its surface position. I also assume the syntax/semantics for movement initially proposed by Heim & Kratzer (1998), whereby moved phrases trigger the copying of an index onto their sisters, which is in turn interpreted as predicate abstraction.

    Regarding the interpretation of this *POS* operator, I follow von Stechow (2009) and Heim (2006) in assuming the following denotation.

(73) **The *POS* Operator: Semantics** $\quad$ $[[\text{POS}]]^c \ = \ [\,\lambda P_{<dt>} : L_c \subseteq P\,]$

Under this semantics, within a context c, the denotation of *POS* is a degree quantifier (of type $<dt,t>$), which takes as argument a degree predicate P, and applies to P if and only if (the characteristic set of) P is a superset of the set of degrees L_C. This set L_C is determined by the context c, and is assumed to be the set of 'non-extreme degrees' for the predicate P. For example, for the predicate *good*, L_C would be those degrees which (within the context c) count as being 'neither good nor bad' (or 'just so-so'). This is illustrated by the diagram below.

(74) **The Set L_C of Contextually Determined 'Non-Extreme' Degrees**

Scale of Goodness: $\quad \longleftarrow$-------------------$[_{LC}$ ---------------------- $]$ ----------------------$\longrightarrow$

$\qquad\qquad\qquad\qquad$ extremely $\qquad\qquad$ neither $\qquad\qquad$ extremely
$\qquad\qquad\qquad\qquad\quad$ low $\qquad\qquad$ good nor bad $\qquad\qquad$ high
$\qquad\qquad\qquad\qquad$ degrees $\qquad\qquad\qquad\qquad\qquad\qquad$ degrees
$\qquad\qquad\qquad$ (qualify as 'bad') $\qquad\qquad\qquad\qquad$ (qualify as 'good')

$\qquad$ In a moment, we will see how this semantics for *POS* can combine with the lexical entries in (71) to yield accurate truth-conditions for sentences like (72a). Before we come to this, though, we will need to add one more ingredient to the syntax in (72b). Note that in (72b), the predicate *good* is not fully saturated within its maximal projection; although the trace of the subject *Dave* saturates the entity argument, nothing within the AP saturates the degree argument of *good*. If we assume that the arguments of a (lexical) predicate must all be saturated within its maximal projection, it follows that there must be something within the AP that saturates the degree argument. Of course, the *POS* operator itself could in principle do this job, but it must head a separate functional projection of the AP (Kennedy 1997). Consequently, to remedy this issue, I will assume the existence of a phonologically null 'degree relative' operator, *DEG-REL*.

$\qquad$ Semantically, the *DEG-REL* operator simply denotes an identity function on degree predicates, as shown in (75a).[8] Syntactically, *DEG-REL* is base-generated within the maximal projection of the gradable predicate, saturating its degree argument. Given its semantic type ($<dt,dt>$), it cannot be interpreted in this position, and so must undergo movement to the left-edge of the AP, as shown in (75b) below, leaving behind a trace of type d.

(75) **The Syntax and Semantics of *DEG-REL***

$\qquad$ a. $\qquad$ <u>Semantics of *DEG-REL:*</u> $\qquad$ $[[\text{DEG-REL}]] \ = \ [\,\lambda P_{<dt>} : P\,]$

$\qquad$ b. $\qquad$ <u>Syntax of *DEG-REL:*</u>

$\qquad\qquad$ (i) $\qquad$ *Sentence:* $\qquad$ Dave is good.

$\qquad\qquad$ (ii) $\qquad$ *Syntax:* $\qquad$ $[_{TP}$ Dave$_1$ $[_{TP}$ 1 $[_{TP}$ is $[_{VP}$ …
$\qquad\qquad\qquad\qquad\qquad\qquad\qquad$ $[_{DegP}$ *POS* $[_{AP}$ *DEG-REL$_2$* $[_{AP}$ 2 $[_{AP}$ t_1 t_2 good $]$ … $]$

---

[8] It therefore has a meaning analogous to that proposed for relative clause operators in such works as Heim & Kratzer 1998, where they are assumed to denote identity functions on entity predicates.

Given the semantic entries above – as well as the assumed semantics for movement structures (Heim & Kratzer 1998) – an LF structure like (75bii) will be computed to have the truth-conditions in (76a) below.

(76)   **Predicated Semantics for Predication Sentences with Positive Gradable Predicates**

      a. $L_c \subset \{ \, d' : goodness(Dave) \geq d' \, \}$

      b.   <u>Diagram Illustrating Truth-Conditions</u>

$\leftarrow$--------------------[$_{LC}$ -----------] ----------------- $\big|$ goodness(Dave) -----------$\rightarrow$

$$\{ \, d' : goodness(Dave) \geq d' \, \}$$
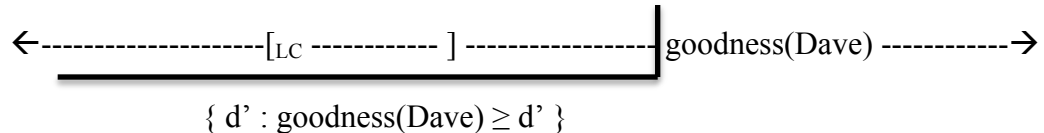
As illustrated in (76b), according to the predicted truth-conditions in (76a), sentence (72a) states that the set of degrees falling below Dave's degree of goodness contains all the 'non-extreme' degrees in L_C. Of course, as illustrated in (76b), this could only be the case if Dave's degree of goodness is *higher* than all the 'non extreme' degrees in L_C. By assumption then, this could only hold if Dave's degree of goodness counts as being 'extremely high', and so is among those degrees qualifying as 'good'.

      With these ideas in place, let us now consider the treatment of negative gradable predicates like *unlucky* and *bad*, beginning with the former. To begin, a simple predication sentence containing the positive predicate *lucky* (77a) will have the structure in (77b) and therefore the truth-conditions in (77c), perfectly analogous with the case of *good* in (75)-(76).

(77)   **Syntax and Semantics of Predication Sentences with Positive Predicate *Lucky***

      a.   <u>Sentence:</u>   Dave is lucky.

      b.   <u>Syntax:</u>   [$_{TP}$ Dave$_1$ [$_{TP}$ 1 [$_{TP}$ is [$_{VP}$ …
                              [$_{DegP}$ *POS* [$_{AP}$ *DEG-REL$_2$* [$_{AP}$ 2 [$_{AP}$ t_1 t_2 lucky] …]

      c.   <u>Predicted Truth-Conditions:</u> $L_c \subset \{ \, d' : luck(Dave) \geq d' \, \}$
            • The set of degrees of 'luck' falling below Dave's contains all the non-extreme degrees in L_C
            • Therefore, Dave's degree of 'luck' is above L_C, and so qualifies as 'extremely high', and so qualifies as 'lucky'.

Adapting ideas from Heim (2006, 2008) and Büring (2007a,b), I assume that (incorporated) negative prefixes like English *un-* directly take as argument a gradable predicate and return its complement. That is, they are assumed to have the denotation in (78a) below.

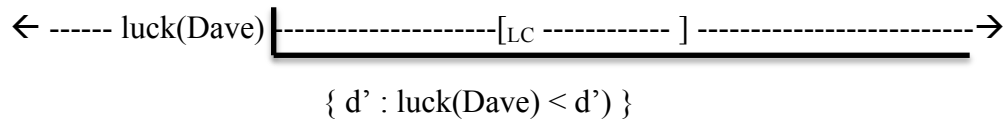(78)   **Denotation of (Incorporated) Negative Prefix**

      a.   [[*un- / in- / non-*]]   =   [$\lambda P_{<det>} : \lambda d : \lambda x : \neg P(d)(x)$]

b.   [[*unlucky*]]   =   [$\lambda d : \lambda x : \neg$ [[*lucky*]](d)(x)]

                                         =   [$\lambda d : \lambda x : \neg$ [$\text{luck}(x) \geq d$]]

                                         =   [$\lambda d : \lambda x : \text{luck}(x) < d$]

Consequently, the negative antonym *unlucky* will receive the denotation in (78b). That is, it will denote the relation that holds between a degree d and an entity x if and only if the denotation of *lucky* does *not* hold between d and x. Given the semantics for *lucky* in (71b), it follows that [[*unlucky*]] holds of d and x if and only if x's degree of luck falls *below* the degree d. Finally, under the syntactic/semantic assumptions in (73)-(75), it follows that the sentence in (79a) containing *unlucky* will have the syntax in (79b) and thus the truth-conditions in (79c).

(79)   **Syntax and Semantics of Predication Sentences with Negative Predicate *Unlucky***

     a.   <u>Sentence:</u>   Dave is unlucky.

     b.   <u>Syntax:</u>   [$_\text{TP}$ Dave$_1$ [$_\text{TP}$ 1 [$_\text{TP}$ is [$_\text{VP}$ …

                                     [$_\text{DegP}$ *POS* [$_\text{AP}$ *DEG-REL$_2$* [$_\text{AP}$ 2 [$_\text{AP}$ t_1 t_2 unlucky] …]

     c.   <u>Predicted Truth-Conditions:</u> $L_c \subset \{ d' : \text{luck}(\text{Dave}) < d' \}$

     d.   <u>Diagram Illustrating Predicted Truth-Conditions:</u>

     $\leftarrow$ ------ luck(Dave) ┣--------------------[$_\text{LC}$ ------------] ------------------------$\rightarrow$

                                      $\{ d' : \text{luck}(\text{Dave}) < d') \}$

According to (79c), sentence (79a) asserts that the degrees of luck falling *above* Dave's degree of luck contain the non-extreme degrees in L_C. As shown in (79d), this could only hold if Dave's degree of luck falls *below* all those non-extreme degrees. By assumption then, this could only hold if Dave's degree of luck counts as being 'extremely low', and so is among those degrees qualifying as 'unlucky'.

     Finally, let us contrast the semantics predicted for (79a) *Dave is unlucky* with that predicted for (80a) below, *Dave is not lucky*. Sentence (80a) is assumed to have the syntax in (80b), whereby the negation is VP-external, and so scopes above the *POS* operator.

(80)   **Syntax and Semantics of Negated Positive Sentences**

     a.   <u>Sentence:</u>   Dave is not lucky.

     b.   <u>Syntax:</u>   [$_\text{TP}$ Dave$_1$ [$_\text{TP}$ 1 [$_\text{TP}$ is [$_\text{NegP}$ not [$_\text{VP}$ …

                                     [$_\text{DegP}$ *POS* [$_\text{AP}$ *DEG-REL$_2$* [$_\text{AP}$ 2 [$_\text{AP}$ t_1 t_2 lucky] …]

     c.   <u>Predicted Truth-Conditions:</u> $\neg$ [$L_c \subset \{ d' : \text{luck}(\text{Dave}) \geq d' \}$]

As shown in (80c), sentence (80a) is predicted to assert that the degrees of luck that fall below Dave's *do not* contain the 'non-extreme' degrees in L_C. This, of course, simply means that

Dave's degree of luck is not above those non-extreme degrees in L_C. Consequently, these truth-conditions are consistent with two different scenarios: (i) Dave's degree of luck falls *below* all the degrees in L_C, and so Dave counts as being 'unlucky'; (ii) Dave's degree of luck falls *within* L_C, and so Dave counts neither as 'lucky' nor 'unlucky' (just so-so/average amount of luck).

In this way, this system captures the observed semantic relationships between (i) *lucky*, (ii) *not lucky*, and (iii) *unlucky*, whereby (i) and (ii) are contradictories of one another, while (i) and (iii) are contraries. Thus, we also capture the fact that the negative predicate *unlucky* is stronger than *not lucky*, the propositional negation of the positive predicate. Note that the crucial difference between *unlucky* and *not lucky* is ultimately the scope of negation. In *not lucky*, the negation scopes above the operator *POS*, while in *unlucky*, *POS* scopes above the negation, which has been incorporated into the predicate. As a result of this scope difference, *not lucky* locates the subject's degree of luck below the maximum degree in L_C, while *unlucky* locates it below the minimum degree in L_C.

Finally, let us consider now the parallel facts concerning the triplet (i) *good*, (ii) *not good*, and (iii) *bad*. Following the key proposals of Rullmann (1995), Büring (2007a,b), and Heim (2008), let us assume that negative antonyms like *bad* are derived from an underlying structure akin to *unlucky*. That is, as illustrated in (81), *bad* underlyingly contains an incorporated type <det,det> negation (78a), just like *unlucky*.

(81) **The Morphosyntax of Superficially Monomorphemic Negative Predicates** [9]

    a.   <u>Syntax:</u>   [$_A$ NEG$_{<det,det>}$ [$_A$ *good*]]   ➔   (Spell Out)
    b.   <u>Morphological Merger (at PF):</u> [[NEG] [*good*]]   ➔ (Readjustment)
    c.   <u>Output Pronunciation:</u>   / bæd /

Under this view, then, a simple predication sentence containing the negative predicate *bad* would have the structure in (82a) and thus the truth-conditions in (82b).

(82) **Syntax and Semantics of Predication Sentences with Negative Predicate *Bad***

    a.   <u>Syntax:</u>   [$_{TP}$ Dave$_1$ [$_{TP}$ 1 [$_{TP}$ is [$_{VP}$ …
                        [$_{DegP}$ *POS* [$_{AP}$ *DEG-REL$_2$* [$_{AP}$ 2 [$_{AP}$ t_1 t_2 [NEG *good*] …]

    b.   <u>Predicted Truth-Conditions:</u> $L_c \subset \{ d' : \text{goodness(Dave)} < d' \}$

According to the truth-conditions in (82b), the degrees above Dave's goodness contain the non-extreme degrees in L_C, which – following prior reasoning – entails that Dave's goodness is below L_C, and thus qualifies as 'extremely low', *i.e.* 'bad'. By contrast, the propositional negation of *Dave is good* would have the structure in (83a) and the truth-conditions in (83b).

(83) **Syntax and Semantics of Negated Positive Sentences**

    a.   <u>Syntax:</u>   [$_{TP}$ Dave$_1$ [$_{TP}$ 1 [$_{TP}$ is [$_{NegP}$ not [$_{VP}$ …
                        [$_{DegP}$ *POS* [$_{AP}$ *DEG-REL$_2$* [$_{AP}$ 2 [$_{AP}$ t_1 t_2 good] …]

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[9] This derivation assumes a morphosyntactic architecture like that of Distributed Morphology (Halle & Marantz 1993), in which operations of 'Morphological Merger' and 'Phonological Readjustment Rules' can take place at PF.

b.   <u>Predicted Truth-Conditions:</u> $\neg\, [\, L_c \subset \{\, d' : goodness(Dave) \geq d' \,\}\,]$

Again, by prior reasoning, the truth-conditions in (83b) are consistent with two different scenarios: (i) Dave's degree of goodness is below all the non-extreme degrees in L_C, and so he qualifies as 'bad'; (ii) Dave's degree of goodness is within the non-extreme degrees in L_C, and so he is 'neither good nor bad' (just 'so-so'). Thus, the system proposed here can capture the observed semantic relationships between *good, not good*, and *bad*, under the assumption in (81) that seemingly monomorphemic negative predicates like *bad* are underlyingly the combination of a positive predicate with an incorporated (type <det,det>) negation.

      Having laid out this network of assumptions regarding negative and positive gradable predicates in English, we will now see in the following subsections how these ideas can be extended to the cases of central interest here, the NEG antonyms of Tlingit.

7.2   Formal Syntax and Semantics of Tlingit NEG Antonyms

Let us begin by considering how the system put forth above can be extended to the NEG antonyms in (1). We will focus upon the triplet in (1a,b,c), repeated below, as representative.

(84)   a.   yak'éi   b.   **tlél** u**sh**k'é   c.   **tlél**   uk'é
            0CL.good   **NEG** IRR.**shCL**.good   **NEG** IRR.**0CL**.good
            It is good.   *It is bad.*   *It is not good.*

First, we can assume that the positive predication sentence (84a) and its propositional negation (84c) are perfectly analogous to their English equivalents in (75)-(76) and (83). That is, we assume that the root *k'éi* in Tlingit has the same denotation as English *good* in (71a), that Tlingit shares with English the operators *POS* and *DEG-REL*, and that aside from details not relevant here, the syntactic structures of (84a)/(84c) are akin to those in (75b)/(83a).

      What, though, of the NEG antonym in (84b)? It has, of course, a stronger meaning than the sentence in (84c), one that is equivalent to the English negative predication sentence in (82). Recall that the English negative predication sentence in (82) receives this stronger 'antonymic' reading due to the relative scope of *POS* and negation. That is, *bad* is stronger than *not good* because in the former *POS* scopes above negation, which has been incorporated into the predicate. In the case of (84b), however, we've seen ample evidence in Section 4 that the negation marker is not incorporated into the predicate, and instead occupies the same high, VP-external position as it does in (84c).

      For this reason, we are forced to conclude that one major difference between Tlingit and English is that in Tlingit, the operator *POS* can occupy a position above clausal negation. This is stated more precisely in (85) below.

(85)   **First Parametric Difference Between English and Tlingit: The Position of Deg**

        a.   In English, Degree heads like *POS* must take an AP as complement.

b.   In Tlingit, Degree heads like *POS* need not take an AP as complement. Rather, they can simply be adjoined to the Negation Phrase (NegP).[10]

Consequently, a simple predication sentence like (86a) in Tlingit will be assumed to have a structure like that in (86b), where the operator *POS* is adjoined to the NegP.

(86)   **Syntax of Predication Sentences with NEG Antonyms (First Pass)**

a.   <u>Sentence:</u>   Jáan   tlél   ushk'é
                            John   NEG   IRR.shCL.good
                            John is bad.   (C)

b.   <u>Syntax:</u> $[_{TP}$ Jáan$_1$ $[_{TP}$ 1 $[_{TP}$ $[_{NegP}$ $[_{DegP}$ *POS*] $[_{NegP}$ *tlél* $[_{VP}$ t_1 *ushk'é*] …]

It is actually not surprising that Tlingit differs from English with regard to the property in (85a). Like other Na-Dene languages, Tlingit does not seem to have adjectives as a lexical category.[11] Indeed, as the reader has no doubt noted, all the Tlingit gradable predicates above – which are semantically equivalent to English gradable adjectives – are in fact verbs. Consequently, if (85a) were to hold in Tlingit, the language would be unable to use any of its gradable predicates. From this fact alone, then, it can be fairly concluded that Deg-heads in Tlingit must have a broader distribution than they do in English.

     Note, however, that in (86b) the root *k'éi* 'good' is not yet fully saturated within its maximal projection; again, there must be something within the VP that satisfies the root's degree argument. With this in mind, I introduce here the second main ingredient to our analysis of Tlingit NEG antonyms, the operator *NEG-REL*.

(87)   **Second Parametric Difference Between English and Tlingit: Existence of *NEG-REL***

a.   <u>Semantics of *NEG-REL*:</u>   [[NEG-REL]]   =   [$\lambda P_{<dt>}$: P]

b.   <u>Syntax of *NEG-REL*:</u>
       • *NEG-REL* must undergo movement to the specifier of a Negation Phrase.
       • *NEG-REL* is the only degree operator permitted to move to Spec-NegP

c.   <u>Morphophonology of *NEG-REL*:</u>
       Adjacency of a predicate to *NEG-REL* triggers certain (lexically stipulated) morphophonological processes.

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[10] Of course, we should also ask what other categories a Deg-head can be adjoined to in Tlingit. In sentences like (84a) and (84c), we will assume that the Deg-head *POS* is adjoined to VP (see (91a) below). I must leave as a question for future research whether Deg-heads can be adjoined to any categories besides VP and NegP.

[11] There is a very small, closed class of adnominal modifiers that could plausibly be called 'adjectives' (*e.g.*, *tlein* 'big', *yées* 'young, new', *etc.*), but these cannot be used predicatively, nor can they combine with degree modifiers like *yáanáx̱* (Leer 1991). Consequently, it's unclear whether it is indeed accurate to label these modifiers as 'adjectives' in the traditional sense.

As stated in (87a), there is no semantic difference between the operator *NEG-REL* and the operator *DEG-REL* in (75); both denote identity functions on degree predicates. *NEG-REL*, however, has certain special syntactic and morphological properties. Syntactically, *NEG-REL* can only be licensed in Spec-NegP. Therefore, if *NEG-REL* is generated in the degree-argument position of a gradable predicate, it must undergo movement to NegP. Furthermore, *NEG-REL* is the only operator permitted to undergo such movement. That is, as in English, *DEG-REL* in Tlingit never targets SpecNegP.[12] Finally, I assume that the special morphological operations found in the NEG antonyms of (1) are a reflex of the presence of *NEG-REL*. That is, these processes are triggered precisely when *NEG-REL* is adjacent to the predicate in question.

With these additional ingredients in place, I propose that the structure of NEG antonym sentences like (86a) is that in (88a). Therefore, such sentences are predicted to have the truth-conditions in (88b).

(88)   **Syntax and Semantics of Predication Sentences with NEG Antonyms**

    a.   <u>Syntax of (86a):</u> $[_{TP}$ Jáan$_1$ $[_{TP}$ 1 $[_{TP}$ $[_{NegP}$ $[_{DegP}$ *POS* $]$

                                    $[_{NegP}$ *NEG-REL*$_2$ $[_{NegP}$ 2 $[_{NegP}$ *tlél* $[_{VP}$ t_1 t_2 *ushk'é* $]$ … $]$

    b.   <u>Predicted Truth-Conditions:</u> $L_c \subset \{$ d' : goodness(John) < d' $\}$

The predicted truth-conditions in (88b) are, of course, exactly those predicted in (82b) for the English negative predication sentence *Dave is bad.* Thus, this system indeed correctly predicts that (84b) has a stronger (antonymic) reading than (84c). Again, this result is obtained by the assumption that in (84b), the degree operator *POS* scopes above (clausal) negation, while in (84c), it scopes below negation.

Let us also observe that we correctly predict that (84c) cannot receive the stronger 'antonymic' interpretation of (84b). Again, to receive such an interpretation, the operator *POS* must scope above negation. Consequently, a degree relative operator must move to the Specifier of that negation, to create the (syntactically derived) <d,t> degree predicate that *POS* takes as argument. However, by assumption (87b), the only degree relative operator that can undergo such movement is *NEG-REL*. Finally, by assumption (87c), adjacency of *NEG-REL* to the root *k'éi* 'good' will trigger the shifting of the classifier to *sh-*. Therefore, the form that surfaces will be the one in (84b), and not the one in (84c).[13]

Similarly, our system is able to capture the semantic contrast observed earlier for (38a,b), repeated below.

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[12] This could perhaps be implemented by assuming that *NEG-REL* bears an uninterpretable instance of the 'negative polarity' feature [-POL], born by negation, while *DEG-REL* bears an uninterpretable instance of the 'positive polarity' feature [+POL], born by a (phonologically null) positive polarity head. For now, however, I leave this as a matter for future research.

[13] Likewise, we correctly predict that (84b) cannot have the weaker 'propositional negation' reading of (84c). To receive that interpretation, *POS* must be in the scope of negation, and so the degree relative operator must also be in the scope of negation. Consequently, that degree relative operator couldn't be *NEG-REL*, which must move to Spec-NegP. Therefore, a sentence receiving such an interpretation could never surface with the *sh*-classifier shift triggered by *NEG-REL*.

(89)	a.	**Tlél**	daa sá	u**sh**k'é	b.	**Tlél**	daa sá	uk'é
		NEG	anything	IRR.**shCL**.good		**NEG**	anything	IRR.**0CL**.good
		Everything is bad.				*Nothing is good.*		

In sentence (89a), the presence of classifier shift entails that *NEG-REL* must have been generated adjacent to the predicate. Given the key assumption in (87b), then, this *NEG-REL* must have undergone movement to SpecNegP. This movement creates a syntactically derived type-<d,t> degree predicate. Consequently, in order for (89a) to be of propositional type (type t), we must assume that the *POS* operator has scope above the NegP. Putting all this together, we conclude that (89a) has the LF structure in (90a), and therefore the truth-conditions in (90b).

(90) **Syntax and Semantics of (89a)**

    a.   <u>Syntax:</u>[14]
        $[_{NegP}\ POS\ [_{NegP}\ NEG\text{-}REL_2\ [_{NegP}\ 2\ [_{NegP}\ tlél\ [_{VP}\ daa\ sá\ t_2\ ushk'é\ ]\ \dots\ ]$

    b.   <u>Predicted Truth-Conditions:</u> $L_c \subset \{\ d' : \neg\exists x\ (goodness(x) \geq d')\ \}$

The truth-conditions in (90b) state that the set of non-extreme degrees L_C is contained within the set of degrees d' such that nothing has a degree of goodness above d'. That is, the set of degrees that are above *everything's* degree of goodness contains the non-extreme degrees L_C. Of course, this could only hold if everything's degree of goodness falls below L_C, and so everything has an 'extremely low' degree of goodness, therefore qualifying as bad. Thus, we correctly predict that (89a) is true if and only if everything is bad. Therefore, we correctly predict the judgments in (38), that (89a) is false when some items of food are merely 'so-so' (and not really bad), and that (89a) is true when the entirety of a beach has become completely spoiled.

    For sentence (89b), however, the absence of any classifier shift entails that *NEG-REL* was not generated adjacent to the predicate. Consequently, the degree relative operator in (89b) must be *DEG-REL*, which is unable to move to Spec-NegP. It follows that *DEG-REL* – and therefore *POS* as well – is within the scope of negation. Thus, (89b) must have the LF structure in (91a) and so the truth-conditions in (91b).

(91) **Syntax and Semantics of (89b)**

    a.   <u>Syntax:</u>[15] $[_{NegP}\ tlél\ [_{VP}\ daa\ sá_1\ [_{VP}\ 1$
                              $[_{VP}\ POS\ [\ DEG\text{-}REL_2\ [\ 2\ [\ t_1\ t_2\ uk'é\ ]\ \dots\ ]$

    b.   <u>Predicted Truth-Conditions:</u> $\neg\exists x\ [\ L_c \subset \{\ d' : (goodness(x) \geq d')\ \}\ ]$

The truth-conditions in (91b) state that there is no entity x such that x's degree of goodness is above the 'non-extreme' degrees in L_C. That is, there is nothing that qualifies as 'good'. Thus,

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[14] Because negation is assumed in Tlingit to occupy a position below TP, the linear position of the subject in (89a) entails that it occupies a lower position in the clause, which I assume here to be within VP.

[15] I assume that as in English, NPIs like *daa sá* 'anything' in Tlingit must be in the immediate scope of their licensing operator. Therefore, *POS* must scope below *daa sá* in (89b), and so I assume in (91a) that *daa sá* has undergone movement to a position above *POS* but below negation.

we correctly predict that (89b) will be true in a scenario where some items of food are merely 'so-so', just as long as no item of food is really 'good'. Furthermore, we correctly predict that (89b) will be anomalous in a context where the entirety of a beach has been spoiled. Although (89b) would be *true* in such a context, we've already seen that (89a) would also be true in such a context. Since (89a) is logically stronger than (89b), it follows that using (89b) in such a context would violate the Gricean Maxim of Quantity, and so would be perceived as anomalous. In this way, our system is able to predict the key judgments in (38) regarding sentence (89b).

Finally, let us end this section by considering how this analysis can capture the generalization in (7), repeated below.

(92) **Scope/Word-Order Generalization for Negation and Degree Modification**

    a.   If a NEG antonym is to be modified by a degree modifier, the degree modifier must precede the negation in the NEG antonym.

    b.   If a positive predicate modified by a degree modifier is to be negated, the negation must precede the degree modifier.

To begin, I assume the following semantics for the comparative operators *yáanáx̱* 'more than' and *x̱ín* 'less than' (Büring 2007a,b; Heim 2008).

(93) **Semantics of Comparative Operators in Tlingit**

    a. $[[\text{ } y\acute{a}an\acute{a}\underline{x} \text{ }]]$ = $[\text{ }\lambda P_{<dt>} : [\text{ }\lambda Q_{<dt>} : P \subset Q\text{ }]\text{ }]$

    b. $[[\text{ } \underline{x}\acute{\imath}n \text{ }]]$ = $[\text{ }\lambda P_{<dt>} : [\text{ }\lambda Q_{<dt>} : P \supset Q\text{ }]\text{ }]$

I also assume that Tlingit comparative constructions like those in (94a) have the LF in (94b).

(94) **Syntax and Semantics of Tlingit Comparative Constructions**

    a.   <u>Sentence:</u>   Jáan   Sóo   yáanáx̱   yak'éi
                               John   Sue   more.than   0CL.good
                               John is better than Sue.   (C)

    b.   <u>Syntax:</u>
        [TP Jáan₁ [TP 1 [VP
              [PP [TP Sóo₁ [TP 1 [VP *DEG-REL₂* [VP 2 [VP *t₁ t₂* ~~yak'éi~~] …] yáanáx̱]
                [VP *DEG-REL₂* [VP 2 [VP *t₁ t₂* yak'éi] …]

    c.   <u>Predicted Truth-Conditions:</u>
        $\{\text{ } d' : goodness(Sue) \geq d' \text{ }\} \subset \{\text{ } d' : goodness(John) \geq d' \text{ }\}$

Mainly for simplicity's sake, I assume here that *yáanáx̱* 'more than' takes a clausal complement, the predicate of which undergoes ellipsis due to parallelism with the matrix predicate. In both the main clause and the complement of *yáanáx̱*, the operator *DEG-REL* undergoes movement to the edge of the VP, producing a derived type <d,t> degree predicate. These degree predicates are taken as the arguments of *yáanáx̱*. Given the lexical entry in (93), this yields the truth-conditions in (94c), which state that the set of degrees lower than John's degree of goodness contains all the

degrees lower than Sue's degree of goodness. Of course, this could only hold if John's degree of goodness is higher than Sue's, and thus we correctly predict that (94a) is true if and only if John is better (of greater goodness) than Sue.

   With this in mind, let us consider the structure of sentences where a comparative phrase modifies a NEG antonym (92a). By assumption, such sentences – like (95a) below – contain the *NEG-REL* operator, which obligatorily takes scope over negation (87b). Consequently, sentences like (95a) must receive the LF structure in (95b).

(95)   **Syntax and Semantics of Comparative Clause Modifying a NEG Antonym**

   a.   <u>Sentence:</u>   Jáan   Sóo   yáaná$\underline{x}$ tlél   ushk'é
                      John   Sue   more.than   NEG   IRR.shCL.good
                      John is worse than Sue.   (C)

   b.   <u>Syntax:</u>
        [$_{TP}$ Jáan$_1$ [$_{TP}$ 1 [$_{NegP}$
            [$_{PP}$ [$_{TP}$ Sóo$_1$ [$_{TP}$ 1 [$_{NegP}$ *NEG-REL*$_2$ [$_{NegP}$ 2 [$_{\text{NegP}}$ ~~tlél~~ [$_{\text{VP}}$ ~~t_1 t_2 ushk'é~~] …] yáaná$\underline{x}$]
            [$_{NegP}$ *NEG-REL*$_2$ [$_{NegP}$ 2 [$_{NegP}$ tlél [$_{VP}$ t_1 t_2 ushk'é] …]

   c.   <u>Predicted Truth-Conditions:</u>
        { d' : goodness(Sue) < d' } ⊂ { d' : goodness(John) < d' }

Under the syntax in (95b), I again assume that *yáaná$\underline{x}$* 'more than' takes an elided clausal complement. In the case of (95b), however, this ellipsis targets a NegP rather than simply the VP. What's key, though, is that in both the main and subordinate clause in (95b), *NEG-REL* has undergone movement to Spec-NegP, creating a derived *negative* degree predicate. These two degree predicates are taken as argument by *yáaná$\underline{x}$*, yielding the truth-conditions in (95c), which state that the degrees of goodness higher than John's include the degrees of goodness that are higher than Sue's. This, though, could only hold if John's degree of goodness were *lower* than Sue's, and thus we correctly predict that (95a) is true if and only if John is worse (of lower goodness) than Sue.

   Lastly, let us consider sentences where a positive predicate modified by a degree modifier is negated (92b). Since the predicate in these sentences is positive, then by assumption they do not contain *NEG-REL*, but rather *DEG-REL*. Thus, a sentence like that in (96a) must receive a structure like that in (96b).

(96)   **Syntax and Semantics of Negated Comparatives**

   a.   <u>Sentence:</u>   Jáan   tlél   Sóo   yáaná$\underline{x}$ uk'é
                      John   NEG   Sue   more.than   IRR.0CL.good
                      John is not better than Sue.   (C)

   b.   <u>Syntax:</u>
        [$_{TP}$ Jáan$_1$ [$_{TP}$ 1 [$_{NegP}$ tlél [$_{VP}$
            [$_{PP}$ [$_{TP}$ Sóo$_1$ [$_{TP}$ 1 [$_{VP}$ *DEG-REL*$_2$ [$_{VP}$ 2 [$_{VP}$ t_1 t_2 ~~yak'éi~~] …] yáaná$\underline{x}$]
            [$_{VP}$ *DEG-REL*$_2$ [$_{VP}$ 2 [$_{VP}$ t_1 t_2 uk'é] …]

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    c.   <u>Predicted Truth-Conditions:</u>
                $\neg$ **[** { d' : goodness(Sue) $\geq$ d' } $\subset$ { d' : goodness(John) $\geq$ d' } **]**

Under the LF in (96b), the comparative clause scopes below the negative operator *tlél*. In both the main and the subordinate clause, the operator *DEG-REL* undergoes movement to a position with the VP, creating the degree predicates that *yáanáx̱* 'more than' takes as argument. The resulting truth-conditions are those in (96c), which simply assert that John's goodness is *not* higher than Sue's. Consequently, such sentences can be understood as true in scenarios where John and Sue are of equal goodness (20).

        In this way, our proposed syntactic/semantic analysis is able to capture the Scope/Word-Order generalization in (7)/(92). Crucially, all the LF structures proposed above accord with the surface word-order of the Tlingit sentences. Consequently, we find that in this system, operators which appear to the left semantically outscope operators to the right. Thus the generalization in (7)/(92) is a simple result of the scope of the operators in question. That is, when NEG antonyms are modified by degree operators, the operator precedes negation precisely because it outscopes that negation (92a). Similarly, the negation of a degree modification places the negation before the modifier precisely because it outscopes that modifier (92b).

7.3   **Further Predictions and Challenges**

In the preceding subsection, we saw that our proposed account correctly predicts that (i) the negated positive predicate in (84c) cannot be interpreted as a NEG antonym in Tlingit, and that (ii) when a degree modifier precedes negation, the sentence is interpreted as the degree modification of a NEG antonym (92). Together, these results correctly predict the ill-formedness of the sentence in (97) below.

(97)   **No Comparative Phrase Before Negation of a Positive Predicate**

    * A yáanáx̱   tlél   uk'é
      3O.more.than   NEG   IRR.0CL.good   (*cf.* (8b), (13))

More precisely, the position of *yáanáx̱* in (97) entails that it must take as argument the denotation of the phrase *tlél uk'é*. Given the semantics in (93), then, the phrase *tlél uk'é* must denote a degree predicate. The only way for such a phrase to denote a degree predicate is if a degree relative operator – either *DEG-REL* or *NEG-REL* – has moved to its left periphery. However, the degree relative operator in (97) couldn't be *DEG-REL*, since that operator is not able to move to the left periphery of a NegP. It also couldn't be *NEG-REL*, since the root *k'éi* 'good' has not undergone the *sh*-classifier shift triggered by *NEG-REL*. Consequently, there is no degree relative operator that could be located in the left periphery of *tlél uk'é*, and so the sentence is not interpretable.

        For similar reasons, our system correctly predicts the ill-formedness of the following.

(98)   **Comparative Phrase Cannot Intervene in a NEG Antonym**

    * Tlél   a yáanáx̱   u**sh**k'é
      NEG   3O.more.than IRR.**shCL**.good   (*cf.* (8b), (13))

Again, given the position of *yáanáx̱* in (98), it must take as argument the denotation of the phrase *ushk'é*. Again, the lexical entry in (93) therefore demands that the phrase *ushk'é* denotes a degree predicate, and so there must be a degree relative operator in its left periphery. This operator couldn't be *DEG-REL*, since *DEG-REL* wouldn't be able to trigger the *sh*-classifier shift found in (98). This operator also couldn't be *NEG-REL*, since *NEG-REL* must move to the Specifier of NegP, and cannot appear at a lower position. Thus, there is no degree relative operator that could be in the left periphery of *ushk'é*, and so (98) is not interpretable.

As this discussion reinforces, a crucial ingredient in our proposed account is the operator *NEG-REL*, and the assumption that it must cross over negation and move to Spec-NegP. This key assumption faces a very difficult challenge, however. Beginning with the work of Heim (2001), it has been argued that movement of degree operators – including degree relative operators – cannot cross logical/quantificational items, such as negation. One could, of course, try to counter that Tlingit is an exception to this pattern. Unfortunately, however, many of the facts that motivate this constraint in English also hold in Tlingit. For example, speakers of Tlingit report that sentence (99a) cannot be construed as true in scenario (99b).

(99)   **Intervention Effects with 'Degree Movement' in Tlingit**

    a.   <u>Sentence:</u>   Ldakát hás   áwé   du ḵín   has koodligéi Bill.
                                  everyone   FOC   3O.less.than   lCL.tall   Bill
                                  Everyone is less tall than Bill.   (JM)

    b.   <u>Falsifying Scenario:</u>
             Bill is taller than everyone but Mary. Mary is the one person taller than Bill.

However, if Tlingit generally permitted degree relative operators like *DEG-REL* to cross quantificational phrases like *ldakát hás* 'everyone', then sentence (99a) could receive the LF in (100a), and so therefore the truth-conditions in (100b).

(100)   **Over-Generating a True Reading for (99a)**

    a.   <u>Problematic LF:</u>
        [$_{TP}$ [$_{PP}$ [$_{TP}$ Bill$_1$ [$_{TP}$ 1 [$_{VP}$ *DEG-REL$_2$* [$_{VP}$ 2 [$_{VP}$ t_1 t_2 ~~ligéi~~] …] ḵín]
                              [$_{VP}$ *DEG-REL$_2$* [$_{VP}$ 2 [$_{VP}$ **ldakát hás** t_2 has koodligéi] …]

    b.   <u>Predicted Truth-Conditions:</u>
        { d' : height(Bill) ≥ d' } ⊃ { d' : ∀x. height(x) ≥ d' }

    c.   <u>Verifying Scenario:</u>
        ---------------------------- Jen -------- Sue ------- Bill ------- Mary ------------→

        { d' : ∀x. height(x) ≥ d' }

                     { d' : height(Bill) ≥ d' }

In the main clause of (100a), *DEG-REL* has moved over the quantificational subject *ldakát hás* 'everyone'; the resulting structure will thus be interpreted as the degree predicate [λd' : ∀x. height(x) ≥ d'].[16] When this predicate combines with the denotation of the comparative phrase, the resulting truth-conditions in (100b) state that the heights lower than Bill's height contain the heights that are lower than *everyone's* height. However, as illustrated in (100c), these truth-conditions are consistent with someone being taller than Bill. Suppose that Jen is 60", Sue is 65", Bill is 72", and Mary is 78". It follows that { d' : ∀x. height(x) ≥ d' } will be all the heights lower than 60", since Jen is the shortest individual. This set is certainly a subset of the heights lower than Bill's, since he is 72". Thus, the truth-conditions in (100b) are consistent with someone being taller than Bill, contrary to the judgments reported for sentence (99a).

It follows, then, that we must somehow rule out the possibility of (99a) receiving the LF in (100c). One option would, of course, be to assume that no degree relative operator – neither *DEG-REL* nor *NEG-REL* – is able to move over any logical/quantificational expression in Tlingit. Such a condition, though, would be incompatible with our proposed analysis of Tlingit NEG antonyms. Instead, let us take note of the following detail. In the LF structures we wish to rule out – such as (100a) and (to my knowledge) all others discussed in the literature – the degree operator moves over the *entire maximal projection* of the logical operator in question. For example, in (100a), *DEG-REL* moves past the maximal projection of the quantificational subject. However, in the LF structures we wish to permit – such as (88a) – the degree operator does not move past the maximal projection of the logical operator. That is, *NEG-REL* never moves completely beyond NegP; it always stops at Spec-NegP. Let us, then, suppose that the general 'intervention condition' governing degree operators is as stated in (101) below.

(101) **Constraint on 'Degree Movement'**
Degree operators (such as *DEG/NEG-REL*) cannot move over the maximal projection of a logical/quantificational operator.

According to the proposal in (101), a head H doesn't count as 'intervening' between Spec-HP and the material in its complement. In essence, Spec-HP is 'too local' to H for the intervention condition to distinguish between them. Another way of viewing this is that (101) states that 'intervenors' must be maximal projections. That is, intervention conditions like the one governing 'degree movement' are calculated over maximal projections, and not over the operators/heads *per se*. Consequently, if a phrase moves to a position *within* the maximal projection of the potential intervenor, the intervention condition is not violated.

In this way, we can both correctly rule out LFs like (100a) and preserve the key assumptions of the analysis in Section 7.2. Of course, it remains to be seen how well the approach in (101) generalizes beyond the intervention conditions discussed here. Consequently, facts like (100) remain an outstanding challenge for the account proposed here.

7.4   Extending the Analysis to the Other NEG Antonyms of Tlingit

Thus far, we've seen how our proposed system can capture the alternations in (1), where (non-productive) morphological operations serve to distinguish the NEG antonym. What, though, of

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[16] This argument makes the natural assumption that the predicates *tall* and *ligéi* are interpreted as the following relation: [λd' : λx : height(x) ≥ d'].

the NEG antonyms in (2)-(3), where these operations are not observed? Let us begin with cases like (2), repeated below, lexemes that cannot appear without negation.

(102) a. **Tlél** chaa x'eití.   b.   * Chaa x'ayatee.
           NEG IRR.0CL.nice(?)   0CL.nice(?)
           He's mean / grumpy / irritable.

Is there a way in which the proposals from Section 7.2 might account for the contrast between (102a) and (102b)? Note that according to those proposals, the Tlingit root *k'éi* 'good' is able to syntactically combine with both *DEG-REL* and *NEG-REL*. Suppose, though, that lexemes like *chaa x'a-tee* were only able to combine with *NEG-REL*. That is, let us imagine that these lexemes specially c-select for *NEG-REL*. Since *NEG-REL* is only licensed in Spec-NegP, it would of course follow that negation must be present in any clause headed by them. Thus, the impossibility of (102b) might be due to the fact that *NEG-REL* – which is required by *chaa x'a-tee* – goes unlicensed in the absence of negation.
    Finally, let us consider the cases in (4), such as the pair in (103) below.

(103) a. Jáan   naaléi   b.   Jáan   **tlél**   unalé
           John   0CL.far   John   **NEG**   IRR.0CL.far
           John is far.   (C)   *John is near.*   (C)

We saw in Section 6 that forms like (103b) in Tlingit can indeed receive strengthened 'antonymic' interpretations, and are not always interpreted as simply the propositional negation of positive forms like (103a). This raises the question, though, of how those antonymic interpretations can be derived. Of course, given our proposed system, such a reading of (103b) would be derived if *NEG-REL* were generated as the degree argument of *léi* 'far', undergoing movement to Spec-NegP, as in (104a) below.

(104) **Syntax and Semantics of 'Phonologically Vacuous' NEG Antonyms**

       a.   <u>Syntax of (103b):</u> $[_{TP}$ Jáan$_1$ $[_{TP}$ 1 $[_{TP}$ $[_{NegP}$ $[_{DegP}$ *POS* $]$
                                          $[_{NegP}$ *NEG-REL*$_2$ $[_{NegP}$ 2 $[_{NegP}$ *tlél* $[_{VP}$ t_1 t_2 *unalé* $]$ … $]$

       b.   <u>Predicted Truth-Conditions:</u> $L_c \subset \{ d' : distance(John) < d' \}$[17]

             • John's distance is below the 'non-extreme' degrees in L_C
             • Therefore, John has 'extremely low' distance, and so qualifies as 'near'

Of course, if the structure in (104a) were a possible LF for (103b), it would follow that *NEG-REL* somehow just has no morphophonological effect upon the predicate *léi* 'far'. Such a possibility, however, shouldn't be surprising. After all, from cases like *tlél ulcheen* 'weak' (1q) and *tlél x'eishgú* 'boring' (1n), we've already seen that the morphophonological effect of *NEG-REL* upon a predicate must be stipulated on an item-by-item basis. Consequently, we should expect that for some items – *i.e.*, those in (4) – *NEG-REL* simply applies vacuously; there is no

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[17] This semantics assumes that the predicates *far* and *léi* are interpreted as the relation: $[\lambda d' : \lambda x : distance(x) \geq d']$.

stipulated morphophonological rule triggered for those cases. In this way, our analysis of the NEG antonyms in (1) can be extended to those in (4).

8. Negation in Other Predicates? Cross-Polar Nomalies in Tlingit and English

In this final section, we will see one more way in which the behavior of negative predicates in Tlingit, given the analysis from Section 7, can impact our understanding of related phenomena in other languages. To begin, recall that certain facts in English (and other languages) have motivated the view repeated in (105) below, that even apparently monomorphemic negative predicates are ultimately derived from a complex structure consisting of (i) negation, and (ii) a positive predicate.

(105)   **The Morphosyntax of Superficially Monomorphemic Negative Predicates**

a.	<u>Syntax:</u>	[A NEG [A *tall*]]	➔	(Spell Out)
b.	<u>Morphological Merger (at PF):</u>	[[NEG] [*tall*]]	➔	(Readjustment)
c.	<u>Output Pronunciation:</u>	/ ʃɔɹt /		

Following Büring (2007a,b) and Heim (2008), a major piece of evidence supporting (105) are so-called 'Cross-Polar Nomalies.' As illustrated in (106) below, within a subcomparative construction, the polarities of the gradable predicates can differ, but only if the positive predicate is in the subordinate comparative clause and the negative predicate is in the main clause.

(106)   **Cross-Polar Nomalies in English (Büring 2007a,b)**

   a.   (i)   * This book is **wider** [than it is **short**]
         (ii)   * This book is **longer** [than it is **narrow**]

   b.   (i)   This book is **shorter** [than it is **wide**]
         (ii)   This book is **narrower** [than it is **long**]

Note, for example, that in (106a), a negative predicate (*short, narrow*) occupies the subordinate clause while a positive predicate (*wide, long*) occupies the main clause. These sentences strike speakers as ill-formed, and are much worse than the sentences in (106b), where the negative predicate occupies the main clause, while the positive predicate occupies the subordinate clause.

As noted by Büring (2007a), the main puzzle here is why the sentences in (106b) are acceptable at all. Because the degrees of contributed by the main predicate are 'negative', while those contributed by the subordinate predicate are 'positive', they should be incommensurable, and so the sentences in (106b) should be just as anomalous as those in (106a). Building upon earlier work by Rullmann (1995), both Büring (2007a,b) and Heim (2008) develop accounts of the contrast in (106) that crucially assume the key notion in (105). In brief, if a negative predicate like *short* underlyingly contains a positive predicate like *tall*, then it becomes possible to provide LF-structures for sentences like (106b) whereby the degrees contributed by the main and subordinate clauses actually match in polarity. In their details, however, the accounts developed by Büring and Heim are rather different. Reviewing some of these differing details will be important for our later discussion.

First, Büring (2007a,b) proposes that sentences like (106bi) are derived from underlying structures like that in (107a). In this structure, a negative operator is adjoined to the comparative operator *–er*. This structure then undergoes two (PF-level) structural changes to yield the pronounced PF form in (107b). First, the comparative clause *than it is wide* is extraposed to the end of the clause. Next – and most crucially – the negation adjoined to *–er* undergoes a short 'hop' over to the adjective that it is now adjacent to. Given the special Morphological Merger rule in (105), the resulting sentence will be pronounced as in (106bi).

(107) **Büring's (2007a,b) Analysis of Cross-Polar Nomalies**

    a.   <u>Base Structure:</u>   [This book [**[-er not]** [than it is wide]] tall]

    b.   <u>PF-Alterations:</u>   (i)   *Extraposition of Comparative Clause:*
    [This book [**[-er not]** tall] [than it is wide]]

                        (ii)   *Short PF-Movement of Negation*
    [This book [**-er** [**not** tall]] [than it is wide]]

    c.   <u>LF-Structure:</u>   [[**[-er not]** [than it is wide]] [1 [this book t_1 tall]]

    d.   <u>Truth-Conditions:</u>   { d' : width(this.book) ≥ d' } ⊃ { d' : height(this.book) ≥ d' }

While (107b) is the PF-form of (107a), the structure in (107c) is its interpreted LF. In this structure, the entire Degree Phrase '[[-er not] [than it is wide]]' undergoes movement to the left-periphery. Finally, under Büring's semantics for negation, the complex head '[-er not]' receives the same interpretation as *less* (93b). Thus, the sentence in (106bi) receives the truth-conditions in (107d), which amount to the assertion that 'this book is *less tall* than it is wide'. This, of course, fits with the intuitive meaning of (106bi). Most importantly though, under these truth-conditions, the degrees being compared are both of positive polarity, and so the analysis correctly predicts the felicity of (106bi).

    By contrast, Heim (2008) proposes that sentences like (106bi) have underlying structures like that in (108a). In this structure, both the main clause and the subordinate clause contain (A-level, incorporated) negation. To obtain the pronounced form of (106bi), the following PF-level operations apply. First, the comparative clause is again extraposed to the end of the sentence. Following this, the negation in the subordinate clause undergoes ellipsis. Again, given the special rule in (105) the resulting PF-structure is realized as in (106bi).

(108) **Heim's (2008) Analysis of Cross-Polar Nomalies**

    a.   <u>Base Structure:</u>   [This book [-er [than it is [**not** wide]]] [**not** tall]]

    b.   <u>PF-Alterations:</u>   (i)   *Extraposition of Comparative Clause:*
    [This book [-er [**not** tall]] [than it is [**not** wide]]]

                        (ii)   *Ellipsis of the Subordinate Negation:*
    [This book [-er [**not** tall]] [than it is [~~**not**~~ wide]]]

c.   <u>LF-Structure:</u>   [[-er [than it is [**not** wide]]] [1 [this book t_1 [**not** tall]]]

d.   <u>Truth-Conditions:</u>   { d' : width(this.book) < d' } ⊏ { d' : height(this.book) < d' }

The LF-structure for (108a), however, is produced by simply moving the Degree Phrase '[-er [than it is [not wide]]]' to the left-periphery of the sentence, as in (108c). Given our semantics for incorporated negation (78a), the resulting truth-conditions are as in (108d). Thus, (106bi) is predicted to be true if and only if the height of the book is less than the width of the book, which again conforms to intuition. And again, what is crucial is that in these truth-conditions, the degrees being compared are both of *negative* polarity; thus, they are commensurable, and so the analysis correctly predicts the felicity of (106bi).

      Given everything we've seen thus far, one might naturally wonder whether facts such as those in (106) also hold in Tlingit, including for negative predicates that *don't* seem to contain overt negation. As we will see, the answer to this is 'yes'. To lay out the key data, I will first introduce the general form of subcomparatives in Tlingit. Such structures are illustrated in (109) below; note that in both sentences the matrix and embedded predicates are of positive polarity.

(109) **Subcomparatives in Tlingit**

    a.   **Aadé** kakwliwóo<u>x</u>'u   **yé**   yáaná<u>x</u>   koowáat'
              3O.to lCL.wide.REL   way more.than 0CL.long
              It's longer than it is wide. (It's longer than how wide it is.)   (GD)

    b.   **Aadé** koowáat'i   **yé**   yáaná<u>x</u>   kakwliwóo<u>x</u>'
              3O.to 0CL.long.REL   way more.than lCL.wide
              It's wider than it is long. (It's wider than how long it is.)   (GD)

In the sentences above, the comparative (subordinate) clause is a relative clause modifying the light noun *yé* 'manner, way, place'. As in all relative clauses modifying *yé*, the comparative clause here contains the phrase *aadé* 'towards it'. In this environment, *aadé* seems to be semantically vacuous; it may simply function here as a kind of resumptive element, resuming the trace of relativization from an adjunct position (James Crippen, p.c.). Either way, the resulting relative clause is semantically akin to a degree free relative in English, such as 'how wide/long it is'. Consequently, the parenthesized English sentences in (109) could also serve as free translations of these Tlingit sentences.

      With this background in place, let us now observe the following reported contrast.

(110) **Cross-Polar Nomalies in Tlingit**

    a.   * Aadé   **klisáak'u**   yé   yáaná<u>x</u>   **koowáat'**
              3O.to lCL.**narrow**.DIM.REL way   more.than   0CL.**long**
              (*Lit. 'It's longer than how narrow it is'.)*   (C)

    b.   Aadé   **koowáat'i**   yé   yáaná<u>x</u>   **kulisáa**
              3O.to 0CL.**long**.REL   way   more.than   lCL.**narrow**
              It's narrower than it is long. (It's narrower than how long it is.)   (SE)

Sentence (110a) consists of a Tlingit subcomparative where the embedded clause contains a negative predicate (*kulisáa* 'narrow') while the matrix clause contains a positive one (*koowáat'* 'long'). This sentence was rejected by 4/6 of the speakers it was presented to. However, sentence (110b) is a subcomparative where the embedded predicate is positive while the matrix one is negative. This sentence was accepted by all six speakers. Given these results, it is fair to conclude that the English judgments in (106) can be replicated for parallel structures in Tlingit.

We find, then, that Tlingit also exhibits the Cross-Polar (A)Nomaly pattern in (106). In as much as this pattern motivates the view in (105), we must conclude that this view is motivated for Tlingit as well. That is, all negative predicates in Tlingit – including ones that don't seem to overtly contain negation (*e.g. kulisáa* 'narrow') – are ultimately derived from a structure containing negation and their positive antonym (*e.g., kuliwóox̲'* 'wide').

This conclusion, however, is faced with an immediate problem. Recall from Section 4.1 that negation in Tlingit obligatorily causes the negated predicate to appear in 'irrealis mode' (26)-(28). In sentences like (110b), however, the negative matrix predicate – which must be parsed as containing negation, in order for (110b) to be interpretable – is in *realis* mode. This raises the following obvious question: if sentence (110b) has an underlying structure where the matrix verb is negated, why isn't the sentence in irrealis mode?

One first possibility might be that surface monomorphemic negative predicates in Tlingit (*e.g., kulisáa* 'narrow') are derived from a structure lacking the clause-level, VP-external negation found in NEG antonyms like (28). That is, perhaps unlike the NEG antonyms of Tlingit (111a), the underlying negation in these predicates is indeed adjoined to the V-head, and does not head a separate functional projection in the clause, as illustrated in (111b).

(111)   **First Possibility: Underlying Negation is *Not* Clause-Level**

   a.   Structure of NEG-Antonym:
           [$_{TP}$ Jáan$_1$ [$_{TP}$ 1 [$_{NegP}$ *NEG-REL$_2$* [$_{NegP}$ 2 [$_{NegP}$ tlél [$_{VP}$ t_1 t_2 ushk'é] …]

   b.   Structure of Negative Predicate *Kulisáa* 'Narrow':
           [$_{TP}$ Jáan$_1$ [$_{TP}$ 1 [$_{VP}$ [$_V$ NEG$_{<det,det>}$ [$_V$ kuliwóox̲' (*wide*)] …]

If this were the case, we might plausibly expect that, due to its low V-internal position, the incorporated negation in (111b) would not have the effects upon inflectional morphology found for VP-external negation (Section 4.1). A serious challenge for this proposal, however, is that Tlingit simply does not seem to have the kind of incorporated negation found in (111b). We've seen in Section 4 that the negation found in NEG antonyms is VP-external. Furthermore, there simply is no other morphosyntactic means in the language for deriving antonyms; there is no Tlingit equivalent to the English prefix *un-*, which forms a part of the verb word and inverts the meaning of the root. Consequently, it would be relatively *ad hoc* to propose such a negation in forms like *kulisáa* 'narrow', simply to capture their appearance in realis mode.

A second possibility might be that irrealis mode in Tlingit is only ever triggered when negation is overtly pronounced as a separate particle.

(112)   **Second Possibility: Unpronounced Negation Does not Trigger Irrealis**
        Negation only triggers irrealis mode when it is pronounced as a separate morpheme.

If we assume (112), then the absence of irrealis in *kulisáa* 'narrow' would just be due to negation not being separately realized in this form, unlike with NEG antonyms (28). However, a serious challenge for this proposal is simply the architectural nature of this rule. Note that the dependency between negation and irrealis seems to be a syntactic phenomenon, rather than morphophonological one. For example, negation triggers irrealis on the verb even when it separated from the verb by arbitrarily long phrases (13)-(19), (29)-(37), (40)-(41). Thus, it would seem best to view the triggering of irrealis mode as taking place within the narrow syntax of the sentence. For example, we could posit a rule/process of the kind in (113), whereby the feature [IRR] 'irrealis' is copied onto the VP (and thus onto the V) when VP is sister to negation.

(113)   **Assignment of Irrealis Mode by Negation**   [NegP NEG VP] → [NegP NEG VP[IRR]]

Whether or not the exact rule in (113) is viable, the key fact remains that the process at work takes place within the narrow syntax of the derivation. Consequently, the condition in (112) would require this process to 'look ahead' to the pronunciation of the sentence to determine whether it applies. Such 'PF look ahead' would, of course, be contrary to the assumed modular isolation of the narrow syntax from the surface phonology; on these grounds, then, we can set aside the approach in (112).

One final possibility might be that the Morphological Merger operation deriving the surface verb *kulisáa* 'narrow' serves to bury the [IRR]-feature on the underlying verb *kuliwóox̱'* 'wide'. To spell this out a bit, let us suppose that the derivation of a surface monophemic negative predicate in Tlingit proceeds as in (114) below (*cf.* (105)).

(114)   **Third Possibility: Morphological Merger Suppresses [IRR] Feature**

   a.   Syntax:
         [NegP *NEG-REL*₂ [NegP 2 [NegP NEG [VP WIDE]**IRR**]]]   →

   b.   Morphological Merger (at PF):   [[*NEG-REL*] [NEG] [WIDE]**IRR**]

   c.   Output Pronunciation: / kʰuɬisá: /

To produce the surface monomorphemic negative predicate, the heads *NEG-REL*, NEG, and the verb *kuliwóox̱'* 'wide' (bearing the [IRR] feature) undergo Morphological Merger.[18] This process creates a complex head that does not itself bear the [IRR] feature (114b). That is, given that Morphological Merger is a PF-level process (Halle & Marantz 1993), narrow-syntax processes of 'feature projection' or 'feature percolation' cannot apply to its output, with the result that the derived complex head does not itself carry the [IRR] feature of its constituent V-head. Finally, if we suppose that 'irrealis mode' is realized only when the pronounced node itself bears the [IRR] feature, we capture the fact that derived negative predicates like *kulisáa* 'narrow' will not bear this mode. When such predicates are derived, the [IRR] feature of the underlying (positive) predicate is embedded within the pronounced head, and is not in a position to trigger the overt realization of the irrealis mode.

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[18] We should include *NEG-REL* in this Merger, in order to correctly predict that NEG only undergoes Morphological Merger with *kuliwóox̱'* 'wide' when in the presence of *NEG-REL*. After all, negation and *kuliwóox̱'* are separately pronounced in the plain propositional negation of the sentence 'it is wide'.

This morphosyntactic account in (113)-(114) of the absence of irrealis mode in forms like *kulisáa* 'narrow' avoids the problems facing the alternative accounts in (111)-(112), and so is the best of the available options. Importantly, though, the considerations favoring (113)-(114) over (111)-(112) raise a key challenge to Heim's (2008) analysis of Cross-Polar Nomalies. Note that under that account, the underlying structure and LF of a 'Cross-Polar Nomaly' sentence like (110b) is that in (108), where both the matrix predicate and the subordinate predicate contain negation. As we've just seen, of course, the account in (113)-(114) predicts that the main predicate should not exhibit irrealis mode. However, that account would *not* make such a prediction for the subordinate clause. Under Heim's (2008) account, the negation in the subordinate clause is simply elided (108bii); it does not undergo Morphological Merger with the underlying positive predicate. Consequently, our morphosyntactic account in (113)-(114) would still predict the predicate *koowáat'* 'long' in (110b) to appear in irrealis mode, contrary to fact.

Of course, the purely phonological account in (112) would correctly predict the absence of irrealis mode in both the main and subordinate clause of (110b); in neither of these clauses is the negation overtly pronounced as a separate head. However, we've already noted that the account in (112) assumes 'PF look ahead' in the narrow syntax, and so should be strongly disfavored. More generally, the challenge that Tlingit raises for Heim's (2008) analysis in (108) is the following. In order to correctly predict the absence of irrealis mode in Tlingit 'Cross-Polar Nomaly' sentences like (110b), the account in (108) must assume that ellipsis of negation will block the assignment of irrealis mode. However, this would require the assignment of irrealis mode to be a purely PF-level process, which would run counter to the evidence that it is dependent upon the (narrow) syntactic structure of the sentence.

It is important to observe here that this challenge does not arise for Büring's (2007a,b) account in (107). Under that account, there is no negation in the subordinate clause of (110b); the only negation appears in the matrix clause (107a,c). Again, our morphosyntactic theory of irrealis in (113)-(114) correctly predicts that the main clause negation of (107a,c) will not result in irrealis mode on the derived surface predicate. Thus, for Büring's (2007a,b) account, the model in (113)-(114) is sufficient to correctly predict the appearance of realis mode in both clauses of (110b).

In summary, then, we've seen that the form of Cross-Polar (A)Nomaly sentences in Tlingit – in particular, their absence of 'irrealis mode' – provides an empirical advantage for Büring's (2007a,b) 'PF-movement' analysis of Cross-Polar Nomalies over Heim's (2008) 'negation ellipsis' account.

9.   Conclusion

We've seen that the NEG antonyms of Tlingit in (1)-(3) hold some interesting and important consequences for our general theory of gradable predicate meaning across language. Their central puzzling feature is that – as I showed in Sections 4 and 5 – they are a construction involving VP-external, clause-level negation, but are interpreted as negative gradable predicates. To capture these properties, we must assume that Tlingit differs from languages like English in two respects. First, degree heads like *POS* and the comparative operator can adjoin relatively high in the clause, at a position above clausal negation (NegP). Secondly, it is possible for certain degree operators in Tlingit (*i.e.*, *NEG-REL*) to undergo movement above negation and into the Specifier of NegP. This raises many novel questions regarding the cross-linguistic typology and syntactic variation of degree constructions, ones that must be left for now to future

research. Furthermore, this analysis forces a refinement of the 'intervention conditions' that govern the movement of degree operators. In particular, our proposed analysis entails that it is indeed possible for degree operators to cross over logical/quantificational heads like negation, just as long as they do not cross the maximal projections of those heads.

Finally, we saw that the existence of Cross-Polar Nomalies in Tlingit can advance our understanding of those phenomena in other languages. The exact form of such sentences in Tlingit – *i.e.*, their complete lack of 'irrealis mode' – raises a challenge specifically for Heim's (2008) 'negation ellipsis' account of Cross-Polar Nomalies, but not for Büring's (2007a,b) 'PF-movement' account.

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