Denominal verbs in Ojibwe

Abstract This paper argues that Ojibwe denominal verbs are very different from their Indo-European counterparts and share instead many properties with denominal verbs in languages such as Inuktitut, Halkomelem Salish and Nuuchahnulth. It is also argued that denominal verb formation in Ojibwe is a kind of nominal incorporation (NI), i.e. light verb NI, a process demonstrated to be both productive and compositional as well syntactic rather than lexical. The nominals in Ojibwe DNVs are also shown to be morphologically complex elements that surface with inflectional affixes and derivational (including possessive morphemes), and sometimes even with modifiers, suggesting that they are not simple heads. The paper can be seen to contribute to on-going discussion on the composition of words in polysynthetic languages, the nature of nominal incorporation, and the relationship between morphology and syntax.

Keywords Denominal verbs • Light verbs • Nominal incorporation • Ojibwe • Algonquian • Distributed Morphology

1. Introduction
A recent special issue of IJAL (edited by Donna B. Gerdts and Stephen Marlett) has contributed much to our understanding of denominal verbs cross-linguistically. As pointed out by the editors in their introduction (Gerdts and Marlett 2008), little is or was known about denominal verb constructions in Native North American languages, other than the substantial research on Inuit (Johns 2007). The papers included in the volume began to fill that gap in shedding light on denominal verbs (DNVs, henceforth) from five different family groups: Seri (a linguistic isolate of Northwestern Mexico), Uto-Aztecan, Apachean, Salish (Halkomelem) and Wakashan (Nuuchahnulth). While Gerdts and Marlett (2008, fn. p. 412) suggest that DNVs may exist in other language families of North America, they conclude that they are not well-documented.2 The aim of the present paper is to show that Ojibwe, an Algonquian language, has DNVs of the kind studied in the special IJAL issue and that the DNV process is different from what have been called DNVs in languages like English, French or other Indo-European languages: they are more active both morphologically and syntactically.

I will also show that the nominal in Ojibwe DNV constructions can be extremely complex morphologically. This corroborates the evidence put forward in Gerdts and Marlett’s (2008) collection of papers, since many of the nominals in DNV constructions described in that volume can be larger than a simple root. Gerdts and Hukari (2008:508) in particular claim that in Halkomelem Salish bound nominals in DNV constructions can be inflected for number and diminution, be compounds, and even be modified by adjectives. The authors concede, however, that the nominals in question are not DPs, since they cannot be preceded by determiners or be possessed. The present paper will show that, although Ojibwe nominals in DNV constructions do not seem to be preceded by determiners, they can certainly be possessed, suggesting that it is not a simple root that merges with the verbalizer in Ojibwe, but a phrase (the possessive heading the DP). Incidentally, there is evidence that nominals in Inuktitut DNVs sometimes bear not only number, but also possessive marking (see also Sadock 1980; Fortescue 1984; Denny 1989).

Finally, I will assess the claim made by Gerdts and Marlett (2008) that DNV formation in North American languages is different from noun incorporation (NI, henceforth). On the basis of Ojibwe, I will show that, while there are admittedly several differences between the two kinds of constructions, there are also many similarities, pointing to the view that a common analysis is not
out of reach. Pre-theoretically, Ojibwe DNV formation is definitely like “classical incorporation” in the sense that a noun is bound morphologically while part of the prosodic word constituted by the stem.

All these claims have theoretical relevance in that they shed light on the relationship between morphology and syntax. Like NI (the “most nearly syntactic of all morphological processes” according to Mithun 1984: 889), and complex compounds (Sproat 1985, Lieber 1992, Giegerich 2005), DNV formation is at the borderline between the lexicon and syntax, exhibiting properties that indicates clearly that the distinction between a compound and a phrase, and thus between a word and a phrase, is extremely fuzzy.3

The paper is organized as follows. Section 2 argues that DNV formation in Ojibwe is syntactic rather than lexical. Section 3 puts forward the hypothesis that Ojibwe verbal suffixes are, following Johns’s (2007) work on Inuktitut, light verbs, i.e., elements with both lexical and functional properties. Section 4 provides direct evidence for the idea that the bound nominals in Ojibwe DNV constructions are morphologically complex elements consisting of more than a simple root. Section 5 concludes the paper.

2. Ojibwe DNV formation is a syntactic process
The present section gives arguments in favour of a syntactic view of DNVs in Ojibwe. First, I show that DNV formation in that language is both productive and compositional. Second, I introduce examples demonstrating that the bound nominal in Ojibwe DNV constructions can set up reference for a subsequent anaphor. Third, I provide evidence that Ojibwe DNVs involve the stranding of quantifiers and numerals. It is argued that all these properties are unlike those associated with English/French type of DNVs and that, on the other hand, the properties described for Ojibwe DNVs are not unlike those associated with NI.

2.1. Productivity and compositionality
(1) is an illustration of the DNV phenomenon in Ojibwe: a verbal suffix –ke is bound to a nominal that contains not only a root/head, but also a nominalizer –gan.4

(1) bkwezhganke
    bakwezh-gan-ke
    bread-Nom-VAI
    ‘He/she is making bread.’

Unlike more familiar DNVs of the English or French kind, DNV formation in Ojibwe is very productive and fully compositional: the meaning of the derived verb is entirely predictable. In English/French, on the other hand, idiosyncrasy arises because the noun root/head and the verbalizing suffix, which has no semantic content apart from its verbalizing function, undergo conflation, a process understood as a lexical operation (or internal word formation as in the Distributed Morphology framework, Marantz 2001, to appear). In this case, the verbalizer acquires lexical content from the root/head with which it merges, resulting in the creation of only one X0 (Baker 2003:168; Hale and Keyser 2002). For example, the verb to man means nothing like ‘to be or become a man’. Rather, it means “to endow something with a suitable crew or operators” (Baker 2003: 100). Similarly, to crystallize and to fossilize are not completely semantically transparent (Baker 2003: 166). In contrast, predicative suffixes such as –ke in
Ojibwe never acquire full lexical content from the noun. Unlike English –ize as in terrorize or French –er as in murer ‘to wall in something’, they form instead a separate X₀ node from that of their associate nominals and have lexical meaning of their own, albeit multiple and variable.

The variable semantic contribution of –ke comes out clearly in examples from (2) to (7). It can mean not only ‘make’, in its literal (2) or more abstract sense (3), but also ‘catch/look for/hunt’ (4), ‘gather/pick’ (5), ‘work with’ (6), ‘tell’ (7a), ‘suckle’(7b), and even ‘practice religion’ (7c) or ‘play’(7d). Although variable the meaning of –ke is nevertheless not completely free: it seems to be restricted to the general meaning of make, not unlike the light verb faire in French which can used not only as a creation verb, but also as a predicate describing an activity (faire la vaisselle ‘to do the washing up’, faire du tennis ‘to play tennis’, etc.). Derivational suffixes like –ize in English, on the other hand, are used in many unpredictable environments: hospitalize, womanize, socialize, winterize, vaporize, etc. share no core predicate meaning. –ize appears to simply turn a noun into a verb while –ke has a clear distinctive meaning.

(2) a. wiigwaamke  
   wiigwaam-ke  
   house-VAI  
   ‘He/she is making a house.’

   b. Eric  
   gii-nboobike  
   Eric  gii-naboob-i-ke  
   Eric PAST-soup-i-VAI  
   ‘Eric was making soup.’

   c. ziinzbaakwadike  
   ziinzibaakwad-i-ke  
   sugar-i-VAI  
   ‘He/she is making sugar.’

   d. miiknaake  
   miikan-ke  
   road-VAI  
   ‘He/she is making a road.’

   e. aniibiishaabooke  
   aniibiishaaboo-ke  
   tea-VAI  
   ‘He/she makes tea.’

(3) a. nbaagenike  
   nbaa-gan-i-ke  
   bed-Nom-i-VAI  
   ‘He/she is making the bed.’

   b. ashkodeke  
   ashkode-ke  
   fire-VAI  
   ‘He/she is making a fire.’

   c. zhoonyake  
   zhooniya-ke  
   money-VAI  
   ‘He/she makes tea.’
'He/she is making money.

(4)  a. memengwaanike (Berdina Johnston, 2008-05-06)
   memengwaan-i-ke
   butterfly-i-VAI
   ‘He/she is catching/looking for butterflies.’
  b. giigoonke (Juanita Pheasant, 2008-05-07)
     giigoon-ke
     fish-VAI
     ‘He/she is looking for fish.’
  c. amike (Berdina Johnston, 2008-05-06)
     amik-ke
     beaver-VAI
     ‘He/she is looking for beavers.’
  d. moozke (Corbiere et al. 1999: 117)
     mooz-ke
     moose-VAI
     ‘He/she is hunting moose.’

(5)  a. mashkiigiminike (Weshki-ayaad et al. 2003)
    mashkiigimin-i-ke
    cranberries-i-VAI
    ‘He/she is gathering cranberries.’
  b. mshiimnike (Corbiere et al. 1999: 124)
     mshiimin-i-ke
     apple-i-VAI
     ‘He/she is picking apples.’
  c. wiigwaasike (Lippert and Gambill 2003)
     wiigwaas-i-ke
     birchbark-i-VAI
     ‘He/she is gathering birchbark.’

(6)  a. semaanke (Valentine 2001: 419)
    aseemaa-n-ke
    tobacco-Nom-VAI
    ‘He/she is working with tobacco.’
  b. daabaanike (Juanita Pheasant, 2008-05-07)
     odaabaa-n-i-ke
     car-Nom-i-VAI
     ‘He/she is working on a car.’
  c. gaawayike (Philomene Chegahno, 2008-05-06)
     gaaway-i-ke
     quill-i-VAI
     He/she is doing quill work.’
(7) a.  aasooke  
    aasoo-ke  
    story-VAI  
    ‘He/she is telling a story/a legend.’

b.  todoshke  
    todosh-ke  
    nipple-VAI  
    ‘He/she is suckling.’

c.  Manitouke  
    Manitou-ke  
    Manitou-VAI  
    ‘He/she is practicing religion.’  
    ‘He/she is seeking a patron of the incorporeal order, a patron to guide him/her.’

d.  bkwaakdoke  
    bikwaakod-ke  
    ball-VAI  
    ‘He/she is playing ball.’

The examples above are a good representation of how productive this construction can be in the language. The use of –ke is so productive in fact that it occurs with many borrowed words adding evidence for the idea that DNV formation in Ojibwe is active and does not stand for fossilized expressions Valentine (2001: 419) mentions toastke ‘make toast’, homeworkke ‘to do homework’ and picnicke ‘to have a picnic’ while Corbiere and colleagues (1999: 120) mention cakeke “make a cake” and pieke ‘make a pie’.5

The facts introduced above suggest that DNV formation in Ojibwe is syntactic rather than simply morphological/lexical. When a nominal morphologically merges (M-merges, henceforth) with a predicative suffix in Ojibwe, the construction gives rise to a fully compositional interpretation, prompting a syntactic view of the facts along the lines of Distributed Morphology and other (neo)-constructionist theories like that of Borer (2005) according to which contextual determination of meaning/compositionality is a property of syntactic derivation.

For example, there is a clear relation between ‘nipple’ and ‘suckling’, on the one hand, and between ‘Manitou’ and ‘religion’, on the other. It is also noteworthy that (6b) can, not only be interpreted as ‘working on a car’, but also as ‘making a car’ while (7d) can be interpreted not only as an activity verb (‘play’), but also, literally, as a creation verb (‘make’). On the other hand, idioms, fossilized forms or even denominal verbs of the English or French kind, are not compositional.

On the view adopted here, inflection is not the only type of morphological process that can be shifted to syntax (Anderson 1982), but derivation can also be placed within the realms of syntax. Although admittedly some derivational processes appear to be listed/fixed in English (creating a lexical residue), it is clear that in Algonquian derivational morphology is as regular as inflectional morphology (cf. Piggott and Newell 2006:48), providing compelling evidence for one of the central tenets of Distributed Morphology (Halle and Marantz 1993; Marantz 1997).
2.2. Referential activity
As the examples in (8) illustrate, it is possible in Ojibwe to refer back to a noun that has been M-merged with a verbal suffix. The referential property of the nouns in (8) is in fact exactly the same as the one exhibited by incorporated nominals (INs, henceforth) in better-studied languages with NI such as Mohawk (Baker 1988, 1996) and Inuktitut/Greenlandic (Sadock 1980, 1986, 1999; Van Geenhoven 1998, Johns 2007).

(8) a. gii-nboobike. Apiiji gii-mino-waagame (Ella Waukey, 2007-04-20)
    gii-nboob-i-ke. Apiiji gii-mino-waagame
    PAST-soup-i-VAI very PAST-good-taste.[liquid].VII
    ‘He/she was making soup,’ ‘It tasted very good.’

b. gii-memengwaanske. Apiiji gii-gwanaaqiwig (Berdina Johnston, 2008-05-06)
    gii-memengwaan-s-ke. Apiiji gii-gwanaaqiwig
    PAST-butterfly-s-VAI very PAST-beautiful-be-3pl
    ‘He/she was catching butterflies,’ ‘They were very beautiful.’

c. nahaangshimi. giinoo-zi (Ella Waukey, 2009-06-15)
    nahaangshimi-i. giinoo-zi
    son.in.law-VAI tall-VAI
    ‘He/she has a son-in-law, He is tall.’

The referential property of the M-merged nominals in (8) is also entirely parallel to the referential property of a free noun. In (9), the unbound/free noun introduces a discourse referent. In this case, a transitive verb ozhitoon “make” is used. While (9) is about an accomplishment, (8) is about an activity. The two constructions mimic the optionality of NI in languages that have verbs that may or may not incorporate a theme (the same opposition exists in other languages with DNVs, e.g., Inuktitut, Johns 2007 and Hopi, Haugen 2008).

(9) nboob gii-oozhitoon. Apiiji gii-gowagmene. (Philomene Chegahno, 2007-04-20)
    soup PAST-make very PAST-delicious
    ‘He/she made soup,’ ‘It was very delicious.’

The fact that the nominal is referentially active in examples such as (8) sets the Ojibwe type of DNV construction apart from the type found in English or French. This is because in the latter set of languages it is not possible to refer back to a noun that appears in a DNV construction. This is exemplified in (10) for English and in (11) for French and is well-documented in Postal (1969), Sproat (1985, 1988), Sproat and Ward (1987) and Ross (2007) for English.

(10) a. *I was hammer-ing really hard. Iti was blue.
    b. *John butter-ed his toast. Iti was rancid.
    c. *He tape-d a poster on the wall. Iti was large.
    d. *John terror-ized his neighbours. You felt iti in the air.

    he has walled his treasure. it was thick
    *He wall-é in his treasure. Iti was thick.
In order to explain the above differences between Ojibwe DNVs on the one hand and English and French DNVs on the other, I propose that anaphora is generally possible with categorized roots, but impossible with uncategorized roots. Whereas DNVs of the English or French kind are formed (uniquely) by conflation (of uncategorized roots into light verbs; for the notion of light verb, see next section), Ojibwe DNVs are formed via incorporation (of categorized roots into verbalizers). Structurally, the nominal in conflation cases does not remain a separate entity from the verb and never introduces a maximal projection as represented in (12). The nominal forms with the verbalizer an indivisible unit, acquiring in the process lexical content from the root. In particular, I follow Baker’s (2003: 168) view according to which “conflation is incorporation prior to lexical insertion, resulting in recategorization. The derived structure has only one X0 node”. It is a predicate and therefore does not carry a referential index. \( v \) is a simple verbalizer, turning a root into a verb.

(12)

\[
\begin{array}{c}
\text{verb} \\
\end{array}
\begin{array}{c}
\text{\( v \)} \\
\text{\langle X \rangle} \\
\text{\( v \)}
\end{array}
\]

The cases in (10)a-b are thus straightforward. More problematic, at least at first, are the cases in (10c,d) (and (11b)) where, according to recent syntactic accounts of the lexicon (Marantz 2001, to appear, Marvin 2002, Arad 2003 following Kiparsky’s 1982 original distinction), it is not a root that merges with the verbalizer but a head \( n \) (i.e., a noun) that has been extracted from an \( nP \). We know independently that it is possible for \( n \) heads in incorporating structures to introduce discourse referents (see Baker 1988, 1996 for Mohawk and Baker 2003 more generally for the idea that nouns come equipped with a referential index while roots do not). If the “nominal” in (10d,e) (and (11b)) is an \( n \) then it comes as a complete surprise why it is not capable of setting reference for subsequent anaphors.

A solution to this problem comes from Harley and Haugen’s (2007) recent snippet where it is argued that Kiparsky’s (1982) original distinction—and by extension that of Marantz (2001)—between the two types of DNVs (the first created from a root, the other from an \( n \)) is not warranted and that all English DNVs are formed from roots. In Harley and Haugen’s (2007) view, the distinction between DNVs formed from roots and those formed from \( ns \) involves the level of semantic/encyclopedic generality associated with the different roots, not a distinction in the syntax. All DNVs in English (and I assume French) involve roots and have thus the structure in (12).

Ojibwe DNVs, on the other hand, are clearly formed from something larger than roots, since discourse referents are introduced when they are used. I propose that Ojibwe DNVs have the structure in (13a) where \( n \) is projected. The head \( n \) carries a referential index, which explains why the M-merged nominal can be anaphorically picked up in the discourse (the M-merged nominal is in fact even bigger than \( n \) as we shall see in Section 4; this is why I use \( nP \) rather than simple \( n \) in (13)). Ojibwe M-merged nominals are independent units from \( v \) and since the
nominal never conflates with the verbalizer, the latter also remains an independent unit from the nominal with its own syntactic and semantic properties. In the next section I will argue that this type of verbalizer is a light verb. In order to distinguish simple verbalizers from light verbs, I use $v$ for the former but $v/V$ for the latter. $V$ stands for a full lexical verb.

(13) a. \[ \begin{array}{c}
    v \\
    \hline
    \text{v/VP} \\
    \text{-ke} \\
    \text{bakwezhgan}
\end{array} \]

b. \[ \begin{array}{c}
    V \\
    \hline
    \text{VP} \\
    \text{ozhitoon} \\
    \text{bakwezhgan}
\end{array} \]

'make'  
'bread'

If $v/V$ in Ojibwe NI is always an independent entity from the M-merged nominal, this means that, although intransitive morphologically - only subject agreement surfaces in the verbal complex when transitive verbs carry both subject and object agreement, cf. (14a) versus (14b) – DNVs in Ojibwe are underlyingly the equivalent of transitive constructions where the object is a separate element from that of the verb as shown in (13b) (DNVs of the English and French kind are morphologically and syntactically intransitive).

(14) a. nwiigwaamke
n-wiigiwaam-ke
1Subj-house-VAI
'I am making a house.'

b. nwaabmaa bezhig amik
n-waabam-aa bezhig amik
1Subj-see-3Obj one beaver
'I see one beaver.'

Independent evidence for the idea that transitivity in Ojibwe, and Algonquian more generally, is not to be defined uniquely morphologically comes from verbs traditionally referred to as Pseudo-Transitive verbs (Bloomfield 1957:33). Data from Piggott (1989) and Valentine (2001:216) for Ojibwe, Branagan and MacKenzie (2001) for Innu-aimûn, and Ritter and Rosen (to appear) for Blackfoot show that the alignment between the verb’s derivational structure with its syntactic behaviour is not always straightforward. The verb bootage ‘grind’ in (15) has no transitive final, no object agreement or obviative marker, yet it appears with a direct object (i.e. mdaamnan ‘corn’) that is marked third person singular and obviative. The verb is thus derivationally and inflectionally intransitive morphologically but transitive syntactically.

(15) gii-bootaagewag giw kwewag niw mdaamnan
    gii-bootaage-wag giw kwe-w-ag niw mdaamn-an
    PAST-VAI-3PL those woman-Nom-PL that corn-OBV

'The women ground up the corn.' (Valentine 2001: 216)

In summary, the status of the nominal in Ojibwe DNV constructions is very different from its counterpart in English/French DNVs. In the former, it is a simple root while in the former it is a categorized root. This explains why M-merged nominals in Ojibwe DNVs are referential.
2.3. Stranded modifiers
DNVs of the English/French type do not allow the stranding of modifiers. This has led Hale and 
Keyser (2002: chapter 3) to change their minds about the nature of DNV formation in English 
and Hopi (they used to propose that conflation is simply another case of incorporation, but they 
came to realize that it behaves very differently from incorporation: compare Hale and Keyser 

Whereas Hopi allows the stranding of modifiers in DNV constructions (16a), English 
does not, as (16b,c) illustrate. In Hale and Keyser’s view, the derivation for (16b) starts with the 
modifier ‘straight’ modifying the noun ‘spear’. Then, the noun incorporates into the verb, leaving 
the modifier behind ((16c) has the same kind of derivation). English DNVs thus behave like 
English compounds, since it is not possible in compounds like ‘babysit’ to strand an adjective 
modifying ‘baby’: *‘I babysat French’ to mean ‘I babysat a French baby’ (in fact, it is not 
possible, as is well-known, to modify nouns in compounds *‘I French-baby-sat’; on the other 
hand, Ojibwe INs can be modified directly as will be shown in Section 4). Hopi DNV formation, 
on the other hand, has the same characteristics as traditional NI (i.e., Mohawk, Baker 1988, 
1996): modifiers can be stranded as in (16a).

(16) a. Pas wuwupa-t angap-soma (Hale and Keyser 2002: 56) 
very long.PL-ACC husk-tie.PERF
‘She bundled up really long cornhusks.’
b. *Japanangka spears straight. (Hale and Keyser 2002: 57) 
(cf. Japanangka straightens spears.)
c. *The north wind skies clear. 
(cf. The north wind clears the sky.)

Just as in Hopi, it is possible in Ojibwe to modify an M-merged nominal from outside the verbal 
complex. In (17a) and b, the quantifier kino ‘all/every’ is stranded while modifying the stem-
internal noun. In (17c) it is a numeral that is stranded.10

(17) a. kino memengwaanske (Shirley Ida Williams, 2008-08-10)
kino memengwaans-ke 
all butterfly-VAI
‘He/she is catching all butterflies.’
b. kino nboobiike (Shirley Ida Williams, 2008-08-18)
kino nboobii-ke. 
all soup-i-VAI
‘He/she is making all of the soup.’
c. niizhoo daabaani (Shirley Ida Williams, 2009-06-22)
niizhoo daabaan-i 
two cars-VAI
‘He/she has two cars.’

This shows that Ojibwe DNV formation is not a case of Compound NI in the sense of Rosen 
(1989). Although Ojibwe DNV formation shares with Compound NI a cluster of properties, i.e., 
morphological intransitivity (see discussion above and footnote 11) and lack of doubling as 
shown in (18),11 it is different from Compound NI or from lexical compounding in general in
that Ojibwe DNVs allow stranding. Like Inuktitut (see Rosen 1989: 304, footnote 11), Ojibwe does not fit in with Rosen’s typology. The notions of “classical” and “compound” NI might be relevant for other languages, but it appears that a third category is needed for Ojibwe (and other North American languages, cf. Gerdt and Marlett 2008), that of DNV formation.

(18) *miijimke mashkiigiminag
    *miijim-ke mashkiigimin-ag
  food-VAI cranberries-PL
  ‘He/she is gathering/collecting cranberries.’

To conclude Section 2: whereas lexical derivation is not necessarily very productive and produces narrow/specified meanings, Ojibwe DNV formation exhibits all the characteristics associated with syntactic derivation. It is thus very different from English or French DNV formation, since the latter is not entirely productive and yields a meaning that is narrow and specialized. For this reason and in view of the other special properties that Ojibwe DNVs have (possibility of modifier stranding, introduction of discourse referents, etc.), I conclude not only that Ojibwe DNV formation is syntactic but that it resembles NI. However, what sets Ojibwe incorporation of the DNV type apart from other more traditional cases of NI is the status of the M-merged nominal and of the verbal incorporator. In the next section, I argue that the incorporator in an Ojibwe DNV construction is not a simple verbalizer as in DNVs of the Indo-European kind or a lexical verb as in Mohawk NI, but a light verb. A light verb is of a mixed category: it is half lexical, half functional.

3. Ojibwe DNV formation and light verbs
In the present section, I argue that the verbalizer in Ojibwe DNV constructions is a light verb (see Johns 2007 for Inuktitut). But first let me introduce basic facts about word formation in Ojibwe and the well-known primary/secondary derivation distinction. There are two reasons why I introduce the distinction between primary and secondary derivation. First, I want to argue that most, if not all, Ojibwe verbalizers are light verbs and not simple verbalizers as in English or French DNVs. This will be the topic of the present section. Second, secondary derivation shows that Ojibwe M-merged nominals or other INs are larger than simple roots: they are words already formed from a root and a category forming element (e.g., –gan in (1), (3a) and (20f), –n in (6a,b) and (20c), –w in (20a). Nominalizers will be discussed in section 4 where it will be argued that secondary derivation takes as input not heads but phrases.

The arrangement of morphemes within a word in Ojibwe, and more generally in Algonquian languages, is often presented as though it follows a strict linear template consisting of an initial, a medial, and a final. The final sometimes surfaces in the derivation as binary with both a pre-final, dubbed a concrete final by Denny (1978), and an abstract final. All these elements combine to form the stem. Medials, as their name suggests, occupy the position between initials and finals and typically denote classifying or body-part elements. INs in lexical V NI (of the Iroquoian type, which Ojibwe has as well as part of its grammar) – see (30) below) also occupy the medial position (INs in light verb NI occupy the initial position). While the initial position always needs to be phonologically realized (Goddard 1990; Brittain 2003), in some (rare) cases finals can be phonologically null.
The traditional literature treats the assembly of words in Algonquian languages as lexical, i.e., pre-syntactic (Bloomfield 1946; Wolfart 1973; Rhodes 1976; Goddard 1979; Nichols 1980; Dahlstrom 1991; Valentine 1994). Words are claimed to be assembled via two major word formation processes: primary and secondary derivation. In primary derivation, the left edge position is filled by verbal/adjec tival roots (19a) or adverbial roots (19b) while in secondary derivation the left edge position is filled by nominals or verbs, see Valentine (2001:333) and Goddard (1990) for general discussion (animate forms are given).

To illustrate, in (20a,b), an intransitive verb is formed from a noun (which itself consists of a root and a nominalizer). In (20c) a noun is formed from an intransitive verb (which itself contains a noun). In (20d) a noun is created from an intransitive verb (which itself contains a root and a verbalizer). In (20e) a transitive verb is formed from an intransitive verb (which is itself formed from a root and a verbalizer) yielding a causative verb. In (20f) a noun is formed from an intransitive verb (which is itself formed from a transitive verb).13

\[
(19) \begin{align*}
\text{a. } & \quad [\text{o}z\text{haawashko-zi]}_V \\
& \quad \text{blue-VAI} \\
& \quad \text{‘to be blue’} \\
\text{b. } & \quad [\text{bim-ose}]_V \\
& \quad \text{along-VAI} \\
& \quad \text{‘to walk (along)’}
\end{align*}
\]

\[
(20) \begin{align*}
\text{a. } & \quad [\text{daaba-n}]_N^{-}\text{ke}_V \\
& \quad \text{car-Nom-VAI} \\
& \quad \text{‘to make a car’} \\
\text{b. } & \quad [\text{ikwe-w}]_N^{-}\text{i}_V \\
& \quad \text{woman-Nom-VAI} \\
& \quad \text{‘to be a woman’} \\
\text{c. } & \quad [\text{[daaba-n]}_N^{-}\text{ke}_V^{-}\text{win}]_N \\
& \quad \text{car-Nom-VAI-Nom} \\
& \quad \text{‘car-making’} \\
\text{d. } & \quad [\text{[bim-ose]}_V^{-}\text{win}]_N \\
& \quad \text{along-VAI-Nom} \\
& \quad \text{‘a walk’} \\
\text{e. } & \quad [\text{[bim-ose]}_V^{-}\text{h}]_V \\
& \quad \text{along-walk-VTA} \\
& \quad \text{‘to make someone walk (along)’} \\
\text{f. } & \quad [\text{[bakite-h]}_V^{-}\text{ge}]_V^{-}\text{gan}]_N \\
& \quad \text{hit-VTA-VAI-Nom} \\
& \quad \text{‘a hammer’}
\end{align*}
\]

According to Valentine (2002: 96-97): “Secondary derivation is formally distinguishable in its requirement that the base be a free lexeme, whereas the constituents of primary derivation are often roots and other bound elements. […] Meanings are also more straightforwardly
compositional in secondary derivation, and more structurally transparent, in that there are not the various accretions and variant forms of morphemes associated with primary forms.\textsuperscript{14}

The distinction between primary and secondary derivation is equivalent to the distinction between formative-boundary and word-boundary affixes (Chomsky and Halle, 1968), morpheme-based morphology and word-based morphology as in lexical phonology (Kiparsky 1982) and Stratum I and Stratum II affixes (Halle and Vergnaud 1987). The first kind of affixes may appear inside the second kind, but not vice versa (*hopefulness). This generalization, often referred to as the Affix Ordering Generalization, does not, however, seem to apply in Ojibwe (Valentine 2001: 334). Word formation in that language is much freer. A case in point is that primary derivation appears to be as productive as secondary derivation and although there appears to be a distinction in the status of the initial when comparing the former and the latter, the status of the final appears to be the same: it is not semantically empty.

This is why Ojibwe verbal suffixes cannot be treated as simple verbalizers. The verb finals in (19) and (20) all have lexical meaning of their own: \textit{-zi} = ‘be’ in (19a), \textit{-ose} = ‘walk’ in (19b), \textit{-ke} = ‘make’ in (20), \textit{-i} = ‘be’ in (20b) and \textit{-h} = ‘causative’ in (20d).\textsuperscript{15} This means that neither primary nor secondary derivation in Ojibwe can be said to involve conflation. Recall from section 2 that structurally the verbalizer in conflation processes never remains a separate entity from the element with which it merges. Instead, it fuses “lexically” with its mate.

\begin{center}
(21) a. \[ v/V \quad \sqrt{\cdot} \quad v/V \]
\quad \textbf{v/V} \quad \sqrt{\cdot} \quad \textbf{v/V} \\
\quad \textit{-zi} \quad \textit{ozhaawashko-} \quad \sqrt{\cdot} \quad \textit{v/V} \\
\quad \textit{-ose} \quad \textit{bim-} \quad \sqrt{\cdot} \quad \textit{v/V} \\
\quad \textit{cf. (19)}
\end{center}

Secondary derivation is similar to primary derivation in that the verbal suffix remains a separate entity from the element with which it merges. The difference between primary and secondary derivation comes down to the status of the incorporee and the number of domains/phases involved. In primary derivation (21), the incorporee is a root while in secondary derivation (22), it is a phrase. In (21) one domain/phase is involved (the root and \textit{v} merge in the same domain/phase) while in (20a,b), whose derivation appear in (22) and (23) respectively, two domains/phases are involved (the nominal or verb and \textit{v} merge in the same domain/phase).\textsuperscript{16} In (22), what rises to the left of the final is an \textit{nP} rather than a head (evidence for this idea will be given in Section 4). The \textit{nP} is formed in the syntax (it is a case of primary derivation).\textsuperscript{17} In (23), it is a \textit{v/VP} that rises to the left of the final (owing to lack of space I cannot discuss such cases in any detail).
Although it is clear that Ojibwe verbal suffixes carry lexical meaning, they nevertheless express meaning of a variable nature (see section 1), a property they share with light verbs which are traditionally considered as deficient or “light”, in that they contribute semantics to the clause which are not very specific (e.g., –h means ‘make’ or ‘get’ in most cases, a meaning most often associated with light verbs when a language has them). Other verbs that tend to participate in such constructions include ‘be’ and ‘have’ (Ritter and Rosen 1997; Harley 2005). In Ojibwe, ‘be’ can be expressed by the verbal suffix –i as shown in (20b). –i does not only mean ‘be’, but also ‘have’ as was illustrated in (8c) and as shown by (24) below. Since the final –i has a general, rather than a precise, meaning it is a good candidate for a light verb analysis.

(24) a. doodaabaani  (Valentine 2001: 416)
    doodaabaan-i
car-VAI
    ‘He/she has a car.’

b. wzhoonyaami  (Nichols et al. 2002: 86)
w-zhoonyaam-i
3SG-money-VAI
‘He/she has money.’

As light verbs, verbal suffixes in Ojibwe also have functional properties. First, although they carry lexical meaning they do not strictly constitute an open class. According to Rhodes (1994), the set of finals is a closed class, comprising about 50 or so sets of animate/inanimate pairs and according to Valentine (2001: 325), there is a relatively small number of abstract VAI finals: –ii, –i, –(i)zi and –(i)n. Second, intransitive verbal suffixes introduce the external argument while transitive verbal suffixes introduce not only the external argument but also syntactically license the direct object (properties associated with the light verb v introduced by Chomsky 1995 and Kratzer 1996). This view of transitivity in Ojibwe is purely syntactic and
contrasts with the traditional wisdom that transitivity in Algonquian is arrived at derivationally while signaling aspeetual and internal argument structure (verb finals carry transitive or intransitive information). See discussion around (13) and (15).

In summary, verbal suffixes in Ojibwe are like light verbs in that they constitute categories with mixed properties (as proposed by Butt 2003): they are both functional and lexical (also, like light verbs they are most often monosyllabic and act as hosts for agreement, animate versus inanimate in Ojibwe). They are like the quasi-lexical functional abstract category postulated by Chomsky (1995) and Kratzer (1996), except that they are phonologically overt (as pointed out by Ritter and Rosen, to appear, there is no reason why Chomsky’s $v$ should lack phonetic content in all languages). In short, to use Ritter and Rosen’s (to appear) terminology, they are quasi-functional lexical morphemes. Crucially, they are not like English or French verbal derivational morphemes (e.g.–ize, –er), since the latter carry no meaning.

4 Complex nominals in DNV formation
While section 3 concentrated on verbal suffixes, this section focuses on the structure of nominals that M-merge/incorporate into these verbal suffixes. I show that M-merged nominals/INs in Ojibwe are complex elements consisting not only of roots/heads but many additional layers.

Nominals in Ojibwe consist of not only a root but also a category-defining nominal suffix. One common nominal suffix is –w: bzhiw ‘lynx’, bgiw ‘gum, pitch’ (Valentine 2001: 481), ootenaw ‘town’ and wajiw ‘mountain’ (Jones 1971). As (20b) and the discussion around secondary derivation in section 3 have testified, such nominalizers are retained when the nominal incorporated into the verbal suffix. The bound nominal in (20b) contains not only a root ikwe ‘woman’, but the nominalizer –w. Other examples appear in (25), this time with –ke as the light verb. Without the nominalizer, the output is ill-formed: *bigike, *bzhiike.20

(25) a. bigwike (Ella Waukey, 2008-05-06/Philomene Chegahno, 2008-05-06)
   bigw-i-ke
   gum-Nom-i-VAI
   ‘He/she is making (pine) gum (as medicine).’
   b..bzhiwike
   bzhiw-i-ke
   lynx-Nom-i-VAI
   ‘He/she is hunting lynx.’

Three other common nominalizers are –gan (damnowaagan ‘doll’, biiskawaagan ‘jacket’, etc.), –win (ngamwin ‘song’, nbewin ‘sleep’, etc.) and –n (bgesaan ‘plum’, kosmaan ‘pumpkin’, etc.). The nominalizers are all retained in DNV constructions as the example in (20a) illustrated. Other examples appear in (26), (27) and (28) (without the nominalizer, all the following examples are ill-formed: *bkwezh-ke, *nbaake, *wazaske, *pabke, *n-jimaake, *daabaake).

(26) a. bkwezhganke (Philomene Chegahno, 2008-05-05)
   bakwezh-gan-ke
   bread-Nom-VAI
   ‘He/she is making bread.’
b. nbaagenike (Anishnaabemowin language booklet and CD)
niba-\textit{gan}-i-ke
bed-Nom-\textit{i}-VAI
‘He/she is making the bed.’

(27) a. wazaswinike (Weshki-ayaad et al. 2003)
wazas-\textit{win}-i-ke
nest-Nom-VAI
‘He/she is making a nest.’
b. pabwinke (Philomene Chegahno, 2008-05-05)
apabi-\textit{win}-ke
chair-Nom-VAI
‘He/she is making a chair.’

(28) a. njiimaanke (Donald Keeshig, 2007-04-20)
n-jiimaa-ke
1Subj-boat-Nom-VAI
‘I am making a boat.’
b. daabaanike (Juanita Pheasant, 2008-05-07)
odaabaan-i-ke
car-Nom-\textit{i}-VAI
‘He/she is working on a car.’

In view of these facts, I propose that the Ojibwe nominal finals –\textit{w}, –\textit{gan}, –\textit{win} and –\textit{n} are all instances of \textit{n}, i.e., light nouns (in the sense of Halle and Marantz 1993; Marantz 1997). They select a root and merge with it, as shown in (29a). Then, the root adjoins to \textit{n} to give (29b). The nominalizer may sometimes be phonologically null: \textit{makwa} ‘bear’ not \textit{makwaw}, although the latter form is the recognized underlying form in the traditional literature. It must be noted that the derivation of nominals can be fairly complex: like (20f) \textit{bakitehigan} ‘hammer’, \textit{bkwezhgan} in (26a) is formed from a VTA verb (\textit{bakwebi-zh} ‘tear a piece off someone’) that is detransitivized with the verbal suffix –\textit{ge} (\textit{bakwebi-zh-ge}). Only then is the nominalizer is –\textit{n} added.

\begin{equation}
\begin{array}{l}
\text{a. } nP \\
\text{b. } nP
\end{array}
\end{equation}

In Ojibwe NI of the Mohawk kind, the nominalizer also surfaces together with the root as shown in (30a).

(30) a. Gii-naad-(i)bkwenzh-gan-ee-w.
PST-fetch-bread-Nom-VAI-3
‘He went after some bread.’
1-FUT-fetch-VTI food-Nom
‘I will get bread.’
The fact that INs retain their nominalizers sets Ojibwe apart from other languages with NI, e.g., Onondaga (an Iroquoian language) and Halkomelem Salish (as in lexical suffix constructions), since in these languages nominalizing morphology, although it surfaces in independent nouns, does not (usually) surface with INs (Gerdts 1998: 85; Wiltschko 2009). For example, in Onondaga, the nominal prefix o- and the final glottal stop, which Woodbury (1975) glosses as noun suffix, appear only in free-standing nouns, but not in INs. Also, the nominal particle neʔ, which accompanies the free nominal, is absent from the incorporating structure. Compare (31a) with (31b).

(31) a. waʔhahninúʔ neʔ oyeʔkwaʔ (Woodbury, 1975: 10)
    TSN-he/it-buy-ASP nm.prtc it-tobacco-n.s
    ‘He bought the tobacco.’

b. waʔhayeʔkwahni:nu?
    TSN-he/it-tobacco-buy-ASP
    ‘He bought (a kind of) tobacco.’

In Halkomelem Salish, free-standing forms in lexical suffix constructions differ from incorporating forms in relation to additional consonants. The latter lack this added consonant which Wiltschko (2009) takes to be a nominalizer (e.g. nominal suffixes -ínəs “chest, beach” versus regular noun sʔínəs “chest”).

Interestingly, Ojibwe is not the only language where NI appears to involve more than a simple root, corroborating my empirical findings in Ojibwe and my analysis of these facts. It has recently come to my attention that, in addition to the incorporation of nominal roots, Oneida (an Iroquoian language) appears to allow the incorporation of nominals together with their nominalizers (see Barrie 2006).21

The M-merged/incorporated nominals in Ojibwe are, however, even bigger in that they can involve not only a root and a nominalizer, but additional functional layers. First, as recently argued by Piggott (2007), there is evidence that number is present in the derivation of every Ojibwe noun. As Piggott argues, each of the singular forms in examples such as (32a,b) ends in a vowel that is demonstrably not part of the exponent of the root morpheme. The root allomorphy in (32b) [miʃ / mis] results from a palatalization process (s → ʃ) that only applies in a derived environment (Kaye and Piggott 1973). This means that there is a singular suffix –i that is attached to inanimate nouns and an animate counterpart –a. In words where no final –i or –a surfaces it is assumed that the vowel has been truncated. The vowel can only be truncated, however, if the word meets minimality requirements apart from the singular suffix, i.e., if it is bisyllabic. If the word is too small the vowel cannot be truncated. Therefore, the process is systematic and predictable. In fact, Proto-Algonquian had a clear distinction between singulars ending in –i and those ending in –a; a distinction Fox has retained (Goddard 2002).

(32) Singular       Plural          (Piggott 2007: 15)
    a. makwa       a’. makwaŋ  ‘bear’ (animate)
    b. michi       b’. misan  ‘piece of firewood’ (inanimate)

Turning back to INs and M-merged nominals in DNV constructions, it is clear that Ojibwe nominals do not lose their singular number affix in such environments. This is illustrated in (33a)
for animates and in (33b) for inanimates. Since number marking is fused with gender marking, it is clear that Ojibwe nominals do not lose their gender marking either in these cases.

(33) a. makwake  
    makw-a-ke  
    bear-NUM-VAI  
    ‘He/she is hunting bears.’

  b. michike  
    mich-i-ke  
    firewood-NUM-VAI  
    ‘He/she is looking for firewood.’

Next, Ojibwe nominals can also retain diminutive and pejorative morphemes when incorporated/M-merged. This is illustrated in (34). This might be treated as a different case from the singular marking mentioned above, since diminutives and pejoratives are usually considered to be derivational morphemes. In Ojibwe, however, such morphemes are very productive (they can attach to any noun) and yield an interpretation that is always transparent (Valentine 2001).

(34) gii-ikwezhenzhishiwi  (bezhig ikwezhenzhish = one naughty little girl)
    gii-ikwe- zhenzh-iw-i  
    ISG-girl-DIM-PEJ-iw-VAI  
    ‘I was a naughty little girl.’

Further evidence that Ojibwe INs/M-merged nominals are morphologically complex comes from possessed nominals. We saw in (24) that verbs of possession are formed by adding a light verb –i to a nominal. What was not mentioned at that point is that possessed nominals in DNV constructions in Ojibwe are marked with third number –o and a possession morpheme –im. Nouns forming possessed themes with inflectional suffixes –im show the suffix in their corresponding verbs of possession (35). (see also Sadock 1980; Fortescue 1984; Denny 1989 for evidence that nominals in Inuktitut DNVs sometimes bear number and possessive marking).

(35) a. ohezhgoogzhiimi  
    o-behezhgoogzh-iim-i  
    3-horse-POSS-VAI  
    ‘He/she has a horse.’

  b. o-mookmaanimi  
    o-mookmaan-im-i  
    3-knife-POSS-VAI  
    ‘He/she has a knife.’

Importantly, the o– prefix attaches to the nominal stem (rather than the verbal stem): it appears on possessive nominals that are not incorporated into a verb (o-wiijitaawaganan ‘his/her friend’ where the last –an is an obviative maker). It should also be noted that third person subject verbal agreement (when it is pronounced) is exclusively suffixal on Ojibwe intransitive verbs.

Possessive marking is traditionally thought to head DPs. A DP can be headed by determiner as in The book or by possessive -’s as in John’s book (but not both, possessive marking and determiners are in complimentary distribution). While Ojibwe has no determiners, it can use demonstratives in lieu of determiners in many contexts. These demonstratives, however, cannot be used in conjunction with possessive marking. This leads me to conclude that the presence of possessive marking in (35) indicates the M-merged nominal is actually a DP, i.e. a
phrase. Although the nominal is a word phonologically (it does not receive its own stress, since there is only one stress for the whole verbal complex), syntactically it is a phrase. This claim has theoretical relevance in that it sheds light on the relationship between morphology and syntax. It shows, in particular, that bound morphological and unitary phonological material in (some) polysynthetic languages can be syntactically autonomous and that such languages have words with an underlying syntactic clausal architecture whose derivations involve not only head but also phrasal movement (see also Déchaine 1999, Branigan et al. 2005 for Algonquian and Julien 2002 for other languages).

Finally, if M-merged nominals in Ojibwe are phrasal, it is predicted that they can surface with modifiers. This prediction is borne out. As shown by the examples in (36), it is possible in Ojibwe for modifiers to surface with nominals in DNV constructions (such modifiers are always stranded in Iroquoian NI, cf. Baker 1988, 1996).

(36)  

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>shkihiiwan</td>
<td>gmino-gwiwzensiw</td>
<td>gichi-sabiike</td>
<td>ngii-gchi-gwiwzensiw</td>
</tr>
<tr>
<td></td>
<td>shki-hii-w-an</td>
<td>gii-mino-gwiwzensw-i</td>
<td>gichi-sabii-ke</td>
<td>n-gii-gchi-gwiwzensens-w-i</td>
</tr>
<tr>
<td></td>
<td>new-thing-Nom-VII</td>
<td>2-good-boy-Nom-VAI</td>
<td>big-net-VAI</td>
<td>1-PAST-big-boy-Nom-VAI</td>
</tr>
<tr>
<td></td>
<td>‘It is a new thing.’</td>
<td>‘You are a good boy.’</td>
<td>‘He/she is making big nets.’</td>
<td>‘I was a big boy.’</td>
</tr>
</tbody>
</table>

The adjective modifies the noun and not the whole verbal complex. First, as noted by Valentine (2002: 489), the structure of (36)d is [[gichi-gwiwzensens-wi]+wi], since the meaning is ‘I was a big boy’, not ‘I was really a boy’ with the structure [gichi-[gwiwzensens+wi]] (gichi is ambiguous, being between an adjective and an adverb). The same logic can be applied to the example in (36)c. This sentence means ‘He/she is making big nets’ with the structure [[gichi-sabii]+ke], not ‘He/she is really making nets’ with the structure [gichi-[sabii+ke]]. Generally, Goddard (1990: 479-480) has shown that modifiers in Algonquian do not necessarily modify whole verbal complexes, but can simply modify elements within those verbal complexes. He concludes from examples such as those introduced in (36) that in Algonquian languages “the concatenation of elements in the sentence logically precedes the morphological composition of the stem”.

In summary, whereas it is traditionally thought that NI types of processes involve the incorporation of roots only (e.g., Iroquoian languages), less documented languages with NI or DNV constructions such as Ojibwe provide evidence that it is possible for incorporated or M-merged nominals to be extremely complex morphologically. This suggests that what merges with the verbal incorporator is not a head, but a constituent, i.e. a phrase. Ojibwe is not the only language with this property. As mentioned in the introduction, Gerfds and Marlett (2008) also
report that in Halkomelem Salish denominal verb constructions (which appear to have all the properties associated with light verb NI), nouns can be inflected for number, carry diminutive marking, be compounds and even be modified by adjectives. I have also mentioned earlier the case of Inuktitut where it is apparently possible in some dialects for nominals in DNVs to bear number and possessive marking (Sadock 1980; Fortescue 1984; Denny 1989).

Finally, it has recently come to my attention that as early as 1915, Michelson (1915, 1917) describes facts in Fox (Mesquakie) similar to the ones introduced in this paper. In Fox, literature since NI became a subject worthy of attention in theoretical linguistics (Sadock 1980; Mithun 1984; Baker 1988, 1996), this type of NI is in fact found in Michelson’s (1915, 1917) INs surprisingly lose none of the morphology that they otherwise carry when used independently outside the verbal complex and often appear at the left edge rather than in the middle of the stem, prompting Michelson to use the term “loose incorporation” when referring to Fox NI.

5 Conclusion
In this paper, I have shown that DNV formation in Ojibwe is very similar to the type of DNV formation described in the papers recently collected in Gerds and Marlett (2008), but very different from DNVs in languages such as English and French. DNV formation in Ojibwe has many syntactic properties and was shown to share many properties with noun incorporation. The verbal suffix was argued to be a light verb and the nominal that merges with that suffix a morphologically complex nominal.

One consequence of my analysis is that, although verbal and nominal complexes in Ojibwe exhibit polysynthetic properties, they are not built into the lexicon. While the traditional literature treats the assembly of words in Algonquian languages as lexical, i.e., pre-syntactic (Bloomfield 1946; Wolfart 1973; Rhodes 1976; Goddard 1979; Nichols 1980; Dahlstrom 1991; Valentine 1994), everything points to the view that the formation of words in these languages is syntactic. In addition, since bound forms can be fairly complex and as big as constituents, the polysynthetic nature of the language might be only an illusion. Words in Algonquian languages are certainly phonological words, but otherwise they have similar properties to words in non-polysynthetic languages (cf. Branigan, Brittain & Dyck 2005).

References


Braithwaite, Benjamin. 2007. Word-internal phases in Nuuchahnulth. Ms., University of Sheffield.


Corbiere, Mary-Ann, Alice Dickson, and Martina Osawamick. 1999. Foundations of Nishnaabemowin. Stepping stones to conversational fluency in Ojibwe. User’s guide and workbook. Wabnode Institute, Cambrian College and Department of Native Studies, University of Sudbury.


Marantz, Alec. 2001. Words. Ms., MIT.


---

1 See also Johns (2007) who surveys a set of languages with DNVs.
2 It cannot be automatically assumed that all or even most North-American languages have denominal verb constructions, since as pointed out by the authors, at least Mayan, Muskogean, and Iroquoian do not.
3 Mithun, who has repeatedly argued against treating Greenlandic as an NI language (1984, 1986), has recently conceded the following: (2009: 13) ‘We have seen that, strictly speaking, the Eskaleut languages lack a formal equivalent of Iroquoian noun incorporation. There is no root-root or stem-stem compounding. But they do contain stem-suffix constructions that are strikingly similar to incorporation in most ways.’ (my emphasis).
4 List of abbreviations for Ojibwe: VAI = Animate Intransitive Verb, VII = Inanimate Intransitive Verb, VTA = Transitive Animate Verb, VTI = Transitive Inanimate Verb, TR = transitive marker, AN = animate, SG = singular, PL = plural, POSS = possessive, Nom = nominalizer, OBV = obviative, i = epenthetic vowel. In the literature, Ojibwe long vowels are sometimes indicated as i: or į, a: or ā, and o: or ō (e is always long). have adjusted all Ojibwe examples taken from the literature to ii, aa and oo.
5 It is worth mentioning that it is a characteristic of DNVs in North-American languages that they can involve the use of borrowed nominals: Gerdts and Marlett (2008) mention Yaqui, Halkomelem, White Mountain Apache, Seri and Nuuchahnulth. Bilingual complex predicates of this sort are also typically attested cross-linguistically when languages are in contact, e.g., Turkish, Japanese, Greek, Punjabi, to name just a few (Gardner-Chloros and Edwards 2007 and references therein).
6 Like –ke, the possessive predicate –i alternates with a transitive verb that is used for more specific uses and whose object is an independent noun (see Valentine 2001).
7 Marantz (2001, to appear), Marvin (2002) and Arad (2003) follow Kiparsky (1982) in opposing denominal verbs created from roots (e.g., ‘to hammer’) and denominal verbs created from nouns (e.g., ‘to tape’). The rationale behind this dichotomy comes from the putative fact that verbs built from roots are, compared with verbs built from nouns, better-suited for figurative contexts. For example, it is said that verbs such as ‘to hammer’ do not necessarily imply the use of a hammer, hence the possibility of ‘She hammered the nail with a rock’. In contrast with the first class, ‘to tape’ supposedly implies the use of tape, hence the ungrammaticality of ‘*She taped the picture to the wall with pushpins’. Harley and Haugen (2007), however, mention grammatical cases such
as: ‘Lola taped the poster to the wall with band-aids/mailing-labels’. Thanks to **** for pointing out the snippet in Harley and Haugen (2007) and for discussing this issue with me.

8 I assume that Ojibwe, like other Algonquian languages (cf. Blain 1997; Déchaine 1999; Branigan et al. 2005) is head-initial.

9 Goddard (1979 : 37) refers to them as transitivized Animate Intransitive verbs, a label which, as O’Meara (1991) points out, reflects a cross-classification of their morphological and syntactic characteristics.

10 Although Ojibwe is SVO, the reason why the modifiers end up at the left periphery is that floated or stranded quantifiers tend to be focused and appear before the verb (Kathol and Rhodes 1999; Tourigny 2008).

11 This shows that M-merged nominals saturate the argument structure of the verb. The variable corresponding to the theme cannot remain open (compare with the languages described by Chung and Ladusaw 2004 and Mohawk as described by Baker 1988, 1996).

12 I will assume that the distinction between concrete and abstract finals (cf. Denny 1978) is not necessary, since all finals appear to be instances of v (in line with Branigan et al. 2005, but contra Slavin 2007). Concrete finals are supposed to add a meaning component to the word while abstract finals are meant only to identify the word’s part of speech and subclass without additional meaning. It is not always easy, however, to distinguish the two on semantic grounds and both types have many properties in common: they are both category-defining and they both introduce the subject.

13 Similarly to the case of –ke, incorporation into the copulative suffix –i (20b) is meaning-preserving. The interpretation is not adjectival with the meaning ‘be womanlike’. Rather (26b) means ‘to be a woman’. Such cases thus differ from those mentioned by Baker (2003) for other polysynthetic languages (e.g., Kiowa, p. 167).

14 It should be noted that throughout this paper I will not use the terms “initial” and “root” interchangeably, as is often done in the traditional Algonquian literature, since it would be confusing/ambiguous. I take “root” to be an uncategorized element in the sense of Distributed Morphology (Halle and Marantz 1993; Marantz 1997) and “initial” to be a purely linear positional concept. In primary derivations, the initial is a root in the Distributed Morphology sense, but in secondary derivation, it is not: it is a complex form that already contains an exemplar of primary derivation. The terms initial, medial and final reflect the templatic, lexical and non-hierarchical nature of traditional accounts of Algonquian word formation. I assume a strict hierarchical configuration for all Ojibwe sentences. Algonquian languages are clearly configurational languages (see Bruening 2001 for Passamaquoddy). Although head-marking, Algonquian languages do not always have a one-to-one correspondence between affixes and NP referents: suffixes may overlap and blend together, making it difficult to separate individual affixes (especially in the conjunct order) and two affixes can indicate properties of a single argument (LeSourd for Maliseet-Passamaquoddy and Tourigny 2008 for Ojibwe). Moreover, not all NP referents are related to affixes: secondary objects are not marked for agreement (LeSourd 2006 for Maliseet-Passamaquoddy and Rhodes 1994 for Ojibwe). Finally, word order is relatively free but not completely unconstrained and can be derived from a complex array of dedicated syntactic focus and topic positions at the left edge of both TP and vP (Tourigny 2008 for Ojibwe).

15 The number of light verbs vary from one language to another (Serì has only a few while Inuktitut has dozens), but what they have in common is that they have lexical meaning generally
associated with activities. Haugen (2008) shows that DNV constructions in Uto-Aztecan combine nominals with suffixes denoting notions such as ‘make’, ‘use’, ‘have’, ‘get’, ‘become’, ‘marry’, ‘put’, ‘on’ and ‘remove’. Similarly, Johns (2007) shows that in Inuktitut incorporating verbs are different from their non-incorporating counterparts, and are generally broader in meaning: –tur– (light) vs. nere– (lexical) ‘eat’, –ngqerr– (light) vs. pike– ‘have’ (lexical), –caar– (light) vs. naspaaw– (lexical) ‘try’ (Mithun 1999, p. 55). As commented by Johns (2007, p. 556), –tur– ‘eat’ (a light verb) does not carry any detail about mouth movement or any physical action involved. It means ‘consume’ rather than ‘eat’ or ‘drink’ and is thus in some ways similar to the English have a cup of coffee (see Ritter and Rosen 1997), except that the Inuktitut verb entails ingesting the item in question, while the English have can go with a good nap, etc. According to Mithun (1999, p. 50), in some dialects –tur– can even mean ‘wearing’, ‘smoking’, ‘thinking’ as in ‘have a jacket’, ‘have a smoke’, and ‘have a thought.’

16 That phases are relevant at the word level in polysynthetic languages has been observed in Piggott and Newell (2006) for Ojibwe; Wojdak (2007), Braithwaite (2007) for Nuuchahnulth; Compton and Pittman (2007) for Inuktitut.

17 Although unfortunately I cannot go into detail because of lack of space, nominal suffixes (noun finals in the traditional literature) are not all abstract (i.e., simple nominalizers): they can also carry lexical meaning (e.g., –aaboo anything pertaining to liquids, –aakw anything pertaining to wood, etc.).

18 Interestingly, as pointed out by Gerdts and Marlett (2008: 413), when a language has only one denominal affix, it seems to be ‘have’/‘do’/‘make’/‘get’ (next most popular are other transitive meanings such as ‘buy’ and ‘ingest’; less frequent are intransitive meanings such as ‘go to’ (cf. Gerdts and Marlett 2008).

19 I also assume these constructions are underlyingly transitive (with the object first as the complement of the verbal affix). See Anderson (2000), who argues that even English copulative structures such as those based on ‘be’, ‘become’, etc. are syntactically “quasi-transitive” and thus admit another argument position.

20 Traditionally, this noun final is not considered to be a nominalizer. Only noun finals that change a verb form into a nominal form count as true nominalizers in the traditional literature. My view of nominalizers here is more like that of Distributed Morphology where roots are never categorized but are instead plain. Therefore, a nominalizer can be understood simply as giving a lexical item a category.

21 Baker (1997, 2003) introduces examples from Mohawk where INS clearly have nominalizers. He does not, however, discuss these nominalizers and their potential relevance to the internal structure of INS.

22 Although plural number morphology rarely surfaces with M-merged nominals/INS, there is evidence from reduplication that it is not completely ruled out. As noted by Valentine (2002 : 94-95), “verbs denoting parts of the body that standardly occur in plurality such as arms and legs sometimes show duplication, which semantically indexes the plurality of the body part”. The duplication morpheme in (i) can be taken as an exponent of a plural number feature.

(i)  a. gagaanwaabiigitawage b. mamaangijaabi
    ga-gaanwa-abiig-itawag-e ma-maang-ijaab-i
    DUP-long-sheet.like-ear-VAI DUP-big-eye-VAI
    ‘He/she has long ears.’ ‘He/she has big eyes.’

25
Number in Ojibwe is definitely inflectional rather than derivational: it is obligatory, it triggers agreement, it is not possible inside compounds or derivational morphology, etc. see Mathieu (2009) for details.

Gender in Ojibwe has all the properties associated with inflectional gender (Ritter 1991).

In other languages, diminutive morphology is not entirely productive and not always transparent, e.g., French: *kitchenette ‘small kitchen’, *fillette ‘little girl’, *maisonnette ‘small house’, but *chaisette ‘small chair’, *pagette ‘small page’, *poirette ‘small pear’. The word *tablette does not mean a small table, but a shelf, *oreillette does not mean a small ear, but an earpiece, etc.

Nouns that do not form possessed themes with suffix –im do not show the suffix in their corresponding verbs of possession (i) (o-bikwaad = his/her friend). Stems that end in the nominalizer –w merge it with the final –i to produce –o: bikwaakdo (o-bikwaad-w-i) ‘He/she has a ball.’ (Valentine 2001: 416)

It must be noted that the nominal prefix o– often undergoes syncope and that it is sometimes replaced with –w (cf. (24)c) as an alternative orthographic convention. When syncopated, it nevertheless influences the vowel in the next syllable in terms of word stress assignment (Valentine 2001), which means there must be a zero exponent.