Nxaʔamxcín Lexical Suffixes: A Working Paper[1]

Ewa Czaykowska-Higgins and Marie Louise Willett
University of Victoria

Agatha J. Bart
Nxaʔamxcín Language Preservation Project

0. Introduction

Lexical suffixes, bound morphemes which carry primarily lexical rather than grammatical content, occur in all Salish languages, although their number and the extent to which they are used in each language varies. Most lexical suffixes refer to nominal concepts, with the largest class consisting of body part suffixes, and they can have concrete senses (e.g., =alt 'child') or more metaphorical senses (e.g., =anaʔ 'ear' also is used to mean 'all over'). In all the Salish languages there exist independent nouns whose meanings are similar to those of the lexical suffixes, but whose phonological forms are usually distinct from those of the corresponding lexical suffixes. This fact has raised two questions in particular: the first concerns the lexical suffixes' origins, the second, their function in words and sentences.

As regards the first question, studies such as Egesdal (1981), Mattina (1987), and Carlson (1990) all suggest that lexical suffixes likely developed from a process of compounding of root morphemes. According to these researchers it is possible to find phonologically and semantically related pairs of lexical suffix and independent noun. Thus, for instance, in Spokane, Carlson has found about two dozen such pairs. Furthermore, Spokane has a synchronic process of root-compounding, and Carlson shows that the same types of head-modifier relations exist in root-root compounds and in root-lexical suffix forms.

As regards the second question, it is well known that lexical suffixes are associated with thematic roles in words and in sentences--in the sentence k'ət'álp kn 'I cut down a tree', for instance, the lexical suffix =alp 'tree' serves as the theme of the root √k'it' 'cut'. The fact that lexical suffixes are associated with thematic roles means that constructions in which they appear resemble, at least superficially, constructions in non-Salish languages which researchers of those languages have labelled noun incorporation. The term 'noun incorporation' has been defined as "the combination into one word of the noun object and the verb functioning as the predicate of the sentence" (Kroeber 1909: 37), or, in one example of more recent work as "a process whereby nouns combine with verbs to produce a complex verb" (Rosen 1989: 294). The Nxaʔamxcín example k'ət'álp kn 'I cut down a tree' certainly seems at first glance to fit in with both of these definitions, and this apparent resemblance to what has been called noun incorporation in other languages has naturally led researchers on Salish to wonder if lexical suffixes are incorporated nouns. Kroeber (1909) and Sapir (1911), for instance, concluded that in spite of their thematic properties, lexical suffixes are not incorporated nouns because they so often do not resemble phonologically the

corresponding independent nominals (see also Hagege 1978, 1981). In contrast, Gerdts and Hinkson (1996), have suggested that some uses of lexical suffixes in Halkomelem and elsewhere in Salish are instances of noun incorporation (as defined in the work of Rosen 1989). Importantly, however, Gerdts and Hinkson suggest that lexical suffixes can also be used in noun-compounds and in applicative constructions, and that they exhibit different degrees of grammaticalization, with "an increasing abstraction of meaning [being] concomitant with a gradual decategorialization" (Gerdts and Hinkson 1996). In addition, Saunders and Davis (1975a,b, 1977) and Davis and Saunders (1973), while not specifically addressing the question of whether lexical suffixes are incorporated nouns, have proposed that some lexical suffixes in Bella Coola are "incorporated" into predicates as a result of a semantico-syntactic process of lexical suffix copy, an early precursor of the type of syntactic analysis that has been given for noun incorporation constructions in non-Salish languages by Baker (1988, 1996) and Sadock (1980, 1985).

Our intent in this paper, therefore, is to determine to what extent, if any, lexical suffixes in Nxaʔamxcín exhibit properties which have been attributed to incorporated nouns in recent literature on the subject, represented by the work of Mithun (1984), Rosen (1989), Baker (1988, 1996), and Sadock (1980, 1985). Since all these researchers have more or less different categorizations of the types of constructions that are included under the label of noun incorporation, and since they attribute similar but not identical properties to noun incorporation we do not attempt to address here the issue of whether lexical suffixes truly are incorporated nouns. We do show, however, that lexical suffixes in Nxaʔamxcín exhibit to varying degrees four properties which one would expect them to have if they were incorporated nouns.

First, all researchers on noun incorporation agree that incorporated nouns assume thematic roles in sentences, but there has been some discussion concerning the question of what kinds of roles incorporated nouns can assume. We show that in Nxaʔamxcín there is evidence that lexical suffixes assume theme, goal, locative and instrument roles, and suggestive, though potentially problematic evidence that they may assume an agent role. Second, Mithun (1984) and Rosen (1989) in particular have suggested that transitivity facts may differ depending on the type of noun incorporation. Therefore we consider how using lexical suffixes affects transitivity, showing that in fact both transitive and intransitive predicates are possible with lexical suffixes. Third, certain types of noun incorporation constructions have been argued to allow doubling (i.e., the presence of an overt NP coreferential with the incorporated noun). We illustrate that Nxaʔamxcín does not allow doubling if the lexical suffix has a theme or a goal thematic role, but that in all cases the language does allow an independent nominal to be coreferential with a lexical suffix in the predicate if the independent nominal is marked as oblique. And fourth, we look at referentiality, an important property in Baker (1996) and Sadock (1980)'s analyses of noun incorporation as syntactic in certain languages. We present the results of referentiality tests on Nxaʔamxcín and suggest that these results do not provide conclusive evidence that lexical suffixes are referential but they also do not provide conclusive evidence that they are not referential.

The paper is organized as follows: section 1 briefly describes the different types and uses of lexical suffixes; section 2 describes the thematic roles lexical suffixes may assume; section 3 considers transitivity effects and doubling; and section 4 discusses referentiality.

1. Nxaʔamxcín Lexical Suffixes

In Nxaʔamxcín there are approximately 90 affixes that can be categorized as lexical suffixes. Lexical suffixes occur in a number of different types of words, may or may not assume thematic roles within the structures in which they are found, and can be more or less semantically fused or lexicalized together with the roots with which they cooccur, or together with other lexical suffixes. In this section we very briefly discuss the different subclasses within the lexical suffix category as a way of providing a context for the data that we present in subsequent sections.

To begin with, it is possible to separate the lexical suffixes into essentially three subclasses based on the types of meanings that they have: 1) Body-part Suffixes: 28 affixes refer specifically to body-parts (e.g., =akst 'hand', =alps 'back of neck', =cin 'mouth', =us 'face', etc.); 2) Object Suffixes: 33 affixes refer to objects other than Body-parts; this set of objects seems random in the sense that there is no particular meaning element common to the entire set (e.g., =aʔst 'stone', =alt 'child', =aɬxʷ 'house', =wil 'vehicle', etc.); and 3) Miscellaneous: about 25-30 suffixes belong to a miscellaneous category either because their meanings are unclear, or because they are neither Body-parts nor specific Objects (e.g., this category includes =tn and =min, both of which are used to create 'nominal'-like forms). In what follows we discuss only the first two subclasses (for a complete list of Nxaʔamxcín lexical suffixes, see Czaykowski 1982).[2]

Some of the suffixes that belong to the Body-part and Object subclasses occur with more than one meaning -- although these meanings are often obviously related -- and thus cross-cut the two subclasses. For instance, =cin 'mouth' is a Body-part suffix that also has the meanings 'language, food, edge, creek'; =anaʔ 'ear' refers also to 'side of head', and 'all over' (e.g., k-√taw'-w'=ánaʔ 'get rained on'; √taw'- rain); and =us refers to 'face, eye, fire, road'. At present there is no obvious evidence to suggest that Body-part and Object lexical suffixes have different formal properties, but since Body-part suffixes refer to objects which are inalienably possessed, whereas many of the Object lexical suffixes do not, one might wish to explore the possiblity that they behave differently in future research.

The types of words in which lexical suffixes are found to occur can be very broadly characterized as follows. First, lexical suffixes occur in forms which are more or less compositional, or transparent, and which are translated into English with noun-like meanings.[3] It is often difficult to tell the degree to which these types of forms are lexicalized.

(1) a. skɬuxʷpákst   'handbag'
     s-k-√ɬuxʷ-p=ákst
     NOM-LOC-√hang-INCH=hand

   b. nnaqálqʷp   'rotten breath'
     n-√naq=álqʷp
     LOC-√rot=mouth/throat

   c. spápqɬcaʔ   'weasel (white phase)'
     s-√pápq=ɬcaʔ
     NOM-√white=outside

   d. picisáɬp   'peach tree'
     √picis=áɬp
     √peach=tree

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[2] Nxaʔamxcín allows more than one lexical suffix to occur in a word. In such cases, the lexical suffixes behave in two different ways: first, in a sequence of two lexical suffixes, the first may combine semantically with the root to form a Root+LS stem (e.g., in na-√xʷir=kst=átkʷ -m 'reach into water' the first lexical suffix, =akst 'hand' forms a stem with the prefix na- 'loc' and the root √xʷir- 'reach' meaning 'reach with hand', and the second suffix =átkʷ 'water' specifies the location of the reaching) ; second, the two (or three) lexical suffixes may combine semantically with each other to form a compound lexical suffix which behaves as a semantic unit (e.g., in kɬ-√mañah=cn=ákst 'he sprained his wrist' =cin=akst is a compound lexical suffix meaning 'wrist' [kɬ- 'loc', √mañah-'sprain+out of control'). The phonological properties of the two types of lexical suffix sequences are identical (see Kinkade 1973, Czaykowski 1982, Czaykowska-Higgins 1996 for discussion of lexical suffix sequences).

[3] In this paper we take no position on the question of whether Salish languages, and Nxaʔamxcin in particular, distinguish lexically between nouns and verbs. Throughout the paper, therefore, we use the terms 'nominal, NP, verb' loosely (see Kinkade 1983, van Eijk and Hess 1986, Demirdache and Matthewson 1995 among many others for discussion of this issue).

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e. smiyawáɬxʷ   'Castle Rock (opposite Brewster): "Coyote's house"
     s-√miyaw=áɬxʷ
     NOM-√coyote=house

   f. miƛ̉íxʷtn   'house paint'
     √miƛ̉=íxʷ=tn
     √paint=house=instrument

   g. ʕʷənʕʷánps   'magpies'
     ʕʷən-√ʕʷán=ps
     DIS-√white=tail

In these types of cases, which for purposes of this paper we call Root+Lexical Suffix Compounds, the lexical suffix may assume a thematic role in relation to the Root, but the entire Root+Lexical Suffix Compound does not take on a predicate-like role in sentences in which it occurs. For example, in (2) the forms nk'əmk'əmúsxəns 'its legs' and c'q'áɬps 'its ribs' serve as independent nominal-like arguments in the discourse:

(2) ʔaxaʔ nk'əmk'əmúsxəns waʔ stkəɬkɬəm kʷaʔ c'q'áɬps kʷaʔ sqəpmíns waʔ ckɬt'ʼm'.....

   ʔaxaʔ n-k'əm-√k'əm=ús=xən-s   waʔ stkəɬkɬ-əm   kʷaʔ
   these LOC-DIS-√surface=top=leg-POSS spec keep separate-Mid and

   √c'q'=áɬp-s   kʷaʔ sqə-mín-s   waʔ   ckɬt'ʼm'....
   √rib=tree-POSS and √horn-POSS SPEC   cut off

'Its legs are kept separate and its ribs and its horns are cut off...'

Second, lexical suffixes occur in forms in which the meanings are compositional, the lexical suffix has a thematic role, and the entire Root+Lexical Suffix stem takes on a predicate-like role in a sentence. We shall refer to these types of forms as Root+Lexical Suffix Predicates. The example in (3), a continuation of the text example given in (2), illustrates two Root+Lexical Suffix Predicates; the Predicate forms are underlined; the other two examples illustrate Root+Lexical Suffix Compound usage:

(3) ...kʷaʔ cpəl'kʷáw's ... ʔa npəl'kʷús lx kʷaʔ swɔ́tn snakʷúptlqs kʷaʔ k'ɔ́spən chacəmnáw's

   ...kʷaʔ c-√pəl'kʷ=áw's   ... ʔa n-√pəl'kʷ=ús   lx   kʷaʔ swɔ́tn
   and   ASP-√break apart=middle PRT LOC-√break=neck they and   uh..

   s-na-√kʷúpt=lqs   kʷaʔ   √k'ɔ́spən c-√hac-mn=áw's
   NOM-LOC-backbone=clothes and √neck   ASP-√tie on-REL=middle

and broken in the middle ... They break its neck and uh tie its neck and backbone together

In these types of cases, the lexical suffix appears to serve as an argument within the context of the entire sentence in which the Root+Lexical Suffix Predicate occurs. Thus, cpəl'kʷáw's and npəl'kʷús serve as main predicates which advance the utterance in the sentence; the two lexical suffixes =áw's 'middle' and =ús 'face, etc. might perhaps be independent arguments. In fact, =ús seems to introduce a 'neck'-like object into the discourse; this object is later referred to by an independent nominal k'ɔ́spən 'neck'.[4]

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[4] Note that the lexical suffix =us does not actually mean 'neck'; it is generally translated with meanings such as 'face' (its most common meaning), 'eye, fire, road'. However, there does seem to be a tendency for at least some lexical suffixes to behave as classifiers (see for example, Rosen

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While the properties of Root+Lexical Suffix Compounds are of interest in themselves, the purpose of this paper is to focus only on the properties of forms which very clearly belong to the category of Root+Lexical Suffix Predicates.[5] We suspect that future research will require us to examine Root+Lexical Suffix Compounds more closely, and that it will reveal certain parallelisms in the semantics of the two types of forms, particularly since at least some instances of Root+Lexical Suffix Compounds are likely to be "lexicalized" versions of Root+Lexical Suffix Predicates.

2. Thematic Interpretations *

The first property of Root+Lexical Suffix Predicates that we focus on involves the thematic interpretations assumed by lexical suffixes in such constructions in Nxaʔamxcín. Since definitions of thematic roles and a proper theory of thematic relations are under considerable discussion in the linguistic literature (see, for example, Jackendoff 1987, 1990, Tenny 1994, Dowty 1991), in this paper we define the different thematic roles assumed by lexical suffixes rather loosely, along the lines of the definitions laid out in Jackendoff (1972) and Gruber (1965).

In the literature on various Salish languages it has been shown that lexical suffixes can assume the role of theme, instrument or locative within a clause (Kroeber 1909, Sapir 1911, Saunders and Davis 1973, Davis and Saunders 1975a, b, 1977, Gerdts and Hinkson 1996, among others). The Nxaʔamxcín evidence suggests that Nxaʔamxcín is like the other Salish languages in allowing lexical suffixes to be semantically interpreted as themes, locatives, or instruments. In addition, the Nxaʔamxcín data also suggest that lexical suffixes may be interpreted as goals. Finally, there is some evidence that lexical suffixes may take on an agent thematic role, although this evidence needs to be examined more closely in future research. We begin first by looking at the evidence for themes and goals, followed by evidence for the locative and instrumental thematic roles, and turning finally to the agent cases.

1989 for a definition) and that may be what is happening here.
In cases where a lexical suffix might have a classifier function, a type of doubling is permitted although not required, with the lexical suffix normally serving to provide the more general meaning, and the independent nominal providing a specific referent. In the examples in (i) we see the lexical suffix =us 'eye'acting as a classifier. =us is used in other types of forms which refer to 'window', and one can imagine that it is literally understood as the 'eye or face' of a house' and therefore its meaning and that of the independent nominal are obviously related.
(i)   n-√p'əsƛ'aʔ=ús   n-s-√xəl=s=áɬxʷ=tn   'big windows'   √p'isƛ'aʔ 'big'
       n-c-√cəm'aʔ=ús   n-s-√xəl=s=áɬxʷ=tn   'small windows'   √cəm'aʔ 'small'
In the examples in (ii), however, the lexical suffix =xn generally refers to foot; so its meaning is not obviously related to that of the independent nominal 'snowflake' (this discrepancy was remarked upon by the Nxaʔamxcin speaker who gave these forms to Dale Kinkade.)
(ii)   √p'isƛ'aʔ=xən s √mák̉ʷt   'big snowflakes'
       c-√cəm'aʔ=xən s √mák̉ʷt   'small snowflakes'

[5] Czaykowska-Higgins (1996) claims that there are two types of lexical suffixes in Nxaʔamxcin, referential and non-referential. Referential lexical suffixesare defined as suffixes which have referential meanings, serve as arguments in sentences, and hence play a role in the syntax, while non-referential lexical suffixes are defined as having non-referential meanings and playing no role in the syntax. The same lexical suffix may serve as either referential or non-referential, depending on the Root with which it combines. Since the term 'referential' is difficult to pin down, we do not use it here to distinguish classes of lexical suffixes. However, for the most part, forms that Czaykowska-Higgins would analyze as containing non-referentially used lexical suffixes correspond to our Root+Lexical Suffix Compound class, while forms that Czaykowska-Higgins would analyze as containing referentially used lexical suffixes correspond to our Root+Lexical Suffix Predicate class.

The *theme* role is defined here as the relation representing an object undergoing motion or change. Lexical suffixes denoting a theme role surface both with root-predicates that semantically require two arguments (4) and with root-predicates that select an internal argument as their only argument (namely, unaccusatives; see 5 & 6). In sentences whose meaning parallels those in (4)-(6), but in which an independent nominal rather than a lexical suffix appears, the independent nominal corresponding to the lexical suffix is marked as a direct argument (see 5b):

Theme

(4)   k'əťáɬp   kn
        √k'əť=áɬp
        cut=tree   1sS
        I cut down a tree.

(5) a. wəckáɬxʷ
        √wəck=áɬxʷ
        fall over=house
        The tipi blew over.

    b. wə́ck wa ʔací spƛ̉'áɬxʷs
        √wə́ck   wa   ʔací   spƛ̉'áɬxʷ-s
        √fall over SPEC   DET   tipi-POSS
        His tipi blew over.

(6)   sal'əl'ált
        √sal'-əl'=ált
        √crazy-OC=child
        Someone's child went crazy.

These types of cases, where the lexical suffix assumes the role of theme are the most common throughout the corpus of Nxaʔamxcín data.

The term *goal* is defined as the thematic role expressing the object toward which the activity of an event is directed. The examples in which the lexical suffix is to be interpreted as a goal are less common than those where it is a theme, and, in fact, all the cases that occur in the data involve the lexical suffix =alt 'child'. This may be because =alt 'child' is the only lexical suffix whose meaning could easily be interpreted as a goal, or it may be an artefact of the data corpus. Nevertheless, such cases are readily interpretable and easily produced by native speakers.

Goal

(7)   kaɬxált   t   púklaʔ
        √kaɬx=ált
        √give=child   OBL   ball
        He/she gave a ball to his/her/a child.

(8)   kn   ʔəmtált
                 √ʔəmt=ált
        1sS   √feed=child
        I fed my child.

(9) a. ḵ̓ʔəmtált   t   sw'ə́naʔx̣
        ḵ̓-√ʔəmt=ált
        LOC-√feed=child OBL huckleberries
        She sent the children huckleberries

    b. ḵ̓ʔəmc   wa   scc̓əm'ált t   sw'ə́naʔx̣
        ḵ̓-√ʔəm-n-t-∅̸-s   SPEC children OBL huckleberries
        LOC-√feed-n-t-∅̸-s
        She sent the children huckleberries.

(10)   cíɬu   kn   sc'əx̣ʷált
                             s-√c'əx̣ʷ=ált
        always   1sS   NOM-√lecture=child
        I always lecture/advise the child.

In sentences with meanings paralleling those of the goal lexical suffix examples in (7)-(10), but in which the goal is an independent nominal rather than a lexical suffix, the goal is often marked as a direct argument. Thus in (9b), a sentence which parallels (9a), the goal scc̓əm'ált 'children' is marked as a direct argument, and is even preceded by the morpheme wa which may be an absolutive marker (see Willett 1996).

The *locative* thematic role is defined as the thematic relation expressing location towards which an event is directed, or the location in which an event/object is situated. For our purposes this includes cases which might be subsumed under the thematic relation of goal/theme, such as the examples in (11) and (13). The reason for including such examples under the locative role category is that they differ from the goal/theme cases seen above in that sentences with parallel meanings but with independent nominals instead of lexical suffixes are found to have the independent nominal marked as an oblique rather than as a direct argument. Thus in (13b) ʔacp'áƛ̓ 'tree' is preceded by the locative preposition l:

Locative

(11)   ncəkəmnátkʷn
        n-√cək-mn=átkʷ-n-t-∅̸-n
        LOC-√hit-REL=water-TR-3O-1sS
        I threw it into the water.

(12)   kn   kɬəqəlxálqʷ
              k-√ɬəq-əlx=álqʷ
        1sS   LOC-√sit-AUT=pole
        I sat on the log.

(13) a. kn tk'əwəlxálqʷ
           t-√k'iw-ilx=álqʷ
        1sS LOC-√climb-AUT=pole
        I climbed the tree

    b. kn tk'íwlx   l   ʔacp'áƛ̓
           t-√kiw-ilx
        1sS LOC-√climb-AUT   PREP tree
        I climbed the tree

The thematic role of *instrument* is used to refer to objects which are the means by which an activity is effected. Instruments are rarer than locatives, and in all our examples the lexical suffix which assumes the instrument interpretation is a Body-part suffix. It remains to be determined whether this is always true, or whether it simply reflects a gap in the data.

Instrument

(14)   yəʕ̓ʷákst   kn
        √yəʕ̓ʷ=ákst
        √force=hand 1sS
        I used a lot of force with my hand.

(15)   x̣əl'x̣al'ákstmn
        x̣əl'-√x̣al'=ákst-mn
        DIS-√turn=hand-REL
        stir something (literally: turn with hand)

(16) a. yər'xnmís   wa   ʔací xƛ̓út
        √yər'=xn-min-t-∅̸-s
        √push=foot-REL-TR-3O-3sS SPEC DET rock
        He pushed that rock aside with his foot

    b. yər'mís   t   sc'uʔxns
        √yər'-min-t-∅̸-s
        √push-REL-TR-3O-3sS OBL foot
        He pushed it aside with his foot'

As is the case with locatives, independent nominals representing instruments are marked as oblique objects (see 16b in which t 'oblique' precedes the word 'foot').

The thematic role of *agent* is defined as the object to which is attributed will or volition toward the action represented in the predicate. There are in our data five examples in which a lexical suffix might possibly be interpreted as the agent of the action. These are listed below. In each case the lexical suffix =alt 'child' can be interpreted as having some will or volition in relation to the activity represented in the verb:

Agent

(17)   ləxʷcənmált
        √ləxʷ=cən-m=ált
        √cry=mouth-MID=child
        Someone's baby cried.

(18)   xʷay'əmált   ʔací Linda
        √xʷay'-əm=ált
        √run away-MID=child   DEM Linda
        Linda's child ran away.

(19)   ʔací sqəl'tmíxʷ cíɬu   sxʷət'pálts
                                  s-√xʷət'-p=álts
        DET man   DET   NOM-√take off-INCH=child
        That man's child is always racing/dashing ahead.

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(20)   ciłu   sməxʷtálts   ʔaci   smʔámm
                   s-√məxʷ-t=ált-s
DET   NOM-√laugh-CHAR=child-POSS DET   woman
That woman's child is always laughing.

(21)   ʔaci   smʔámm   snkʷnamáltəxʷ
                      s-n-√kʷna-m=ált-əxʷ
DET   woman   NOM-LOC-√sing-MID=child-IMPF
That woman's child is singing.

Taken at their face value, the stems (i.e., cry, laugh, dash ahead, take off, sing) to which the lexical suffixes in (17)-(21) are affixed appear to be unergative: in other words, they appear to be intransitive predicates which select one, external, argument. If we could show that these predicates are indeed unergative, then this might allow us to conclude less tentatively that the lexical suffixes do in fact represent agents, since external arguments are often associated with an agent thematic role. The selectional restrictions and subcategorization frames of roots and of derived stems in Nxaʔamxcín have yet to be examined in any detail, however, and therefore we cannot be sure of the (unergative) status of the stems to which the lexical suffixes are affixed. At present, therefore, the agent data are suggestive, but not conclusive.[6]

In this section, then, we have suggested that Nxaʔamxcín allows lexical suffixes to assume the thematic roles of theme, goal, instrument, locative, and, possibly, agent. In the literature on noun incorporation it is generally claimed that incorporation is limited to themes, instruments, and locatives, and in fact Baker (1996) has gone so far as to claim that it is an impossibility in languages which show what he defines as "true noun incorporation" to incorporate either goals or agents. Given that Nxaʔamxcín allows lexical suffixes to assume the goal role and that it may allow lexical suffixes to serve as agents, we can conclude tentatively that the language allows more freedom in the types of thematic roles exhibited by lexical suffixes than is generally found to be the case for what have been called incorporated nouns in other languages.

3. Transitivity and Doubling

In this section we outline the properties of Root+Lexical Suffix Predicates with respect to transitivity and doubling. The data show that if the lexical suffix on a predicate is a theme or a goal, the Root+Lexical Suffix Predicate may be either transitive or intransitive. In addition, an independent coreferent nominal may occur in a construction containing a theme/goal lexical suffix, but only if that independent nominal is marked as an oblique Noun Phrase (NP). In transitive

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6 It is interesting to note that in all instances of what may be an agent thematic role, the lexical suffixes are affixed to stems derived by adding -m 'middle', -t 'stative/characteristic', -p 'inchoative' to a root morpheme. In the current literature on Salish there is a debate concerning the question of whether argument structure differences between predicates are part of the meaning of roots (as suggested in Thompson and Thompson 1992, Gerdts 1991, Howett 1993, Thomason and Everett 1993, Thomason 1994), or whether argument structure is "radically decompositional .... [with] all roots having the same (minimal) argument structure, [and] differences [between predicates] being derived from different affixation possibilities" (Davis 1996: 2; see also Egesdal 1993). If this latter position is the correct one, then the fact that all four stems to which lexical suffixes are affixed are derived stems rather than bare roots might be evidence that the roots are in fact unaccusative in the lexicon, and that therefore at that level the lexical suffixes represent internal arguments and hence, possibly, themes rather than agents.

constructions, moreover, an independent direct argument nominal may occur, but it is never coreferential with the theme/goal lexical suffix; instead it (as well as the object marker on the transitive predicate) is interpreted as the possessor of the lexical suffix.

If the lexical suffix on a predicate is a locative or an instrument, the Root+Lexical Suffix Predicate may also surface as transitive or intransitive. As in the theme/goal cases, an independent obliquely-marked nominal which is coreferent with the lexical suffix may also occur in a sentence containing a Root+Locative/Instrument Lexical Suffix Predicate. However, the locative /instrument lexical suffix cases differ from the theme/goal cases in that in a transitive Root+Locative/Instrument Lexical Suffix Predicate, a direct object may occur but is never interpreted as a possessor of the lexical suffix, nor, of course, as being coreferent with the lexical suffix.

We begin this section by focussing on cases in which the thematic role of the lexical suffix is a theme/goal.

3.1 Root+Theme/Goal Lexical Suffix Predicates

The data indicate that Root+Theme/Goal Lexical Suffix Predicates may surface as intransitive, as in (22) and (23):

(22)   k'ət'áɫp   kn
            √k'ť'=aɫp
            √cut=tree   1sS
            I cut down a tree.

(23)   kaɫxált   t   stxʷúl
            √kaɫx=alt
            √give=child   OBL   house
            He gave his child a house.

These examples bear resemblance to a particular type of noun incorporation that has been referred to in the literature as "lexical compounding" (Type I) by Mithun (1984) or "compound noun incorporation" by Rosen (1989). This type of noun incorporation is considered by Mithun and Rosen to combine a Verb and Noun stem into an intransitive verb. The incorporated N stem is interpreted as being the theme, instrument or locative of the predicate.

It is not possible for Root+Theme/Goal Lexical Suffix Predicates to take a direct object that corresponds semantically to the lexical suffix (i.e., no intransitive constructions of the form Root+LS$_i$ DO$_i$ occur). This is a direct result of the fact that these forms are intransitive and, therefore, cannot license an NP in direct object position. In addition, it is not possible for a Root+Theme/Goal Lexical Suffix Predicate to be marked transitive in order to allow for a direct object NP that corresponds to the lexical suffix, as demonstrated by (24) and (25):

(24)   * t'əsaksn   kalxs
            √t's=akst-t-Ø-n   kalx-s
            √slap=hand$_i$-TR-3O-1sS   hand$_i$-3POSS
            (I slapped her hand.)

(25)   * ckʷanaʔstən xƛ'ut
            c-√kʷan=aʔst-t-Ø-n
            LOC-√take=rock$_i$-TR-3O-1sS   rock$_i$
            (I took the rock.)

These examples are in contrast with Mithun's (1984) "classificatory noun incorporation", Rosen's (1989) "classifier noun incorporation" and Baker's (1988, 1996) syntactic noun incorporation data in which [N+V] forms take transitive morphology and (optionally) direct object NPs corresponding to the incorporated noun. Some examples of this latter kind of construction are given for Tuscarora and Rembarnga:

(26) **Tu**   ne-hra-taskw-ahkw-haʔ   haʔ   tsiːr.
          du-M-animal-pick up-SERIAL   EMPH   dog
          'He picks up domestic animals.' (He is a dog catcher.)   (Williams 1976:60)

(27) **Re**   kaṯaʔ-ø   par-kaṯaʔ-ta-ŋin.
          paperbark-NOM   3sg.obj.3pl.TRANS.S-paperbark-stand-(CAUS)-
                                                          Past.Cont
          'They would spread paperbark (on the ground).'   (McKay 1975:296)

Unlike in languages like Tuscarora and Rembarnga, in Nxaʔamxcín an independent nominal and a semantically linked lexical suffix in an intransitive predicate can only surface in the same clause if the nominal is marked by t 'oblique' (in the case of a theme lexical suffix) or by a preposition such as k'l (in the case of a goal lexical suffix), as in (28) and (29), respectively:

(28)   Máry   tumistáɬxʷ   t   stəxʷtəxʷúl
              √tumist=aɬxʷ
         Mary   √sell=house   OBL   houses
         Mary sells houses.

(29)   kɬʔəmtált   k'l   sccəm'álts   t   sw'śnaʔx
         kɬ-√ʔmt=alt   sccəm'alt-s
         LOC-√feed=child   to   child-3POSS   OBL   huckleberries
         She sent her children huckleberries.

     The Nxaʔamxcín data also indicate that Root+Theme/Goal Lexical Suffix Predicates may be marked transitive. In such cases, an independent nominal direct object is allowed. However, the direct object is always interpreted as the possessor of the lexical suffix, as in (30) and (31):

(30)   k'əṯáɬpən   Jóhn
         √k'iṯ'=aɬp-t-ø-n
         √cut=tree-TR-3O-1sS   John
         I cut down John's tree.

(31)   kaɬxáltən   Máry   t   yúp'aʔtən
         √kaɬx=alt-t-ø-n
         √give=child-TR-3O-1sS   Mary   OBL   toy
         I gave Mary's baby a toy.

These possessors are clearly independent direct arguments; they do not surface with possessor morphology. Example (32) shows that possessors are followed by the morpheme l in Nxaʔamxcín, while (33) and (34) illustrate that when the possessor of a lexical suffix is expressed as a direct argument it cannot be followed by l :

(32)   kmíƛ'c'aʔaɬxʷs   wa   Jóhn   l   stxʷúls
         k-√miƛ'=aɬc'aʔ=aɬxʷ-t-ø-s   stxʷul-s
         LOC-√paint=side=house-TR-3O-3S   WA   John   POSS   house-3POSS
         He painted the outside of John's house.

(33)   * k'əṯáɬpən   Jóhn   l
         √k'ṯ'=aɬp-t-ø-n
         √cut=tree-TR-3O-1sS   John   POSS
         (I cut down John's tree.)

(34)   * kaɬxáltən   Máry   l   t   yúp'aʔtən
         √kaɬx=alt-t-ø-n
         √give=child-TR-3O-1sS   Mary   POSS   OBL   toy
         (I gave Mary's baby a toy.)

If no overt object NP is present, the possessor is determined by the object morphology on the predicate.

(35)   t'əsáksn
         √t's=akst-t-ø-n
         √slap=hand-TR-3O-1sS
         I slapped her hand.

     Similar data have been discussed in Mithun's (1984) Type II noun incorporation ("the manipulation of case"). She gives the following Blackfoot clause as an example:

(36)   Nit-ssik-o'kakín-aw óma nínaawa.
         I-break-back-him that man
         'I broke the man's back.'
                                                           (Mithun 1984:858)

Finally, it is possible in Nxaʔamxcín for a transitive Root+Theme/Goal Lexical Suffix Predicate to cooccur with a coreferent independent nominal, provided that that nominal is marked as an oblique. An example of this kind of construction is seen in (37), which contains not only an oblique nominal coreferent with the lexical suffix =aɬp 'tree', but also a direct object possessor of the lexical suffix.

(37)   k'əṯáɬpən   John   t   c'əq'áɬps
         √k'əṯ'=aɬp-t-ø-n   √c'əq'=aɬp-s
         √cut=tree-TR-3O-1sS John OBL   √fir=tree=his
         I cut down John's fir tree.

     Aside from the possessor examples in (28), (29) and (37), Nxaʔamxcín lexical suffix constructions do not resemble Mithun's Type II noun incorporation. A characteristic property of this type of noun incorporation is that oblique arguments can be raised to non-oblique status when a lexical suffix combines with a predicate. Mithun gives Yucatec Mayan as an example:

(38) a.   k-in-č'ak-ø-k   če'   ičil   in-kool
           INCOMP-I-chop-it-IMPF   tree   in   my-cornfield
           'I chop the tree in my cornfield.'

b. k-in-č'ak-če'-t-ik   in-kool
INCOMP-I-chop-tree-TR-IMPF my-cornfield
'I clear my cornfield.'   (Mithun 1984:858)

The non-incorporated version in (a) has both a direct object NP ('tree') and an oblique NP ('cornfield'). When the direct object is incorporated, as in (b), it appears that the oblique NP can assume a vacated licensed position and surface as a direct NP. Comparable examples are not possible in Nxaʔamxcín as shown in (39):

(39) a.   káɬxc   t   stxʷúl wa   xxál'aʔ
√kaɬx-t-∅-s
√give-TR-3O-3S   OBL house WA   baby
He gave a house to the baby.

b.   kaɬxált   t   stxʷúl
√kaɬx=alt
√give=child OBL house
He gave his child a house.

c.   * kaɬxalc   stxʷul
√kaɬx=alt-t-∅-s
√give=child-TR-3O-3S   house

Thus, Nxaʔamxcín lexical suffix constructions only resemble Mithun's Type II noun incorporation with respect to examples like (30), (31) and (36) where the possessor of a lexical suffix assumes the direct object position. The promotion of oblique arguments is not possible.

In summary, we can schematize possible Root+Theme/Goal Lexical Suffix Predicate combinations as follows (coindexing indicates semantic correspondence):

(40) Intransitive Predicates
i.   Root = LS   (compound NI: Mithun, Rosen)
ii.   Root = LS$_i$ OBL NP$_i$
iii. *Root = LS$_i$ NP$_i$

Transitive Predicates
i.   Root= LS$_i$ -TR-O$_{POSS\ i}$ (NP$_{POSS\ i}$)   (manipulation of case NI: Mithun)
ii.   *Root = LS$_i$-TR NP$_i$ (classifier NI: Mithun, Rosen;
syntactic NI: Baker)

iii. Root = LS$_i$ -TR OBL NP$_i$
iv.   Root = LS$_i$ -TR NP$_{POSS\ i}$ OBL NP$_i$

The schematization in (40) summarizes the following facts: theme/goal lexical suffixes can combine with roots to form intransitive or transitive predicates. In the latter case, a direct object must be interpreted as the possessor of the lexical suffix (whether that direct object is an obligatory object marker on the transitive verb, or an optional independent nominal NP). Independent NPs that are semantically linked to the lexical suffix surface as oblique in transitive or intransitive constructions.

3.2 Root+Locative/Instrument Lexical Suffix Predicates

Predicates which contain a locative or instrument lexical suffix can surface as transitive or intransitive, as shown below:

(41)   Locative Intransitive
nɬt'pmátkʷ
n-√ɬt'p-m=atkʷ
LOC-√jump-INCH-MID=water
He jumped into the water.

(42)   Instrument Intransitive
xʷírxənəm   kʷaʔc kʷás   t   slíxsxnc
√xʷír=xn-m
√reach out=foot=MID and   pick up OBL toe-POSS
He reached out with his foot and picked it up with his toes.

(43)   Locative Transitive
ncəkəmnátkʷn
n-√ck-min=atkʷ-t-∅-n
LOC-√hit-REL=water-TR-3O-1sS
I threw it into the water.

(44)   Instrument Transitive
yər'xənmís   wa   ʔací xƛ'út
√yər'=xn-min-t-∅-s
√push=foot-REL-TR-3O-3S SPEC DET rock
He pushed that rock aside with his foot.

Note that in (44) there is an independent nominal wa ʔací xƛ'út marked as a direct argument of the transitive predicate. In this case, unlike in the theme/goal lexical suffixes cases seen in section 3.1, the independent nominal is not interpreted as the possessor of the lexical suffix, but is interpreted as a direct object of the transitive predicate which is non-coreferent with the lexical suffix. We have seen no evidence that a locative or instrument lexical suffix can combine with a root that is marked transitive and that it can license a possessor of the lexical suffix as direct object. Thus, we have found no locative/instrument lexical suffix examples paralleling (30) and (31).

An independent locative or instrument nominal can cooccur with a corresponding lexical suffix provided the locative or instrument nominal is overtly marked as oblique. Some examples are given in (45) and (46). Note that both these examples have transitive marking on the predicate; we do not have corresponding examples with intransitive predicates, although we predict they should be able to occur:

(45)   nləʕʷátkʷn   l   sáwɬkʷ
n-√lʕʷ=atkʷ-t-∅-n
LOC-√place=water-TR-3O-1sS   POSS water
I put it into the water.

(46)   yəʕʷákstmn   t   ʔinkálx [...]
√yʕʷ=akst-min-∅-n   ʔin-kalx
√?=hand-REL-3O-1sS   OBL 1sPOSS-hand
I used force on it with my hand [...]

In (45) the independent locative is marked by the preposition l 'in' and in (46) the independent instrument is marked by the instrument marker t (otherwise the oblique marker). It is not possible for a direct argument locative/instrument NP to cooccur with a corresponding locative/instrument lexical suffix, as indicated by the following ungrammatical examples:

(47)   * nləʕʷátkʷn   sáwɬkʷ
            n-√lʕʷ=atkʷ-t-∅-n
            LOC-√place=water-TR-3O-1sS   water
            I put it into the water.

(48)   * yəʕʷákstmn   ʔinkálx [...]
            √yʕʷ=akst-min-t-∅-n   ʔin-kalx
            ʔ=hand-REL-TR-3O-1sS   1sPOSS-hand
            I used force on it with my hand [...]

This follows from the fact that the transitive predicate licenses a null pronoun in direct object position in (47) and (48) and, therefore, there is no licensed position available for an unmarked locative or instrument.

It is difficult to see where the locative/instrument Root+Lexical Suffix Predicates fit into the broader picture of noun incorporation since incorporated locatives and instruments receive little discussion in Mithun (1984), Rosen (1989), and Baker (1988,1996), the last of whom considers them not to be instances of true (i.e. syntactic) noun incorporation.

In summary, it appears that Root+Locative/Instrument Lexical Suffix Predicates exhibit the following combinations:

(49)   Intransitive Predicates
      i.   Root = LS
      ii.   Root = LS$_i$ OBL NP$_i$ (no examples yet available, but predicted to be correct)
      iii. *Root = LS$_i$ NP$_i$

    Transitive Predicates
      i.   Root= LS$_i$-TR-O $_j$ (NP$_{j)}$
      ii.   *Root = LS$_i$-TR NP$_i$/NP$_{POSS\,i}$
      iii. Root = LS$_i$ -TR OBL NP$_i$
      ıv. Root = LS$_i$ -TR OBL NP$_i$ (no examples available, but predicted to be correct)

The locative/instrument lexical suffixes resemble the theme/goal lexical suffixes in that they can combine with roots to form intransitive predicates and transitive predicates. They are unlike theme/goal lexical suffixes in that the transitive predicates they form can take direct objects which are are not, and in fact cannot be interpreted as possessors of the lexical suffix. Finally, an independent oblique nominal form and a corresponding locative/instrument lexical suffix can cooccur in a clause.

4. Referentiality

One of the issues discussed in the literature on noun incorporation concerns the question of whether incorporated nouns can be interpreted as referential in meaning. Thus for instance, Sadock (1980) states that in Greenlandic an "incorporated object can [...] set up the reference for the object of a succeeding transitive verb," and that constructions paralleling (50), in which bed and it are coreferential, occur in the language:

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(50)   I bed$_i$-bought yesterday, and Mary liked it$_i$.

Baker (p.c.)[7] claims that examples like (50) are not good tests for referentiality since "the referent of the pronoun is simply determined pragmatically, with no explicit syntactic antecedent." He suggests instead that sentences like (51) are better tests for referentiality:

(51)   Mary saw a bed$_i$ at the store yesterday, so I went and bed$_i$-bought.

                                                      (Baker, p.c.)

In this type of construction it is important, according to Baker, that the incorporated noun is coreferential with an independent nominal that precedes but does not c-command it.

Both Baker (1996) and Sadock (1980) use the claim that incorporated nouns may be referential as evidence that noun incorporation in Mohawk, Southern Tiwa, and Mayali, or Greenlandic, respectively should be analysed as the result of syntactic, as opposed to lexical processes. Thus the question of whether lexical suffixes are referential or not may be an important one to answer in any future attempt to provide an adequate analysis of their properties.

An examination of the Nxaʔamxcín data reveals that speakers of the language can interpret lexical suffixes in both types of constructions as being coreferential with a corresponding independent nominal or pronominal in the sentence. Thus (52)-(54) parallel the example in (50): in thes ecases the lexical suffix introduces a participant into the discourse, and is co-referential with a null pronoun in a following clause:

(52)   kn   q'iləlqʷp   kʷaʔ   ʔacmínsn
              √q'il=əlqʷp   √ʔac-mín-stu-∅-n
       1sS   √hurt=throat   and   √rub-REL-CS-3O-1sS
       My throat$_i$ hurts and I am rubbing it$_i$.

(53)   yas   ḥiy'pált   kʷaʔ   t'əsaləwísc
             √ḥiy'-p=ált   √t'əs=aləwís-n-t-∅-s
       after √scold=child   and   √slap=breast-TR-3O-3S
       After she scolded the child$_i$, she slapped it$_i$ around.

(54)   kn   ʔəmtált   t   st'úkʷʷəm yas   ʔits   kʷaʔ q'áw'əm
              √ʔəmt=ált   √ʔitn-n-t-∅-s
       1sS   √feed=child OBL   carrot after √eat-TR-3O-3S   and burp
       I fed the child$_i$ some wild carrots. After she$_i$ ate them she$_i$ burped.

Similarly (55)-(57) illustrate cases that parallel (51): in these examples the lexical suffix in the second clause is interpreted as being coreferential with an independent nominal in a preceding clause.

(55)   q'ilt   ʔinqənúxʷ   kʷaʔ kn   mínəlqʷpm
                ʔin-√qənúxʷ   √mín=əlqʷp-m
       hurt   POSS-√throat and 1sS √rub=throat-MID
       My throat hurts and I am rubbing it.

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[7] Personal communication with Anna Maclachlan. Our thanks to Anna for passing this communication on to us.

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(56) Jóhn k'ət'áłps   wa   ʔact'úqʷ kʷaʔ kn   ʔincá yák'ɬpəm
     √k'ət'=áłp-n-t-Ø-s   √yák'=ɬp-əm
     John √cut=tree-TR-3O-3S SPEC tree   and 1sS DET √burn=tree-MID
     John cut down the tree$_i$ and I burned it$_j$.

(57) ʔitxsc   sqʷəsqʷə́saʔs kʷaʔ t'ucált
     √ʔitx-stu-Ø-s   √t'uc=ált
     √sleep-CS-3O-3S baby-POSS and   √lay down=child
     He put the baby to sleep then he laid it down.

Nxaʔamxcín thus appears to satisy both tests for referentiality. However, we do not believe that it is possible to conclude from these tests that lexical suffixes may have truly referential interpretations. If one considers the types of constructions which are being tested, one realizes that in both sets of cases, and not just in the first set (as Baker p.c. suggests), the pragmatics essentially force coreferentiality between the lexical suffix and an independent nominal or pronominal when these types of constructions are used out of context. These results are likely independent of the language being tested. Speakers of English whom we consulted, for instance, uniformly agreed that in sentences like (58) and (59) berry was definitely coreferential with the pronoun them or the independent noun strawberries.

(58)   I went berry$_i$-picking yesterday, and Mary ate them$_i$.

(59)   The strawberries$_i$ are ripe now, so I went berry$_i$-picking.

More adequate tests for referentiality seem to be needed, therefore, to determine whether lexical suffixes (and incorporated nouns) truly are referential. In closing, however, we would like to suggest that although neither of the tests can be regarded as conclusive, the fact that cases like (58)-(59) are interpreted as having a lexical suffix coreferential with an independent pronoun does suggest that lexical suffixes may ultimately turn out to have referential interpretations, since it shows that lexial suffixes are sufficiently salient in the discourse to be used to introduce participants into it.[8]

5. Final Remarks

In this paper we have shown that lexical suffixes in Nxaʔamxcín do indeed exhibit a number of properties attributed to incorporated nouns in non-Salish languages. In section 2, we saw that lexical suffixes may take on different thematic roles, including theme, goal, locative, instrument,

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[8] Our thanks to Tom Hukari for this point. Note, however, that even the fact that lexical suffixes appear from such examples as (52)-(54) to be salient in the discourse may not be enough to interpret them as referential. In (3) above, we saw an example where a lexical suffix =us was used to introduce the participant 'neck-like object' into the discourse; however, the lexical suffix seemed to be acting as a classifier in this instance. In note 5 we pointed out that in cases where one might wish to analyze lexical suffixes as classifiers, doubling of some kind does seem possible. In Rosen (1989: 307) it is suggested, following comments by Ken Hale and Joan Bresnan, that true classifiers have few noun-like or referential features and that it is this fact which allows them to occur in constructions with a doubled NP. If this hypothesis is correct, and if, further, the lexical suffix =us is a classifier, then an example like (3) suggests that even if a lexical suffix introduces a participant into a discourse it need not be fully referential. Again, this is an issue which requires further study.

and possibly agent. In section 3 we saw that lexical suffixes can occur in both transitive and intransitive predicates, but that the thematic role assumed by the lexical suffix determines how any independent nominals in the sentence are to be interpreted: if the lexical suffix is a theme or a goal, a direct argument nominal is always interpreted as the possessor of the lexical suffix; if the lexical suffix is a locative or instrument, a direct argument nominal is never interpreted as a possessor of the lexical suffix and is always interpreted as non-coreferential with the lexical suffix. In all types of constructions containing lexical suffixes, the lexical suffix may be coreferential with an independent nominal in the same clause as long as that independent nominal is marked as an oblique argument by the oblique marker t, or by a preposition. Finally, in section 4 we suggested that we cannot come to any conclusions concerning the referential/non-referential status of lexical suffixes.

Although lexical suffixes exhibit a number of incorporated noun-like properties, they nevertheless do not fit neatly into any of the different types of noun incorporation categories defined in the recent literature on the subject. Coming to any firm conclusions regarding the incorporated noun status of lexical suffixes in Nxaʔamxcín, therefore, will require more investigation into their properties.

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