DENOMINAL VERBS IN OJIBWE

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Abstract This paper argues that denominal verb formation in Ojibwe is similar to nominal incorporation: a complex nominal (containing inflectional and derivational affixes) incorporates into a verb. This process differs from denominalization in languages such as English where denominal verbs are the result of the concatenation of derivational affixes and nouns that are simple roots. 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 • Nominal incorporation • Ojibwe • Algonquian]
1. Introduction For a long time, other than the substantial research on Inuktitut,1 little was known about the syntactic and semantic properties (referentiality, modifier stranding, doubling, etc.) of denominal verb constructions in Native North American languages. A recent special issue of *IJAL* (edited by Donna Gerds and Stephen Marlett) began to fill that gap and the papers included in that volume have contributed much to our understanding of the syntax and semantics of denominal verbs (DNVs, henceforth) in five different family groups: Seri (a linguistic isolate of Northwestern Mexico), Uto-Aztec (e.g. Hopi), Apachean, Salish (e.g. Halkomelem) and Wakashan (e.g. Nuuchahnulth).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* issue3 and more specifically that: i) DNV formation in Ojibwe involves the incorporation of a noun into a verbal element with root/lexical properties, i.e. a verb, rather than the morphological concatenation of a noun and a simple category-changing derivational affix (as is the case in English, e.g. –ize as in *materialize* or *pauperize*); ii) the incorporated noun in Ojibwe is not a simple uncategorized root but a complex noun. This fact corroborates the evidence put forward in Gerds 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. Gerds and Hukari (2008:508) in particular claim that nominals in Halkomelem Salish DNV constructions can be inflected for number and diminution, be compounds, and even be modified by adjectives, a situation which will be shown to be identical in Ojibwe DNV formation with the addition of person and possessive morphology for the latter.

By comparing DNV formation with noun incorporation, I will examine Gerds and Marlett’s (2008) claim that denominalization and noun incorporation in Native North American languages are essentially different phenomena. On the basis of Ojibwe, I will show that, while there are admittedly a few differences between the two kinds of constructions, there are so many similarities that a common analysis is called for.4

Ojibwe encompasses varieties of the language called by different names in English, including Odawa, Ottawa, Chippewa or Ojibway. While the language is spoken over a vast region of central Canada and in U.S. border states from Michigan to Montana, the varieties of the language used in this study are those found in Valentine (2001a), i.e. dialects spoken in southern Ontario between the shores of Lake Huron to the east roughly as far as the Ottawa River. Many of the original data used in this article are taken from fieldwork undertaken with members of The Chippewas of Nawash Unceded First Nation at Cape Croker (Neyaashinigmiing) on the Saugeen (Bruce) Peninsula. Ojibwe is spoken there as well as Odawa for a few speakers. Other sources come from published material such as grammars, dictionaries and articles on the syntax and morphology of the language.5

The paper is organized as follows. Section 2 shows that in Ojibwe DNV formation nouns and verbal suffixes merge to form a single word. Section 3 provides direct evidence for the idea that nominals in Ojibwe DNV constructions are morphologically complex elements. Section 4 argues that Ojibwe DNV formation is a type of noun incorporation and that Ojibwe DNVs are therefore very different from DNVs found in languages such as English. Section 5 concludes the paper.

2. Verbal suffixes in Ojibwe DNV constructions The present section introduces three main verbal suffixes (called finals in the traditional literature) that participate in Ojibwe denominalization. While there are many verb finals in Ojibwe, I choose to concentrate on these three since they can occur with nouns. I demonstrate how these three verbal suffixes are not free-
standing verbs, but form instead with their object nouns a single word. I also show that Ojibwe denominalization is both productive and compositional.

2.1 The verbal suffix –ke In Ojibwe, transitive verbs select an object noun phrase that is free-standing, i.e. separate from the verb. For example, in (1) the verb waabam ‘see’ and its object amikwag ‘beavers’ form two separate words. As a transitive verb, waabam ‘see’ takes not only a subject first person pronominal form n– ‘1SG’, but also a suffix –aa ‘3’ and a suffix –(a)g ‘PL’ agreeing with the object in third person and in number.6

(1) ngii-waabmaag amikwag
    n-gii-waabam-aa-g amikw-ag
    1SG.S-PAST-see.VTA-3SG.O-PL beaver-PL
‘I saw beavers.’ (DK, 2008-05-05) Ojibwe

In contrast, in Ojibwe denominalization the verbal element and the object/theme noun with which it merges form a single word. This is illustrated in (2) where the noun naboob ‘soup’ merges with the intransitive animate verbalizing suffix –ke (which on my view is a verb). No object agreement appears on the verb, since in this case the verb is (morphologically) intransitive. Third person subject agreement is (in this context) suffixal (-w), but is often not pronounced (for this reason it will only appear in the underlying form and the gloss in the remaining examples).7

(2) Eric giinboobike
    Eric giinaboob-ke-w
    Eric PAST-soup-VAI-3SG.S
‘Eric was making soup.’ (EP, 2007-04-19) Ojibwe

Since the object/theme noun is fused morphologically with the verb, pre-theoretically this denominalization process can be said to be analogical to that of noun incorporation (NI, henceforth). NI is a well-known phenomenon in Iroquoian languages (Mithun 1984, 1986, Baker 1988) and other Amerindian languages where a noun morphologically merges with a non-suffixal verb to form a single word. NI of this type is also very productive in Ojibwe and in other Algonquian languages and has been the topic of several papers (Wolfart 1971, Mellow 1990 for Cree, Mithun 1984 for Blackfoot, Rhodes 1976, 2003 for Ojibwe).8

As a way of illustration, an example from Ojibwe appears in (3): the noun miijm ‘food’ incorporates into the non-suffixal verb naad ‘fetch/get’, forming a single word. In this case, the verb is a root (or more precisely a stem),9 i.e. a lexical verb.

(3) Gii-naad-(i)-miijm-ee-w
    Gii-naad-miijm-ee-w
    PAST-fetch-food-VAI-3SG.S
‘He went after some food.’ (Rhodes 1976:260) Ojibwe

NI of this kind is optional, since it is also possible for the noun to appear separately from the verb. This is shown in (4). In this case, the verb is transitive.
In DNV formation, however, it is not possible for the verbal suffix to appear separately from the noun with which it is associated. This is illustrated in (5).

The only context where a noun like nboob ‘soup’ can appear separately from the verb with the semantics of make is to use instead the transitive, non-incorporating, non-suffixal verb ozhitoon as in (6).¹⁰

The crucial difference between affixal NI and traditional NI¹¹ has thus to do with the verb rather than the noun. In NI, but also in denominalization contexts and regular transitive environments the noun has the shape of a full noun rather than a simple root (see Section 3 for specific details). On the other hand, while the meaning of a traditional incorporating verb (e.g. naad ‘fetch/get’, cf. (3)) is constant (exactly like a non-incorporating verb: e.g. ozhitoon ‘make’ always denotes the concrete action of making), the semantic contribution of –ke is variable. Its most straightforward meaning is ‘make’ in its literal sense as illustrated by (7)-(10), but it is not the only context in which it can be used, as we shall see (the b variant shows that it is not possible for –ke and its associated noun to appear as two separate words).¹²

(7a) wiigwaamke
    wiigiwaam-ke-w
    house-VAI-3SG.S
    ‘He/she is making a house.’ (DK, 2007-04-20) Ojibwe
(7b) *wiigwaam  ke

(8a) Eric gii-nboobike
    Eric gii-naboob-ke-w
    Eric PAST-soup-VAI-3SG.S
    ‘Eric was making soup.’ (EP, 2007-04-19) Ojibwe
(8b) *Eric gii-nboob  ke

(9a) ziinzbaakwadike
ziinzibaakwad-ke-w  
sugar-VAI-3SG.s  
‘He/she is making sugar.’ (DK, 2007-04-20) Ojibwe

(9b) *ziinzibaakwad ke

(10a) miiknaake  
miikan-ke-w  
road-VAI-3SG.s  
‘He/she is making a road.’ (PC, 2008-05-05) Ojibwe

(10b) *miikan ke

The verbal suffix –ke can also be interpreted as ‘make’ in its less literal, more abstract sense. This is shown in (11)-(13). Again, the b variant shows that –ke and its associated noun must form a tight morphological unit.

(11a) nbaagenike  
nibaagan-ke-w  
bed-VAI-3SG.s  
‘He/she is making the bed.’ (Anishinaabemowin language booklet) Ojibwe

(11b) *nibaagan ke

(12a) ashkodeke  
ashkode-ke-w  
fire-VAI-3SG.s  
‘He/she is making a fire.’ (Pedchenko et al. 2003) Ojibwe

(12b) *ashkode ke

(13a) zhoonyake  
zhooniya-ke-w  
money-VAI-3SG.s  
‘He/she is making money. (Valentine 2001a: 998) Ojibwe

(13b) *zhoonya ke

Depending on what type of noun is merged with –ke, we can obtain verbs that denote activities such as hunting, looking for or catching. This is the case with names of animals as in (14)-(17).

(14a) memengwaanike  
memengwaan-ke-w  
butterfly-VAI-3SG.s  
‘He/she is catching/looking for butterflies.’ (BJ, 2008-05-06) Ojibwe

(14b) *memengwaan ke

(15a) giigoonke  
giigoon-ke-w  
fish-VAI-3SG.s
‘He/she is looking for fish.’ (JP, 2008-05-07) Ojibwe

(15b) *giigoon  ke

(16a) amike
    amik-ke-w
    beaver-VAI-3SG.S
    ‘He/she is looking for beavers.’ (BJ, 2008-05-06) Ojibwe

(16b) *amik  ke

(17a) moozke
    mooz-ke-w
    moose-VAI-3SG.S
    ‘He/she is hunting moose.’ (Corbiere et al. 1999: 117) Ojibwe

(17b) *mooz  ke

If used with nouns denoting fruits, vegetables or wood, the verb can be interpreted in the sense of gathering or picking. A set of examples appears in (18)-(20).

(18a) mashkiigiminike
    mashkiigimin-ke-w
    cranberry-VAI-3SG.S
    ‘He/she is gathering cranberries.’ (Pedchenko et al. 2003) Ojibwe

(18b) *mashkiigimin  ke

(19a) mshiimnike
    mshiimin-ke-w
    apple-VAI-3SG.S
    ‘He/she is picking apples.’ (Corbiere et al. 1999: 124) Ojibwe

(19b) *mshiimin  ke

(20a) wiigwaasike
    wiigwaas-ke-w
    birchbark-VAI-3SG.S
    ‘He/she is gathering birchbark.’ (Pedchenko et al. 2003) Ojibwe

(20b) *wiigwaas  ke

With nouns such as semaan ‘tobacco’, odaabaan ‘car’ or gaaway ‘quill’ it is possible for the verb to denote an activity corresponding to ‘work with or on something’. Relevant examples are introduced in (21)-(23). As before, the b examples illustrate the morphological tightness between the verbal form and the noun.

(21a) semaanke
    asemaan-ke-w
    tobacco-VAI-3SG.S
    ‘He/she is working with tobacco.’ (Valentine 2001a: 419) Ojibwe

(21b) *semaan  ke
In many of the above examples, –ke is simply used in the sense of ‘do’. This is even more striking when we obtain verbs that denote concepts such as ‘suckle’ (24), ‘practice religion’ (25) and ‘play’ (26).

In 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 denote fossilized expressions. Valentine (2001a: 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’. It is in fact a characteristic of DNVs in Native 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.
Since it is so easy to create new expressions of this kind when needed in discourse, it is not possible to list or catalogue in a dictionary all existing or possible DNVs in the language.

So far, I have shown how productive the use of –ke can be. Now, I would like to turn to the property of compositionality that denominal verbs in Ojibwe exhibit. The meaning we arrive at in Ojibwe DNV formation is always compositional. For example, it is noteworthy that (22a) can, not only be interpreted as ‘working on a car’, but also literally as ‘making a car’ while (26a) can be interpreted not only as an activity verb (‘play’), but also literally as a creation verb (‘make’). These verbs and their associated nouns are therefore not fossilized/idiomatic expressions with a unique and/or opaque meaning. As long as the inherent meaning of –ke is preserved (i.e. ‘make’ or ‘do’) and as long as the verb denotes an activity, the context dictates the ultimate interpretation. This prompts me to adopt for DNV formation in Ojibwe a syntactic view 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. I take it that fixed meaning is, on the other hand, a property of the lexicon.14

2.2 The verbal suffix –i The suffix –i (–an for the inanimate form), meaning ‘have’, is another suffix that participates in denominal verb formation in Ojibwe. It forms verbs from possessive nouns that surface with the third person possessive o–. As shown by (27)-(29), nouns forming possessed themes with inflectional suffix –im (e.g. mookmaan ‘knife’) show the suffix in their corresponding verbs of possession as well as third person marking o– (27)-(29). Nouns that do not form possessed themes with suffix –im do not show the suffix in their corresponding verbs of possession: o-bikwaad = ‘his/her friend’ → bikwaakdo (o-bikwaad-w-i) ‘He/she has a ball’ (because the stem ends with the nominalizer –w, the latter merge with the final –i to produce –o, Valentine 2001a: 416).

(27a) bezhgoogzhiimi
[0-bebethgoogzhi-im]-i-w
[3SG-horse-poss]-VAI-3SG.s
‘He/she has a horse.’ (Valentine 2001a: 416) Ojibwe

(27b) *bezhgoogzhiim i

(28a) mookmaanimi
[0-mookmaan-im]-i-w
[3SG-knife-poss]-VAI-3SG.s
‘He/she has a knife.’

(28b) *mookmaanim i

(29a) zhoonyaami
[w-zhoonyaa-m]-i-w
[3SG-money-poss]-VAI-3SG.s
‘He/she has money.’ (Nichols et al. 2002:86) Ojibwe

(29b) *w-zhoonyaam i

As pointed by Valentine (2001a:201), there is considerable variation as to which noun stems take the possessive suffix. Rhodes (1985), for example, occasionally lists variable forms for words,
such as the words meaning ‘my dad’, which may be either *nbaabaa* and *nbaabaam*, and ‘my mother’ which may be either *nmamaanh* or *nmaamaam*, varying by community.

It must also be noted that the nominal prefix *o*—often undergoes syncope (it is sometimes replaced with *w*—as an alternative orthographic convention). After having undergone syncope, it nevertheless influences the vowel in the next syllable in terms of word stress assignment (Valentine 2001a), which means there must be a zero exponent. As pointed out by Valentine (2001a:202), in contemporary Ojibwe the possessive theme suffix takes on special importance as a marker of a noun having singular third person possessor, precisely because of this syncope. Speakers make much greater use of the possessive theme suffix in order to avoid ambiguities. “Such usage is growing rapidly, as speakers seek to regularize a system set adrift by syncope” (Valentine 2001a:202).

In summary, we have evidence that the noun that merges with the verbal suffix –*i* carries person and possessive morphology.

### 2.3 The verbal suffix –*wi*

The third suffix that participates in denominal verb formation is –*wi* (–*wan* for inanimates). Two examples appear below.

(30a)  
niniiwi  
ninii(w)-i-w  
man-VAI-3SG.

‘He is a man.’ (Valentine 2001a:335) Ojibwe

(30b)  
*ninii (w)i*

(31a)  
mshkikiiwi  
mashkikii(w)-i-w  
medicine-VAI-3SG.

‘It is a medicine.’ (Valentine 2001a:318) Ojibwe

(31b)  
*mshkikii (w)i*

Like –*ke*, –*wi* is extremely productive; so much so that it appears with many borrowings. As pointed out by Valentine (2001a:709), “/-wi/ is […] used to translate various English expressions with *be* and *do*”: Sundaywan ‘it is Sunday’ (Valentine 2001a:709), aawiwi ‘be out’ (baseball term) and when used with borrowings the meaning is not –*be*, but –*do*: practice-*wi*, ‘to do practice’, skidoonwi ‘drive a skidoo’, skiinwi ‘ski’, exercise-*wi*, roller-blade-*wi*, etc. (Valentine 2001a:364). These can, however, literally be translated as ‘be practising’, ‘be skidooing’, ‘be skiing’, etc.

To summarise Section 2. I have introduced three verb suffixes in Ojibwe and have shown how they merge with nouns to form denominal verbs in a productive and compositional fashion. A single word is formed expressing a verb whose meaning shifts depending on the context as long as the verbal suffix denotes an action of making or more generally an activity in the case of –*ke*, possession and existentiality in the case of –*i* and –*wi* respectively.

### 3. Complex nominals in Ojibwe DNV formation

This section focuses on the structure of the nouns that are contained in Ojibwe DNVs. I show that these nouns are not simple roots but complex nominals. They surface with nominalizers and in some cases person, number, gender, diminutive and pejorative morphology. Nouns in Ojibwe DNVs can also be possessed,
suggesting that the element that merges with the verbal suffix in Ojibwe can be as big as a phrase (the possessive heading the Determiner Phrase). I will also show that these nouns can surface with modifiers. I begin with nominalizers, then turn to the other suffixes that surface with nouns in Ojibwe DNVs and I end Section 3 with the case of modifiers.

### 3.1 Nominalizers

Many nominals in Ojibwe consist of a root and a nominal suffix. One common nominal suffix is –w as in bzhiw ‘lynx’, bgiw ‘gum, pitch’ (Valentine 2001a:481), ootenaw ‘town’ and wajiw ‘mountain’ (Jones 1971). In all other nouns, –w is not pronounced, although it is often given in full morphological representations by Algonquianists. What is interesting is that, as shown by (32), –w does not disappear in the process of denominalization. Without the nominal suffix, the output is ill-formed: *bigike, *bzhiike. –w could not possibly be a linking element in this case, since it is perfectly possible to pronounce the strings bigike, bzhiike.

(32a) **bigwike**  
[big-w]-ke-w  
gum-NMZ-VAI-3SG.s  
‘He/she is making (pine) gum (as medicine).’  
(EW, 2008-05-06/PC, 2008-05-06) Ojibwe

(32b) **bzhiwike**  
[bzhi-w]-ke-w  
lynx-NMZ-VAI-3SG.s  
‘He/she is hunting lynx.’

Ojibwe has three other nominal suffixes. Unlike –w, they have true nominalizing properties: they take as input a verbal form to change it into a noun (i.e. a deverbal noun).16 These suffixes are –gan (damnowaagan ‘doll’, biiskawaagan ‘jacket’, etc.), –win (ngamwin ‘song’, nbewin ‘sleep’, etc.) and –n (bgesaan ‘plum’, kosmaan ‘pumpkin’, etc.). For example, bakitehigan ‘hammer’ as in (33) is a complex form that includes a verb bakite ‘hit’ and h, a transitive/causative morpheme. Then, the addition of –gan morphs this verbal complex into a noun (–gan may be thought of as –ge – a de transitivizer + + (a)n – a nominalizer –, which means that –gan is used when the input to the noun is a transitive rather than an intransitive verb, but nothing hinges on this matter for the presentation of the main idea, namely that nominalizers are retained in Ojibwe DNV formation).

(33) **bakitehigan**  
bakite-h-gan  
hit-VAI-NMZ  
‘a hammer’  
derivation: [[[bakite-h]_{VAI}]-gan]_N Ojibwe

Similarly, bakwezhigan ‘bread’ in (34) is formed from bakwe ‘part of’ and transitive marker izh ‘cut’. Then, –gan is added to form a noun.17

(34) **bakwezhigan**  
bakwe-izh-gan  
part.of-VAI-NMZ
‘bread’ derivation: $[\text{[bakwe-h]}_{\text{VTA}}\text{-gan}]_\text{N}$ Ojibwe

As in the case of $-w$ above, what is interesting is that these three nominalizers are all retained in DNV constructions. This is illustrated in (35) for $-gan$, in (36) for $-win$ and in (37) for $-n$ (without the nominalizer, all the following examples are ill-formed: *bkwezh-ke, *nbaake, *wazaske, *pabke, *n-jimaake, *daabaake).

(35a) \text{bkwezhganke}
\[\text{[bakwehi-gan]-ke-w}\]
bread-\text{NMZ-VAI-3SG.s}
‘He/she is making bread.’ (PC, 2008-05-05) Ojibwe
derivation for \text{bkwezhigan}: $[\text{[bakite-h]}_{\text{VTA}}\text{-gan}]_\text{N}$
cut \text{VTA} \text{NMZ}

(35b) \text{nbaagenike}
\[\text{[nibaa-gan]-ke-w}\]
bed-\text{NMZ-VAI-3SG.s}
‘He/she is making the bed.’ (Anishnaabemowin language booklet and CD)
derivation for \text{nibaagan}: $[\text{[nibaI]}_{\text{VAI}}\text{-gan}]_\text{N}$
sleep \text{NMZ}

(36a) \text{ataasowinike}
\[\text{[ataaso-win]-ke-w}\]
cupboard-\text{NMZ-VAI-3SG.s}
‘He/she is making a cupboard.’ (Pedchenko et al. 2003) Ojibwe
derivation for \text{ataasowin}: $[\text{[ataaso]}_{\text{VAI}}\text{win}]_\text{N}$
store \text{NMZ}

(36b) \text{pabwinke}
\[\text{[apabi-win]-ke-w}\]
chair-\text{NMZ-VAI-3SG.s}
‘He/she is making a chair.’ (PC, 2008-05-05)
derivation for \text{apabiwin}: $[\text{[apab]-I]}_{\text{VAI}}\text{win}]_\text{N}$
sit be \text{NMZ}

(37a) \text{njiimaanke}
\(n\)-\[\text{jiimaa-n]-ke}\]
1SG.S-boat-\text{NMZ-VAI}
‘I am making a boat.’ (DK, 2007-04-20) Ojibwe
derivation for \text{jiiman}: $[\text{[jiime]}_{\text{VAI}}\text{-n}]_\text{N}$
paddle \text{NMZ}

(37b) \text{daabaanike}
\[\text{[odaabaa-n]-ke-w}\]
car-\text{NMZ-VAI-3SG.s}
‘He/she is working on a car.’ (JP, 2008-05-07)
derivation for \text{odaabaan}: $[\text{[odaaba]}_{\text{VAI}}\text{-n}]_\text{N}$
carry \text{NMZ}
The contrast between nouns formed from roots versus nouns formed from verbs is of course also found in English. The noun *growth* comes from the root *grow* (and not from the verb *grow*, see Marantz 2001, to appear) while the noun *happening* comes from the verb *happen*. In the Algonquian literature, this contrast corresponds to the contrast between primary and secondary derivation. According to Valentine (2001b: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.”

The distinction between primary and secondary derivation is similar 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). Some affixes select roots while others select words.

In summary, denominal verbs in Ojibwe are formed from nouns larger than simple roots. I will now go on to show that in addition to a nominalizer, they can also include many functional layers.

### 3.2 Functional layers in Ojibwe denominalization

First, nouns in Ojibwe DNV formation can surface with inflectional morphology such as number marking (singular marking to be more precise). This is illustrated in (38a) for animates (*makwa* ‘bear’) and in (38b) for inanimates (*anwi* ‘bullet’). Since singular marking is fused with gender marking, it is clear that Ojibwe nominals that merge with verbal suffixes do not lose their gender marking either when they merge with verbal suffixes.

(38a) *makwake*

\[
[\text{makw-a}]-ke-w
\]

bear-SG/AN-VAI-3SG.s

‘He/she is hunting bears.’ Ojibwe

(38b) *anwiike*

\[
[\text{anw-i}]-ke-w
\]

bullet-SG/IN-VAI-3SG.s

‘He/she is making bullets.’ Ojibwe

Following Piggott (2007), I am assuming that number/gender is present in the derivation of every Ojibwe noun. Both *makwa* ‘bear’ and *anwi* ‘bullet’ end in a vowel that is demonstrably not part of the exponent of the root morpheme. –a is a singular/animate suffix while –i is a singular/inanimate suffix (the plural of *makwa* is *makwag* ‘bears’, the plural of *anwi* is *anwiin*). In words where no final –i or –a surfaces it is assumed that the vowel has been truncated.

Second, Ojibwe nominals in DNVs can also retain diminutive and pejorative morphology. This is illustrated in (39a). The free form appears in (39b).

(39a) *ngii-kwezhendishiwii*

\[
\text{n-gii-}{\text{ikwe-zhenzh-ish}}{-i}
\]
ISG.S-PAST-girl-DIM-PEJ-VAI
‘I was a naughty little girl.’

(39b) bezhig ikwezhish
bezhig ikwe-zhenzh-ish
one girl-DIM-PEJ
‘one naughty little girl’ Ojibwe

Third, Ojibwe nominals in DNVs may include possessive and person morphology. We saw in (27)-(29) that verbs of possession are formed by merging a verbal suffix –i with a nominal that contains both person and possessive morphology. As pointed out by Déchaine (1999), secondarily possessed forms in Algonquian contain a dependent stem with two layers of possessor agreement. This is shown in (40a) for Plains Cree. Possessor constructions with suffix i also show two layers of possessor agreement (40b).

(40a) n-[ô-stikwân-im]
1-3-head-POSS
‘my severed head’ (literally, ‘my his head’) (Déchaine 1999:45) Plains Cree

(40b) [o-môhkoman]-i-w
3-knife-have-3SG.s
‘He/she has a knife.’ (Déchaine 1999:46)

The possibility of two layers of possessor agreement follows if the lower nominal projection is a phrasal DP that can itself host possessor agreement. In addition to the normal subject agreement (–w), the incorporated nominal is obligatorily inflected with prefixal possessor agreement. The o-prefix must be attaching to the nominal stem, since 3rd person agreement is exclusively suffixal on Algonquian intransitive verbs (pimisini-w ‘He/she lies down’). This leads to the conclusion that the prefixal possessor inflection is part of the incorporated stem, implying in turn that the stem is a phrasal category.

Following a well-known assumption that possessive marking heads Determiner Phrases, I take it that a whole DP is projected when possessive morphology surfaces on the nominal merged with the verb suffix. Possessive marking and determiners are in complementary distribution in English: a DP can be headed by determiner the or by possessive –’s as in (41a), but not both, as shown in (41b).

(41a) the book or John’s book
(41b) *the John’s book or *John’s the book

The same facts hold in Ojibwe. Although Ojibwe does not have articles, it has demonstratives (that, incidentally, often behave as quasi-articles). These determiners can be used with a noun as in (42a) or possessive –im can be used with a noun as in (42b), but demonstratives and possessive –im cannot be used at the same time, as illustrated in (42c). As in English, they are in complementary distribution.

(42a) iw mookmaan
iw mookmaan
that knife
‘that knife’

(42b)  
**Zhaabdiis**  mookmaanim
**Zhaabdiis**  o-mookmaan-im
John  3-knife-poss

‘John’s knife’

(42c)  
*iw* **Zhaabdiis**  mookmaanim  or * **Zhaabdiis iw mookmaanim
*iw* **Zhaabdiis**  o-mookmaan-im
that John  3-knife-poss

*‘that John’s knife or ‘John’s that knife’* Ojibwe

In sum, I assume that nominals that merge with verbal suffixes in Ojibwe can be as big as DPs and may thus involve phrasal rather than simple head movement. This means that, although verbal stems are prosodic/phonological words (there is only one stress for the whole verbal complex), syntactically it involves phrases (see also Déchaîne 1999, Branigan et al. 2005 for Algonquian and Julien 2002 for other languages for the idea that words can be formed via phrasal movement). In English, on the other hand, nouns in DNV constructions are simple roots, with no nominalizing or additional morphology.

That Algonquian’s word formation appears to contain whole phrases was in fact noticed as early as 1915 by Michelson (1915, 1917). Based on Fox (Mesquakie) his study shows, for example, that incorporated nominals lose none of the morphology that they otherwise carry when used independently outside the verbal complex. Word parts in fact appear to have relative autonomy in the language (they can be split by certain particles, cf. Voorhis 1971, Dahlstrom 1987, Goddard 1988, 1990). This indicates, in turn, that Algonquian languages are not truly polysynthetic.23

### 3.3 Modifiers/prenouns

Further evidence that nouns in Ojibwe DNVs are complex comes from modification phenomena. It is possible as shown by the examples in (43) for modifiers to surface with nominals in Ojibwe DNV constructions. The modifier is called a “prenoun” in the traditional literature. Often a prenoun (e.g. *gichi*) can also be used as a modifier of a verb phrase, in which case it is called a “preverb”. There are all kinds of preverbs, some denoting tense, aspect, others denoting predicates that modify a verb. There are also all kinds of prenouns.

(43a)  
**ngii-gichi-gwiiwzensiw**
*n-gii-gichi-gwiiwzens-w-i*
1SG.S-PAST-big-boy-NMZ-VAI
‘I was a big boy.’ (Valentine 2001b:489) Ojibwe

(43b)  
**gichi-sabiike**
**gichi-sabii-ke-w**
big-net-VAI-3SG.S
‘He/she is making big nets.’ (EW, 2008-05-06)

In (43) the modifier modifies the noun and not the whole verbal complex. First, as noted by Valentine (2001b: 489), the structure of (43a) is [[gichi-gwiiwzens]+wi], since the meaning is ‘I was a big boy’, not ‘I was really a boy’ with the structure [gichi-[gwiiwzens+iwi]] (gichi is ambiguous between an adjective and an adverb). The same logic can be applied to the example
in (43b). This sentence means ‘He/she is making big nets’ with the structure \([\text{gichi-sabii}+\text{ke}]\), not ‘He/she is really making nets’ with the structure \([\text{gichi-}[\text{sa}\text{bii}]+\text{ke}]\).

As for preverbs in Algonquian, Goddard (1990:479-480) has independently shown that they do not necessarily have scope over whole verbal complexes, but can simply have scope over elements within those verbal complexes. In the Fox example in (44) the sentential complement is a derived initial incorporated into the stem. The preverb \text{kiishi} ‘finish’ pertains to the celebrating, not the thinking. Goddard (1990) concludes from such examples that in Algonquian languages “the concatenation of elements in the sentence logically precedes the morphological composition of the stem”. This is an interesting proposal that is completely in the spirit of Distributed Morphology (see of course also Baker 1988, 1996 according to whom complex verbs consist of separate units prior to concatenation).

(44) \text{kiishi-kiikeenoweneemaki}  
\text{kiishi-kiike-enow-eneem-aki}  
finish-clanfeast-celebrate-VTA.think.about-1SG/3  
‘when I thought they were finished celebrating the clanfeast.’  
(Goddard 1990:479-480)  
Fox (Mesquakie)

Further evidence that stems are formed syntactically in Algonquian comes from ordering of preverbs (see Goddard 1990). The concrete final \text{bizo} ‘drive’ can surface with the preverb \text{bimi} ‘along’ to give the stem ‘to drive along’ while \text{bizo} ‘drive’ can appear with the preverb \text{maaji} ‘start’ to give the stem ‘start driving’. If we want to express the complex predicate ‘start driving along’ we must say \text{bimimaajibizo} and not *\text{maajibimibizo}. The preverb \text{maaji} has scope over the preverb \text{bimi}. Assuming that scope is derived via c-command, it appears then that scope relations are constructed first in the syntax and morphological concatenation or morphological Merger in the sense of Distributed Morphology (Marantz 1984, 1988) is carried out after syntax. Word formation in Algonquian is therefore motivated by scope properties/relation (see Rice 2000 for Athapaskan languages and Brittain 2003 for Algonquian languages).

In summary, Section 3 has shown that the nouns that merge with verbal suffixes in Ojibwe DNV formation are complex elements. They contain not only a root, but also a nominalizer and in some cases, number, gender, diminutive, pejorative, person and possessive morphology. Finally, they can also be modified stem-externally.

4. Ojibwe DNV formation and noun incorporation  In this section, I show that DNV formation in Ojibwe shares many properties with noun incorporation of the classical kind and that DNV formation in this language is therefore very different from DNV formation found in languages such as English. In the previous section, we have already established that nouns in Ojibwe DNV constructions are far bigger than simple roots. In this section, it will be argued that Ojibwe DNVs are not simply the result of the concatenation of a noun and a derivational affix (e.g. \text{vapor} \rightarrow \text{vaporize} as was argued by Sapir 1911 for Eskimo-Aleut DNVs): they involve incorporation of a noun into a verb; a process that is equivalent to NI.

First, in section 4.1, I introduce the basic properties of NI and show that these are shared with DNV formation in Ojibwe: morphological merger, optionality of form and consequences for meaning, relevance of argument structure. In section 4.2, I focus on productivity and compositionality and show that, again, DNV formation in Ojibwe patterns with traditional NI and definitely not with DNVs in more familiar languages such as English. Section 4.3 continues
this trend by focusing on referentiality: the noun in Ojibwe DNVs is as referential as the noun in traditional NI. Section 4.4 deals with the stranding of modifiers and shows once more that Ojibwe DNV formation patterns with NI. Section 4.5 demonstrates that the nouns in NI and in DNVs in Ojibwe are equally complex morphologically. Finally, section 4.6 compares NI and DNV formation in Ojibwe in relation to the doubling of the noun.

4.1 Basic properties of noun incorporation Traditionally, NI is understood to be a phenomenon that involves the morphological incorporation of a root or noun stem into a non-suffixal verb that is itself a root or verb stem. Prototypically, the incorporated noun is the direct object. 0 is from Mohawk. I use Mohawk as illustration, since it is often mentioned as a typical example of a language with NI in the literature (Mithun 1984, Baker 1988, etc.). (45a) is the free structure (non-NI): the object complement appears separately from the verb. (45b) is the NI construction: in this case, the noun appears inside the stem.

(45a) Wa’k-hnínú-’ ne ka-nákt-a’
FACT-1SG.S-buy-PUNC NE NSS-bed-NSF
‘I bought a/the bed.’

(45b) Wa’-ke-nakt-a-hnínú-’
FACT-1SG.S-bed-JOIN-buy-PUNC
‘I bought a/the bed.’ (Baker 1996:279) Mohawk

This type of NI has certain well-known properties: the ability for the noun to be referred to in discourse (46), the ability to the strand a modifier (47) and the ability to double the incorporated nominal with another noun (48) (the incorporated noun is generic while the free noun is interpreted specifically). For this reason, NI has been described as the “most nearly syntactic of all morphological processes.” (Mithun 1984:889).

(46) θetá’re’ wa’-ke-nakt-a-hnínú-’ I-k-her-e’
yesterday FACT-1SG.S-bed-∅-buy-PUNC ∅-1SG.S-think-IMPF
Uwári a-ye-núhwe’-ne’
Mary FUT-FsS-like-PUNC
‘I bought a bed yesterday. I think that Mary will like it.’ (Baker 2003:168) Mohawk

(47) Kanekwáruńyu wa?-k-akyatawi?tsher-ú:ni
3N.dotted.DIST wa?-k-akyatawi?tsher-ú:ni
PAST-1SG.3N-dress-make
‘I made a polka-dotted dress.’ (Mithun 1984:870) Mohawk

several so.it.year.numbers so it.goes eight of.them
rabahbéto wahu-tsya:ahní:nu ki rake?nìka
bullhead 3M.3N-fish-bought this my.father
‘Several years ago my father bought eight bullheads.’ (Mithun 1984:870) Mohawk

Ojibwe has the kind of NI found in Iroquoian languages (cf. (3)). (49a) is the free structure (non-NI). (49b) is the NI construction. While the free verb is transitive, the NI verb is intransitive (–ε is a detransitivizer).25
(49a) Nin-gii-moon-ah-an mashkiki
1SG.S-PAST-dig.up-TR-3SG.O medicine
‘I dug up medicine herbs.’ (Rhodes 1976:264) Ojibwe

(49b) nin-gii-moon-ah-mashkiki-w-e
1SG.S-PAST-dig.up-TR-medicine-NMZ-VAI
‘I dug up some medicine herbs.’

There are several properties that DNV formation shares with the type of NI in (49). First, in both cases a verbal element forms a single word with a noun. Second, both provide speakers alternatives for packaging information in discourse (Haugen 2008). For example, NI is typically used to denote activities or stative situations (Mithun 1984) whereas the non-NI version is used for accomplishments or non-stative situations. This contrast is also found in relation with DNVs in Ojibwe, albeit somewhat differently. The contrast is mimicked by the availability of a free lexical verb construction alongside the DNV option (the same opposition exists in other languages with DNVs, e.g., Inuktitut, Johns 2007 and Hopi, Haugen 2008). For example, (50) shows that the general suffix –ke can be used in the same dialogue/text as a more concrete verb such as ozhitoo. While the making of a floor is treated as an activity (probably regular), the making of this particular canoe requires the use of a free verbal form.

(50) … gii-ozhitoo-waad ’ow wiigwaasi-jiimaan;
PAST-make-3PL.s this birchbark-canoe
dibishkoo go ’iw gii-michisago-ke-waad …
like EMPH that PAST-floor-make-3SG.s
‘… they made this canoe with birchbark; meanwhile they fashioned the flooring of long pieces of cedar.’ (Nichols 1988:242) Ojibwe

Third, both NI and DNV formation are constrained by certain properties of argument structure. For example, as is well-known (cf. Baker 1988, 1996 and many others) NI is possible with themes but not with agents. This is exactly the constraint we find with DNVs in Ojibwe (and in Cree, cf. Mellow 1989). (51a) can only mean ‘I carried my child on my back’ not ‘My child carried me on my back’ and (51b) can only mean ‘He/she hunts wolves’ not ‘Wolves hunt him/her’ (on Baker’s 1988 account, NI is constrained as such because direct objects/themes are lexically governed while agents are not).

(51a) Ngii-bimoomaawas
N-gii-bimoom-aawahzo
1SG-PAST-carry.along(on the back)-child
‘I carried my child (on my back).’
*‘My child carried me (on the back).’ (Rhodes 1976:265) Ojibwe

(51b) mahiingnke
mahiingan-ke-w
wolf-VAI-3SG.s
‘He/she hunts wolves.’
**‘Wolves hunt me.’ (Valentine 2001a:418)
4.2 Productivity and compositionality Like NI in Ojibwe and in Algonquian generally (Wolfart 1971, Mellow 1990 for Plains Cree, Mithun 1984 for Blackfoot, Rhodes 1976, 2003 for Ojibwe), DNV formation in the language is very productive. DNV formation in Ojibwe, like NI, is also compositional. Recall that bkwaakdoke in (26a) means either ‘play ball’ or ‘make a ball’. The ultimate meaning is obtained through context. The same can be said about standard NI. Productive NI is always associated with non-lexicalized/transparent meanings.

Traditional DNVs, as those found in English, do on the other hand come with idiomatic properties: their meaning is fixed. This is true for both conventional and innovative DNVs (see Clark and Clark 1979 for the original distinction). The former are lexicalized or semi-lexicalized in that, although they were probably purely dependent on context at an earlier stage in the language, they are now set by convention and speakers have to know their meaning in order to use them correctly.

For example, to man as in (52a) and to house as in (52b) mean ‘to staff’ or ‘to operate’ and ‘to provide someone with living quarters or shelter’ respectively. The meaning of to man does not shift according to the context: it cannot be coerced to mean ‘be a man’, ‘act like a man’ or ‘put a man in a ship’. Similarly, to house does not mean ‘to look for a house’, ‘make a house’ or even simply ‘to put someone in a house’, since to house someone also implies that shelter is being offered.26

(52a) I man a ship
(52b) We housed a friend

Innovative DNVs have, on the other hand, a shifting sense and denotation: they always depend on the time, place, and circumstances of their use. They can be used as long as speakers and listeners follow a convention (cf. Rose 1973). ‘The convention is that when a speaker utters such a verb, he intends his listener to see that the verb picks out a readily computable and unique kind of state, event, or process that the speaker is confident the listener can figure out’ Clark and Clark (1979:768).

How we arrive at this convention, however, shows a certain degree of randomness. The meaning that becomes conventionalized is arbitrary and speakers of the language have no intuitions about the lexical characteristics of a new converted verb when first introduced (Lieber 1992). The examples in (53) can only make sense if enough information is known about Lady Gaga’s hair (and her hair bow in particular) and about Kanye West’s (in)famous interruption at the 2009 Video Music Award.

(53a) I lady gagaed my hair
(53b) Man, he Kanye Wested her

Without this information, the verbs in question are meaningless and speakers would not have intuitions about what they could possibly mean. However, once the newly formed verb becomes popular, its meaning is fixed. A certain amount of lexicalization is needed before these verbs can be used at all. Out of the blue, these predicates can simply not be interpreted.

The question that arises at this point is this: although it is clear that Ojibwe DNVs are not conventional DNVs, could they be like English innovative DNVs? The answer must be no.
In English innovative converted verbs there is no core semantic contribution from the verbal suffix. This means that the meaning of such verbs is completely unpredictable. To illustrate further, if a verb like knob\(\_V\) is newly coined (from knob\(\_N\)), it can have in principle any of the meanings (among others) shown in (54a) and any of the predicate argument structures indicated in (54b).

\[(54a) \text{ Meanings} \quad \begin{array}{l}
\text{‘to imitate a knob’} \\
\text{‘to assault X with a knob’} \\
\text{‘to put a knob on X’ (adapted from Lieber 1992:163)}
\end{array} \]

\[(54b) \text{ Predicate argument structure} \quad x \quad \text{intransitive verb} \quad \text{‘I knobbed all night’} \\
\text{x <Y>} \quad \text{transitive verb} \quad \text{‘I knobbed Fenster’} \\
\text{‘I knobbed the cabinet’} \]

In contrast, the contribution of the verbal suffix’s meaning in Ojibwe is important in the overall interpretation of verbal expression and the verb is uniquely and consistently intransitive. Because Ojibwe denominal verbs contain a verbal suffix that has clear root-like properties, they are entirely meaningful even out of the blue or with minimum contextualization. This means that, although they are suffixes, verb finals in Ojibwe are verbs and not simple category-changing derivational affixes.

It should also be emphasized that DNVs in Ojibwe and other Native North American languages are often verbs of creation (‘make a house’, ‘build a canoe’). This is a characteristic not found in English DNV formation: I caked cannot mean ‘I ate cake’ and let’s soup does not mean ‘let’s make soup’ (if these verbs can be used at all they might marginally be used as consumption verbs, but definitely not as creation verbs). As pointed out by Harley (2005), verbs of creation with conversion in English are restricted to cases where the subject is creating the theme in an inalienable way, usually ‘out of’ the subject’s own body: both Mary drooled and The mare foaled are possible.

Interestingly, it is not possible either for English DNVs to be identity or possession verbs. For example, to woman does not mean ‘to be a woman’ and to cat could not possibly mean ‘to have a cat’. English DNVs cannot be verbs of fetching/getting either (to bread cannot mean ‘to get bread’) nor can they be verbs of speaking (to Spaniard or to English cannot mean to speak Spanish or English respectively). All these meanings are, on the other hand, typically associated with verbal affixes in the languages that have them (e.g. Ojibwe).

Let me now turn to English DNVs formed with the suffix –ize. I turn to these because they are overt (converted verbs such as knob involves zero affixation) and thus might be thought of as the real equivalent of Ojibwe verbal suffixes. This has been a popular hypothesis for Inuktitut. For example, Mithun (1997, 1999) follows Sapir’s (1911) original proposal very closely in proposing that verbal elements in Eskimo-Aleut are not verb stems but derivational affixes. Indeed, Sapir (1911:254) takes them to be morphologically comparable to English –ize in verbs of the type materialize, pauperize, etc. However, as Mithun remarks herself, this claim is problematic in view of the fact that the elements in question have retained more root-like (lexical) properties than other affixes in the language or in English: Inuktitut –tur– ‘consume/have’ is richer in meaning than, say, –ly in English which simply forms adverbs from adjectives. Similarly, English –ize does not appear to come with a core meaning and it yields a meaning that is not completely semantically transparent (Baker 2003:166). It is used in many unpredictable environments: hospitalize, for example, means roughly ‘to put someone in a
hospital’ (with the added implicature that medical care is provided), but *caramelize* does not mean ‘to put someone or something in caramel’ but rather ‘to cause something to become caramel’. *Womanize* does not receive any of these meanings but means instead something like ‘to pursue women lecherously’. *Vaporize* means ‘to change or cause to change into vapor’ while *winterize* means ‘get ready for winter’, etc.

In addition, such verbs can not only be intransitive (*concertize, fantazize, harmonize*), but also transitive (*categorize, terrorize, alphabetize*) (there are also inchoative/causative alternators: *crystallize, caramelize, fossilize*, Harley 2009:331). On the other hand, Ojibwe DNVs are, as already mentioned several times, uniquely morphosyntactically intransitive.

In sum, it appears that Ojibwe verbal suffixes have more in common with noun-verb compounds such as English *babysit* than with affixal derivation. Like *sit in babysit*, verbal suffixes carry root meaning. However, Ojibwe denominalization is not compounding, since, as I show next, the noun that merges with the verb in Ojibwe is referentially active. In compounding, referential activity of the noun is not possible. From this point of view, Ojibwe denominalization is, again, more akin to NI: the verb final is a verb root/stem and not a simple derivational affix.

4.3 Referentiality As the examples in (55) illustrate, it is possible in Ojibwe to refer back to a noun that has been merged with a verbal suffix. (55a–b) involve the verbal suffix –*ke* while (55c) involves the suffix –*i*.

(55a) *gii-nboobike.* Aapiji *gii-mino-waagame*

*gii-naboob-ke-w* Aapiji *gii-mino-waagame*

PAST-soup-VAI-3SG.S very PAST-good-taste.[liquid].VII

‘*He/she was making soup.*’ ‘*It* tasted very good.’ (EW, 2007-04-20) Ojibwe

(55b) *gii-memengwaanske.* Aapiji *gii-gwanaajiwag*

*gii-memengwaan-ke-w.* Aapiji *gii-gwanaajiw-ag*

PAST-butterfly-VAI-3SG.S very PAST-beautiful.be-3PL

‘*He/she was catching butterflies.*’ ‘*They* were very beautiful.’ (BJ, 2008-05-06) Ojibwe

(55c) *nahaangshiimi.* giinoo-zi

*nahaangshiim-i-w* giinoo-zi-w

son.in.law-POSSESS-VAI-3SG.S tall-VAI-3SG.S

‘*He/she has a son-in-law.* He is tall.’ (EW, 2009-06-15) Ojibwe

The referential property of the merged nominals in (55a–c) is entirely parallel to the referential property of a free noun used with a transitive verb *ozhitoon* ‘make’. In (56), the free noun can be picked-up in subsequent discourse.28

(56) *nboob gii-ozhitoon.* Aapiji *gii-gowagmino*

*naboob gii-ozhitoon.* Aapiji *gii-gowag-mino*

soup PAST-make.VTA very PAST-extremely-good

‘*He/she made soup.*’ ‘*It* was extremely good.’ (PC, 2007-04-20) Ojibwe

The referential property of the merged nominals in (55a–b) is also entirely parallel to the referential property of nouns in NI constructions. In (57a–b), it is possible to refer back to the incorporated noun in subsequent discourse (in each case the verb is an incorporating verb that can also appear as a free-standing verb).
(57a) ngii-moon-ah-apnii mii dash ngii-giziibiiginig-an
1SG.S-PAST-dig-TR-potato and then 1SG.S-PAST-wash-3PL.O
‘I dug up potatoes.’ ‘And then I washed them.’ (BJ, 2008-12-17) Ojibwe

(57b) ngii-bengw-h-i-naagan-e mii dash taaswin-in ngii-atoonan
1SG.S-PAST-dry-TR-dish-VAI and then cupboard-in 1SG.S-PAST-place-3PL.O
‘I dried the dishes.’ ‘And then I put them away.’

The fact that the nominal is referentially active in examples such as (55) sets the Ojibwe type of DNV construction apart from the type found in English. This is because in English (and other Indo-European languages) it is not possible to refer back to a noun that appears in a DNV construction. This is exemplified in (58) for English and is well-documented in Postal (1969), Sproat (1985, 1988), and Ross (2007).

(58a) *I was hammer-ing really hard. It was blue.
(58b) *John butter-ed his toast. It was rancid.
(58c) *He tape-d a poster on the wall. It was large.
(58d) *John terror-ized his neighbours. You felt it in the air.

The fact that verbs such as hammer (58a) and tape (58b) behave exactly the same in relation to referentiality suggests that there is only one type of English DNV: one that involves the merging of a verbal affix with a root. This contrasts with the DM view, since according to Marantz (2001, to appear), Marvin (2002), Arad (2003) – following Kiparsky’s (1982) original distinction – there are two types of DNVs in English: to hammer and to tape. In the first case, the verb contains a root while in the second case the verb contains a noun.

The rationale behind the dichotomy between hammer-type verbs and tape-type verbs comes from the putative fact that verbs built from roots are, when compared to verbs built from nouns, better suited for figurative contexts. For example, it is said that verbs such as to hammer does not necessarily imply the use of a hammer, hence the possibility of (59a). The verb tape is said to be more compositional in that it implies the use of tape only, hence the ungrammaticality of (59b).

(59a) She hammered the nail with a rock
(59b) *She taped the picture to the wall with pushpins

However, Harley and Haugen (2007) mention grammatical cases such as those in (60) indicating that this type of verbs is also well suited for figurative contexts and that it need not be compositional.

(60) Lola taped the poster to the wall with band-aids/mailing-labels.

In sum, English DNVs differ from Ojibwe DNVs, since they involve not a noun, but only a root. This explains why in English as shown in (61) no conversion is possible from complex
items derived by productive means of word formation. *to happening, *to growth, *to baker are all impossible.

(61a)  \( \text{happen}_V \rightarrow \text{happening}_N \rightarrow *\text{to happening}_V \)
(61b)  \( \text{grow}_V \rightarrow \text{growth}_N \rightarrow *\text{to growth}_V \)
(61c)  \( \text{bake}_V \rightarrow \text{baker}_N \rightarrow *\text{to baker}_V \)

As shown in (62), the suffix –ize cannot turn a full noun into a verb either. *bakerize, *to communicationize, *to bitternessize are all ill-formed.

(62a)  \( \text{baker}_V \rightarrow \text{baker}_N \rightarrow *\text{to bakerize}_V \)
(62b)  \( \text{communicate}_V \rightarrow \text{communication}_N \rightarrow *\text{to communicationize}_V \)
(62c)  \( \text{bitter}_A \rightarrow \text{bitterness}_N \rightarrow *\text{to bitternessize}_V \)

In Ojibwe, on the other hand, it is perfectly possible to derive verbs from complex nouns. The noun bakitehgan ‘hammer’ can be turned into a verb as shown in (63a) and the complex noun apabiwin ‘chair’ can be turned into a verb as shown in (63b).

(63a)  \( \text{bakitehgan} \quad \rightarrow \quad \text{bakitehgeganke} \)
       \( \begin{array}{ll}
          \text{[[bakite-h]_V-gan]}_N & \rightarrow \quad \text{[[bakite-h]_V-gan]}_N-ke \\
          \text{hit-VTA-NMZ} & \rightarrow \quad \text{hit-VTA-NMZ-VAI} \\
          \text{‘a hammer’} & \rightarrow \quad \text{‘to make a hammer’} \\
       \end{array} \)
(63b)  \( \text{apabiwin} \quad \rightarrow \quad \text{apabiwinke} \)
       \( \begin{array}{ll}
          \text{[[apab-i]_V-win]}_N & \rightarrow \quad \text{[[apab-i]_V-win]}_N-ke \\
          \text{sit-VAI-NMZ} & \rightarrow \quad \text{sit-VAI-NMZ-VAI} \\
          \text{‘a chair’} & \rightarrow \quad \text{‘to make a chair’} \\
       \end{array} \)

4.4 Stranding of modifiers There is another major similarity between DNVs in Ojibwe and NI that sets them apart from English DNVs: stranding of modifiers. The fact that English behaves differently from Hopi from this perspective has led Hale and Keyser (2002: chapter 3) to change their minds about the nature of DNV formation in English and Hopi. Whereas they used to propose that conversion (conflation as they call it) is simply another case of noun incorporation, they came to realize that it behaves very differently from noun incorporation: compare Hale and Keyser (1993) with Hale and Keyser (2002). In (64a) Hopi angap ‘husk’ is modified by wuwupa ‘long.PL’ while being merged with the verbal affix soma ‘tie.PERF’. In (64b) kis ‘shade’ is modified by i-t ‘this-ACC’ while being merged with the verbal affix ta ‘make’.

(64a)  \( \text{Pas} \quad \text{wuwupa-t} \quad \text{angap-soma} \)
       \( \begin{array}{ll}
          \text{very} & \quad \text{long.PL-ACC} \quad \text{husk-tie.PERF} \\
          \text{‘She bundled up really long cornhusks.’} & \quad \text{(Hale and Keyser 2002:56) Hopi} \\
       \end{array} \)
(64b)  \( \text{Hak} \quad \text{i-t} \quad \text{kis-ta?} \)
       \( \begin{array}{ll}
          \text{who} & \quad \text{this-ACC} \quad \text{shade-make} \\
          \text{‘Who built this shade?’} & \quad \text{(Hill 2003:234) Hopi} \\
       \end{array} \)
Similarly, it is possible in Ojibwe to modify a nominal merged with a verbal affix from outside the verbal complex. In (65a), the quantifier *kino* ‘all/every’ is stranded while modifying the stem-internal noun. In (65b) it is a numeral that is stranded.\(^{30,31}\)

\[(65a)\]
\[
\begin{align*}
  &\text{*kino memengwaanske} \\
  &\text{kino memengwaan-ke-w} \\
  &\text{all butterfly-VAI-3SG.s} \\
  &\text{‘He/she is catching all butterflies.’ (SW, 2008-08-10) Ojibwe}
\end{align*}
\]

\[(65b)\]
\[
\begin{align*}
  &\text{niizhoo daabaani} \\
  &\text{niizhoo daabaan-i-w} \\
  &\text{two car-VAI-3SG.s} \\
  &\text{‘He/she has two cars.’ (SW, 2009-06-22) Ojibwe}
\end{align*}
\]

As shown by (66), it is also possible to strand certain modifiers in classical NI in Ojibwe.

\[(66)\]
\[
\begin{align*}
  &\text{Ngii-bimoomaawazo maaba} \\
  &\text{N-gii-bimoom-aawazo maaba} \\
  &\text{1SG.S-PAST-carry.on.back.VAI-child this} \\
  &\text{‘I carried this child (on my back).’ Ojibwe}
\end{align*}
\]

Inuktitut is another language with verbal suffixes where it is possible for a noun to be merged with a verbal suffix while being modified by a stranded modifier (Van Geenhoven 1998). In English, it is not possible for modifiers of nouns that change into verbs to be modified as the examples in (67) illustrate.\(^{32}\)

\[(67a)\] *John pushed sudden the cart  
In the sense of: John did a sudden push to move the cart

\[(67b)\] *John hammered that  
In the sense of: John used that hammer

This indicates that English DNVs are lexicalized, since other lexicalized expressions behave similarly: it is not possible in English compounds such as ‘babysit’ to strand an adjective modifying ‘baby’: *I babysat French’ in the sense of ‘I babysat a French baby’. In fact, it is not possible, as is well-known, to modify nouns in compounds *‘I French-baby-sat’ and it is not possible, as shown in (68) to modify the noun in English DNVs whether the verb is a hammer-type verb or a tape-type verb.

\[(68a)\] *to big-hammer (intended: to hammer with a big hammer)

\[(68b)\] *to large-tape (intended: to tape something with large tape)

In contrast, nouns in Ojibwe DNVs can be modified directly as was shown in Section 3.

In summary, DNV formation in Ojibwe is noun incorporation: no recategorization takes place (a noun is not turned into a verb). Rather, a full noun incorporates into a verb. English DNV formation is, on the other hand, recategorization. On my account, Ojibwe DNVs are built in the syntax but English DNVs are not.\(^{33}\) In English, I assume that conversion simply involves relisting in the lexicon (Lieber 1992) as defined in (69). When a verb is created from an existing
noun, that verb enters the lexicon: there are now two listemes: a verb and a noun. This means that each item has only one node $X^0$ in the syntax.

(69) Relisting
i. The lexicon allows for the addition of new entries.
ii. conversion occurs when an item already listed in the lexicon is re-entered as an item of a different category. (Lieber 1992:159)

On the other hand, in Ojibwe, two syntactic nodes are created: one for the noun and one for the verb.

4.5 Morphological complexity In section 3, it was shown that nominals in Ojibwe DNV constructions can be complex morphologically. We find exactly the same state of affairs in the case of Ojibwe NI. In Ojibwe classical NI the incorporated noun keeps its morphology. The object noun *bwenzhgan* ‘bread’ in (70a) is a complex element that contains a nominalizer –*gan*. The incorporated noun in (70b) has the same form. The incorporated noun is not stripped of its nominalizer –*gan*. This is a property that non-suffixal NI shares with suffixal NI.34

(70a) nga-naadin       bkwenzhgan
    N-ga-naad-in       bkwenzh-gan
    1SG.S-FUT-fetch-VTI bread-NMZ
    ‘I will get bread.’

(70b) Gii-naadibkwenzhganeeew
    Gii-naad-(i)bkwenzh-gan-ee-w
    PAST-fetch-bread-NMZ-VAI-3SG.S
    ‘He went after some bread.’ Ojibwe

Gerdts and Marlett (2008) also report that nouns in Halkomelem Salish DNVs can be inflected for number, carry diminutive marking, be compounds and even be modified by adjectives. It has also been reported that, in some dialects of Inuktitut, it is also possible for nominals in DNVs to bear number and possessive marking (Sadock 1980; Fortescue 1984; Denny 1989:239, Gerdts 1998:98). Like the case of Ojibwe, it is also possible in Inuktitut for nouns in DNVs to be modified. In fact, according to Sadock (1980:316), “modification of incorporated nominals is perfectly regular in Greenlandic”.

4.6 Doubling Despite many similarities between the two processes, there is admittedly one main difference between non-suffixal verb NI and suffixal verb NI in Ojibwe. Doubling is possible in the former case but not in the latter. Having said that, note that as shown by (71) doubling is possible in some dialects of Ojibwe (thanks to an anonymous reviewer for pointing this out). More research is needed on this particular topic of doubling and more fieldwork is necessary in order to establish whether examples such as (71) are really ungrammatical in the dialect studied in this paper. It is not clear whether examples such as (72) are ungrammatical either in all dialects of Ojibwe.

(71) Nikii-nanaantawi-moos-we        kihci-moos
    Ni-kii-nanaantawi-moos-we        kihci-moos
I went hunting for a big moose.’ Ojibwe

Variation between DNV constructions across and within one language should not, however, come as a surprise. There is after all great variation between DNV languages. For example, as argued by Gerdts and Marlett (2008), in some languages DNVs are intransitive while in others they are transitive. In Halkomelem DNV formation, although no stranding is allowed, doubling is possible.35

This sort of variation can in fact be found in languages with traditional NI. In Southern Tiwa, an Iroquoian language, incorporating verbs surface with object agreement. On the other hand, incorporating verbs in Nahuatl do not (Gerdts and Marlett 2008). In Southern Tiwa, modifier stranding is allowed but doubling is ruled out. In Mapudungun, a language spoken in parts of Chile and Argentina, only possessors, and no other modifiers, may undergo stranding (Baker et al. 2005). In contrast, Inuktitut allows the stranding of all sorts of modifiers, but it does not tolerate the stranding of possessors (Johns 2009).

This concludes Section 4. It was shown in this section that DNV formation in Ojibwe shares many properties with traditional NI. Even though there may be differences between the two processes (variation is omnipresent in language), DNV formation in Ojibwe definitely patterns like NI and referring to it as NI is not a category mistake.

5. Conclusion In this paper, I have shown that DNV formation in Ojibwe is very similar to noun incorporation. It is associated with many syntactic properties (stranding of modifiers, referentiality of the incorporated nominal, etc.) that are not found in the DNV formation of more familiar languages (e.g. English). Like noun incorporation, productive derivation (e.g. re–, un–, secondary derivation in Algonquian) and productive/complex compounding (e.g. a who’s the boss wink?, a pleasant to read book), DNV formation in Ojibwe has many syntactic properties that set it apart from more traditional non-productive morphology (e.g. derivational –ity, –ic and irregular inflection cacti, oxen, primary derivation in Algonquian).

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1 The iso 639-3 codes for the languages included in this paper are: Inuktitut, ike, ikt, kal; Seri, sei; Ojibwe, oj; Nuuchahnulth, noo; Hopi, hop; Halkomelem, hur; Blackfoot, bla; Cree, crk; Yaqui, yaq; Mohawk, moh; Mapudungun, arn; Southern Tiwa, tix, Turkish, tur; Japanese (jpn); Greek (ell), Malisset-Passamaquoddy (pqm). Note that not all the languages included in this paper have a corresponding iso 639-3 code.

2 See also Johns (2007) and Gerdts and Marlett (2007) who survey a set of languages with DNVs.
It cannot be automatically assumed that all or even most North-American languages have denominal verb constructions, since as pointed out by Gerdts and Marlett (2008), at least Mayan, Muskogean, and Iroquoian do not.

Incidentally, Mithun, who has repeatedly argued against treating Inuktitut, a language with DNVs not unlike those in Ojibwe, as an NI language (1984, 1986), has recently conceded the following: (2009:13) ‘[…] 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).

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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, 3SG.S = third person singular subject, 3SG.O = third person singular object, PL = plural, POSS = possessive, NMZ = nominalizer, OBV = obviative, i = epenthetic vowel. In the literature, Ojibwe long vowels are sometimes indicated as i: or ĭ, a: or ā, and o: or ò (e is always long). I have adjusted all Ojibwe examples taken from the literature to ii, aa and oo.

Some Algonquianists (Charles J. Lippert, p.c.) choose to represent variants of –ke with a preceding i after a consonant as an allomorph of –ke in the underlying representation (i.e. –ike). I choose instead to introduce –ke always as –ke in the underlying from (simply because an –i does not systematically occur after a consonant and before –ke and in the case of some consonants never), but nothing hinges on this matter.

Incidentally, the productivity of NI in Ojibwe indicates that Baker’s (1996:18) suggestion that Algonquian languages may at best tolerate NI sporadically or not at all cannot be on the right track. NI in Ojibwe is ‘robust’ in the sense described by Baker (1996), since it fulfils all four properties put forward by him for the notion of ‘robust’ NI: (i) it is reasonably productive; (ii) the noun root is fully integrated with the verb morphologically; (iii) the noun is referentially active in the discourse; (iv) both the noun root and the verb root can, in general, be used independently.
In this paper, I will not use the terms “initial” and “root” interchangeably, contrary to what is often done in the traditional Algonquian literature, since it might lead to confusion. 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 DM 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.

This is not an incorporating verb, therefore only (6) is possible: *gii-nboob-oozhitoon is not grammatical.

By “traditional” or “classical” NI, I mean NI that involves the merging of a noun with a verb that is lexical and non-suffixal: in other words, a root/stem.

*i* is an epenthetic vowel that I choose not to reproduce in the underlying morphological string (second line of each example).

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).

For DM, even less regular morphological phenomena are built in the syntax (internal word formation, as it is called in that framework). While external word formation is definitely syntactic, internal word formation nevertheless has, it seems to me, all the characteristics of a residual lexical component.

In a previous version of this paper, I collapsed –*i* and –*wi* together, since I believe they are essentially the same morpheme (*w* is being used as a linking element). There is plenty of evidence cross-linguistically for the idea that ‘have’ and ‘be’ have the same underlying source (Bénvéniste 1966, Freeze 1992, Kayne 1993). It should therefore not come as a surprise that Ojibwe (and perhaps other languages) have one morpheme or one word for both concepts. In fact, in Blackfoot the suffix –*yi* can be used both for ‘be’ and ‘have’ in DNV formation (Frantz 2009). However, in the Ojibwe literature it is customary to introduce these two suffixes separately (Valentine 2001a). This is what I do here. However, nothing hinges on this matter.

It must be noted that –*i* can be used not only as an existential predicate but also as an inchoative predicate (the inchoative interpretation appears to be stronger when the verb is in the past, Valentine 2001a:710, therefore gii-*niniwi* means ‘He/she became a man.’).

I will use the term ‘nominalizer’ to refer to –*w* as well, although technically it does not turn a verb into a noun. In this case, the nominal suffix turns a simple root into a noun. Nominalizer thus means herein ‘turning a bare root, a verb, etc.’ into a noun.

While (33) and (34) are fairly transparent, it is admittedly not always easy to discern the individual parts of complex nominals.

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).

Admittedly, number surfaces here only in the singular. It does not appear to be possible for nouns in Ojibwe DNV constructions to surface in the plural (although examples with reduplication denoting plurality inside the noun complex are attested). I could not find such examples in texts and have not been able to elicit them.
Proto-Algonquian had a clear distinction between singulars ending in –i and those ending in –a; a distinction Fox has retained (Goddard 2002).

As in English and other languages, possessive morphology in Ojibwe has all the properties associated with inflectional morphology: it does not change the category it attaches to and (typically and especially in the absence of prefixes, see previous footnote) it can apply to any noun (provided, of course, that the resulting meaning is compatible with an acceptable pragmatic interpretation).

Independent evidence for such a conclusion comes from agreement phenomena: there is not always a one-to-one correspondence between affixes and NP referents. Suffixes often 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 2006 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 Malisset-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 the sentence and verbal domains (Tourigny 2008 for Ojibwe).

The modifier can itself be modified as shown by the example in (i). –ad is the inanimate variant of –i. Note that most modifiers are bound forms in Ojibwe, which means that they can never appear separately from the noun as shown in (ii).

(i)  
gii-gichi-mino-giizhig-ad

PAST-very-good-day-VII

‘it was a very good/beautiful day.’
(in The Thunderers, Jones 1919, Ojibwe Texts, p. 192) Ojibwe

(ii)  *sabiike  gichi
      sabii-ke  gichi
      net-VAI  big

Intended: ‘He/she is making a big net.’

What is noteworthy, however, is that such modifiers form a complex entity with the noun in Ojibwe DNVs. In other languages, e.g. English, it is not possible for nouns in DNVs to surface with such modifiers (see Section 4).

25 There are in fact two different kinds of non-suffixal NI in Ojibwe. I am focusing only on the first. In (49b), the incorporated noun *mashkiki* ‘medicine’ surfaces to the right of the transitive marker –ah. In other cases, the incorporated noun surfaces to the left of the transitive marker. This is called ‘medial’ NI in the Algonquian literature (Wolfart 1971, Mellow 1989, 1990 and Hirose 2001, 2003 for Plains Cree, Mithun 1984 for Blackfoot, and Rhodes 1976, 2003 for Ojibwe). For Hirose (2001, 2003), only the type where the noun appears to the right of the transitive marker is true NI.

26 To quote Bloomfield (1933:238-239): ‘The semantic relations are not grammatically definable. Thus, we derive a great many verbs from nouns by means of various changes, including a zero-element, but the meanings of these derived verbs in relation to the underlying noun are manifold: to man, to dog, to beard, to nose, to milk, to tree, to table, to skin, to bottle, to father, to fish, to clown, and so on.’

27 Ojibwe has the verbal suffix –mo which refers to any kind of oral activity (speaking a language included).
Other North American Native languages that have verbal suffixes as part of their grammars have the same referential property: the noun that merges with the verbal affix can be picked up in subsequent discourse (Sadock 1980, 1986, Bittner 1994, Van Geenhoven 1998, Johns 2007 for Inuktitut, Gerdts and Hukari 2008 for from Halkomelem, Wojdak 2005, 2008 for Nuuchahnulth and Kenneth Hill personal communication for Hopi).

Conflation consists in the process of copying the p-signature of the complement into the p-signature of the head, where the latter is “defective.” (Hale & Keyser 2002:63). Unlike expressions such as make trouble the verbalizer is phonologically empty in the case of denominal verbs. On Hale & Keyser’s view this means that incorporation into the empty verbalizer is necessary.

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).

In the case of Halkomelem and Nuuchahnulth, no stranding is allowed. In Halkomelem, the denominal verb affix attaches to the adjective instead of the head noun (Gerdts and Marlett 2008:418).

Based on the fact that stranded adjectival modifiers do not appear with such verbs, Borer (1991) argues explicitly that an incorporation account is not appropriate for –ize derived verbs.

This means that my account is different from Johns’s (2007) analysis of verbal suffixes in Inuktitut. Her analysis appears to rely on a version of Hale and Keyser’s work that explicitly treats DNV formation in English as equivalent to NI. However, as we saw above, they changed their minds, since there is plenty of evidence that, although DNV formation in Amerindian languages is akin to NI, this is not the case for DNV formation in English. Contrary to Johns (2007), I assume that Inuktitut DNVs, like their Ojibwe counterparts, are instances of NI.
In Iroquoian there are incorporated nominals that appear without a nominalizer, but incorporated nominals in Iroquoian are not always bare roots: they can contain nominalizing morphology (Abbott 2000, Barrie 2006).

Hopi is more consistent, since it allows both stranding and doubling (Hill 2003).