Conversion, structured inflection, and the ontological/semantic organization of the lexicon in Oneida

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Polysynthetic languages are well known for their inflectional complexity, but it is not clear whether this complexity should be modeled via a large set of position classes or by positing some internal structure. Oneida (Northern Iroquoian) is an interesting test case in this regard since going back to Lounsbury (1953), its verbal and nominal inflectional morphology has been analyzed as involving a flat (i.e. position class-based, slot-and-filler, templatic) combination of morphs as well as a hierarchically organized combination of morphs. (1) diagrams the inflectional structure of verbs: a stem combines first with an aspect suffix and then the result with one of fifty-eight pronominal prefixes (that all occur in one slot or position class) and up to five prepronominal prefixes (from a total of eleven modal and non-modal prefixes that themselves are distributed into 6 position classes). (2) diagrams the inflectional structure of nouns: a stem combines with a noun suffix and the result with a pronominal prefix. (The sets of pronominal prefixes on verbs and nouns are not always identical, hence the subscripts $_V$ and $_N$ in (1) and (2).)

(1) [(prepronominals)-pronominal$_V$-[stem-aspect]]

(2) [pronominal$_N$-[stem-noun.suffix]]

Despite the fact that the structure in (1) is traditionally assumed, very little evidence has been provided to support it. Lounsbury (1953) alludes to the fact that modal preponominal prefixes occur only when the punctual aspect suffix occurs and subsequent literature (Chafe 1967 for Seneca and Bonvillain 1973 for Mohawk) to the fact that the aspect suffix can determine (Agent versus Patient) pronominal prefix category. But, in neither case is the evidence particularly convincing as feature co-occurrence restrictions on morphosyntactic feature sets are enough to account for these two dependencies. In this paper, we provide new evidence for the structures in (1) and (2) as well as evidence that inflection in Iroquoian is interleaved with derivational conversion processes that form nouns from verbs. Such conversion processes play an important functional role in Oneida onomasiology, given the verb-centricity of Iroquoian languages noted since at least Cuoq (1866) for Mohawk. What is critical for our purposes is that conversion can target the stem or any bracketed constituent of the structure diagrammed in (1) to derive a constituent in (2).

Table 1 summarizes the properties of noun roots, as well as the classes of derived nouns, and identifies the inflectional potential of underived nouns and each kind of derived nouns as well as whether they are eligible for noun incorporation; the last column gives the number of each kind in Michelson & Doxtator (2002). Examples are provided in (3)-(6).

(3) **o**-sahe?t-**a?**
NPF-bean-NSF
'bean(s)'

(4) **lao**-hyatú-hsl-**i?**
3M.SG.POSS-write-NMZR-NSF
'his book, paper'

(5) **akw**-an-isnuhs-ohlók-t-**a?**
1SG.POSS-SRF-finger-insert-CAUS-HAB
'my ring'

(6) **yu**-t-wʌn-a-ta?-á-st-**a?**
3FL.A-SRF-voice-JN-put.in-JN-CAUS-HAB
'telephone'

	Nominal prefix (NPF)	Possessive prefix (POSS)	Nominal suffix (NSF)	Incorporation	# in Michelson & Doxtator (2002)
Noun root	+	+	+	Possible	305
Nouns derived from a verb stem	+	+	+	Possible	24
Nouns derived from a verb stem + aspect suffixes	+	+	-	Impossible	55
Nouns derived from fully inflected verbs	-	-	-	Impossible	333

Table 1: Classes of underived and derived nouns in Oneida, which inflectional processes they can undergo and whether they can incorporate into verbs or not.

Crucially, as Table 1 indicates, which constituent is targeted by the conversion process determines the inflectional potential of the derived noun. If an uninflected stem is the input, as in (4), the nominal output will have both nominal suffixes, nominal pronominal prefixes, and will be able to incorporate into a verb root, just as uninflected, underived noun roots, as in (3). If a stem plus an aspect suffix is the input, as in (5), only nominal pronominal prefixes are possible, since the stem already includes (verbal) aspect suffixes and only uninflected noun stems can incorporate. Finally, if a fully inflected word is the input, as in (6), the output has no nominal inflectional potential but includes all the verbal inflection included in the input.

Interestingly, about a dozen nouns in Michelson and Doxtator (2002) that are derived from verbs have two variants, one variant is derived from a verb stem that includes an aspect suffix, and the other variant is derived from a verb stem that includes a nominalizer suffix. The first variant behaves like the example in (5) whereas the other variant *must* incorporate. An example is given in (7): The forms in (7a) and (7b) include the habitual aspect suffix *-ha?* (*-hkw-ha?* becomes *-khwa?* by phonological rule), whereas the form in (7c) has the nominalizer suffix *-ʔtsl-*. Only this last form can (in fact, must) incorporate. The data summarized in Table 1 and (3)-(7) show that Oneida conversion is sensitive to and interleaved with the layered inflectional structure of verbs and nouns.

(7) a. **ate**-khw-a-hl-á-**khwaʔ**
∅,NPF-SRF-food-JN-set.on-JN-INSTR:HAB
'table'

b. **akw**-ate-khw-a-hl-á-**khwaʔ**
1SG.POSS-SRF-food-JN-set.on-JN-INSTR:HAB
'my table'

c. waʔ-k-ate-khw-a-hl-a-**ʔtsl**-oˑkéw-eʔ
FACT-1SG.A-SRF-food-JN-set.on-JN-NMZR-wipe-PNC
'I wiped the table'

Although we have talked until now of Oneida nouns and verbs, the data on conversion supports an ontological reanalysis of those terms: *noun* stem or word reduces to stem or word describing entities or objects and *verb* stem or word reduces to stem or word describing events or situations. This is because conversion processes are ontologically transparent in Oneida: the change in inflectional potential is *always* accompanied by a change in ontological category

(from situation/event describing stem or word to object/entity describing stem or word). This contrast with ontologically opaque conversion processes in Indo-European and many other languages, where the input and output can share ontological type. For example, the noun *dance* in English can still describe the unfolding of an event through time, despite its nominal morphological and syntactic properties. The ontological transparency of conversion in Oneida supports the view that the Oneida lexicon (excluding particles) is organized along ontological classes (object vs. event describing stems or words), as inflectional potential strictly follows from the ontological class a stem belongs to: given an inflecting stem or inflected word's ontological category, its inflectional potential follows.

Finally, we show that a semantic organization of Oneida inflected lexemes is superimposed on its ontological organization. Whereas the ontological organization separates lexical entries into event/situation and object/entity denoting stems or words, the semantic organization separates inflecting stems or words on the basis of its arity, namely whether it denotes a one-place or two place predicate. Kinship terms and stems/words denoting possession relations exemplify the distinction.

Kinship relations describe entities in Oneida, as evidenced by the fact that pronominal prefixes that reference their arguments drop initial glides when relevant, just like stems that describe entities (see Table 1). But they select so-called transitive prefix like verbs, i.e. prefixes that reference both arguments of the relation as shown in (8). More generally, kinship stems share with situation-describing stems all inflectional properties characteristic of two-place predicates and with entity-denoting stems all inflectional properties characteristic of stems whose discourse referent are of sort entity rather than situation (see Koenig & Michelson (2010) for details).

(8)	lake**ʔ**níha	aksótha	onatatyʌ́ha
	lake-ʔni-ha	**(w)ak**-hsot-ha	**(y)on**-atat-yʌ-ha
	3M.SG>1SG-father-DIM	3FZ.SG>1SG-grandmother-DIM	3FZ.DP.P-REFL-child-DIM
	'my father'	'my grandmother'	'mother and daughter'

Stems denoting possession relations are an exception to the previous generalization as only possessors are marked, as shown in (9). Importantly, this exceptional selection of intransitive prefixes despite the fact that their semantic content is relational stays constant whether that content is used to describe a member of that relation, an entity, (9), or the relation itself, a situation (10).

(9) **la**-ʔnyú··ke
3M.SG.A-nose-LOC
'his nose'

(10) Thoʔnʌ́ tékni te-**wak**-atʌnoʔsʌ-··sh-ʌ́·
and then two DL-1SG.P-sibling-NMZR-have:STV
'And then I have two brothers'

Although their differ in argument referencing, stems whose semantic content include a possession relation or a kinship relation behave similarly in one respect, how they are negated. In general, stems describing situations and entities differ in how they are negated in Oneida. Both require the presence of the uninflected particle *yah*, but whereas stems describing situations must also include the prepronominal negative (inflectional) prefix *teʔ-*, stems describing entities include the uninflected particle *té·kʌ*. Kinship terms and stems that describe entities that are possessed, though, behave differently; we illustrate with possessed stems. Possessed stems can follow both patterns, that is they can negate just like other stems describing objects/entities, as in (11) or they can negate like other stems whose semantic content is relational, as in (12).

(11) Yah né· í· ak-kʌ́h-aʔ **té·kʌ** thi·kʌ́.
not assertion FIRST.PERSON 1SG.POSS-blanket-NSF it's not that
'It's not my blanket.'

(12) Yah né· í· **teʔ**-wak-kʌ́h-aʔ thi·kʌ́.
not assertion FIRST.PERSON NEG-1SG.POSS-blanket-NSF that
'It's not my purse/blanket.'

The behavior of kinship terms and stems which contribute a possession relation in the sentence's semantic content shows that Oneida inflection is not only sensitive to structural considerations and based on an ontological distinction between what is being described, entities/objects or events/situations, but also to the kind of semantic type of the content used to describe those individuals, namely one place or two-place predicates (and in the case of two-place predicates, whether possession is involved or not). In brief, to properly infect a stem in Iroquoian, you need to know: what its structure is (as in (1)-(2)), the sort of its discourse referent (see de Swart 1998), and the type of its semantic content (simplifying somewhat, $< e, t >$ vs. $< e, e, t >$).

References

Bonvillain, Nancy. 1973. *A grammar of Akwesasne Mohawk (Canadian ethnology service paper no.8)*. Ottawa: National Museum of Man Mercury Series, National Museums of Canada.

Chafe, Wallace. 1967. *Seneca morphology and dictionary*. Washington: Smithsonian Press.

Cuoq, Jean-André. 1866. *Etudes philologiques sur quelques langues sauvages de l'Amérique*. Montréal: Dawson Brothers, reprinted 1966 by Mouton, La Hague.

de Swart, Henriëtte. 1998. Aspect shift and coercion. *Natural Language and Linguistic Theory* 16(2). 347–385.

Koenig, Jean-Pierre & Karin Michelson. 2010. Argument structure of Oneida kinship terms. *International Journal of American Linguistics* 76. 169–205.

Lounsbury, Floyd. 1953. *Oneida verb morphology. Yale University Publications in Anthropology 48*. New Haven, CT: Yale University Press.

Michelson, Karin & Mercy Doxtator. 2002. *Oneida-English/English-Oneida dictionary*. Toronto: University of Toronto Press.