Two types of deverbal nominalization in Northern Paiute

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TWO TYPES OF DEVERBAL NOMINALIZATION IN NORTHERN PAIUTE

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Why do nominalizations mean what they do? I investigate two deverbal nominalizers in Northern Paiute (Uto-Aztecan, Numic: Western United States), *-na* and *-dɨ*, which create nominalizations that describe either an event (like the POSS-*ing* gerund in English) or an individual (like agent nominalizations with *-er*). I propose a syntax and semantics for these deverbal nominalizations that account for their interpretive variability. On the syntax side, I argue that *-na* and *-dɨ* overtly realize the nominal functional head that canonically assigns case to possessors when this head takes a vP complement. On the semantics side, I propose that Northern Paiute has operators that abstract over a variable inside nominalizations. This accounts for the meanings that deverbal nominalizations in Northern Paiute have, and it highlights their relationship to nominalization patterns in other languages.*

Keywords: nominalization, gerunds, nominal structure, possession, resumptive pronouns, events, Uto-Aztecan

1. Introduction. Northern Paiute—a Uto-Aztecan language belonging to the Numic branch, spoken across the western United States—has two types of deverbal nominalization that describe either events or individuals. When the nominalizer suffixes *-na* or *-dɨ* attach to a verb, they create nominalizations that can refer to the event described by the verb, as in 1a and 2a. But when one of the verb's arguments is gapped, they create nominalizations that describe that individual, as in 1b and 2b.[1]

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[1] The data in this article comes primarily from my own fieldwork on the variety of Northern Paiute spoken at Mono Lake in eastern California (Lee Vining, California) and immediately to the north in Bridgeport and Coleville, California, and Sweetwater, Nevada. In addition to the Mono Lake dialect, there are several other closely related dialects spoken across, and immediately adjacent to, the Great Basin. These dialects are all mutually intelligible; the variation among them is primarily phonological and lexical (see Babel et al. 2012 and Babel et al. 2013 for details). To a lesser extent, I have also drawn on data from the Burns, Oregon, variety (Thornes 2003).

Northern Paiute is severely endangered. For all dialects, there are probably no more than 300 fluent speakers today (Golla 2011:174). For the Mono Lake dialect specifically, there are around five speakers, with varying levels of proficiency. The fieldwork data I present here comes entirely from the two oldest, most fluent speakers of the Mono Lake variety. At the time of writing, Edith McCann was eighty-eight years old and Madeline Stevens was ninety-two years old. They learned Northern Paiute as their first language and were introduced to English when they started school. Both trace their ancestry to Bridgeport, though they also have family from Mono Lake (Lee Vining) and Sweetwater. There are only a few differences in their speech; these consist entirely of very small lexical differences that reflect minor historical variation among the communities in the Mono Lake dialect area (e.g. *tɨba'a* 'pinenut' in Lee Vining, but *tɨba* elsewhere).

(1) a. N**ɨɨ** **a=bbauma-wɨnɨ-na** naka.
1SG.NOM **4.GEN=rain-IPFV-NMLZ** hear
'I hear **it raining**.' (elicitation, MS, BP37-1-s, 6)

b. **I=saa-na** ne-hu.
1SG.GEN=cook-NMLZ burn-PFV
'**What I was cooking** burned.' (elicitation, EM, BP32-9-s, 15)

(2) a. N**ɨɨ** **pauma-wɨnɨ-dɨ** naka.
1SG.NOM **rain-IPFV-NMLZ** hear
'I hear **it raining**.' (elicitation, MS, BP37-1-s, 5)

b. **Su=kutsu** **patsa-dɨ** mia-hu.
DEF.NOM=cow kill.SG-NMLZ go-PFV
'**The one who killed the cow** left.' (elicitation, EM, BP37-1-s, 16)

In 1b, the patient of the verb *saa* 'cook' is gapped, and the nominalization describes the thing that the speaker cooks. In 2b, the agent of the verb *patsa* 'kill (sg.)' is gapped, and the nominalization describes the person who kills the cow.

This semantic variability is surprising when we compare the nominalization patterns in 1 and 2 to structurally similar ones in English. The POSS-*ing* gerund, in Abney's (1987) terms, must describe an event (3a); it cannot refer to the individual corresponding to an agent (3b) or patient (3c) argument.

(3) a. I witnessed **Caesar's burning the city**.
b. ***Burning the city** was arrested.
intended: 'The one who burned the city was arrested.'
c. ***Caesar's burning** was rebuilt within the year.
intended: 'What Caesar burned was rebuilt within the year.'

Instead, English uses a different series of nominalizers to describe individuals. For instance, the *-er* suffix creates nominalizations that pick out the external argument of the verb, as in 4a (Rappaport Hovav & Levin 1992). It is not able to create event-denoting nominalizations (4b).[2]

Examples from other sources receive the usual parenthetical citation. Examples from my own fieldwork are annotated with relevant metadata: (i) how the data was collected: in a dialogue, through elicitation, in a narrative, or in a prompted narrative, (ii) the initials of the speaker who uttered the example or provided a judgment for the example (EM or MS), (iii) a number (starting with BP) identifying the source recording for the example, and (iv) the example's location in the source recording (either a line number in the corresponding transcription of the recording or a timestamp). The source recordings and transcriptions are not currently available to the public, at the request of the speakers, because they contain culturally sensitive content.

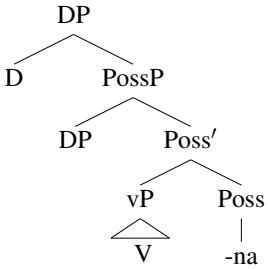
I use the following abbreviations: ACC: accusative, APPL: applicative, DEF: definite, DEM: demonstrative, DIM: diminutive, DUR: durative aspect, EMPH: emphatic particle, EXCL: exclusive, FOC: focus prefix, GEN: genitive, INCH: inchoative, INCL: inclusive, IND: indicative, IP: instrumental prefix, IPFV: imperfective aspect, IRR: irrealis, LOC: locatival postposition, MOD: modal particle, MOT: motion suffix, NEG: negation, NMLZ: nominalizer, NOM: nominative, NSP: nonspecific patient, PASS: passive, PL: plural, PLUR: pluractional, PRF: perfect aspect, PFV: perfective aspect, PRO: resumptive pronoun, PROSP: prospective aspect, PST: past tense, PTC: discourse particle, REFL: genitive reflexive anaphor, SBJ: subject, SBJV: subjunctive, SEQ: sequential marker, SG: singular, TNS: 'general tense' (Thornes 2003:398).

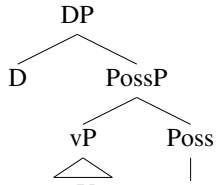
[2] The exception is derived nominals that exhibit the process-result ambiguity (Grimshaw 1990:46–63). A derived nominal like *destruction* can describe an event of destruction, or it can describe the result of that event. Observe, however, that the result is not itself an argument of the verb *destroy*—it describes not the thing destroyed but the effects of the destruction. In addition, as Borer (2003) observes, the so-called result interpretation is not always so easily characterized as the result of an event. For instance, under their 'result' meanings, *obstruction* describes something like the causer of an event, *administration* the agent, and *entrance* a location. The precise nature of the result interpretation depends on a variety of factors, including the Ak-

(4) a. **The seller of counterfeit stock** was jailed.
b. *I witnessed **the seller of counterfeit stock**.
intended: 'I witnessed the selling of counterfeit stock.'

Why do the two types of deverbal nominalization in Northern Paiute permit both an event and an individual interpretation, when their correlates in English do not? I give a syntax and semantics that accounts for this interpretive variability in Northern Paiute.

I start by exploring the syntax of deverbal nominalization in Northern Paiute. Assuming that they contain a verbal projection embedded inside a nominal one (Bresnan 1997, Borsley & Kornfilt 2000), I propose in §2 that the nominalizers *-na* and *-dɨ* realize the nominal functional category that canonically assigns case to possessors when it embeds a vP.

(5) a.


b.


This nominal head, which I call Poss, is the analogue of T(ense) in the verbal domain (Szabolcsi 1983, 1987, 1994, Cardinaletti 1998, Alexiadou et al. 2007:556–75). Since these nominalizations do not contain T, nominative case is not available inside them. The *-na* nominalizer does make an additional genitive case available to the DP in the specifier position it projects. The *-dɨ* nominalizer, however, is defective and does not project a specifier position or assign genitive case, leaving one case too few in the nominalizations it creates.

With these structures in hand, I then turn to the semantics of deverbal nominalization in Northern Paiute. In §3, I show that, on the one hand, the event interpretation of nominalizations with *-na* comes for free in a certain way. Since the nominalizer makes a genitive case available to the highest argument of the verb, all of its individual-type arguments can be saturated. Assuming that the verb also takes an event argument (Davidson 1967), only this event argument will be left unsaturated, so that the nominalization describes an event. On the other hand, the individual interpretation arises because Northern Paiute has operators inside the DP that can abstract over the variable contributed by a (sometimes null) resumptive pronoun. These pronouns are projected syntactically, creating a gap in direct object position, as in 2a, or in the argument position of a postposition, as in 6.

(6) **Ika i=naa'a pɨ-kuba kati-na** nɨɨ tɨmɨ-dua.
DEM.ACC **1SG.GEN=father PRO-LOC sit-NMLZ** 1SG.NOM buy-IRR
'I will buy **that one my father is sitting on**.' (elicitation, MS, BP34-5-s, 6)

Because of the antilocality property of resumptive pronouns (Borer 1984, McCloskey 1990), nominalizations with *-na* can describe any individual that is not the highest argument of the embedded verb (the surface subject, in other words).

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tionsart of the nominalized verb and whether it is a verb of creation (Asher 1993:150–59, Pustejovsky 1995: 170f.). This is very different from the semantic variability exhibited by the two types of deverbal nominalization I describe in Northern Paiute, which, as I show below, always describe an argument of the embedded verb, under their individual interpretations.

In contrast, when nominalizations created by *-dɨ* describe an individual, they invariably describe the highest argument of the verb. This might be the agent, as in 2b above, though it can also be the patient of a passive or unaccusative verb, as in 7a,b, or the sole argument of a stative predicate, as in 7c.

(7) a. **Su=na-gwɨtama-dɨ** wadzi-mia-hu.
DEF.NOM=PASS-lock.up-NMLZ hide-go-PFV
'**The one who should be locked up** ran away.'
(elicitation, EM, BP34-4-s, 26)

b. Ka=ɨdzɨggwi **ka=kwopika-wɨnɨ-dɨ** nɨɨ ki'a.
DEF.ACC=blanket **DEF.ACC=shiver-IPFV-NMLZ** 1SG.NOM give.DUR
'I gave the blanket to **the one who is shivering**.'
(elicitation, MS, BP34-3-s, 28)

c. Su=nana **ka=patsiponoa-dɨ**-na katɨ-'yu.
DEF.NOM=man **DEF.ACC=be.round-NMLZ**-LOC sit-DUR
'The man is sitting on **the thing that is round**.'
(elicitation, EM, BP34-3-s, 34)

In §4, I propose that because these nominalizations do not contain nominative case—and because genitive case is also not available—the highest argument of the verb must be realized as a phonologically null argument (PRO) that is abstracted over by an operator, in order to derive the individual interpretation. Moreover, the only time nominalizations with *-dɨ* can describe an event is when the verb does not take any individual arguments at all.

In §5, I explore why the English nominalizations in 3–4 do not exhibit the same semantic variability that nominalizations with *-na* and *-dɨ* do in Northern Paiute. The POSS-*ing* gerund, in fact, has much the same structure as a nominalization with *-na*. Yet it only has an event interpretation, I argue, because English lacks the system of operators and resumptive pronouns found in Northern Paiute. As for the other nominalization pattern, the *-er* suffix in English might at first glance resemble *-dɨ*, but its syntax and semantics are actually quite different. The nominalizer itself closes off the verb's event argument, so the nominalizations it creates never have an event interpretation.

2. TWO DEVERBAL NOMINALIZERS IN NORTHERN PAIUTE. Deverbal nominalizations share properties of both nouns and verbs. They have the external distribution of a nominal category. The nominalizations created by *-na* and *-dɨ* in Northern Paiute can, for instance, serve as the argument of a verb, as in 8, or as the argument of a postposition, as in 9.

(8) a. **Su=nana patsa-na** oo hapi.
DEF.NOM=man kill.SG-NMLZ there lie.DUR
'The thing the man killed is lying over there.' (elicitation, EM, BP37-1-s, 18)

b. **Su=kutsu patsa-dɨ** mia-hu.
DEF.NOM=cow kill.SG-NMLZ go-PFV
'The one who killed the cow left.' (elicitation, EM, BP37-1-s, 16)

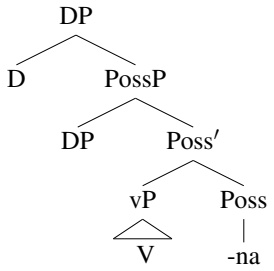
(9) a. Su=pa'mogo **ka=nana tɨ-batsa-na**-gguba katɨ.
DEF.NOM=frog **DEF.ACC=man NSP-kill.SG-NMLZ**-LOC sit
'The frog is sitting on what the man killed.' (elicitation, EM, BP32-7-s, 14)

b. O-no'ona-ggwe nɨmmi **ka=kutsu patsa-dɨ**-ggwe
3SG-LOC-LOC 1PL.EXCL.NOM **DEF.ACC=cow kill.SG-NMLZ**-LOC
mo'o.
walk.DUR.PL
'We walked around the one who killed the cow.'
(elicitation, MS, BP34-3-s, 38)

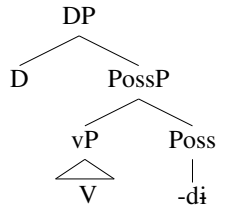
At the same time, deverbal nominalizations have the internal structure of a verbal category. Looking just at the nominalizations in 8 and 9, we can say that they must at least contain a verb, *patsa* 'kill (sg.)'.[3]

Within a phrase-structural theory of syntax, the mixed nature of nominalizations can be represented with structures that are, as Bresnan (1997:4) puts it, 'partitioned into two categorially uniform subtrees such that one is embedded as a constituent of the other'. The verb-like properties of a nominalization come from the verbal projection embedded inside the nominal projection (Kornfilt 1984, Borsley & Kornfilt 2000, Kornfilt & Whitman 2011). For Northern Paiute, I propose that *-na* and *-dɨ* are both realizations of a nominal functional head, which I call Poss, when it takes a vP complement (repeated from 5 above).[4]

(10) a.



b.



The Poss head canonically assigns case to possessors (Szabolcsi 1983, 1987, 1994, Cardinaletti 1998, Alexiadou et al. 2007:556–75), and in possessive descriptions it would, of course, take a nominal complement.[5] I contend, however, that Poss can also take a vP complement in deverbal nominalizations in Northern Paiute. The Poss head that projects a specifier to which it assigns genitive case is realized overtly as the nominalizer *-na* when its complement is a vP. I assume that if Poss is obligatorily present in the extended nominal projection, there must also be a defective version of the head, which does not project a specifier or assign case. This defective Poss would show up in DPs that are not possessive descriptions, and it is realized overtly as *-dɨ* in deverbal nominalizations.

In the early literature on nominalization, nominalizers were taken to be members of a lexical category, not a functional category, as I am proposing. The *-ing* suffix in POSS-

[3] Northern Paiute, like other Numic languages, has a robust system of consonant mutation. The first consonant of any morpheme can take up to three different forms—lenis, fortis, or voiced fortis—depending on what the preceding morpheme is. For instance, the initial consonant in *patsa* 'kill (sg.)' is realized as a lenis stop (*b*) when it is preceded by the nonspecific patient prefix *tɨ-* in 9a, but as a voiced fortis stop (*bb*) when it is preceded by the accusative second-person singular proclitic pronoun: that is, *ɨ=bbatsa* 'kill you (sg.)'. See Babel et al. 2012 for details.

[4] If the *-na* and *-dɨ* nominalizers are terminal nodes in the syntax, they must somehow appear as suffixes on the verb. I remain agnostic about how precisely this happens. In a strongly lexicalist framework, such as LEXICAL-FUNCTIONAL GRAMMAR (LFG) or HEAD-DRIVEN PHRASE STRUCTURE GRAMMAR (HPSG), there are technically distinct ways of treating nominalization, which conceptually end up being quite similar (see, for instance, Bresnan 1997 and Malouf 2000a,b). It should be possible to translate the insights of the current proposal into a lexicalist framework.

[5] The Poss head is sometimes realized overtly in possessive descriptions. In Hungarian, for instance, the possessed noun in a possessive description bears an agreement suffix.

(i) a Péter kalap-ja
the Peter hat-3SG
'Peter's hat' (Szabolcsi 1987:171)

Szabolcsi (1987) argues that this agreement suffix is the overt realization of Poss, which agrees in person and number with the possessor in its specifier. (See Abney 1987:37–53 for discussion of similar languages.)

ing gerunds, for instance, was analyzed as an N that takes a verb phrase complement (Horn 1975, Jackendoff 1977:222f.). This is problematic for a couple of reasons. First, if nominalizers were themselves Ns, they would not have the same type of meaning as other members of this category. We are used to thinking of common nouns as describing a set of entities, but it is clear that nominalizers do not mean this. More importantly, we would expect to be able to substitute a regular noun in the same phrase-structural position as a nominalizer. But Ns do not take verb phrase complements.

The syntax that I am proposing for the two types of deverbal nominalization in Northern Paiute has three important components, which I provide evidence for below:

- The *-na* and *-dɨ* nominalizers embed a verbal constituent that is the size of a vP, and not one that is larger or smaller. In §2.1, I show that the nominalizations they create must contain at least a vP because: (i) the direct object receives accusative case, (ii) they can contain negation, and (iii) they can contain adverbs that occur at the left edge of the verb phrase. They do not, however, contain a larger constituent because they cannot contain elements associated with higher verbal projections like TP and CP.
- The two nominalizers in Northern Paiute realize the Poss head. This predicts that nominalizations with *-na* and *-dɨ* should be able to contain any of the categories located above Poss in the extended nominal projection. In §2.2, I show that both types of nominalization can occur under a determiner (D) and markers of number.
- The *-na* nominalizer projects a specifier to which it assigns genitive case—like the possessor in a possessive description—while *-dɨ* does not. In §2.3, I show that nominalizations with *-na* always do contain a possessor. Then, in §2.4, I show that nominalizations with *-dɨ* never do.

If this proposal is on the right track, there is no construction in English with a structure that is completely identical (though there might be some very similar ones, as I discuss in §5). Consequently, if we want to give translations of Northern Paiute sentences that are grammatical in English, we have to use a variety of different syntactic structures. Often this will involve a relative clause (8a) or a free relative (1b), both of which resemble deverbal nominalizations in Northern Paiute in one significant way: they enable a verbal category to have the distribution of a nominal category.

Why could deverbal nominalizations in Northern Paiute not be given the same syntactic analysis as relative clauses or free relatives in English? At a very superficial level, this question is easy to answer. By definition, a relative clause is a clause that modifies a head noun (Andrews 2007:206), but in both types of nominalization in 1–2, there is no overt head noun. Nor can they be assimilated to free relatives, which are relative clauses marked by a relative pronoun that occurs without a head (van Riemsdijk 2006:340). There is no relative pronoun in either type of nominalization in 1–2.

Like relative clauses or free relatives, however, these nominalizations do describe an individual when they contain a gap. So, the question above can be restated in a different way: Does the same mechanism that derives the interpretation of relative clauses and free relatives in English also derive the individual interpretation of deverbal nominalizations in Northern Paiute? I address precisely this question when we get to the semantics of deverbal nominalization in §3.3 and §4.1, respectively. For now, though, I turn to the evidence for the syntax of deverbal nominalization in Northern Paiute that I am proposing.

2.1. THE VERBAL STRUCTURE OF DEVERBAL NOMINALIZATIONS. Since at least Chomsky 1970, it has been known that deverbal nominalizations form a heterogeneous class

whose members can be more or less verb-like (a fact also recognized in the typological literature; see Comrie 1976, Koptjevskaja-Tamm 1993:6f., Comrie & Thompson 2007: 343–76). Some nominalizations, such as the POSS-*ing* gerund in 3a, resemble a clause to a much greater degree than others, such as the agent nominalization in 4a. If deverbal nominalizations contain a verbal projection embedded inside a nominal one, the 'verbiness' of a nominalization depends on how large the verbal projection it contains is (Kornfilt 1984, Borsley & Kornfilt 2000, Panagiotidis & Grohmann 2009, Kornfilt & Whitman 2011).

The two types of deverbal nominalization in Northern Paiute exhibit some properties of a clause, but not others. I argue that they embed only a vP, because they are able to contain elements associated just with this verbal projection but not larger projections, such as TP or CP.

THE TWO NOMINALIZERS EMBED A vP. There are three pieces of evidence that nominalizations with *-na* and *-dɨ* embed a verbal constituent that is at least as big as a vP. First, direct objects of the verb are realized exactly as they would be in a clause, since v is present to assign them accusative case (Chomsky 2000:123f.). This means that *i=gwana'a* 'my younger brother' in 11a and *ka=toogga* 'the dog' in 11b can appear as direct arguments of the verb without the mediation of an adposition.

(11) a. Nɨɨ i=bidzi'i **i=gwana'a** kia-hu-na
1SG.NOM 1SG.GEN=mother **1SG.GEN=younger.brother** give-PFV-NMLZ
o=ddɨdɨha-hu.
3SG.ACC=steal-PFV
'I stole the thing that my mother gave to my brother.'
(elicitation, EM, BP34-3-s, 50)

b. Su=**ka=toogga** patsa-dɨ wadzi-mia-hu.
DEF.NOM=**DEF.ACC=dog** kill.SG-NMLZ hide-go-PFV
'The one who shot the dog ran away.' (elicitation, MS, BP34-3-s, 45)

Moreover, the definite determiners of the direct objects in 11 bear accusative case and are realized as *ka=*, rather than the nominative *su=*. Accusative case in Northern Paiute is also manifested morphologically on pronouns. The direct object of each nominalization in 12 is the first-person singular accusative proclitic pronoun *i=*.

(12) a. Nɨɨ sɨddobbu'i ka=naatsi'i **i**=dɨɨkwi-na.
1SG.NOM know.DUR DEF.ACC=boy **1SG.ACC**=tell-NMLZ
'I believe what the boy told me.' (elicitation, EM, BP35-4-s, 15)

b. Su=**i**=gwoti-hu-dɨ mia-hu.
DEF.3SG=**1SG.ACC**=shoot-PFV-NMLZ go-PFV
'The one who shot me left.' (elicitation, MS, BP35-4-s, 21)

Second, negation can occur inside both types of nominalization. In Northern Paiute, negation appears either in sentence-initial position, as in 13a, or following the subject at the left edge of the verb phrase, as in 13b (Thornes 2003:328).

(13) a. **Kai** nɨmmi wiupui-gga yaa.
NEG 1PL.EXCL.NOM buckberry-have there
'We have no buckberries this time.' (dialogue, MS, BP23-1-t1, 3)

b. Su=natɨzuabi **kai** togi i=ma-nɨmma.
DEF.NOM=medicine **NEG** correct 1SG.ACC=IP.hand-feel
'The medicine doesn't make me feel quite right.'
(elicitation, Thornes 2003:328)

If we assume that negation adjoins either to TP or to vP—the two positions where negation is attested crosslinguistically (Laka 1990:9–85)—it should be possible inside nominalizations when it adjoins to vP. As shown in 14, this is indeed the case.

(14) a. I=dua **kai** tɨka-na pisa kamma-dɨ.
1SG.GEN=son **NEG** eat-NMLZ good taste-NMLZ
'What my son didn't eat is good tasting.' (elicitation, MS, BP43-2-s, 1)

b. Nɨɨ ka=**kai** mia-dɨ sɨta-ggɨ-ti.
1SG.NOM DEF.ACC=**NEG** go-NMLZ bad-APPL-TNS
'I am angry at the one who won't leave.' (elicitation, EM, BP37-1-s, 24)

I return to the question of whether high negation is possible inside nominalizations shortly.

Finally, adverbs that occur at the left edge of the verb phrase can appear inside both types of nominalization. This includes *pɨdɨ* 'just' (15) and the manner adverb *obida* 'slowly' (16).

(15) a. I=bia **pɨdɨ** saa-na pisa kamma.
1SG.GEN=mother **just** cook-NMLZ good taste
'What my mother just cooked tastes good.' (elicitation, EM, BP34-4-s, 14)

b. Su=**pɨdɨ** katɨ-dɨ oo ya'i-hu.
DEF.NOM=**just** sit-NMLZ there die-PFV
'The one who just sat down died there.' (elicitation, EM, BP35-2-s, 5)

(16) a. Nɨɨ ka=mogo'ni **obida** tɨ-madabbui-na tɨmɨ-hu.
1SG.NOM DEF.ACC=woman **slowly** NSP-cook-NMLZ buy-PFV
'I bought what the woman made slowly.' (elicitation, EM, BP37-3-s, 30)

b. Nɨɨ ka=**obida** mia-dɨ nagi-gga'a.
1SG.NOM DEF.ACC=**slow** go-NMLZ chase-MOT
'I will chase the one who is running away slowly.' (elicitation, MS, BP34-4-s, 16)

Assuming that *pɨdɨ* 'just' and manner adverbs like *obida* 'slowly' adjoin to vP, then their presence inside these nominalizations is expected if they embed a vP.[6]

THE NOMINALIZERS DO NOT EMBED A CP. But how do we know that *-na* and *-dɨ* do not embed a verbal constituent larger than vP? Northern Paiute has an inventory of clitics expressing various modal categories that occur in second position following the first major sentence constituent (Thornes 2003:336–41). The modal clitic *=sakwa*, for instance, can occur after the subject (17a), a fronted direct object (17b), or a sentence-initial adverb (17c).

[6] Aspectual morphology is also possible inside deverbal nominalizations in Northern Paiute. In (i)–(ii), this is the perfective aspect suffix *-hu*, which encodes whether the event described is 'bounded, that is, whether or not either the initial or terminal endpoint is expressed or understood' (Thornes 2003:407).

(i) Nɨɨ tɨmɨ-hu ka=i=naa'a ka=tɨhɨdda pɨ-ma-mma patsa-**hu**-na.
1SG.NOM buy-PFV DEF.ACC=1SG.GEN=father DEF.ACC=deer PRO-LOC-LOC kill.SG-**PFV**-NMLZ
'I bought what my father killed the deer with.' (elicitation, MS, BP34-3-s, 48)

(ii) Usu i=doogga wati-**hu**-dɨ wadzi-mia.
DEM.NOM 1SG.GEN=dog shoot-**PFV**-NMLZ hide-run
'The one who shot my dog ran away.' (elicitation, EM, BP34-3-s, 46)

If aspectual information is generally conveyed by functional heads located roughly between v and T (Cinque 1999), we might actually want to say that the nominalizers *-na* and *-dɨ* embed a slightly larger verbal projection below T. For our purposes, though, the simpler assumption that these nominalizers embed vP suffices.

(17) a. **ɨ**=**sakwa** pida.
2SG.NOM=**MOD** start.fire
'You should start the fire.' (elicitation, EM, BP33-5-s, 47)

b. Himma=**sakwa** tammi madabbui.
thing=**MOD** 1PL.INCL make
'We might make something.' (elicitation, EM, BP34-2-s, 17)

c. Mu'a=**sakwa** tammi t**ɨ**ba'a hani-ga-kw**ɨ**.
tomorrow=**MOD** 1PL.INCL pinenut do-MOT-PROSP
'Tomorrow, we are going to go get pinenuts.' (elicitation, EM, BP33-5-s, 51)

The modal clitic =*sakwa* is ungrammatical when it is the second element in a nominalization with *-na*, as in 18a. It is likewise ungrammatical in the second position of a nominalization with *-d**ɨ***, such as 18b, where it would follow the direct object *t**ɨ**ba* 'pinenut'.

(18) a. *N**ɨɨ** ka=i=dua=**sakwa** t**ɨ**ka-na huna-ggwa wokwoti.
1SG.NOM DEF.ACC=1SG.GEN=son=**MOD** eat-NMLZ outside-LOC throw
intended: 'I threw out what my son should have eaten.'
(elicitation, EM, BP37-1, 58:14)

b. *Su=t**ɨ**ba=**sakwa** hani-d**ɨ** oo s**ɨ**ggwi kat**ɨ**.
DEF.NOM=pinenut=**MOD** do-NMLZ there just sit
intended: 'The one who should be cleaning pinenuts is just sitting over there.' (elicitation, EM, BP37-1, 49:14)

Assuming that modal clitics occupy C—like the highest auxiliary or main verb in verb-second Germanic languages (Koster 1975, among others)—the nominalizations created by *-na* and *-d**ɨ*** cannot embed a verbal constituent as large as CP.

THE NOMINALIZERS DO NOT EMBED A TP. There is also evidence that the nominalizers in Northern Paiute do not embed a TP. The T head itself is not obviously realized overtly in the language by auxiliaries or markers of tense and finiteness.[7] But recall from 13a above that negation in Northern Paiute can occur to the left of the subject in sentence-initial position. Assuming that it is adjoined to TP, nominalizations with *-na* do not embed a TP because they cannot contain high negation.

(19) *Su=**kai** i=dua t**ɨ**ka-na pisa kamma.
DEF.NOM=**NEG** 1SG.GEN=son eat-NMLZ good taste
intended: 'What my son didn't eat tastes good.' (elicitation, MS, BP43-2, 2:36)

Unfortunately, negation is not as useful for probing the structure of nominalizations with *-d**ɨ*** since they do not contain an overt subject—see §4.

More indirectly, though, we can see that neither type of nominalization in Northern Paiute embeds a TP, since they do not contain nominative case. In a normal clause, the

[7] The so-called irrealis suffix *-dua* in Northern Paiute is unable to occur inside nominalizations with *-na* and *-d**ɨ***.

(i) *N**ɨɨ** ka=nana patsa-**dua**-na t**ɨ**mi-hu.
1SG.NOM DEF.ACC=man kill.SG-**IRR**-NMLZ buy-PFV
intended: 'I bought the one that the man will kill.' (elicitation, EM, BP43-2, 9:34)

(ii) *I=kutsu kwati-**dua**-d**ɨ** kwana'a nobi-ka-'yu.
1SG.GEN=cow shoot-**IRR**-NMLZ far house-have-NOM
intended: 'The one who will shoot my cow lives far away.' (elicitation, EM, BP43-2, 7:50)

Thornes (2003:406) writes that its function 'falls under the broad functional domain of *irrealis*. That is, the event is "hypothetical, possible, and uncertain" (Givón 1984)' (original emphasis). If the irrealis suffix realizes T, it would provide more direct evidence that nominalizations in Northern Paiute do not embed TP.

subject receives nominative case, which in 20 is realized on the first-person singular nominative pronoun *nɨ̈ɨ̈* 'I'.

(20) Kai **nɨ̈ɨ̈** oi-tu tɨka-'yu.
NEG **1SG.NOM** there-LOC eat-DUR
'I didn't eat any there.' (narrative, EM, BP24-1-t1, 33)

In nominalizations with *-na*, though, the highest argument of the embedded verb receives not nominative case, but genitive case, like the possessor in a possessive description. Both the external argument of the *-na* nominalization in 21 and the possessor of the possessive description in 22 are realized as the genitive proclitic pronoun *i=* 'my'.

(21) **I**=saa-na ne-hu.
1SG.GEN=cook-NMLZ burn-PFV
'What I was cooking burned.' (elicitation, EM, BP32-9-s, 15)

(22) **I**=babi'i oo habi-nɨmmi.
1SG.GEN=older.brother there lie-around
'My older brother is lying over there.' (elicitation, MS, BP32-4-s, 54)

Nominalizations with *-dɨ*, too, do not contain nominative case. It is ungrammatical for the highest argument of the verb to be realized overtly as the first singular nominative pronoun *nɨ̈ɨ̈* 'I' in 23.

(23) *Su=mogo'ni **nɨ̈ɨ̈** na-dɨka-dɨ natɨ̈ɨ̈na-hu.
DEF.NOM=woman **1SG.NOM** PASS-eat-NMLZ take.away-PFV
intended: 'The woman took away what was being eaten by me.'
(elicitation, EM, BP43-2, 13:13)

Of course, as I show later in §2.4, nominalizations with *-dɨ* are not able to realize the highest argument of the verb overtly at all. For these reasons, I conclude that nominalizations in Northern Paiute only embed a vP.

We should consider the possibility, however, that they embed a TP headed by a defective T head. Such an analysis has been proposed for so-called indicative nominalizations in Turkish, illustrated in 24.

(24) a. Hasan **uşağ-ın oda-yı temizle-diğ-in**-i söyle-di.
Hasan **servant-GEN room-ACC clean-NMLZ-3SG**-ACC say-PST.3SG
'Hasan said **that the servant cleaned the room**.'
b. Hasan **uşağ-ın oda-yı temizle-me-sin**-i söyle-di.
Hasan **servant-GEN room-ACC clean-NMLZ-3SG**-ACC say-PST.3SG
'Hasan said **that the servant should clean the room**.'
(Kornfilt & Whitman 2011:1300)

Kornfilt and Whitman (2011:1300ff.) propose that these nominalizations embed an entire TP because they express a tense contrast between future (24b) and nonfuture (24a). Crucially, however, Kornfilt and Whitman give three reasons that the head of this TP is DEFECTIVE. First, it is only able to convey a restricted range of tense interpretations: future and nonfuture, but not present or past. Second, the verb does not show any signs of φ-agreement. Third, the subject fails to receive nominative case, and instead it bears genitive case. In addition, Kornfilt and Whitman (2012:44) argue that the T head must be defective because adverbs, which do not surface preceding the subject, cannot adjoin to the TP embedded inside the nominalization.

If a defective T head does not assign nominative case—and if it can block negation from adjoining to TP, just as it can an adverb—then it might be possible that the nominalizations in Northern Paiute embed a defective TP. But as far as I know, there is no evidence for this analysis over my proposal that they embed just a vP. Unlike Turkish,

Northern Paiute does not have verbal tense (Thornes 2003:396), and there is no tense contrast inside nominalizations. Fortunately, this analytical uncertainty does not affect the larger claim of this article. Regardless of whether deverbal nominalizations in Northern Paiute embedded a vP or a defective TP, they would not contain nominative case. It is this property, and not the size of the verbal projection itself, that gives rise to the range of event and individual interpretations they can have.

2.2. THE NOMINAL STRUCTURE OF DEVERBAL NOMINALIZATIONS. If the nominalizers *-na* and *-dɨ* are realizations of the Poss head when it takes a vP complement, then any functional categories above Poss in the extended nominal projection should be able to occur outside of a nominalization.

Following much recent work, I assume that Poss is located below D(eterminer) and above N in the extended verbal projection.

(25) D > Poss > N

In this hierarchy, Poss is treated as the analogue of T(ense) in the verbal domain (Szabolcsi 1983, 1987, 1994, Cardinaletti 1998, Alexiadou et al. 2007:556–75). This is clearly inspired by the DP hypothesis, proposed by Abney (1987:54–85) and Horrocks and Stavrou (1987) for English. But D is treated as the nominal correlate of C, rather than the nominal correlate of T. This parallelism between DP and CP was in some ways foreseen by Horrocks and Stavrou, who analyze Spec-DP in Greek as an A′-position that functions as an escape hatch for movement, just like Spec-CP (see also Szabolcsi 1983, 1989 on Hungarian).

The position of Poss below D is needed to account for the location of possessors in a number of different languages, including Northern Paiute. For instance, in Italian, weak and clitic possessive pronouns receive case in Spec-PossP, with the weak possessive pronouns surfacing there as well; the clitics subsequently move even higher to D (Cardinaletti 1998). In Hungarian, both pronominal and nonpronominal possessors can occur below the determiner in Spec-PossP (Szabolcsi 1983, 1987, 1994). In Northern Paiute, too, possessors can surface below D in Spec-PossP. Full DP possessors, as in 26a, and genitive strong pronouns, as in 26b, occur to the right of a determiner.

(26) a. Su=**nana** tua wadzi-mia.
DEF.NOM=**man** son hide-go
'The man's son ran away.' (elicitation, MS, BP32-3-s, 6)

b. Su=nana ka=**nɨka** puggu patsa-hu.
DEF.NOM=man DEF.ACC=**1SG.GEN** horse kill.SG-PFV
'The man killed MY horse.' (elicitation, EM, BP32-3-s, 23)

We have already seen that, as predicted, deverbal nominalizations in Northern Paiute can be embedded under D. The nominalizations in 27 and 28a, repeated from 8a and 9a above, both occur with overt determiners. It does not matter whether the possessor in nominalizations with *-na* is a full DP, as in 28a, or a strong genitive pronoun, as in 28b.

(27) **Su**=kutsu patsa-dɨ mia-hu.
DEF.NOM=cow kill.SG-NMLZ go-PFV
'The one who killed the cow left.' (elicitation, EM, BP37-1-s, 16)

(28) a. Su=pa'mogo **ka**=nana tɨ-patsa-na-gguba katɨ.
DEF.NOM=frog **DEF.ACC**=man NSP-kill.SG-NMLZ-LOC sit
'The frog is sitting on what the man killed.' (elicitation, EM, BP32-7-s, 14)

b. Su=naatsi'i **ka**=nɨka saa-na kai pisapi.
DEF.NOM=boy **DEF.ACC**=1SG.GEN cook-NMLZ NEG like.DUR
'The boy doesn't like the thing I cooked.' (elicitation, EM, BP37-2-s, 13)

There is another nominal category found in Northern Paiute that is not included in the hierarchy in 25: number. Some nouns can be marked for plural number with the suffix *-mɨ* (e.g. *tua* 'son' ~ *tuamɨ* 'sons, children') (Thornes 2003:100). For a small number of nouns—mostly ones referring to humans—plural number can be marked through reduplication (e.g. *moko'ni* 'woman' ~ *mommoko'ni* 'women') or suppletion (e.g. *siadɨmɨ* 'young woman' ~ *sɨsɨa'a* 'young women') (Thornes 2003:103). Neither of these instantiations of number tells us much about the hierarchical position of the nominalizers, because they are realized on the noun itself.

There is, however, another more productive realization of plural number, the prenominal proclitic *mɨ=*. Thornes (2003:131) analyzes the proclitic as a definite determiner, but I do not adopt this analysis since *mɨ=* is not in complementary distribution with other definite determiners. As shown in 29, it occurs immediately below the accusative definite determiner *ka=*.

(29) Su=hudziba ka=**mɨ**=naa'atsi'i-gguba-ggwe yodzi-huka.
DEF.NOM=bird DEF.ACC=**PL**=boy.PL-LOC-LOC fly-INCH.DUR
'The bird flew over the boys.' (elicitation, MS, BP32-4-s, 51)

Instead, I assume that *mɨ=* is the realization of a Num(ber) head located immediately below D. Nominalizations with *-na* and *-dɨ* can show up embedded under the *mɨ=* plural marker.

(30) a. **Mɨ**=i=yadua-na yaa aataa-dɨ.
PL=1SG.GEN=talk-NMLZ there sit.PL-NMLZ
'The ones I was talking to are the ones sitting over there.'
(elicitation, EM, BP32-7-s, 27)

b. Su=nana ka=**mɨ**=aataa-dɨ yadu'i.
NOM=man DEF.ACC=**PL**=sit.PL-NMLZ talk.to.DUR
'The man is talking to the ones who are sitting.'
(elicitation, EM, BP37-2-s, 7)

Just as we would expect if the nominalizers *-na* and *-dɨ* realize Poss, the nominalizations they create can be embedded both under a determiner (D) and under the plural marker (Num).

2.3. AN OBLIGATORY POSSESSOR IN NOMINALIZATIONS WITH *-na*. Though the two nominalizers are similar in many ways, I have proposed that they differ in one important way. While *-na* projects a specifier to which it assigns genitive case, just as the Poss head does in possessive descriptions, *-dɨ* does not.

This makes two predictions. First, nominalizations with *-na* should always contain a DP in Spec-PossP. Indeed, when the embedded predicate is a zero-place predicate—such as the weather verb *tɨɨggwa* 'snow'—the expletive proclitic pronoun *a=* is obligatory.

(31) Nɨɨ *(**a=**)ddɨɨggwa-wɨnɨ-na punni.
1SG.NOM **4.GEN=**SNOW-IPFV-NMLZ see.DUR
'I see it snowing.' (elicitation, EM, BP37-3, 1:14:26)

Second, since Spec-PossP is the position where possessors get genitive case, the DP that occupies this position in a nominalization with *-na* should have the same realization as a possessor. As I show below, this is indeed the case.

GENITIVE PRONOUNS. When the possessor in a possessive description is a full DP, it bears no special morphology. In 26a above, the possessor DP *nana* 'the man' is a bare noun. When the possessor is a pronoun, however, it receives a special realization. As shown in Table 1, there are two series of genitive pronouns in Northern Paiute, in addi-

tion to nominative and accusative pronouns.[8] The genitive strong pronouns are morphologically independent and are used when the possessor is focused, as in 32a, repeated from 26b above. Otherwise, the genitive proclitic pronouns are used, which select the noun heading the possessive description as their host, as in 32b.

	NOMINATIVE	ACCUSATIVE		GENITIVE	
		STRONG	PROCLITIC	STRONG	PROCLITIC
1SG	nɨ̈ɨ	nɨka	ɨ=	nɨga (nɨka)	ɨ=
2SG	ɨ̈ɨ	ɨmi	ɨ=	ɨga (ɨmi)	ɨ=
3SG	isu, usu, masu	ika, uka, maka	u=	iga, uga, maga (ika, uka, maka)	u=
1DU	ta	taka (ta)	ta=	taga (ta)	ta=
1PL.INCL	tammi	tammika (tammi)	ti=	tammiga (tammi)	ti=
1PL.EXCL	nɨmmi	nɨmmika (nɨmmi)	ni=, mi=	nɨmmiga (nɨmmi)	ni=, mi=
2/3PL	ɨmɨ	umɨ	mɨ=	umiga (umɨ)	mɨ=
4			a=		a=

TABLE 1. Nominative, accusative, and genitive pronouns in Northern Paiute (Thornes 2003:155–69); parenthetical forms are from the Mono Lake dialect.

(32) a. Su=nana ka=**nɨka** puggu patsa-hu.
DEF.NOM=man DEF.ACC=**1SG.GEN** horse kill.SG-PFV
'The man killed MY horse.' (elicitation, EM, BP32-3-s, 23)

b. Su=nana **i**=buggu patsa-hu.
DEF.NOM=man **1SG.GEN**=horse kill.SG-PFV
'The man killed my horse.' (elicitation, EM, BP32-3-s, 24)

As an aside, observe that while the strong pronouns can cooccur with a determiner (32a), the proclitic pronouns are in complementary distribution with the determiner (32b). This is not an uncommon pattern crosslinguistically. To derive the same complementarity for genitive clitic pronouns in Italian, Cardinaletti (1998:17) proposes that they receive case in Spec-PossP but then undergo head movement to D. Assuming that head movement is substitution, if genitive proclitic pronouns in Northern Paiute raise to D, then they will be in complementary distribution with determiners.[9] They will occupy D instead of an overt determiner. (Ultimately, though, the genitive proclitic pronouns must be realized with the noun heading the possessive description as their host.)

In nominalizations with *-na*, the highest argument of the verb can be realized as a genitive pronoun, either a strong pronoun (33a) or a proclitic (33b).

(33) a. Su=naatsi'i ka=**nɨka** saa-na kai pisapi.
DEF.NOM=boy DEF.ACC=**1SG.GEN** cook-NMLZ NEG like.DUR
'The boy doesn't like what I cooked.' (elicitation, EM, BP37-2-s, 13)

b. **I**=saa-na ne-hu.
1SG.GEN=cook-NMLZ burn-PFV
'What I was cooking burned.' (elicitation, EM, BP32-9-s, 15)

Note that no other case realization is possible for the highest argument of the verb. Specifically, it cannot receive nominative case—the canonical case realization for subjects—as shown in 34.

[8] The third-person singular pronouns are simply demonstrative pronouns: proximate *i-*, distal *u-*, and topical *ma-*.

[9] See van Riemsdijk 1998 for discussion of head movement as substitution vs. adjunction.

(34) *N**ɨɨ** saa-na ne-hu.
1SG.NOM cook-NMLZ burn-PFV
intended: 'What I was cooking burned.' (elicitation, EM, BP43-2, 11:14)

But how do we know that these arguments are not being assigned accusative case? As Table 1 shows, the proclitic pronouns are identical in both the genitive and accusative cases. Moreover, in the Mono Lake dialect of Northern Paiute, from which most of my data comes, the distinction between the accusative and genitive pronouns has been neutralized completely in both the proclitic and strong pronoun series. Unfortunately, in the resources available to me on other varieties of Northern Paiute, there are no attested examples of a nominalization with *-na* where the highest argument is a strong pronoun. From the examples in 33–34, all we can conclude, then, is that there is no nominative case inside these nominalizations, and that it is POSSIBLE that they contain a possessor.

Fortunately, however, all varieties of Northern Paiute have a genitive reflexive anaphor *t**ɨ***=, which Thornes (2003:175) calls '[t]he most important distinction between the possessor proclitics and transitive object proclitics'. In 35, the anaphor is the possessor of the noun *toogga* 'dog'. Crucially, as shown in 36, it is ungrammatical in direct object position.

(35) Su=naatsi'i$_1$=b**ɨ**no'o ka=**t**i**ɨ**=$_1$ddoogga haan**ɨ**; kuyaa
DEF.NOM=boy=PTC DEF.ACC=**REFL**=dog scold far
o=dda-yaggw**ɨ**ne'e-hu tabbu'a.
3SG.ACC=IP.foot-kick-PFV look.like
'The boy$_1$ is scolding his$_1$ dog, and then he kicks him to go away.'
(prompted narrative, MS, BP24-1-t3, 41)

(36) *Su=naatsi'i$_1$ **t**i**ɨ**=$_1$bbunni.
DEF.ACC=boy **REFL**=see.DUR
intended: 'The boy$_1$ sees himself$_1$.' (elicitation, EM, BP37-2, 36:35)

This anaphor, which only functions as a possessor, can be the highest argument of a nominalization with *-na*.

(37) Oo uu ka=**t**i**ɨ**=$_1$t**ɨ**-patsa-na usu idza$_1$ p**ɨɨ** owi
there thusly DEF.ACC=**REFL**=NSP-kill.SG-NMLZ DEM.NOM coyote 3SG there
manai čaisi u-ma koggw**ɨ**-u.
do then that-LOC take.away-PFV
'So it was of his$_1$ kill, that Coyote$_1$, he took it over then and took it away.'
(narrative, Thornes 2003:484)

In 37, the agent of the nominalized verb *patsa* 'kill (sg.)' is projected as the genitive reflexive anaphor and corefers with the subject *usu idza* 'that Coyote'.

CASE ON ADJECTIVES. The case realization of adjectives shows more indirectly that nominalizations with *-na* contain a possessor. When a possessor contains an adjective, it receives the case—either nominative or accusative—of the ENTIRE possessive description.

(38) a. [$_{DP}$ [$_{DP}$ **Miitsi-'yu** nana] dua] habi-hu.
short-NOM man son lie-PFV
'The short man's son fell down.' (elicitation, EM, BP32-3-s, 18)

b. N**ɨɨ** [$_{DP}$ ka=[$_{DP}$ **miitsi-ggu** nana] toogga] pisapi.
1SG.NOM DEF.ACC=**short-ACC** man dog like.DUR
'I like the short man's dog.' (elicitation, EM, BP37-2-s, 18)

The adjective *miitsi* 'short' gets the nominative case suffix *-'yu* in a possessive description that is the subject (38a), and the accusative case suffix *-ggu* in a possessive de-

scription that is the direct object (38b). When the highest argument in a nominalization with *-na* contains an adjective, it exhibits the same pattern of case marking.

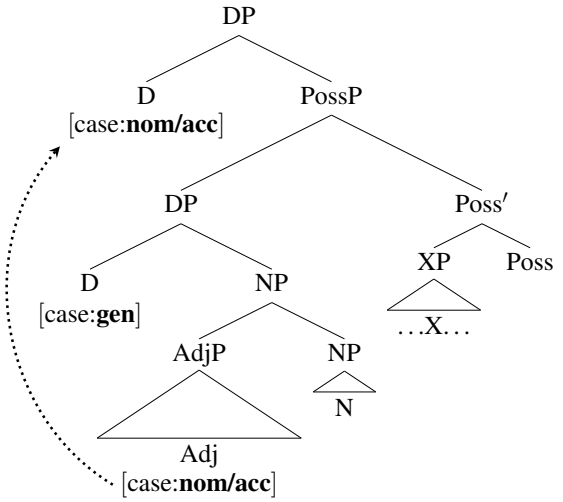
(39) a. [$_{DP}$ Su=[$_{DP}$ **miitsi-'yu** nana] saa-na] pisa kamma.
DEF.NOM=**short-NOM** man cook-NMLZ good taste
'What the short man cooked tastes good.' (elicitation, EM, BP37-2-s, 19)

b. N**ii** [$_{DP}$ ka=[$_{DP}$ **waha-ggu** momoko'ni] saa-na] pisapi.
1SG.NOM DEF.ACC=**two-ACC** women cook-NMLZ like.DUR
'I like what the two women cooked.' (elicitation, EM, BP32-8-s, 9)

An adjective (or numeral) is realized with nominative case in 39a when it modifies the highest argument of a nominalization in subject position, and it is realized with accusative case in 39b when it modifies the highest argument of a nominalization in direct object position.

Without doubt, this pattern of case concord is somewhat unusual, since the adjective does not agree with the closest case-bearing head. Assuming that DPs get case by valuing a case feature on D, when an adjective is contained within a possessor, the closest D that can value the adjective's own case feature should be the one that heads the possessor DP. But as we have seen, an adjective contained within the possessor does not agree in genitive case.

(40)



I suspect that this pattern might arise because adjectives are formally deficient in Northern Paiute. Say that the case feature on an adjective can only have certain values. Specifically, it can be valued as either nominative or accusative, but not genitive. When an adjective occurs inside a possessor, then, the closest head bearing a case feature that it can agree with will not be the D heading the possessor DP. Rather, it will be the D heading the entire possessive description.[10]

POSSESSOR EXTRACTION AND PIED-PIPING. Possessors in Northern Paiute do not obey the LEFT BRANCH CONDITION. They can be extracted through WH-movement to sen-

[10] Deal (2013:409–13) argues for Nez Perce that genitive case is assigned at PF to DPs that lack nominative or accusative case for some reason. Assuming that Northern Paiute works the same way, even if the entire possessor does receive genitive case later on, at the point in the derivation when nominative or accusative case is assigned, there would be no intervening case feature for adjectives. Consequently, they would be assigned the same case as the entire possessive description.

tence-initial position, as in 41a. Wh-possessors can also optionally pied-pipe the rest of the possessive description along with them, as shown in 41b.

(41) a. **Haga**$_1$ **ɨɨ** [$_{DP}$ t$_1$ **kaadzi**] pisapi?
who.GEN 2SG.NOM **car** like.DUR
'Whose car do you like?' (elicitation, EM, BP33-5-s, 19)

b. [$_{DP}$ **Haga** **kaadzi**]$_1$ **ɨɨ** t$_1$ pisapi?
who.GEN car 2SG.NOM like.DUR
'Whose car do you like?' (elicitation, EM, BP33-5-s, 18)

The highest argument in nominalizations with *-na* exhibits the same pattern. When it is a wh-phrase, it can be extracted by itself (42a) or the rest of the nominalization can raise with it to sentence-initial position (42b).

(42) a. **Haga**$_1$ su=nana [$_{DP}$ t$_1$ **tɨ-batsa-na**] tɨdɨha-huka?
who.GEN DEF.NOM=man **NSP-kill.SG-NMLZ** steal-INCH.DUR
'Whose kill did the man steal?' (elicitation, EM, BP33-5-s, 15)

b. [$_{DP}$ **Haga** **tɨ-batsa-na**]$_1$ su=nana t$_1$ wadzi-hani-huka?
who.GEN NSP-kill.SG-NMLZ DEF.NOM=man hide-do-INCH.DUR
'Whose kill did the man take away?' (elicitation, EM, BP33-5-s, 13)

This optional pied-piping of nominalizations is expected if the wh-phrase in 42 is a possessor.

2.4. No possessor in nominalizations with *-dɨ*. If *-dɨ* realizes the Poss head when it does not project a specifier, then the nominalizations it creates should never contain a possessor. Indeed, adding a possessor to the nominalization in 43a is ungrammatical, regardless of whether it is a genitive pronoun (43b), a nominative pronoun (43c), or a full DP (43d).

(43) a. Su=mogo'ni **ka=na-dɨka-dɨ** natɨɨna-hu.
DEF.NOM=woman **DEF.ACC=PASS-eat-NMLZ** take.away-PFV
'The woman took away what was being eaten.'
(elicitation, MS, BP37-2-s, 29)

b. *Su=mogo'ni **ɨ=na-dɨka-dɨ** natɨɨna-hu.
DEF.NOM=woman **1SG.GEN=PASS-eat-NMLZ** take.away-PFV
intended: 'The woman took away what was being eaten by me.'
(elicitation, EM, BP37-2, 57:04)

c. *Su=mogo'ni **nɨɨ** **na-dɨka-dɨ** natɨɨna-hu.
DEF.NOM=woman **1SG.NOM PASS-eat-NMLZ** take.away-PFV
intended: 'The woman took away what was being eaten by me.'
(elicitation, EM, BP43-2, 13:13)

d. *Su=mogo'ni **ka=nana** **na-dɨka-dɨ** natɨɨna-hu.
DEF.NOM=woman **DEF.ACC=man PASS-eat-NMLZ** take.away-PFV
intended: 'The woman took away what was being eaten by the man.'
(elicitation, EM, BP37-2, 1:01:17)

It does not make a difference if the nominalization describes an event as opposed to an individual. The nominalization in 44a becomes ungrammatical when a genitive proclitic pronoun is added, as shown in 44b.

(44) a. Nɨɨ **ka=tɨɨggwa-dɨ** punni.
1SG.NOM **DEF.ACC=snow-NMLZ** see.DUR
'I see it snowing.' (elicitation, EM, BP37-2-s, 32)

b. *Nɨɨ **a=ddɨɨggwa-dɨ** punni.
1SG.NOM **4.GEN=snow-NMLZ** see.DUR
intended: 'I see it snowing.' (elicitation, EM, BP37-2, 1:04:03)

Unlike the parallel nominalization with *-na* in 31, the nominalization with *-dɨ* in 44b is ungrammatical because it contains a possessor.

I have argued that the deverbal nominalizers *-na* and *-dɨ* realize Poss—the nominal functional head that canonically assigns case to possessors—when it takes a vP complement. This accounts for the noun-like external distribution of the nominalizations they create, as well as their verb-like internal structure. In addition, I argued that while *-na* projects a specifier to which it assigns genitive case, *-dɨ* is defective and does not project a specifier position at all. With this syntax for the two types of deverbal nominalization in Northern Paiute, I now go on to show how they are able to describe both events and individuals.

3. The interpretation of nominalizations with *-na*. Some basic examples of nominalizations with *-na* are presented again below. They can describe an event (45) or an individual participating in an event (46).

(45) a. **Su=nana ka=toogga patsa-na** idzi'i.
DEF.NOM=man DEF.ACC=dog kill.SG-NMLZ yesterday
'The man's killing the dog happened yesterday.'
(elicitation, MS, BP32-4-s, 29)

b. N**ɨɨ ka=Grace hubia-du-na** pisapi.
1SG.NOM **DEF.ACC=Grace song-make-NMLZ** like.DUR
'I like Grace's singing.' (elicitation, EM, BP32-9-s, 7)

c. N**ɨɨ ka=mogo'ni tɨba'a saa-na** ikwi.
1SG.NOM **DEF.ACC=woman pinenut cook-NMLZ** smell
'I smell the woman cooking pinenuts.' (elicitation, EM, BP32-7-s, 35)

(46) a. N**ɨɨ ka=i=naa'a saa-na** tɨka.
1SG.NOM **DEF.ACC=1SG.GEN=father cook-NMLZ** eat
'I ate the thing that my father cooked.' (elicitation, EM, BP37-2-s, 35)

b. **Ika i=naa'a pɨ-kuba katɨ-na** n**ɨɨ** tɨmɨ-dua.
DEM.ACC 1SG.GEN=father PRO-LOC sit-NMLZ 1SG.NOM buy-IRR
'I will buy that one my father is sitting on.' (elicitation, MS, BP34-5-s, 6)

The nominalizations in 46 clearly refer to individuals, since the matrix verbs are predicates that can only hold of individuals. The ones in 45, however, deserve a bit more scrutiny.

There are two arguments that nominalizations created by *-na* do, in fact, describe events. First, they can serve as the argument to a predicate of events. In 45a, for instance, the nominalization in subject position is being predicated of the temporal adverb *idzi'i* 'yesterday'. Accordingly, the sentence entails that an event of the man killing the dog occurred during a certain time interval. (Note that Northern Paiute is a null copula language, so the adverb can function as a predicate without an overt verb.) In addition, in 45c, the nominalization is the direct object of the perception verb *ikwi* 'smell', so the sentence entails that the speaker perceives an event of the woman cooking pinenuts through smell. This is truth-conditionally distinct from simply perceiving one of the individuals participating in the event. If you perceive an event of the woman cooking pinenuts through smell, you do not necessarily perceive either the woman or the pinenuts.

How do we know that the nominalization in 45c really is the direct object of the perception verb? It is not obviously impossible for the accusative determiner *ka=* in 45c to be parsed with the possessor *mogo'ni* 'woman'.[11] But recall from §2.3 that genitive

[11] For this reason, we might think that the possessor *mogo'ni* 'woman' is itself an object of *ikwi* 'smell'. If perception verbs in Northern Paiute were raising-to-object predicates, 45c would have the following structure.

clitic pronouns are in complementary distribution with overt determiners. When the possessor in 45c is replaced with a genitive clitic pronoun, the accusative determiner cannot be overt, as shown by the contrast between 47a and 47b.

(47) a. Nɨɨ **ɨ**=hubia-du-na naka.
1SG.NOM **2SG.GEN**=song-make-NMLZ hear
'I hear you singing.' (elicitation, EM, BP48-1-s7)

b. *Nɨɨ **ka=ɨ**=hubia-du-na naka.
1SG.NOM **DEF.ACC=2SG.GEN**=song-make-NMLZ hear
intended: 'I hear you singing.' (elicitation, EM, BP48-1, 13:46)

c. Nɨɨ **ka=i=bia** hubia-du-na naka.
1SG.NOM **DEF.ACC=1SG.GEN=mother** song-make-NMLZ hear
'I hear my mother singing.' (elicitation, MS, BP48-1-s8)

Of course, when the subject is a full DP, the accusative determiner can be overt, as shown by 47c or by the original example in 45c. This distribution follows straightforwardly if the accusative determiner forms a constituent with the entire nominalization, which is serving as the direct object of the perception verb.

The second argument that the nominalizations in 45 do indeed describe events comes from the fact that the nominalizer *-na* can apply to zero-place predicates, such as the weather verb *pauma* 'rain'.

(48) Nɨɨ **a=bbauma-wɨni-na** naka.
1SG.NOM **4.GEN=rain-IPFV-NMLZ** hear
'I hear it raining.' (elicitation, MS, BP37-1-s, 6)

(i) Nɨɨ [$_{DP}$ ka=mogo'ni]$_1$ [$_{DP}$ t$_1$ tɨba'a saa-na] ikwi.
1SG.NOM DEF.ACC=woman pinenut cook-NMLZ smell
'I smell the woman cooking pinenuts.'

The subject of the nominalization would raise—here, string-vacuously—into an object position of the perception verb. There are three pieces of evidence, however, that 45c is not in fact a raising-to-object construction.

First, if the subject of the nominalization raised to be an object of the verb, when it is a proclitic pronoun, you might expect it to cliticize to the perception verb. In fact, a proclitic pronoun attaches to the nominalized verb, as shown in (ii), just as if it were its possessor.

(ii) Nɨɨ ka=toogga **ɨ**=ggwiba-na naka.
1SG.NOM DEF.ACC=dog **2SG.GEN**=hit-NMLZ hear
'I hear you hitting the dog.' (elicitation, MS, BP37-1-s, 9)

This might not be a problem for the raising-to-object analysis if proclitic pronouns are constrained by locality and hence cannot raise out of the nominalization. There are, however, languages that do allow pronominal clitics to raise into a higher verbal domain, for example, in possessor raising.

Second, a raising-to-object analysis incorrectly predicts that 47c below should be ungrammatical. The subject of this nominalization, *i=bia* 'my mother', is a possessive description whose possessor is a genitive clitic pronoun. If this DP did raise to be an object of the verb, it should not be able to bear the accusative determiner—contrary to fact. As we have seen, genitive clitic pronouns cannot cooccur with overt determiners. More generally, such an analysis would not be able to explain the complementary distribution of the determiner in 47.

Third, if the subject in 45c were the raised object of the verb *ikwi* 'smell', it would occur in the wrong linear position. Derived objects, such as the beneficiary added in an applicative construction, as in (iii), occur immediately before the verb, to the right of the underlying direct object (Thornes 2003:307).

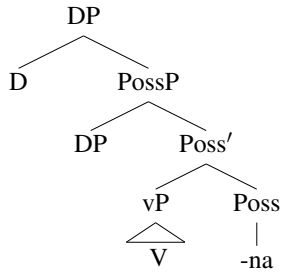
(iii) Nɨɨ ka=huba **i=bia** saa-ggɨ-ti.
1SG.NOM DEF.ACC=soup **1SG.GEN=mother** cook-APPL-TNS
'I cooked soup for my mother.' (elicitation, EM, BP34-2-s, 35)

In contrast, the hypothetical raised object in (i) would occur farther to the left, preceding the nominalization inside which it originated.

Assuming that this predicate does not take any individual-type arguments, the nominalization in 48 must describe an event, because the speaker perceives an event of raining through hearing.

Whether they describe an event or an individual, nominalizations with *-na* have the same basic structure, shown schematically in 49 (repeated from 5a and 10a above). The nominalizer overtly realizes Poss when it takes a vP complement, and it projects a specifier position to which it assigns genitive case.

(49)



Before getting to the interpretation of nominalizations with *-na*, I start by showing in §3.1 that the possessor is always interpreted as an argument of the nominalized verb. Consequently, I propose that it originates inside the embedded vP and raises to Spec-PossP to get case. Then, moving on to the event interpretation in §3.2, I demonstrate that it comes for free, in a manner of speaking, when all of the embedded verb's individual-type arguments are saturated. In contrast, the individual interpretation arises as a special case, when one of the verb's arguments is saturated by a resumptive pronoun. I argue in §3.3 that because Northern Paiute has operators that can abstract over the variables contributed by these pronouns, nominalizations created by *-na* describe an individual. Moreover, the antilocality property of resumptive pronouns accounts for why nominalizations with *-na* only describe individuals that are NOT the highest argument of the verb.

3.1. THE POSSESSOR IN DEVERBAL NOMINALIZATIONS. The possessor bears the theta role of the highest argument of the verb. For instance, in 50, repeated from 45c above, the possessor is the agent of the transitive verb *saa* 'cook'.

(50) N**ɨɨ** **ka=mogo'ni** **tɨba'a** **saa-na** ikwi.
1SG.NOM **DEF.ACC=woman pinenut cook-NMLZ** smell
'I smell the woman cooking pinenuts.' (elicitation, EM, BP32-7-s, 35)

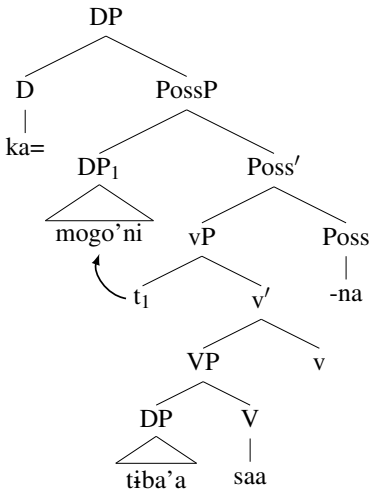
This interpretation is obligatory. In the context in 51, where the possessor *i=naa'a* 'my father' does not satisfy the agent entailments of the transitive verb *patsa* 'kill (sg.)', the sentence is infelicitous.

(51) [Context: My father was driving along when he sees a dead deer along the side of the road. He picks it up and brings it home.]
#Mu'a tammi **i=naa'a** **ti-batsa-na** tɨka-kwɨ.
tomorrow 1PL.INCL **1SG.GEN=father NSP-kill.SG-NMLZ** eat-PROSP
'Tomorrow we are going to eat what my father killed.'
(elicitation, EM, BP33-5, 44:59)
(EM: 'That wasn't true. He just telling lie, I guess. Just fooling them or something.')

The native speaker reported that the sentence is not true in the context given, because the speaker's father was not the agent of the killing event. The deer was already dead when he found it.

This property of nominalizations with *-na* follows straightforwardly if the possessor originates inside the embedded vP as an argument of the verb. The event nominalization in 50, for instance, has the structure in 52.

(52)



Because *saa* 'cook' is transitive, v assigns accusative case to the direct object. The possessor DP *mogo'ni* 'woman' originates in Spec-vP, where it receives the agent theta role from the embedded verb *saa* 'cook'. Since the nominalization does not contain T, and hence does not contain nominative case, the possessor can only get case by raising to Spec-PossP, where it is assigned genitive case.

This movement takes place overtly. The possessor in nominalizations with *-na* occurs to the left of adverbs that themselves occur at the left edge of the verb phrase.

(53) I=bia **obida** ka=tɨba'a sa'a.
1SG.GEN=mother **slowly** DEF.ACC=pinenut cook.DUR
'My mother cooked the pinenuts slowly.' (elicitation, EM, BP37-1-s, 20)

(54) I=bia **obida** saa-na nɨɨ tɨka.
1SG.GEN=mother **slowly** cook-NMLZ 1SG.NOM eat
'I ate what my mother cooked slowly.' (elicitation, EM, BP37-1-s, 21)

In a basic SOV sentence like 53, the manner adverb *obida* 'slowly' occurs to the left of the direct object, at the left edge of the verb phrase. Assuming that manner adverbs adjoin to vP (Pollock 1989:366), the agent of the nominalization in 54 must have raised to Spec-PossP, since it appears to the left of *obida*.

While the possessor is the agent in 50, under my account it need only be the HIGHEST argument of the verb. Indeed, when *-na* embeds an unaccusative or passive verb, the possessor bears a different theta role.

(55) a. **Su=toogga akwisiyai-na** i=masɨa-hu.
DEF.NOM=dog sneeze-NMLZ 1SG.ACC=scare-PFV
'The dog's sneezing scared me.' (elicitation, EM, BP33-3-s, 7)

b. **I=bia na-bida-ggɨ-na** nai-hu.
1SG.GEN=mother PASS-make.fire-APPL-NMLZ burns-PFV
'The fire that was built for my mother burned.'
(lit. 'What was fire-built for my mother burned.')
(elicitation, EM, BP34-2-s, 43)

In 55a, the possessor is the patient of *akwisiyai* 'sneeze'; in 55b, it is the beneficiary *i=bia* 'my mother', which is added by the applicative suffix before the predicate is pas-

sivized. Since these predicates lack an external argument, accusative case is not assigned, in accordance with BURZIO'S GENERALIZATION. It is consequently an internal argument of the verb that lacks case and raises to Spec-PossP.

We might wonder, if the highest argument in a deverbal nominalization occupies Spec-PossP, whether it also has the semantics of a possessor. Of course, the possession relation in possessive descriptions is notoriously variable. The possessor can stand in a variety of superficially different semantic relations to the possessee, determined in part by the noun that heads the possessive description. In 56a, for instance, the possessor *Kaabidzi* 'Kaabidzi' is interpreted as the spouse of the possessee, because the noun *nodɨkwa* 'wife' is inherently relational.

(56) a. **kaabidzi nodɨkwa**
Kaabidzi wife
'Kaabidzi's wife' (Thornes 2003:145)

b. [Context: My younger brother and sister each have a frog.]
I=gwana'a **pa'mogo** isikwidda-dɨ.
1SG.GEN=younger.brother frog be.brown-NMLZ
'My younger brother's frog is brown.' (elicitation, EM, BP34-5, 17:40)

c. [Context: I go out hunting with my father and my younger brother. Only I have a gun. My father and younger brother each see a different deer at the same time.]
Nɨɨ **i=naa'a** **tɨhɨdda** patsa-hu.
1SG.NOM **1SG.GEN=father deer** kill.SG-PFV
'I shot my father's deer.' (elicitation, MS, BP37-3, 1:13:46)

For nouns that are inherently nonrelational, the possession relation is context-dependent and varies with the context of utterance. In 56b, an ownership relation holds between the speaker's younger brother and the frog; in 56c, a seeing relation holds between the speaker's father and the deer.

To account for this variability, I assume, following Szabolcsi (1994), that the Poss head itself does not contribute the content of the possession relation. When the possessee is an inherently relational noun, the possessor in Spec-PossP stands in whatever relation is described by the noun itself (or is added by a nominal functional head on par with v in the verbal domain; Valois 1991:15f., Sportiche 1998:216–30, Carstens 2000, Radford 2000, Bowers 2011).[12] For deverbal nominalizations in Northern Paiute—which are parallel to inherently relational nouns, because the semantic relationship between the possessor and the verb is constant and does not vary—Poss would consequently not add any additional meaning. The possessor receives the theta role of the highest argument of the verb, as it starts out inside the vP and then raises to Spec-PossP where it receives case.

If the Poss head in nominalizations with *-na* obligatorily projects a specifier but does not itself impose any semantic requirements on it, then it should be possible for that position to be filled by an expletive pronoun. In a normal clause, zero-place predicates,

[12] Szabolcsi still takes the Poss head to be the formal theta-assigner for the purposes of the THETA CRITERION. The content of the theta role assigned to the possessor in Spec-PossP must then somehow be transmitted from the possessee when it is an inherently relational noun. I do not have too much to say here about formal theta role assignment—if it exists at all—except to observe, as Szabolcsi herself does (1994:192f.), that this would require abandoning the assumption that theta roles are always assigned to DPs in their base-merged position (at D-structure), since the possessor originates low and raises to Spec-PossP.

such as the weather verb *tiiggwa* 'snow' in 57, do not require an overt subject. But when the same verb is nominalized with *-na*, as in 58, the expletive *a=* is obligatory.

(57) Tiiggwa-winni.
snow-IPFV
'It's snowing.' (elicitation, MS, BP32-4-s, 13)

(58) Nii *(a=)ddiiggwa-wini-na punni.
1SG.NOM **4.GEN=snow-IPFV-NMLZ** see.DUR
'I see it snowing.' (elicitation, EM, BP37-3, 1:14:26)

In its contentful use, the fourth-person genitive proclitic pronoun *a=* identifies an indefinite antecedent. In its expletive use, it fills Spec-PossP and checks genitive case when there is no DP that can raise there.

Before moving on, I should address the issue of where the context-dependent possession relation comes from with nonrelational nouns. To some degree, we do not have to worry about this here, since the possession relation in deverbal nominalizations with *-na* is determined entirely by the embedded verb. But as I understand Szabolcsi (1994: 197), when the possessee is a nonrelational noun, the context-dependent possession relation is introduced by a process of derivational morphology that takes an inherently nonrelational noun and turns it into a relational noun. A similar idea is found in the semantics literature, where the context-dependent possession relation is introduced through a type-shifting operation that applies to nonrelational nouns (Pustejovsky 1993, Jensen & Vikner 1994, Partee & Borschev 1998). This permits a uniform syntax and semantics for possessors, both when the possessee is inherently relational and nonrelational, and in deverbal nominalizations.[13]

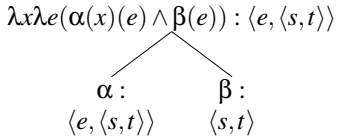
3.2. THE EVENT INTERPRETATION. Since *-na* projects a specifier position to which it assigns genitive case, all of the embedded verb's individual-type arguments can be saturated, even though there is no nominative case inside the nominalization. The event interpretation of *-na* follows straightforwardly from this syntax, once some additional assumptions are in place about how verb phrases are interpreted.

Since Davidson 1967, it has frequently been assumed that predicates take an event argument in addition to their regular complement of individual-type arguments. It is this event argument that Kratzer (1996) argues holds the verb phrase together semantically. In her neo-Davidsonian event semantics, both V and v denote relations between individuals and events. V relates the internal arguments to an event, and v relates the external argument to an event. These predicates of events are combined by a rule of EVENT IDENTIFICATION, which Kratzer (1996:122) defines as follows.[14]

[13] However, such an approach might not be able to derive the contrast between relational and nonrelational nouns when the possessor occurs AFTER the noun in the Norman *of*-genitive: for example, *a child of John* vs. **a firetruck of John* (Barker 1995:9, Partee 1997:465). See Partee & Borschev 2002 and Barker 2011 for discussion of precisely this question.

[14] I assume a type-theoretic, compositional, extensional semantics that has, in addition to other rules defined in the text, a rule of FUNCTION APPLICATION used for interpreting complex constituents (Heim & Kratzer 1998:49). The truth conditions of a sentence, and the contribution that subparts of a sentence make to those truth conditions, are represented by a predicate logic metalanguage with the lambda calculus. Constants are bolded. I use x, y, z, x', y', and z' as variables over individuals (type e); e, e', and e'' as variables over events (type s); and, p, q, and r as variables over truth values (type t). The only higher-order variables are f, g, and h, which range over functions from either individuals or events to truth values (type $\langle e, t\rangle$ or $\langle s, t\rangle$).

(59) EVENT IDENTIFICATION



Event identification takes one function of type ⟨*e*, ⟨*s*, *t*⟩⟩ (a function from individuals to functions from events to truth values) and another function of type ⟨*s*, *t*⟩ (a function from events to truth values) and returns a function of type ⟨*e*, ⟨*s*, *t*⟩⟩. In other words, event identification combines two predicates of events by abstracting over both of their event arguments.

The semantic composition of the event nominalization in 50 can then proceed as in Figure 1.

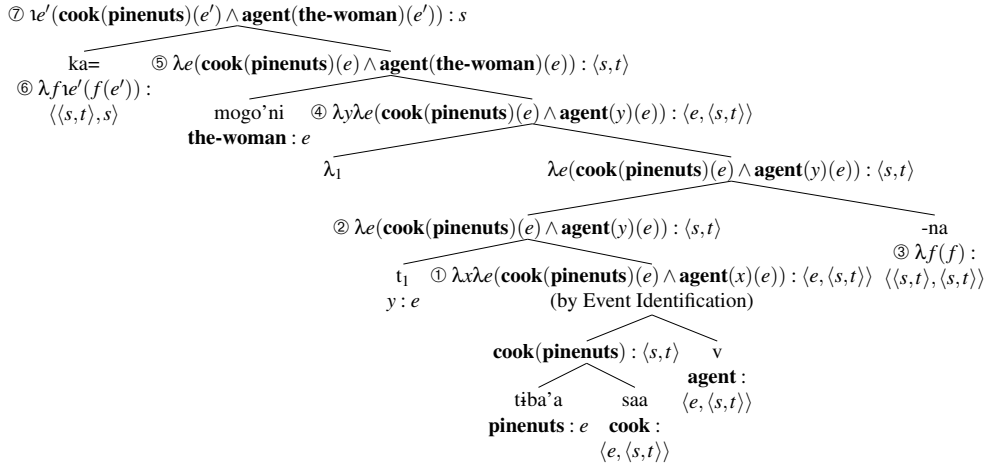


FIGURE 1. Semantic composition of the event nominalization in 50.

Event identification combines the predicates of events expressed by the VP and v to produce a predicate of events whose sole individual argument is the external argument (①). Assuming that traces are interpreted as variables, this argument is saturated by the trace left behind by the DP *mogo'ni* 'the woman' when it raises to Spec-PossP.

This leaves only the predicate's event argument unsaturated (②). In clauses, the event variable is existentially bound, so that the sentence has a truth value as its extension. I assume that this operation applies at the vP level through an optional operation of EXISTENTIAL CLOSURE. In a nominalization where all individual-type arguments have been saturated, existential closure cannot apply. Existentially binding the event argument would produce a type mismatch, since the embedded vP must still combine with the remainder of the noun phrase.[15]

In particular, the determiner calls for a set of entities as its argument (Barwise & Cooper 1981). I assume that the nominalizer *-na* itself denotes the identity function, be-

[15] Alternately, following Hacquard (2010), it might be possible for the event argument to be saturated at the vP level by an event variable. For the nominalization to compose successfully, this event variable would still not be existentially bound. Instead, it would be abstracted over to create a set of events that is able to combine with the determiner. While this would make the composition of event nominalizations more parallel to the composition of individual nominalizations—see §3.3 below—I can think of no empirical reason to favor it.

cause it does not contribute anything to the semantics of nominalization (③). It takes a set of entities and returns a set of entities. Following λ-abstraction over the trace in Spec-vP (④), the DP in Spec-PossP saturates this argument to produce the set of events of the woman cooking pinenuts (⑤). The definite determiner *ka=* takes this set and returns its unique member (⑥). The entire DP refers to the event of the woman cooking pinenuts (⑦).[16]

The event interpretation arises, then, because the determiner requires a set of entities to apply to. By making an additional case available inside nominalizations, *-na* permits all of the embedded predicate's individual arguments to project. Once the individual arguments have all been saturated, only the event argument is left open. Consequently, nominalizations with *-na* describe an event. This interpretation comes for free, in some sense, because of the syntax of *-na* itself. It embeds a vP, and it projects a specifier to which it assigns genitive case.

3.3. THE INDIVIDUAL INTERPRETATION. Leaving open the embedded predicate's event argument is not the only way to fashion a set of entities. There can also be a gap in the position of an individual argument, as in 60, repeated from 46 above. When this happens, the nominalization describes an individual.

(60) a. N**ɨɨ** **ka=i=naa'a** **saa-na** t**ɨ**ka.
1SG.NOM **DEF.ACC=1SG.GEN=father cook-NMLZ** eat
'I ate the thing that my father cooked.' (elicitation, EM, BP37-2-s, 35)

b. **Ika** **i=naa'a** **pɨ-kuba** **kati-na** n**ɨɨ** t**ɨ**m**ɨ**-dua.
DEM.ACC **1SG.GEN=father** **PRO-LOC** **sit-NMLZ** 1SG.NOM buy-IRR
'I will buy that one my father is sitting on.' (elicitation, MS, BP34-5-s, 6)

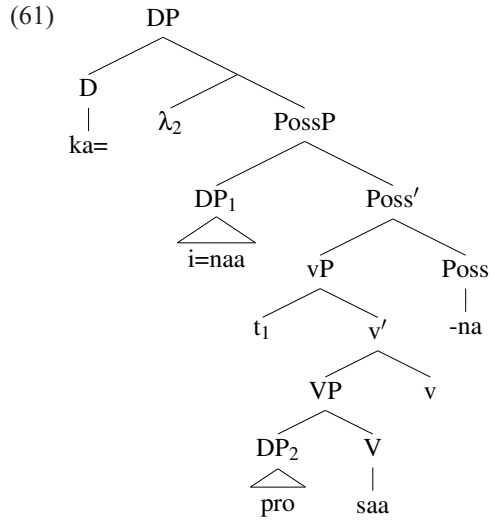
In 60a, there is no overt DP projected as the internal argument of the verb *saa* 'cook', and in 60b, the argument of the postposition *-kuba* is projected as the pronominal element *pɨ*.

The nominalizations in 60 are reminiscent of relative clauses, which contain an individual argument gap and denote a set of individuals. This kind of configuration is usually taken to arise from an A′-dependency holding between an operator and an expression in argument position that semantically contributes a variable. In relative clauses in English, this variable, which is bound by the operator, is introduced by the A′-trace of the operator itself (Chomsky 1977:87). I assume here that the individual interpretation for nominalizations with *-na* also arises from an A′-dependency of some kind. But it does not arise through movement, as in English relative clauses. Rather, I present evidence that the A′-dependency arises when a λ-operator binds a resumptive pronoun, which contributes the variable.

Under my proposal, the nominalization in 60a has the structure in 61; a null pronoun occupies the direct object position.

[16] I have assumed a Davidsonian conception of events. But there might be advantages to thinking of events as minimal situations. See Portner 1992:88–145 and Zucchi 1993 for discussion specifically related to nominalization.

(61)



The resumptive pronoun enters into an A′-dependency with a λ-operator, which is adjoined to the complement of D for semantic reasons. The determiner requires a set of entities as its argument, which its complement can provide only if there is a λ-operator to bind the variable contributed by the pronoun in its scope. The nominalization in 60b with a gap in an oblique position has a parallel structure, except that the pronoun is realized overtly as *pi*.

The composition of the individual-denoting nominalization in 60a starts off much like the event-denoting nominalization in §3.2. But one of the predicate's individual-type arguments is saturated by the free variable introduced by the pronoun, as shown in Figure 2.

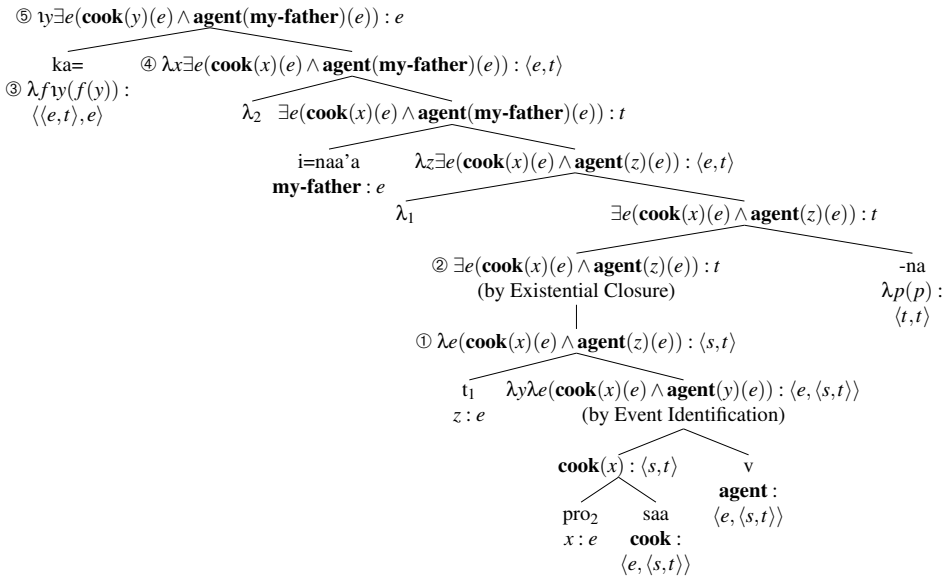


FIGURE 2. Semantic composition of the individual-denoting nominalization in 60a.

Once the predicate's individual-type arguments are saturated, the vP denotes a predicate of events (①). In this nominalization, however, the event argument is existentially bound by existential closure (②). This does not trigger a type mismatch since there is a pronoun inside vP. The determiner requires a set of entities as its argument (③), which is created when the λ-operator abstracts over the pronoun (④). In the end, the DP refers to the individual that is cooked by the speaker's father (⑤).[17]

Do these null resumptive pronouns have to be licensed in some way?[18] In fact, nothing special needs to be said, since resumptive pronouns are formally identical to nonresumptive pronouns. McCloskey (2006:96) states that he 'know[s] of no report of a language that uses a morphologically or lexically distinct series of pronouns in the resumptive function'. At least for null pronouns, this generalizations holds in Northern Paiute.[19] When an argument is previously given in the discourse, it can be realized as a null pronoun in direct object position (62a), as well as in subject position (62b).

[17] Note that the determiner can be an overt demonstrative or definite determiner, as in 60a, or it can be phonologically null. When the determiner is null, it picks out the unique (nonatomic) individual, much like a free relative (Jacobson 1995, Caponigro 2003). This can give rise to a universal-like interpretation.

(i) 'Having got there, we picked a lot [of chokecherries] at that place. Everyone, we picked along with our mother. Later on we, having picked a lot, we came back again.'
Mi=ti-dzapoka-na nimmi ni=hi-kwai-ku nimmi, oo
1PL.EXCL.GEN=NSP-pick-NMLZ 1PL.EXCL.NOM 1PL.EXCL.GEN=what-LOC-LOC 1PL.EXCL.NOM so
tia' nimmi tsa-čakwi-na …
thusly 1PL.EXCL.NOM IP.fist-do-NMLZ
'What we picked we carried in our whatchamacallit (bag) like so … '
(narrative, Thornes 2003:523)

In (i), the speaker is talking about ALL of the chokecherries that were picked, not just a (unique) individual chokecherry.

[18] In particular, because the null pronouns in 62 are referential, we might think that they must be both licensed and identified, as in Rizzi's (1986) theory of *pro*. That is, do the null pronouns have to check all the φ-features (both person and number) of their governing category? Since Northern Paiute has neither subject nor object agreement, there are no morphologically realized φ-features on the verb for the null pronouns to check, just as in Mandarin Chinese. Perhaps, as Rizzi suggests (1986:545f.), the identification condition on null pronouns is vacuously satisfied in these languages without overt agreement.

[19] The resumptive pronoun *pi* that appears in oblique position might be unusual in this respect. It is potentially unique to nominalizations with *-na*, since it does not appear as the argument of a postposition elsewhere in the language. There might be some relationship between *pi-* and the so-called emphatic pronoun *pii*. Since independent words in Northern Paiute must be bimoraic in length, it would not be implausible for *pi-* to lengthen to *pii* when standing on its own.

A semantic connection between the two forms is somewhat more difficult to identify. The emphatic pronoun, as its name suggests, lends emphasis to a DP, either by itself (i) or when it is supported by the enclitic *=su* (ii) or by *=simi* 'alone, only' (iii).

(i) Oka **pii** yaa su=toogga-tsi puni-kati.
3SG.ACC PRO there DEF.NOM=dog-DIM see-sit
'Now that's what the dog was looking at, sitting there.' (prompted narrative, EM, BP25-2-t1, 7)

(ii) Su=naatsi'i **pii=su** tika.
DEF.NOM=boy PRO=EMPH eat
'The boy himself is eating.' (elicitation, EM, BP37-2-s, 16)

(iii) Su=nana **pii=simi** oo siggwi kati.
DEF.NOM=man PRO=alone there just sit
'The man is just sitting there by himself.' (elicitation, MS, BP33-3-s, 18)

In (i), for instance, *pii* emphasizes the third-person singular object of the verb, as reflected in the English translation, which is a reverse pseudocleft. In (ii)–(iii), the emphasis is realized in the English translations in the emphatic use of reflexive anaphors—that is, *the boy himself* and *the man ... by himself*. Further investigation is clearly needed to determine whether the emphatic pronoun can be identified with the resumptive pronoun.

(62) a. **Pa'mogo**$_1$=bi̶no'o ka=hanno=sabbi̶ mia-hu. Kai ni̶i̶ **pro**$_1$
frog=PTC DEF.ACC=where=PTC go-PFV NEG 1SG.NOM
punni.
see.DUR
'And the frog$_1$ went, I don't know where. I don't see it$_1$.'
(prompted narrative, MS, BP24-1-t3, 58–59)

b. Obina-ggwe yaisi **mi̶=nigga-di̶**$_1$=bi̶no'o ka=paaskiti pibo'a.
after-LOC PTC **PL=dance-NMLZ**=PTC DEF.ACC=basket throw.DUR
Yaisi oo'ni yaisi na-ma-maggwi̶-hu-si, yaisi **pro**$_1$ ti̶ka …
PTC later PTC PASS-PLUR-finish-PFV-SEQ PTC eat
'Afterwards the dancers$_1$ throw the basket. Then, after it is finished, they$_1$ eat … ' (narrative, MS, BP13-4-t2, 12–13)

All null pronouns in Northern Paiute can thus be licensed formally in the same way. Outside of an individual-denoting nominalization, they refer to an individual. But in an individual-denoting nominalization, a null pronoun in the scope of a λ-operator can be bound and the free variable it contributes abstracted over.[20]

There is independent evidence that the individual interpretation of nominalization with *-na* does not arise through A′-movement. Resumptive pronouns have a number of

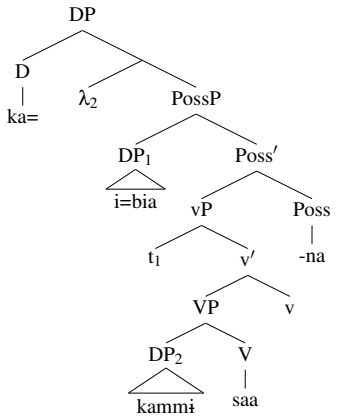
[20] If a null pronoun does not depend on the presence of a λ-operator, then it should be possible for a λ-operator to occur without a pronoun, as long as it is able to find something to bind. I argue elsewhere (Toosarvandani 2011) that it is also possible to bind the variable contributed by a Heimian indefinite.

As in many other languages (Langdon 1977, Culy 1990), internally headed relative clauses in Northern Paiute, such as (i), are built from nominalizations, specifically nominalizations with *-na*.

(i) Kai ni̶i̶ **ka=i̶=bia** **kammi̶ saa-na** ti̶ka-kwi̶.
NEG 1SG.NOM **DEF.ACC=1SG.GEN=mother rabbit cook-NMLZ** eat-PROSP
'I won't eat **the rabbit my mother cooked**.' (elicitation, EM, BP32-4-s, 78)

Basilico (1996) shows for a diverse set of languages (Lakhota, Mojave, Mooré, and Northern Athabaskan) that the interpretation of such internally headed relative clauses arises through abstraction over an indefinite DP, which under Heim's (1982) theory introduces a restricted free variable.

If this analysis can be extended to Northern Paiute, the nominalization in (i) would have a structure completely parallel to the individual-denoting nominalizations in 60.

(ii)


Instead of binding a pronoun, the λ-operator binds a free variable introduced by a Heimian indefinite. This is the object of the verb *saa* 'cook', which is the bare indefinite *kammi̶* 'rabbit'. After combining with the definite determiner, the entire nominalization has the correct individual-denoting meaning.

(iii) ι*x*(**rabbit**(*x*) ∧ ∃*e*(**cook**(*x*)(*e*) ∧ **agent**(**my-mother**)(*e*))) : *e*

The nominalization in (i) describes an individual—the rabbit cooked by the speaker's mother—even though there is no obvious gap in the patient argument.

properties that distinguish them from A′-traces: (i) absence of weak crossover effects, (ii) insensitivity to constraints on movement, and (iii) failure to license parasitic gaps.[21] In what follows, I show that the resumptive pronouns inside individual-denoting nominalizations with *-na* do not exhibit weak crossover and that they do not obey the standard constraints on extraction, insofar as they can be tested in Northern Paiute. The third property above—the failure of resumptive pronouns to license parasitic gaps—is of little use because Northern Paiute has null arguments.

Instead, I provide an additional argument based on the antilocality property of resumptive pronouns.

WEAK CROSSOVER EFFECTS. While resumptive pronouns show strong crossover effects, just like the traces of A′-movement, they do not exhibit weak crossover effects (Sells 1984:69–84, McCloskey 1990:236f.). In Northern Paiute, WH-movement does exhibit weak crossover, as shown in 63.

(63) a. Haga$_1$ t$_1$ t~~i~~=$_1$ddua t~~i~~ka-gg~~i~~-ti?
who REFL=child eat-APPL-TNS
'Who$_1$ fed their$_1$ child?' (cf. 'Who$_1$ t$_1$ fed their$_1$ child?')
(elicitation, EM, BP37-3-s, 13)

b. *Haga$_1$ t~~i~~=$_1$bbia t$_1$ t~~i~~ka-gg~~i~~-ti?
who REFL=mother eat-APPL-TNS
intended: 'Who$_1$ was fed by their$_1$ mother?'
(cf. *'Who$_1$ did their$_1$ mother feed t$_1$?') (elicitation, EM, BP37-3, 32:38)

c. *Haga$_1$ u=$_1$bbia t$_1$ t~~i~~ka-gg~~i~~-ti?
who 3SG.GEN=mother eat-APPL-TNS
intended: 'Who$_1$ was fed by their$_1$ mother?'
(cf. *'Who$_1$ did their$_1$ mother feed t$_1$?') (elicitation, EM, BP43-2, 30:10)

In 63a, the genitive reflexive anaphor *t~~i~~=* can be bound by a subject WH-phrase when it occurs inside the object. But when the anaphor appears inside the subject, as in 63b, it cannot be bound by an object WH-phrase that has A′-moved past it. The ungrammaticality of 63b cannot be attributed solely to a violation of PRINCIPLE A, since the nonreflexive possessive pronoun in 63c is also ungrammatical in the same crossover configuration.

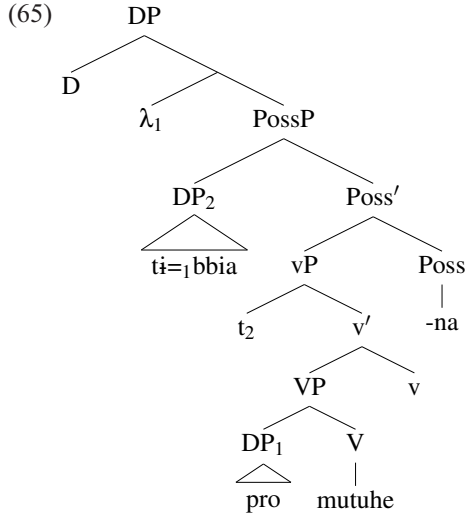
In contrast, when the genitive reflexive anaphor occurs as the possessor in a nominalization, it can be bound by the operator that binds the (null) resumptive pronoun inside the embedded vP.

(64) T~~i~~=bbia mutuhe-na yaka.
REFL=mother kiss-NMLZ cry.DUR
'The one$_1$ kissed by their$_1$ mother is crying.'
(cf. *'The one who$_1$ their$_1$ mother kissed t$_1$ is crying.')
(elicitation, EM, BP37-3-s, 15)

The nominalization in 64 describes the individual who was kissed by the individual's mother. Its structure is shown in 65.

[21] There are languages, such as Swedish (Engdahl 1985) and Vata (Koopman 1992), that have resumptive pronouns that do behave, for all intents and purposes, like the gap created by A′-movement. These might be analyzed as the overt realization of an A′-trace. Other languages, such as English, only allow an 'intrusive' resumptive pronoun when extraction is not possible (Chao & Sells 1983, Sells 1984). I am not concerned with these types of resumptive pronouns here.

(65)



This is a weak crossover configuration, since the λ-operator that binds the resumptive pronoun inside the vP also has the genitive reflexive anaphor *tɨ=* in its scope.[22] Such a configuration is ruled out for operators that undergo A′-movement, but it is grammatical for the operators that bind resumptive pronouns.

CONSTRAINTS ON MOVEMENT. Unlike the trace of A′-movement, resumptive pronouns also do not obey standard restrictions on extraction. Unfortunately, we cannot show this with island constraints in Northern Paiute. The language does not obey the left branch condition (see §2.3). In addition, it is not possible to construct the syntactic configurations necessary to test the other islands, a fact that I discuss more extensively in the appendix.

There is, however, one constraint on A′-movement that is available. WH-phrases cannot be extracted from within a PP—that is, postpositions must be pied-piped, as *-kuba* is in 66a. Stranding the postposition, either by itself (66b) or with the pronominal element *pɨ* as its host (66c), is ungrammatical.

(66) a. **Hi-kuba**$_1$ ɨɨ ka=wihi t$_1$ tɨkɨ?
what-LOC 2SG.NOM DEF.ACC=knife put.DUR
'What did you put the knife on?' (elicitation, MS, BP11-5-s, 20)

b. ***Hi**$_1$ ɨɨ ka=wihi t$_1$**-kuba** tɨgɨ-hu?
what 2SG.NOM DEF.ACC=knife **-LOC** put-PFV
intended: 'What did you put the knife on?' (elicitation, EM, BP37-3, 19:57)

c. ***Hi**$_1$ ɨɨ ka=wihi **pɨ-**$_1$**kuba** tɨgɨ-hu?
what 2SG.NOM DEF.ACC=knife **PRO-LOC** put-PFV
intended: 'What did you put the knife on?' (elicitation, EM, BP37-3, 20:45)

Of course, in nominalizations with *-na*, a preposition can be stranded. That is how they are able to describe an individual that is projected as an oblique argument. Consider again the sentence in 67, repeated from 60b above.

[22] How can the genitive reflexive anaphor *tɨ=* be licensed in 64, if it is subject to a constraint like principle A? It is not inconceivable that the λ-operator itself counts as a binder for the purposes of principle A. In the end, though, a more complex solution will probably be necessary. Even in English there are free occurrences of anaphors inside DPs: for example, *John*$_1$ *was going to get even with Mary. That picture of himself*$_1$ *in the paper would really annoy her* ... (Reuland 2006:277). Unfortunately, binding in Northern Paiute will have to await future investigation.

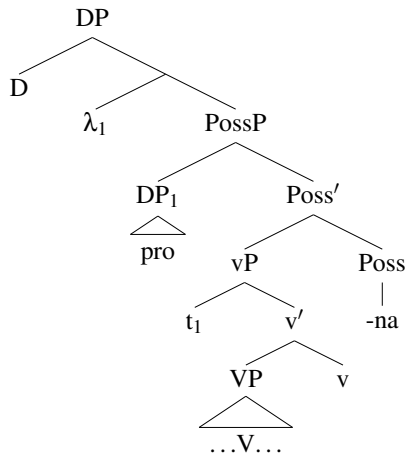
(67) Ika i=naa'a **pi-kuba** kati-na nii timi-dua.
DEM.ACC 1SG.GEN=father **PRO-LOC** sit-NMLZ 1SG.NOM buy-IRR
'I will buy that one my father is sitting on.' (elicitation, MS, BP34-5-s, 6)

The nominalization describes the argument of a locatival postposition, which is stranded inside the vP. Since a postposition must be pied-piped when its argument has been extracted, the gap in this nominalization must be produced by a resumptive pronoun.

THE HIGHEST SUBJECT RESTRICTION. Resumptive pronouns exhibit what McCloskey (1990:210) calls the HIGHEST SUBJECT RESTRICTION. They cannot occupy a subject position immediately subjacent to their binder. The proper analysis of this phenomenon remains controversial, though often it is related to the more general antilocality property of (nonreflexive) pronouns embodied in PRINCIPLE B (Borer 1984, McCloskey 1990; see McCloskey 2006 for additional discussion and references). I do not attempt to provide a theory of why resumptive pronouns should obey this constraint. I simply use it to argue that the gap in individual nominalization with *-na* is created by a resumptive pronoun.

First, we need to figure out how the highest subject restriction applies in the nominal domain. The DP that corresponds to the subject of a clause sits in Spec-PossP. The highest subject restriction states, then, that a resumptive pronoun is not able to occupy this position when the resumptive pronoun's binder is located within the same subjacency domain. In other words, the following configuration is ruled out.

(68)



A nominalization with the structure in 68 would describe the highest argument of the embedded verb. However, such nominalizations with a gap in the position of the POSSESSOR are not attested in Northern Paiute.

(69) *Nii **ka=ti=naa'a** **tona-hu-na** mutuhe-hu.
1SG.NOM **DEF.ACC=REFL=father punch-PFV-NMLZ** kiss-PFV
intended: 'I kissed the one who punched my father.'
(elicitation, EM, BP37-3, 58:00)

That is, when nominalizations with *-na* describe an individual, this must be an argument of the embedded verb that is not the highest argument.

4. THE INTERPRETATION OF NOMINALIZATIONS WITH *-dii*. Nominalizations that describe the highest argument of the verb are created with the *-dii* nominalizer, regardless of the thematic role of this argument.

(70) a. **Su=kutsu patsa-dɨ** mia-hu.
DEF.NOM=**cow kill.SG-NMLZ** go-PFV
'The one who killed the cow left.' (elicitation, EM, BP37-1-s, 16)

b. **Su=na-gwɨtama-dɨ** wadzi-mia-hu.
DEF.NOM=PASS-**lock.up-NMLZ** hide-go-PFV
'The one who should be locked up ran away.' (elicitation, EM, BP34-4-s, 26)

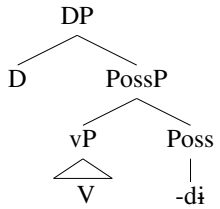
c. Ka=ɨdzɨggwi **ka=kwopika-wɨni-dɨ** nɨɨ ki'a.
DEF.ACC=blanket **DEF.ACC=shiver-IPFV-NMLZ** 1SG.NOM give.DUR
'I gave the blanket to the one who is shivering.'
(elicitation, MS, BP34-3-s, 28)

d. Su=nana **ka=patsiponoa-dɨ**-na katɨ-'yu.
DEF.NOM=man **DEF.ACC=be.round-NMLZ**-LOC sit-DUR
'The man is sitting on the thing that is round.'
(elicitation, EM, BP34-3-s, 34)

The nominalization in 70a describes the agent of the transitive verb *patsa* 'kill (sg.)'; the one in 70b the patient of the passive verb *nagwɨtama* 'be locked up'; the one in 70c the patient of the unaccusative verb *kwopika* 'shiver'; and the one in 70d the sole argument of the stative verb *patsiponoa* 'be round'.

The nominalizations in 70 all have the schematic structure in 71 (repeated from 5b and 10b above), where *-dɨ* is the realization of a Poss head that takes a vP complement.

(71)

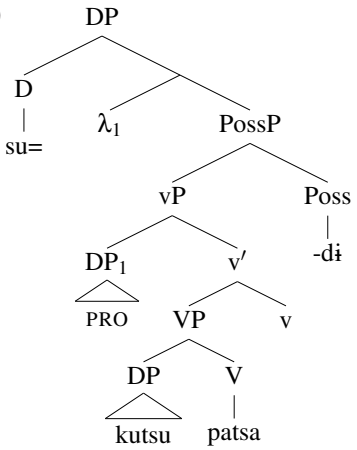


Since there is no T head inside these nominalizations and *-dɨ* does not project a specifier, there is one case too few. In particular, as I discuss in §4.1, there is no case (nominative or genitive) to license an overt DP in the highest argument position of the embedded verb. Consequently, as I show in §4.2, this position is occupied by a phonologically null argument (PRO) that does not need case. It is bound by a λ-operator, giving rise to the individual interpretation.[23] The event interpretation of nominalizations with *-dɨ* is restricted to zero-place predicates. This follows from the current account, as I show in §4.3, because the verb's event argument can be left unsaturated only when it takes no individual-type arguments.

4.1. THE INDIVIDUAL INTERPRETATION. The individual nominalization with *-dɨ* in 70a has the structure in 72.

[23] Krause (2001) makes a similar proposal for reduced relative clauses, where the highest argument of a verb raises to be the head of a reduced relative clause because it cannot get nominative case.

(72)



The direct object *kutsu* 'cow' gets accusative case from v. A DP in Spec-vP, however, would be unable to get case. There is no T inside the nominalization, and since *-dɨ* does not project a specifier into which the DP can raise and get genitive case, there is simply no case to assign it. Consequently, this argument of the verb in 72 is projected as a phonologically empty argument that does not need case (PRO; Chomsky 1981).

This nominalization with *-dɨ* describes an individual because PRO is abstracted over by the same λ-operator found in nominalizations with *-na*.[24] The semantic composition of 70a is shown in Figure 3.

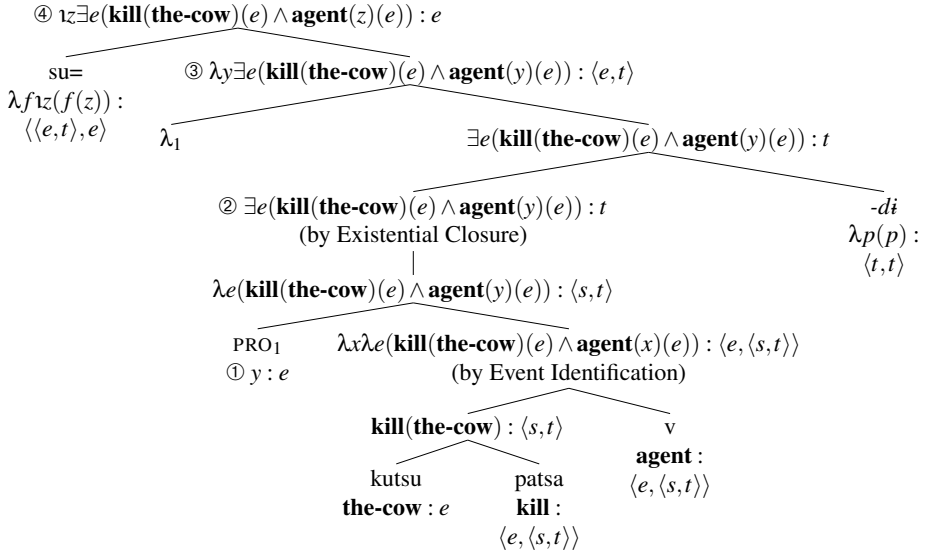


FIGURE 3. Semantic composition of 70a.

[24] Why must PRO be bound in nominalizations with *-dɨ*? In this syntactic context, it cannot receive an arbitrary interpretation, as it can in other contexts (e.g. 91). One possibility is that there must be a λ-operator obligatorily adjoined inside nominalizations, a requirement that not implausibly could be imposed by D. If vacuous binding is not allowed, it would have to find something to bind, which in an individual-denoting nominalization with *-dɨ* can only be the PRO in subject position. But then the question is what happens in

The null argument contributes an individual-type variable (①), which saturates the verb's external argument. The event argument is existentially bound by existential closure at the vP level (②). (Again, I assume that the nominalizer *-di* denotes the identity function, since it does not contribute to the meaning of the nominalization.) Then, the variable contributed by PRO is abstracted over by a λ-operator that adjoins to the sister of D (③). The resulting set of individuals serves as the argument for the determiner, so that the entire DP refers to the individual who is the agent of the event of killing the cow (④).

The interpretations of the nominalizations in 70b–d, where *-di* applies to an unaccusative, passive, or stative verb, arise in a similar fashion. These nominalizations are also missing one case, since by Burzio's generalization v cannot assign accusative case if it does not assign an external argument theta role. In an ordinary clause, the internal or stative arguments of these verbs would raise to subject position. But in a nominalization with *-di*, they are realized as PRO, so that the nominalization describes the internal or stative argument.

4.2. EVIDENCE FOR PRO. We might consider an alternative to PRO. Say that, when the highest argument of the verb is unable to get case, it is simply not projected at all. This would leave that argument of the predicate unsaturated, yielding the same interpretation as λ-abstraction over PRO. There is evidence from the binding of reflexive and nonreflexive pronouns, however, that the highest argument in a nominalization with *-di* is, in fact, syntactically projected.[25]

In Northern Paiute, the genitive reflexive anaphor *ti=* obeys a constraint like principle A: it must be bound (73a,b). In contrast, the (nonreflexive) genitive proclitic pronoun *u=* obeys something like principle B: it must be free in its binding domain (73c).

(73) a. **Su=nana**$_1$ ka=**ti**=$_1$ggutsu kwati-hu.
DEF.NOM=man DEF.ACC=**REFL**=COW shoot-PFV
'The man$_1$ shot his$_1$ cow.' (elicitation, EM, BP37-3-s, 32)

b. ***Su=nana**$_1$ ka=**ti**=$_2$ggutsu kwati-hu.
DEF.NOM=man DEF.ACC=**REFL**=COW shoot-PFV
intended: 'The man$_1$ shot his$_2$ cow.' (elicitation, MS and EM, BP48-1, 26:22)
(MS: 'Must be the man's cow.' EM: 'He shot his own cow.')

---

event-denoting nominalizations with both *-na* and *-di*, which I have argued do not contain an additional λ-operator. If the predicate's event argument is always saturated by a free variable—an idea that I discuss in n. 15—then even in event-denoting nominalization, the λ-operator will have something to bind.

[25] Baker and Vinokurova (2009:548) use the same argument to support the presence of PRO in so-called agent nominalizations in Gĩkũyũ (Niger-Congo, Bantu: Kenya). Like the *-di* nominalizer in Northern Paiute, the *-i* suffix turns a verb into a nominal that describes the verb's highest argument, for example, the agent (i). (The numbers in the interlinears for the Gĩkũyũ examples represent noun class, not person.)

(i) **A-thĩnj-í** **mbũri** **ũũru** **acio** nĩ-má-á-tũm-a tũ-caamb-e.
2-slaughter-NMLZ **10.goats** **badly** **2.DEM** FOC-2.SBJ-PRF-make-IND 2.SG.SBJ-bad.reputation-SBJV
'**Those (people) who slaughter goats badly** have given us a bad reputation.'
(Mugane 2003:237)

Baker and Vinokurova argue (pp. 547f.) that these nominalizations do not contain nominative case, so that the highest argument of the verb is realized as PRO. It is able to license a reflexive pronoun (realized as an *i-* prefix on the verb) in the two nominalizations in (ii).

(ii) Andũ ma-ti-thũ-íre **mũ-ĩ-end-i** ta **mũ-ĩ-yamb-i**.
2.people 2.SBJ-NEG-hate-PRF **1-REFL-like-NMLZ** like **1-REFL-pride-NMLZ**
'People don't hate one who likes him/herself as much as one who is full of him/herself.'
(Mugane 2003:239)

Baker and Vinokurova write (p. 548) that they 'suspect that this sort of nominalization [in Gĩkũyũ] is relatively rare'. But if it has the same syntax and semantics as nominalizations with *-di* in Northern Paiute, perhaps it is not so rare after all.

c. *Su=nana$_1$ u=$_1$ggutsu kwati-hu.
DEF.NOM=man 3SG.GEN=cow shoot-PFV
intended: 'The man$_1$ shot his$_1$ cow.' (elicitation, EM, BP37-3, 1:20:20)

The genitive reflexive anaphor and nonreflexive proclitic pronoun have the same referential possibilities in nominalizations with *-dɨ*.

(74) a. Nɨɨ ka=tɨ=bbia mutuhe-dɨ pisa pisapi.
1SG.NOM DEF.ACC=REFL=mother kiss-NMLZ good like.DUR
'I like the one$_1$ who is kissing his$_1$ mother well.'
(elicitation, EM, BP37-3-s, 36)

b. *Nɨɨ u=bbia mutuhe-dɨ pisapi.
1SG.NOM 3SG.GEN=mother kiss-NMLZ like.DUR
intended: 'I like the one$_1$ who is kissing his$_1$ mother.'
(elicitation, EM, BP37-3, 1:37:02)

This should only be possible if there is another DP inside these nominalizations to bind them. The sentence in 74a is grammatical, since *tɨ=* is bound by a PRO in Spec-vP. Similarly, the sentence in 74b is ungrammatical under the intended interpretation, since *u=* is not free. It is c-commanded by, and coreferential with, PRO in Spec-vP.[26]

We should be careful here to distinguish syntactic binding from semantic binding. Under standard assumptions, the distribution of reflexive and nonreflexive pronouns is mediated by SYNTACTIC binding, which BINDING THEORY defines as a relation between DPs (based on c-command and coreference). In contrast, semantic binding is a relation between a λ-operator (or other operator) and a variable. Both reflexive and nonreflexive pronouns can be semantically bound, but only a reflexive pronoun must be syntactically bound. Consequently, even though PRO is semantically bound by a λ-operator in nominalizations with *-dɨ*, we can use syntactic binding and the distribution of reflexive and nonreflexive pronouns to provide evidence for its presence.[27]

4.3. THE EVENT INTERPRETATION. When the verb embedded by *-dɨ* takes one or more individual-type arguments, the highest one cannot get case and must be realized as PRO. By abstracting over the variable it contributes, the nominalization describes an individual, and the verb's event argument is existentially bound. Say, though, that every individual-type argument were to get case. A nominalization with *-dɨ* would then describe the verb's event argument, which would be its highest (and only) argument.

This happens in exactly one circumstance, when the embedded verb takes NO individual arguments. If zero-place predicates like weather verbs only take an event argu-

[26] We might wonder whether 74b is ruled out independently by the i-within-i constraint, which bans the coindexation of an element with a phrase that contains it: *[…α_1…]$_1$ (Chomsky 1981:212). On the face of it, this is problematic because the i-within-i constraint would also undesirably rule out 74a, which is grammatical with exactly the same indexation pattern. Moreover, there are prominent exceptions to the constraint even in English, as Chomsky himself observes (1981:229, n. 63). For instance, the translations of both nominalizations in 74 are grammatical even though they violate the i-within-i constraint: [$_{DP}$ *the one who is kissing his*$_1$ *mother*]$_1$. We need a much better understanding of the constraint in English, as well as of binding in Northern Paiute more generally.

[27] There have been some attempts to collapse syntactic binding into semantic binding (Reinhart 1983a,b, Heim 1998). If these are successful, we might think that the data in 74 would not show anything about the presence of a PRO in nominalizations with *-dɨ*. A reflexive pronoun could, for instance, always be licensed by a λ-operator adjoined to the sister of D. While this would account for the presence of a reflexive pronoun inside a nominalization with *-dɨ*, it would not derive the correct interpretation for 74a. If the external argument of the verb were not projected syntactically, it would remain unsaturated and not be available for (semantic) binding. Consequently, a λ-operator would only be able to bind the reflexive pronoun. This would not give rise to the interpretation in 74a, in which the external and internal arguments corefer.

ment, then when the *-dɨ* nominalizer applies to *tɨɨggwa* 'snow' or *pauma* 'rain', the resulting nominalizations can describe an event.[28]

(75) a. Nɨɨ **ka=tɨɨggwa-dɨ** punni.
1SG.NOM **DEF.ACC=snow-NMLZ** see.DUR
'I see it snowing.' (elicitation, EM, BP37-2-s, 32)

b. **Pauma-dɨ** tɨɨnaha-hu.
rain-NMLZ stop-PFV
'The raining stopped.' (elicitation, EM, BP33-2-s, 27)

c. Su=nana **ka=pauma-dɨ**-ggwe nɨka-'yu.
DEF.NOM=man **DEF.ACC=rain-NMLZ**-LOC dance-DUR
'The man is dancing during the raining.' (elicitation, EM, BP32-4-s, 25)

The nominalization in 75a describes an event of snowing that is perceived by the speaker, and the one in 75b an event of raining that ends. The nominalization in 75c is the argument of the postposition *-ggwe*, which has a temporal sense that locates the raining event described by the nominalization at the same time as the dancing event.

We might wonder whether the nominalizations in 75 actually describe individuals. Chomsky (1981:325), for instance, treats the subject of a weather verb as a 'quasiargument' that bears a θ-role but does not refer. There are, however, other zero-place predicates, for which this issue does not arise. For instance, in Northern Paiute, (unergative) intransitive verbs can be passivized, as shown for *wohi* 'bark' in 76.

(76) a. Toogga wohi.
dog bark
'A dog is barking.' (elicitation, EM, BP48-1-s14)

b. Na-wohi.
PASS-bark
'There is barking.' (elicitation, EM, BP48-1-s11)

The passive prefix *na-* removes the sole (agent) argument of *wohi* 'bark'. (Consequently, the subject position is empty or is filled by a null expletive pronoun.) This leaves only the verb's event argument open. As predicted, when the nominalizer *-dɨ* applies to passivized intransitive verbs, as in 77, the resulting nominalizations denote an event.

(77) a. **Su=na-wohi-dɨ** paba-'yu.
DEF.NOM=PASS-bark-NMLZ big-NOM
'The barking is loud.' (elicitation, MS, BP48-1-s13)

b. Nɨɨ **ka=na-wohi-dɨ** naka.
1SG.NOM **DEF.ACC=PASS-bark-NMLZ** hear
'I hear the barking.' (elicitation, MS, BP48-1-s12)

[28] Observe that 75a forms a near-minimal pair with the event nominalization of a weather verb by *-na* in 48. Under my proposal, they should have the same truth conditions. I do not know, however, whether there are any differences—semantic or pragmatic—between the two types of deverbal nominalization.

I will point out that English also has multiple ways of describing the same event. A perception verb can take as its internal argument a bare infinitival complement (i), a POSS-*ing* gerund (ii), or an ACC-*ing* gerund (iii).

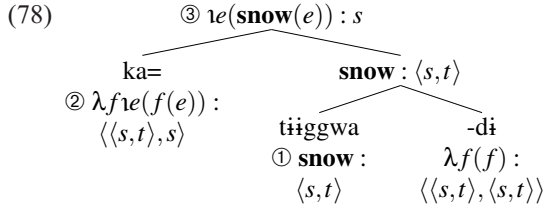
(i) I saw him eat the cake.
(ii) I saw his eating the cake.
(iii) I saw him eating the cake.

There is probably some sort of difference among these three constructions, even though superficially they appear to have the same truth conditions. I leave this question for future investigation.

The sentence in 77a entails that an event of barking is loud, and that in 77b entails that the speaker perceives an event of barking through hearing.

The semantic composition of the event nominalizations in 75 and 77 starts out in a nearly identical fashion to the individual nominalizations. This is illustrated for 75a in the parsetree in 78.

(78)



The verb denotes a set of events (①). In a clause, the event argument would be existentially bound, but since the definite determiner *ka=* requires a set of entities as its argument (②), the existential closure operation does not apply. The entire DP thus refers to the event of its snowing (③).

The nominalizer *-dɨ* does not project a specifier and does not make an additional genitive case available. This consequently produces an individual interpretation when the highest argument of the verb is realized without case as a null argument that is abstracted over (PRO). It can only have an event interpretation when the verb takes no individual-type arguments.

5. HOW ENGLISH IS (NOT) LIKE NORTHERN PAIUTE. While deverbal nominalizations in Northern Paiute can have either an event or an individual interpretation, why do parallel nominalization patterns in other languages not exhibit the same variability? Consider the two English nominalization patterns from the introduction: the POSS-*ing* gerund, illustrated in 79a, and agent nominalizations with *-er*, illustrated in 79b.

(79) a. I witnessed **Caesar's burning the city**.
b. **The seller of counterfeit stock** was jailed.

The POSS-*ing* gerund can only describe an event—never an individual—while the agent nominalization can only describe an individual. Below I explore why English is different from Northern Paiute in this respect.

The POSS-*ing* gerund, I argue in §5.1, has the same basic structure as a nominalization with *-na*. But it only describes events because English lacks the system of operators and resumptive pronouns that gives rise to the individual interpretation in Northern Paiute. In contrast, while the *-er* nominalizer in English might bear a passing similarity to *-dɨ* in Northern Paiute, I show in §5.2 that its syntax and semantics are actually quite different. An event interpretation is never possible since the verb's event argument is closed off by the nominalizer suffix itself.

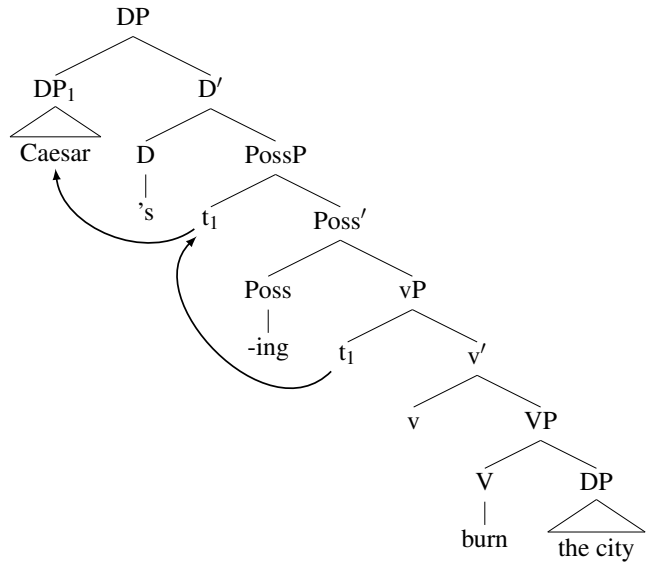
5.1. THE POSS-*ing* GERUND. Though there are many analyses of the POSS-*ing* gerund in English, most generative approaches take the *-ing* suffix to realize some kind of head in the extended nominal projection.[29] Early accounts assumed that it was an N that takes a verb phrase complement (Horn 1975, Jackendoff 1977:222f.). This seems unlikely, though, since *-ing* does not have the right kind of meaning for a noun; it does not

[29] There are alternatives. For instance, gerunds could not be endocentric (Schachter 1976, Pullum 1991), or they could have the features of both nouns and verbs (Malouf 2000a,b, Hudson 2003), or the *-ing* suffix (or some abstract correlate of it) could be adjoined to a verb phrase (Abney 1987:241–44, Yoon 1996). For reasons of space, I set these possibilities aside.

denote a set of entities like a common noun. Instead, we might think that *-ing* is a D. But Abney (1987:193–209) rejects this possibility because it is able to cooccur with the Saxon genitive *'s*, which is in complementary distribution with other determiners.

Baker (2005) proposes that the *-ing* suffix in POSS-*ing* gerunds realizes a nominal functional head somewhere between N and D that is the nominal equivalent of T (or Infl) (see the earlier work of Baker 1985 and Milsark 1988 as well). Since this is precisely the position and function of the Poss head, I propose that *-ing* realizes the Poss head when it takes a vP complement. Like *-na* in Northern Paiute, it projects a specifier where possessors are assigned case. Under this analysis, the POSS-*ing* gerund in 79a has the structure in 80.

(80)



The external argument of the embedded verb raises to Spec-PossP, where it receives case, before raising to its surface position in Spec-DP, as Abney (1987:79) proposes. Just as we would expect if the POSS-*ing* gerund contains a vP, it assigns accusative case to the direct object, and it can include verbal modifiers such as manner adverbs (*Caesar's quickly burning the city*) (Abney 1987:182). Yet the POSS-*ing* gerund does not assign nominative case to the highest argument of the base verb—what would be the subject in a clause—which is instead realized as a possessor.

If *-ing* is indeed the overt realization of the Poss head, POSS-*ing* gerunds should have the same properties that we saw nominalizations with *-na* have: (i) they should be able to contain nominal categories located above Poss; (ii) they should take an obligatory possessor; and (iii) they should have an event interpretation. Below, I show that POSS-*ing* gerunds have all three properties.

It is important to note that I am proposing the structure in 80 only for the POSS-*ing* gerund. It is not necessarily suitable for other deverbal nominalizations created by the *-ing* suffix, such as the ACC-*ing* gerund in 81 or the derived nominal in 82.

(81) I witnessed **Caesar burning the city**.
(82) I witnessed **Caesar's burning of the city**.

There have been attempts to unify the ACC-*ing* gerund and derived nominals with the POSS-*ing* gerund. For example, Abney (1987:222–30) proposes that the same *-ing* suffix creates all three nominalization patterns. The two gerunds would embed a somewhat

larger verbal constituent, while derived nominals would embed a smaller one, possibly just the verb (though see Alexiadou 2001 and Borer 2003). Except for some tentative suggestions in n. 31 about assigning the ACC-*ing* gerund the structure in 80, I set these other nominalization patterns aside to focus just on the POSS-*ing* gerund.

OTHER NOMINAL CATEGORIES INSIDE POSS-*ing* GERUNDS. If *-ing* realizes the Poss head, POSS-*ing* gerunds should be able to contain functional categories located above Poss in the extended nominal projection. The two main candidates are Num and D, both of which can appear inside a possessive description.

(83) John**'s** dog**s** scared me.

Num is realized as the plural *-s* suffix on the head noun, and D as the Saxon genitive *'s* (Abney 1987:79).

It is not possible for the plural suffix—and hence Num—to appear inside a POSS-*ing* gerund.

(84) *I witnessed Caesar's burning**s** the city.

But this restriction arises for independent reasons. Borer (2005:239–45) shows that other event nominalizations can only bear plural marking when the embedded predicate is telic.

(85) a. the pilot's crossings of the Pacific
b. #the team's swimming of laps

The predicate *cross the Pacific* has an inherent endpoint, while *swim laps* has no inherent endpoint. While derived nominals inherit the telicity of the embedded predicate, Alexiadou and colleagues (2010:552–56) argue that POSS-*ing* gerunds are always atelic.[30] Consequently, they do not allow plural marking for independent reasons, and the ungrammaticality of 84 tells us nothing about the structure of the POSS-*ing* gerund.

Assuming that *'s* is a determiner, we have already seen that D can appear inside POSS-*ing* gerunds. But this is the only determiner that can appear inside possessive descriptions in English, and hence also in POSS-*ing* gerunds. This contrasts with Northern Paiute, which allows the definite determiners *su=* and *ka=* inside both its possessive descriptions and its nominalizations with *-na* and *-dɨ* (see §2.2).[31]

AN OBLIGATORY POSSESSOR INSIDE POSS-*ing* GERUNDS. If *-ing* realizes Poss when it projects a specifier, then POSS-*ing* gerunds should always contain a possessor. This is in-

[30] I leave for future research where this aspectual contribution comes from. Alexiadou and her coauthors observe (2010:554, n. 15) that it does not come from the *-ing* suffix itself. This makes sense if it realizes the Poss head, which I am arguing is semantically contentless.

[31] There might be one other determiner besides *'s* that appears inside nominalizations with *-ing*. In the ACC-*ing* gerund in (i), *'s* is absent, and when the external argument is a pronoun, it bears accusative case.

(i) {John / Him} building the bridge ruined the company.

The traditional story, as told by Abney (1987:222–31), is that the POSS-*ing* gerund embeds a smaller constituent, such as a vP, while the ACC-*ing* gerund embeds a full clause, a TP.

Portner (1992:88–145) argues convincingly, however, that ACC-*ing* and POSS-*ing* gerunds do not embed different-sized verbal constituents. He attributes their differences in structure and interpretation to a contrast in DEFINITENESS. While the POSS-*ing* is headed by the definite determiner *'s*, the ACC-*ing* gerund is headed by a null indefinite determiner. Translating Portner's insight into the current framework, we could say that both the POSS-*ing* and ACC-*ing* gerunds involve the same nominalizer, a Poss head realized as *-ing*. While it assigns genitive abstract case to the DP in its specifier, this is realized morphologically as (default) accusative case. In an ACC-*ing* gerund, the (indefinite) determiner is phonologically empty, so the subject looks like it has accusative case. In a POSS-*ing* gerund, the determiner is *'s*, which causes accusative pronouns to be pronounced as morphologically genitive pronouns: that is, *him's* → *his* (Hudson 2003:603).

deed the case, as Abney (1987:183) observes. The possessor in a POSS-*ing* gerund cannot be omitted (86), unlike the possessor in either a possessive description (87a) or a derived nominal (87b).

(86) I witnessed { Caesar's / *the } burning the city.

(87) a. I witnessed { John's / the } will.

b. I witnessed { John's / the } construction of the house.

It is tempting to attribute the ungrammaticality of the POSS-*ing* gerund without a possessor in 86 entirely to a failure of the embedded verb's external argument to project (a violation of the THETA CRITERION). Baker (1985:7) observes, however, that predicates with no unsaturated arguments—such as a weather verb (88a) or a predicate like *be certain* that does not assign a theta role to its subject (88b)—can occur in a POSS-*ing* gerund.

(88) a. I am disappointed by { its / *the } raining all day.

b. I am disappointed by { its / *the } being certain that she'll quit. (Baker 1985:7)

There is some dispute about whether these examples are grammatical (Abney 1986:16, 1987:208). But there are plenty of naturally occurring examples of both types.

(89) a. The idea is said to have originated in **its raining on the day on which it was intended to remove his remains** … [32]

b. Moreover, and this is part of Strawson's Point, indignation differs from **its seeming that a sanction would be desirable** … [33]

The predicates embedded in these POSS-*ing* gerunds in 88–89 take no arguments that need case. Nonetheless, they must have a possessor, even if it is nothing more than the expletive pronoun *its*.

AN EVENT INTERPRETATION FOR POSS-*ing* GERUNDS. If *-ing* realizes the Poss head in POSS-*ing* gerunds, then they should be able to describe an event. This is the interpretation that we saw in §3.2 comes for free when all of the embedded predicate's individual arguments are saturated. See Figure 4.

The embedded predicate of the POSS-*ing* gerund in 79a only has its event argument left open (①). It would be existentially bound in a clause, but inside a nominalization the event argument is instead bound by the determiner (②). Abstraction over the trace of the external argument, which has raised to Spec-DP, creates a function from individuals to events (ignoring the intermediate trace in Spec-PossP) (③). This function applies to the external argument in Spec-DP, so that the gerund describes the event of Caesar burning the city (④).

The POSS-*ing* gerund does not have an individual interpretation like nominalizations with *-na* in Northern Paiute because English has no way of constructing the relevant kind of dependency inside nominalizations. It lacks true resumptive pronouns, as resumption is used as a rescue strategy only when movement is not possible (Chao & Sells 1983, Sells 1984). Consequently, it is not possible for an internal argument of the verb in a POSS-*ing* gerund to be gapped, regardless of whether this gap is null or overt.

[32] *An illustration of the liturgy*, by Rev. Thomas Pruen. London: W. Bulmer and W. Nicol, 1820, p. 146.

[33] *The second-person standpoint: Morality, respect, and accountability*, by Stephen Darwall. Cambridge, MA: Harvard University Press, 2006, p. 67.

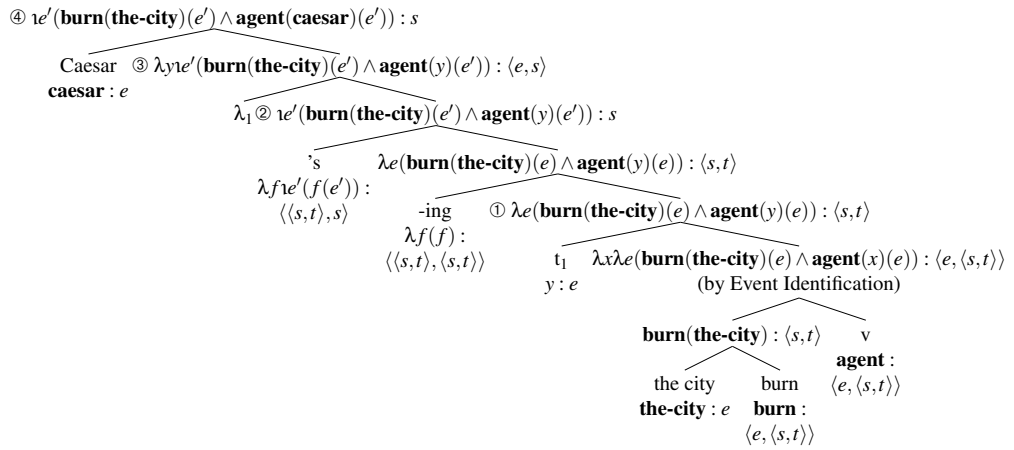


FIGURE 4. Semantic composition of the event interpretation for the POSS-*ing* gerund.

(90) *I witnessed {Caesar's burning / Caesar's burning it}.
intended: 'I witnessed what Caesar burned.'

In addition, English also lacks the operators that would abstract over a resumptive pronoun. There are some variable-denoting expressions that can appear inside the POSS-*ing* gerund. The subject can be gapped, as in 91, yet no individual interpretation is possible.

(91) **Finding oneself** is hard work.

Assuming that the external argument of the verb here is saturated by PRO (Abney 1987:168), the gerund would describe an individual if a λ-operator could bind it. But there must be no such operator in English, since PRO receives an arbitrary interpretation and the gerund describes an event.

In sum, the POSS-*ing* gerund has essentially the same structure as a nominalization with *-na* in Northern Paiute. It does not exhibit the same interpretive variability, though, because English does not have the system of resumptive pronouns and operators to bind them that would give rise to an individual interpretation. Consequently, the POSS-*ing* gerund only has an event interpretation.

5.2. THE AGENT NOMINALIZATION IN ENGLISH. At first glance, agent nominalizations with *-er* in English resemble nominalizations with *-dɨ* in Northern Paiute. In fact, they diverge significantly in both their syntax and semantics.

The agent nominalizations created by *-er* are significantly less verb-like than the POSS-*ing* gerund in English: (i) they cannot assign accusative case to the direct object (**the seller the counterfeit stock*); and (ii) they cannot be modified by adverbs (**the frequently seller of the counterfeit stock*). In contrast, nominalizations with *-dɨ* pattern with the POSS-*ing* gerund in these respects—see §2.

Moreover, nominalizations with *-er* describe individuals bearing a restricted set of theta roles. In 92, repeated from 79b above, the nominalization describes the agent of the embedded verb.

(92) **The seller of counterfeit stock** was jailed.

Rappaport Hovav and Levin (1992) show that *-er* creates nominalizations that describe any external argument theta role, as shown in 93. But they can NEVER describe an internal argument. The nominalizations of unaccusative verbs in 94 are all ungrammatical.

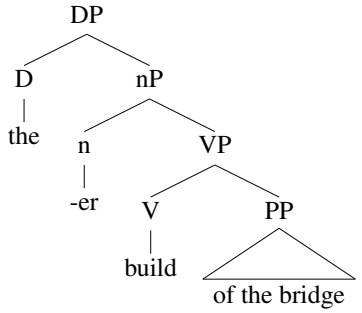
(93) a. The banya as an institution struck me as one of the few great **levelers** of Soviet society.
b. If you are the **holder** of a Visa or MasterCard charge card, you know they are accepted at hotels …
c. Jobs are the best **indicator** of a sound economy.
(Rappaport Hovav & Levin 1992:130f.)

(94) *appearer, *collapser, *dier, *disappearer, *emanator, *ender, *exister, *happener, *laster, *occurrer, *transpirer, *waner, *wilter
(Rappaport Hovav & Levin 1992:148)

This contrasts strikingly with *-di*, which, as we saw in §4, applies to both unaccusative and passive verbs to create nominalizations that describe an internal argument.

To account for its properties, Baker and Vinokurova (2009) propose that *-er* realizes a nominal functional head, which I call n, that introduces an external argument theta role (see also Bowers 2011:1200ff.).

(95)



The *-er* nominalizer realizes this n head when it takes a VP complement. This derives the syntactic properties of agent nominalizations. Since v is not present inside this nominalization, the internal argument must be projected inside a PP and there can be no left-edge adverbs.

Baker and Vinokurova's proposal accounts for why agent nominalizations have only an individual interpretation. Unlike both the *-na* and *-di* nominalizers in Northern Paiute and *-ing* in English, the *-er* suffix itself contributes the agent theta role (G is the generic operator).

(96) $[\![\text{-er}]\!] = \lambda f \lambda x \text{G} e(f(e) \wedge \textbf{agent}(x)(e)) : \langle\langle s, t\rangle, \langle e, t\rangle\rangle$

Simplifying Baker and Vinokurova's lexical entry (2009:531) somewhat, the *-er* nominalizer takes a property of events and returns the set of individuals who are generic agents in those events.[34] The nominalization in 95 consequently describes the individual who is the agent of an event of building the bridge. It can never have an event interpretation because the event argument of the verb is closed off through generic quantification by the *-er* suffix itself.

[34] Baker and Vinokurova actually give the lexical entry for *-er* in (i), where $\cap$ is Chierchia's nominalization operator. It is a function from properties of events to the individual correlate of the property of usually being the agent in such events.

(i) $[\![\text{-er}]\!] = \lambda f^{\cap} \lambda x \text{G} e(f(e) \wedge \textbf{agent}(x)(e)) : \langle\langle s, t\rangle, e\rangle$

In this denotation, the *-er* nominalizer returns an individual correlate as opposed to a predicate. By bringing the property of being an agent down to its individual correlate with the $\cap$ operator, the determiner would have to encode the inverse $\cup$ operator to raise the individual correlate to a predicate again, in the way that Chierchia (1998) describes.

6. CONCLUSION. Northern Paiute has two types of deverbal nominalization that have the internal structure of a vP and the external distribution of a DP. Unlike similar patterns of nominalization in English, these can describe either an event or an individual. I have proposed that this range of interpretations arises through the interaction between the syntax of the nominalizers themselves, on the one hand, and operators that can abstract over a variable, on the other hand.

If the *-na* and *-dɨ* nominalizers in Northern Paiute realize Poss, the nominal functional head that canonically assigns genitive case, the event interpretation comes for free. In a Davidsonian event semantics, the verb takes an event argument that can remain unsaturated inside these nominalizations. In contrast, with agent nominalizations in English, no event interpretation can arise because the *-er* nominalizer itself binds the verb's event variable.

The individual interpretations for deverbal nominalizations in Northern Paiute arise because the language has operators inside the DP that can abstract over a variable-contributing expression. For nominalizations with *-na*, the variable is contributed by a pronoun, which can occur anywhere except as the highest argument of the verb. In POSS-*ing* gerunds, which otherwise have a nearly identical structure, only an event interpretation is possible because English lacks the operators and resumptive pronouns needed to construct an individual interpretation. For nominalizations with *-dɨ*, the variable is contributed by a phonologically null element that does not need to get case (PRO), which is projected as the highest argument of the verb.

Deverbal nominalizations have diverse structures and interpretations across languages. Despite this variation, there are patterns and regularities. Some of these, I have sought to capture in the syntax of nominalizers themselves and the semantic resources available in a language.

APPENDIX: ISLANDS INSIDE NOMINALIZATIONS IN NORTHERN PAIUTE

The syntactic contexts necessary for constructing most islands inside a nominalization are not possible in Northern Paiute. I show this below for the COORDINATE STRUCTURE CONSTRAINT, the SENTENTIAL SUBJECT CONSTRAINT, and the COMPLEX NP CONSTRAINT.

Starting with the coordinate structure constraint, Northern Paiute does not allow coordination structures inside nominalizations. There are no overt coordinators. The language instead juxtaposes clauses in a type of asyndetic coordination (e.g. 35); discourse particles, such as *yaisi* 'also, too', are optional. If two VPs are coordinated in this way inside of a nominalization, it is indeed not possible to bind a variable contained within just one of them, as shown in A1a.

(A1) a. *Nɨɨ $[_{DP}\ \lambda_1$ i=naa'a [[hubia-du] [yaisi pro_1 saa]]-na] tɨka-hu.
1SG.NOM 1SG.GEN=father song-make PTC cook-NMLZ eat-PFV
intended: 'I ate what my father cooked while singing.'
(cf. *'I ate $what_1$ my father sang and cooked t_1.') (elicitation, EM, BP48-1, 20:31)

b. *Nɨɨ $[_{DP}\ \lambda_1$ i=bia [[hubia-du] [yaisi nɨgga]]-na] kai pisapi.
1SG.NOM 1SG.GEN=mother song-make PTC dance-NMLZ NEG like.DUR
intended: 'I don't like my mother's singing and dancing.' (elicitation, EM, BP46-2, 8:47)

c. *Nɨɨ $[_{DP}\ \lambda_1$ i=naa'a [[pro_1 tɨ-batsa] [yaisi pro_1 saa]]-na] kai tɨka.
1SG.NOM 1SG.GEN=father NSP-kill.SG PTC cook-NMLZ NEG eat
intended: 'I didn't eat what my father killed and cooked.'
(cf. 'I didn't eat $what_1$ my father killed t_1 and cooked t_1.')
(elicitation, EM, BP46-2, 13:44)

However, this does not constitute evidence against my proposal that the variable in nominalizations is contributed by a resumptive pronoun (pro_1), rather than the trace of A′-movement. Crucially, the parallel non-island-violating sentences are also UNGRAMMATICAL. In A1b, there is no variable in either constituent that is abstracted over. In A1c, there is a variable contained inside each constituent in an across-the-board fashion. Yet both A1b and A1c are rejected by speakers.

Northern Paiute simply does not allow asyndetic coordinations inside nominalizations. Plausibly, the language might lack a (covert) coordinator for combining constituents small enough to occur inside a nominalization. Such a gap in the syntactic categories that can be coordinated, while not common, is attested in other languages (Haspelmath 2004:12). For instance, in Tîrî, the coordinator *mê* 'and' can coordinate DPs or full clauses, but it cannot combine just verb phrases (Moyse-Faurie & Lynch 2004:458f.). This means that clausal juxtaposition in Northern Paiute may not even have the syntactic properties of coordination, an issue that will have to await future investigation.

It is similarly not possible to test the sentential subject constraint. The only way to put a clause in subject position is through nominalization, since to my knowledge there is no way of embedding a bare clause. It is indeed ungrammatical for an operator (λ_1) to bind a variable inside a subject nominalization, as in A2a.[35]

(A2) a. *Nɨɨ [$_{DP}$ ka= λ_1 [$_{DP}$ λ_2 mogo'ni pro$_1$ pro$_2$ kia-na] tɨba saa-na] tɨka-hu.
1SG.NOM DEF.ACC= woman give-NMLZ pinenut cook-NMLZ eat-PFV
intended: 'I ate what the woman gave to the one who cooked pinenuts.'
(cf. *'I ate what$_1$ the one to whom$_2$ the woman gave t$_1$ t$_2$ cooked pinenuts.')
(elicitation, EM, BP46-4, 21:02)

b. *Nɨɨ [$_{DP}$ ka= λ_1 [$_{DP}$ λ_2 mogo'ni opo pro$_2$ kia-na] pro$_1$ saa-na] tɨka-hu.
1SG.NOM DEF.ACC= woman round.basket give-NMLZ cook-NMLZ eat-PFV
intended: 'I ate what the one who the woman gave a round basket to cooked.'
(cf. 'I ate what$_1$ the one to whom$_2$ the woman gave a round basket t$_2$ cooked t$_1$.')
(elicitation, EM, BP46-4, 17:18)

But again the parallel non-island-violating sentence in A2b is also ungrammatical, even though each λ-operator binds a variable inside its own immediate nominalization. It appears that Northern Paiute simply does not allow the recursive embedding of nominalizations.

The same problem arises for the complex NP constraint. I have found no nouns in Northern Paiute that take clausal complements. But relative clauses can be formed by juxtaposing a nominalization to a noun: a nominalization with *-dɨ* for subject relative clauses or a nominalization with *-na* for nonsubject relative clauses (see Toosarvandani 2011 for a more complete treatment). Both in subject relative clauses (A3a) and in nonsubject relative clauses (A3b), it is not possible for the operator (λ_1) of a nominalization to bind a variable inside the relative clause (pro$_1$).

(A3) a. *Nɨɨ [$_{DP}$ ka= λ_1 mogo'ni opo [$_{DP}$ ka=naatsi'i pro$_1$ tɨka-dɨ] kia-na]
1SG.NOM DEF.ACC= woman round.basket DEF.ACC=boy eat-NMLZ give-NMLZ
tɨmɨ-hu.
buy-PFV
intended: 'I bought what the boy who the woman gave a round basket to ate.'
(cf. *'I bought what$_1$ the woman gave a round basket to the boy who ate t$_1$.')
(elicitation, EM, BP47-5, 22:39)

b. *Nɨɨ [$_{DP}$ ka= λ_1 mogo'ni opo [$_{DP}$ ka=naatsi'i$_2$ λ_2 nana pro$_1$ pro$_2$ maka-na]
1SG.NOM DEF.ACC= woman round.basket DEF.ACC=boy man feed-NMLZ
kia-na] tɨma-hu.
give-NMLZ taste-PFV
intended: 'I tasted what the man fed to the boy who the woman gave a round basket to.'
(cf. *'I tasted what$_1$ the woman gave a round basket to the boy$_2$ to whom$_2$ the man fed t$_1$ t$_2$.') (elicitation, EM, BP47-5, 24:23)

But again, it is generally not possible to embed a relative clause inside a nominalization, as shown in A4a and A4b, for a subject and nonsubject relative clause, respectively.

[35] So that both λ-operators have an argument to bind, the embedded verbs in A2 are ditransitive predicates. The ungrammaticality of these examples cannot be attributed to a ban on extracting, or otherwise abstracting over, a recipient argument. Recipients have the same morphological realization and syntactic status as canonical direct objects, and they are just as easily extracted.

(i) Haga$_1$ isu nana ka=tonigapɨ t$_1$ kia-hu-tua?
who DEM.NOM man DEF.ACC=flower give-PFV-IRR
'To whom will this man give the flower?' (elicitation, MS, BP11-5-s, 15)

In (i), just as the direct object *ka=tonigapɨ* 'the flower' would be able to undergo A′-movement (data not shown), the recipient does.

(A4) a. *N**i̵i̵** [$_{DP}$ ka= λ_1 mogo'ni pro$_1$ [$_{DP}$ ka=naatsi'i t**i̵**ba t**i̵**ka-d**i̵**] kia-na]
1SG.NOM DEF.ACC= woman DEF.ACC=boy pinenut eat-NMLZ give-NMLZ
t**i̵**m**i̵**-hu.
buy-PFV
intended: 'I bought what the woman gave to the boy who ate pinenuts.'
(cf. 'I bought what$_1$ the woman gave t_1 to the boy$_2$ who$_2$ t_2 ate pinenuts.')
(elicitation, EM, BP47-5, 21:57)

b. *N**i̵i̵** [$_{DP}$ ka= λ_1 mogo'ni pro$_1$ [$_{DP}$ ka=naatsi'i$_2$ λ_2 nana t**i̵**ba pro$_2$ maka-na]
1SG.NOM DEF.ACC= woman DEF.ACC=boy man pinenut feed-NMLZ
kia-na] t**i̵**m**i̵**-hu.
give-NMLZ buy-PFV
intended: 'I bought what the woman gave to the boy the man fed pinenuts to.'
(cf. 'I bought what$_1$ the woman gave t_1 to the boy$_2$ to whom$_2$ the man fed pinenuts t_2.')
(elicitation, EM, BP47-5, 23:29)

Again, we cannot use the complex NP constraint to test for the presence of resumptive pronouns, because embedding one nominalization within another is just not possible.

Why does Northern Paiute not allow the recursive embedding of nominalizations in this way? The crosslinguistic distribution of recursion is, of course, a complex topic, which I cannot do justice to here. But the first thing to note is that Northern Paiute does have recursion elsewhere in the grammar. A possessor, for instance, can easily be embedded inside another possessor.

(A5) N**i̵i̵** [$_{DP}$ uka [$_{DP}$ [$_{DP}$ nana] dua] puggu] patsa-hu.
1SG.NOM DEM.ACC man son horse kill-PFV
'I killed the man's son's horse.' (elicitation, EM, BP32-3-s, 26)

It is nominalizations specifically that cannot be embedded inside one another. This property, while perhaps unfamiliar, is attested in other languages.

In Mẽbengokre, for instance, Salanova (2011:58) documents that '[w]hen multiple subjects are present, multiple embedding is avoided', which he conjectures might arise 'because the resulting construction is inherently clumsy or difficult to process, as it would have several subjects in sequence separated from the predicates with which they belong'. In other words, in languages with SOV word order, the recursive embedding of nominalization can result in multiple central embedding, which is unacceptable (though possibly not ungrammatical) in many languages, as in *The rat the cat the dog chased killed ate the malt* (Chomsky 1961). Superficially, this would seem to accurately characterize the infelicitous sentences in A2–A4.

However, there is evidence from the literature on internally headed relative clauses that some languages do allow the recursive embedding of nominalization, Mojave (A6) and Quechua (A7), for instance. (See n. 20 for the treatment of internally headed relative clauses as nominalizations.)

(A6) [$_{DP}$ [$_{DP}$ Tunay pi:pa$_1$ t_1 ʔ-u:yu:-n^y]$_2$ hatčoq t_2 k^{y}o:-n^y-č] poš kaʔa:k-k.
yesterday person 1-see-DEM dog bite-DEM-SBJ cat kick-TNS
'The man I saw yesterday who the dog bit kicked the cat.' (Munro 1976:202)

(A7) [$_{DP}$ Marya [$_{DP}$ Juan wawa-ta rikushka-ta] nishka] llugshirka.
Maria Juan child-ACC saw-ACC said left
'The child that Maria said that Juan saw left.' (Cole & Hermon 1994:249)

Notice, however, that the head of an internally headed relative clause in Mojave moves to the left edge of its nominalization (Basilico 1996), so that there ends up being no center-embedding in A6. Similarly, while A7 looks like a case of center-embedding on the surface, Cole and Hermon (1994:248f.) argue that in Quechua the head of the most deeply embedded internally headed relative clause—the object *wawata* 'child (acc.)'—undergoes movement at LF to the right edge of the higher nominalization (after *nishka* 'said'). This eliminates the center-embedding in this language as well.

I leave the question of why overt or covert movement is not available to remedy center-embedding in languages like Northern Paiute and Mẽbengokre for the future.

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