What's in a noun?
Deverbal nominalization in Northern Paiute*

Maziar Toosarvandani
Massachusetts Institute of Technology

June 16, 2012

Abstract

Why do nominalizations mean what they do? I investigate two deverbal nominalizers, *-na* and *-dɨ*, in Northern Paiute (Uto-Aztecan, Numic: Western United States), which create nominalizations that describe either an individual (like agent nominalizations with *-er*) or an event (like the POSS-ing gerund). I argue that these nominalizers overtly realize the nominal functional head that assigns case to possessors. This accounts for the possible interpretations of these nominalizations in Northern Paiute and highlights their relationship to nominalization patterns in other languages.

1 Introduction

Deverbal nominalizations share the properties of both nouns and verbs. They have the external distribution of a nominal category but the internal structure of a verbal category. The gerund in (1a)—which in Abney's (1987) terms is a POSS-ing gerund—assigns accusative case to the direct object, can include verbal modifiers such as manner adverbs (*John's quickly building the bridge*), and can contain aspectual morphology (*John's having built the bridge*) (Abney 1987:182). Yet, it 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.

(1) a. **John's building the bridge** ruined the company.
b. **The builder of the bridge** quit.

*I thank Grace Dick, Leona Dick, Morris Jack, Elaine Lundy, Edith McCann, Meg McDonald, and Madeline Stevens for teaching me about their language. I am also grateful to Rebecca Cover for our early discussions of the Northern Paiute data, as well as to Rajesh Bhatt, Annahita Farudi, Andrew Garrett, Michael Houser, Kyle Johnson, Line Mikkelsen, Tom Roeper, Andrés Salanova, Tim Thornes, and audiences at McGill University, the Massachusetts Institute of Technology, Stanford University, the University of California (Berkeley, Los Angeles, and Santa Cruz), the University of Massachusetts, Amherst, and the University of Ottawa for their very helpful suggestions and questions. The fieldwork for this paper was supported by grants from the Survey of California and Other Indian Languages at the University of California, Berkeley and the Sven and Astrid Liljeblad Endowment at the University of Nevada, Reno.

Some nominalizations are more verb-like than others, a fact long recognized both in the typological literature (Comrie 1976, Koptjevskaja-Tamm 1993:6f., Comrie and Thompson 2007:343–376) and in the formal syntactic literature (Ross 1973 and much subsequent work). The agent nominalization in (1b), for instance, exhibits fewer verbal properties than a POSS-ing gerund, since it can only introduce an internal argument as an oblique (with the preposition *of*), it cannot be modified by manner adverbs (**the quickly builder*), and it cannot contain aspectual morphology (**the haver built of the bridge*).

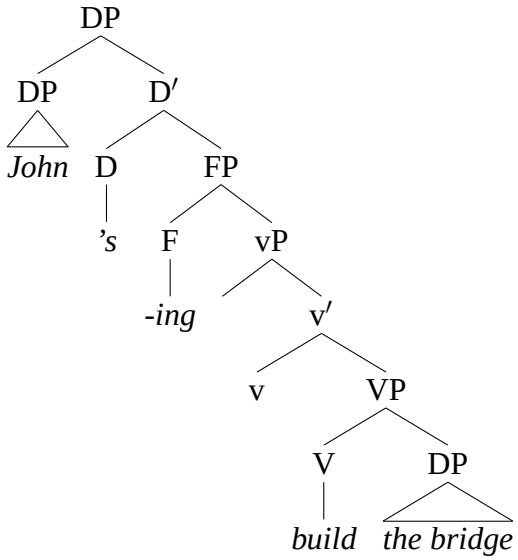
Within a phrase-structural theory of syntax, the mixed nature of nominalizations can be captured by structures that are, as Bresnan (1997:4) puts it, 'partitioned into two categorially uniform subtrees such that one is embedded as a constituent of the other.' The verb-like properties of a nominalization come from the verbal projection embedded inside the nominal projection. Borsley and Kornfilt (2000) refine this hypothesis to take into account Chomsky's (1986:160f.) theory of functional categories, which following Kornfilt and Whitman (2011) we can call the FUNCTIONAL NOMINALIZATION THESIS:

> **Functional Nominalization Thesis**
> Nominal properties of a nominalization are contributed by a nominal functional projection. The nominalization has verbal properties below the nominal functional projection, nominal properties above it.
>
> (Kornfilt and Whitman 2011:1298)

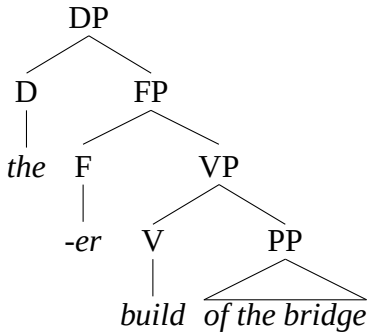
Depending on how big or small the verbal projection inside the nominalization is, it will exhibit more or fewer verbal properties (see also Panagiotidis and Grohmann 2009).

The POSS-ing gerund must accordingly embed an entire vP (Abney 1987:165–254, Kratzer 1996:126–131, Baker 2005), as shown in (2a). It must include v — the verbal functional head that introduces the external argument and assigns accusative case. It cannot, however, contain T(ense) because there is no nominative case inside the nominalization. The highest argument of the verb — here, the agent *John* — instead occupies the same position as a possessor.[1]

(2) a.



b.



[1]There are some proposals that the POSS-ing gerund does contain T — see Guéron and Hoekstra 1995:86–89 and Kornfilt and Whitman 2011:1302 — but this would have to be a defective T that does not assign nominative case.

In contrast, the agent nominalization embeds a smaller verbal constituent—just a VP, as shown in (2b) (Baker and Vinokurova 2009). This derives the less verb-like properties of these nominalizations. Since there is no v, the internal argument cannot get accusative case, and there is nowhere for adverbs to adjoin.

There is a striking correspondence between the size of the verbal projection inside these nominalizations and their interpretation. The POSS-ing gerund in (1a) describes an event—the event of John building the bridge—while the agent nominalization in (1b) describes an individual—the agent of a building event. For agent nominalizations, we know why they describe an individual. Baker and Vinokurova (2009) argue that the *-er* suffix realizes a nominal functional head—labelled F in (2b) above—that takes a VP complement and introduces an agent theta-role (see also Bowers 2011:1200ff.). Since this head does not project a specifier that can bear the agent theta-role, the entire nominalization ends up describing the individual who is the agent. The meaning of the nominalization, in other words, is determined in part by which functional head is realized by the nominalizer.

Why, then, do POSS-ing gerunds in English describe events? It seems, at least at first glance, as if an event interpretation would be the only one possible for a nominalization with the structure of the POSS-ing gerund. Since they embed a vP containing all of the verb's individual-type arguments, it is hard to imagine what else a POSS-ing gerund could possibly refer to except the event described by the verb itself. Once we look outside English, though, we find other interpretive possibilities. There are two nominalizers in Northern Paiute, *-na* and *-dɨ*, both of which create nominalizations containing a vP.[2] These describe either an EVENT, as in (3a–b), or an INDIVIDUAL, as in (4a–b).[3]

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

b. Nɨɨ **pauma-wɨnnɨ-dɨ** naka.
1SG.NOM **rain-STAT-NMLZ** hear
'I hear **it raining**.' (elicitation, MS, BP37-1-s, 5)

[2]Northern Paiute (Uto-Aztecan, Numic: western United States) is comprised of several closely related dialects that are spoken across and immediately adjacent to the Great Basin (Babel et al., to appear). Most of the data presented here come from my own fieldwork on the Mono Lake variety, spoken at Mono Lake in eastern California and immediately to the north in Bridgeport and Coleville, California and Sweetwater, Nevada. Additional data comes from the Burns, Oregon variety (Thornes 2003), and to a lesser extent the McDermitt, Nevada variety (Snapp et al. 1982) and the Bannock variety spoken at Fort Hall, Idaho (Liljeblad 1966). For all dialects of Northern Paiute, there are probably no more than 300 fluent speakers today (Golla 2011:174), and for the Mono Lake dialect, there are around five speakers.

[3]Each example from my own fieldwork is annotated with its type (dialogue, elicitation, narrative, or prompted narrative), the speaker's initials, the source text (starting with BP), and its location in the text (either a line number or timestamp). Examples from other sources receive the usual parenthetical citation.

I use the following abbreviations in this paper: ABS = absolutive suffix, ACC = accusative, ADV = adverbial suffix, APPL = applicative, CAUS = causative, DEF = definite, DEM = demonstrative, DIM = diminutive, DL = dual, DUR = durative, EMPH = emphatic particle, EXCL = exclusive, F = feminine, FOC = focus prefix, FUT = future, GEN = genitive, IMPFV = imperfective, INCH = inchoative, INCL = inclusive, IND = indicative, INSTR = instrumental nominalizer, IP = instrumental prefix, IRR = irrealis, LOC = locatival postposition, M = masculine, MOD = modal particle, MOT = motion suffix, NEG = negation, NMLZ = nominalizer, NOM = nominative, NSP = nonspecific object, PASS = passive, PL = plural, PLUR = pluractional, PRF = perfect, PRO = resumptive pronoun, PTC = discourse particle, QUOT = quotative, REFL = genitive reflexive anaphor, SBJ = subject, SBJV = subjunctive, SEQ = sequential marker, SG = singular, STAT = stative aspect, TNS = 'general' tense (Thornes 2003:398).

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

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

So, in addition to the question above about the English POSS-ing gerund, we now have the following question about Northern Paiute. Why can nominalizations created by *-na* and *-dɨ* describe either an event or an individual? Much as Baker and Vinokurova do, I will look for answers to both of these questions in the syntax and semantics of the nominalizers themselves.

My investigation proceeds as follows. I start in §2 by showing that nominalizations with *-na* and *-dɨ* have the same basic structure as the POSS-ing gerund. They embed a vP since: i) the direct object receives accusative case; ii) they can contain verbal modifiers; and, iii) they can contain aspectual morphology. There is no nominative case inside these nominalizations. When the highest argument of the verb is projected, as in (4a), it is realized as a possessor. In §3, I propose a syntax for the two nominalizers in Northern Paiute. Both *-na* and *-dɨ* realize a nominal functional category that assigns case to possessors. 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. 2007:556–575). But, while *-na* projects a specifier position where a possessor receives genitive case, *-dɨ* does not.

As I then show in §4, the nominalizations created by *-na* describe an individual when there is a resumptive pronoun inside the embedded vP that can be abstracted over. Because of the antilocality property of resumptive pronouns, these nominalizations describe any individual that is not the highest argument of the embedded verb. In (4a), this is the direct object, but it can also be an oblique argument, as in (5).

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

In contrast, nominalizations created by *-dɨ* describe the individual that would be the subject in a clause. This can be an agent, as in (4b), or it can be a patient, as in (6a–b), or the sole argument of a stative predicate, as in (6c). Since there is no nominative case inside these nominalizations, the highest argument of the embedded vP must be realized as a phonologically null argument (PRO) that is abstracted over, as I show in §5.

(6) a. **Su=na-gwɨtama-dɨ** wadzi-mia-hu.
DEF.NOM=PASS-lock.up-NOM hide-go-PUNC
'**The one who should be locked up** ran away.' (elicitation, MS, BP34-4-s, 24)

b. Ka=ɨdzɨggwi **ka=kwopika-wɨnnɨ-dɨ** nɨɨ ki'a.
DEF.ACC=blanket **DEF.ACC=shiver-STAT-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-ma** katɨ-hu.
DEF.NOM=man **DEF.ACC=be.round-NMLZ**-LOC sit-PUNC
'The man sat on **the round thing**.' (elicitation, EM, BP34-3-s, 34)

The event interpretation of both types of nominalization comes for free, so to speak, when all of the verb's individual-type arguments are saturated. For *-dɨ*, this is only possible when the embedded verb does not take any individual arguments to start with.

Nominalizers that instantiate the Poss head are attested in other languages besides Northern Paiute. In §6, I identify the POSS-ing gerund as a counterpart of nominalizations with *-na*. It only has an event interpretation, though, because English independently lacks the ability to license a gap inside nominalizations. At first glance, agent nominalizations in English, such as (1b), might seem to be a good counterpart to nominalizations with *-dɨ*, but a closer correlate is found in a nominalization pattern in Gĩkũyũ (Niger-Congo, Bantu: Kenya). The *-i* nominalizer creates nominalizations with the internal structure of a vP that describe the highest argument of the verb, just like *-dɨ* in Northern Paiute.

2 Two deverbal nominalizers in Northern Paiute

Nominalizations with *-na* and *-dɨ* have the distribution of noun phrases. They can occur with an overt determiner and serve as the argument of a verb, as in (7a–b), or the argument of a postposition, as in (8a–b).

(7) 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-PUNC
'The cow killer left.' (elicitation, EM, BP37-1-s, 16)

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

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

Nonetheless, these nominalizations have the internal structure of a verb phrase. Below, I show that both *-na* and *-dɨ* embed a vP — just like the POSS-ing gerund in English.

2.1 The 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. This means that *ka=toogga* 'the dog' in (9a) and *ka=opo* 'the basket' in (9b) can appear as direct arguments of the verb, without the mediation of an adposition.

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

b. Nɨɨ kai u=bbisabi **ka=i=bia ka=opo kia-kwɨ-na**.
1SG.NOM NEG 3SG.ACC=like **DEF.ACC=1SG.GEN=mother DEF.ACC=basket give-IRR-NMLZ**
'I don't like the one that my mother is going to give the basket to.' (elicitation, EM, BP35-3-s, 9)

Moreover, accusative case is realized morphologically on determiners and pronouns. The definite determiners in the direct objects in (9a–b) appear in the accusative as *ka=*, as opposed to the nominative as *su=*. And, the direct object in the both nominalizations in (10a–b) is the first-person singular accusative proclitic pronoun *i=*.

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

b. 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)

Second, there are various verbal modifiers that can appear inside nominalizations: i) negation, ii) left-edge adverbs, and iii) aspectual morphology. Negation in Northern Paiute appears either in sentence-initial position, as in (11a), or following the subject at the left edge of the verb phrase, as in (11b) (Thornes 2003:328).

(11) a. **Kai** nɨmɨ wiupui-gga yaa.
NEG person 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)

Assuming that negation adjoins either to TP or to vP — the two positions where negation is attested cross-linguistically (Laka 1990:9–85) — then, when it adjoins to vP, it should be possible inside nominalizations. This is indeed the case:

(12) a. 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)

b. **Ika i=dua kai tɨka-na** hunaggwa-tu tsɨtudda-hu.
DEM.ACC 1SG.GEN=son NEG eat-NMLZ outside-LOC throw.away-PUNC
'I threw away what my son didn't eat.' (elicitation, MS, BP37-1-s, 25)

Left-edge adverbs can also appear inside these nominalizations, including *pɨdɨ* ‘just’ (13a–b) and the manner adverb *obida* ‘slowly’ (14a–b).

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

b. **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)

(14) a. 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)

b. **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)

Finally, aspectual morphology is also possible inside these nominalizations. In (15a–b), this is the punctual suffix *-hu*, which codes that the event described is ‘bounded, that is, whether or not either the initial or terminal endpoint is expressed or understood’ (Thornes 2003:407).

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

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

Since aspectual information is encoded relatively low in the extended verbal projection, I assume for convenience that it occurs inside the vP itself. We could alternately take aspectual morphology to head its own Asp(ect) projection right above v, in which case *-na* and *-dɨ* would embed AspP. For present purposes, though, the simpler assumption that these nominalizers embed vP suffices.

2.2 They do not embed a CP

How do we know *-na* and *-dɨ* do not embed a verbal constituent larger than a vP? Northern Paiute has an inventory of clitics expressing a range of modal categories, which occur in second position following the first major sentence constituent (Thornes 2003:336–341). The modal clitic *=sakwa* ‘should, might’, for instance, can occur after the subject (16a), a fronted direct object (16b), or a sentence-initial adverb (16c).

(16) a. **Ɨɨ=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 tɨba'a hani-ga-kwɨ.
tomorrow=**MOD** 1PL.INCL pinenut do-MOT-IRR
'Tomorrow, we are going to go get pinenuts.' (elicitation, EM, BP33-5-s, 51)

The modal clitic *=sakwa* 'must, could' is ungrammatical in a nominalization with *-dɨ*, regardless whether it attaches to the determiner, as in (17a), or some other host, such as the direct object *tɨba* 'pinenut' in (17b). It is likewise ungrammatical when it is the second element in a nominalization created by *-na*, as shown in (18).

(17) a. * **Su=sakwa na-ggwɨtama-dɨ** wadzi-mia-hu.
DEF.NOM=MOD REFL-lock-NMLZ hide-go-PUNC
Intended: 'The one who should be locked up ran away.' (elicitation, MS, BP34-4, 56:58)

b. * **Su=tɨba=sakwa hani-dɨ** oo sɨggwi katɨ.
DEF.NOM=1PL.INCL=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)

(18) * Nɨɨ **ka=i=dua=sakwa tɨka-na** hunaggwa wokwoti.
1SG.NOM **DEF.ACC=1SG.GEN=son=MOD eat-NMLZ** outside throw
Intended: 'I threw out what my son should have eaten.' (elicitation, EM, BP37-1, 58:14)

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

2.3 They 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 overtly realized in the language by auxiliaries or markers of tense and finiteness. More indirectly, we can tell that nominalizations with *-na* do not embed TP, since they do not contain nominative case. In a clause, the subject receives nominative case, which in (19) is realized on the first-person singular nominative pronoun *nɨɨ* 'I'.

(19) Kai **nɨɨ** oi-tu tɨka-hu.
NEG **1SG.NOM** there-LOC eat-PUNC
'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:

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

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

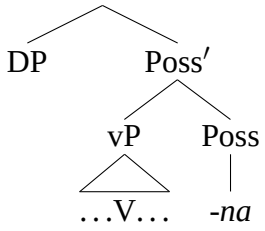
Both the external argument of the *-na* nominalization in (20) and the possessor of the possessive description in (21) are realized as the genitive proclitic pronoun *i=* 'my'.

3 The proposal and its consequences

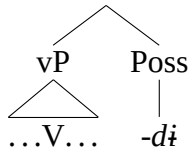
The nominalizations created by *-na* and *-d̷* in Northern Paiute embed a verbal constituent the size of a vP and no larger. They license accusative case on the direct object, contain negation and other verbal modifiers, and contain aspectual morphology. They do not, however, contain any material associated with higher verbal projections, such as second-position modal clitics or nominative case.

The nominalizers themselves, I propose, realize the nominal functional head that assigns case to possessors, which I will call Poss. When Poss takes a nominal complement in a possessive description, it is phonologically null. When it takes a vP complement, however, it is pronounced as either *-na* or *-d̷*. The difference between the two nominalizers is that, while *-na* projects a specifier, *-d̷* does not:

(22) a.



b.



Of course, if the *-na* and *-d̷* nominalizer are terminal nodes in the syntax, they must somehow appear as suffixes on the verb. I remain agnostic about how precisely this happens. In strongly lexicalist frameworks, 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). I believe it is possible to translate the insights of the current proposal into a lexicalist framework.

What role does the Poss head play in the syntax of the noun phrase? Following much recent work, I assume that Poss is located below D(eterminer) and above n, a functional head parallel to v in the extended verbal projection (Alexiadou et al. 2007:570–575):

(23) D > Poss > n > N

It has frequently been observed since at least Jackendoff (1977:42–45) that possessors behave much like subjects. They do not, for instance, bear a unique thematic role, though they do have a unique case realization. This follows if Poss assigns structural case to possessors, but does not assign them a theta role. This is the responsibility of n, a functional head that introduces external arguments of the noun (Valois 1991:15f., Sportiche 1998:216–230, Carstens 2000, Radford 2000, Bowers 2011).

The Poss head is sometimes realized overtly. In many languages, the possessed noun in a possessive description comes with special morphology. In Hungarian, for instance, it bears an agreement suffix:

(24) 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.) The Poss head can also be realized overtly when it does not project a specifier. The Uto-Aztecan languages (including Northern Paiute) are famous for their 'absolutive suffixes', which appear on nouns when they are NOT possessed, as illustrated for Cahuilla (Takic, Uto-Aztecan: Southern California) below:

(25) a. púč-iĨ
eye-ABS
'the eye, nobody's eye, seed(s)'
b. hé-puš
3SG-eye
'his eye' (Seiler 1977:67)

The suffix *-iĨ* must occur on the noun *puč* 'eye' when it is not possessed, as in (25a), and it must be omitted in possessive descriptions, such as (25b). It is plausible that the absolutive suffixes realize Poss when it does not project a specifier (consequently, when there is no possessor).

While Poss is responsible for assigning them case, possessors can actually surface at three different levels in the hierarchy in (23): n, Poss, and D. In Hungarian, post-determiner possessors always occupy Spec-PossP (Szabolcsi 1983, 1987, 1994); and, in English, all possessors raise to Spec-DP (Abney 1987:79). But, in Italian, possessors can occupy any of the three layers depending on their morphological properties (Cardinaletti 1998). Postnominal possessor DPs are merged in Spec-nP and stay there (while the noun raises to its left), since they are 'strong' and can receive case in situ. Weak and clitic possessive pronouns are 'deficient' and raise to Spec-PossP to get case. The clitics subsequently move even higher to D.

This syntax for the noun phrase was clearly inspired by the DP Hypothesis proposed by Abney (1987:54–85) and Horrocks and Stavrou (1987) for English. But rather than being the nominal correlate of T, D is treated as the nominal correlate of C. This is needed to account for the position of possessors below D in Northern Paiute, as well as in languages like Hungarian and Italian. 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 proposal for *-na* and *-dɨ* in (22) makes a number of syntactic predictions. First, since the nominalizers themselves realize the Poss head, the nominalizations they create should be able to contain any of the categories above Poss in the extended nominal projection. Second, since *-na* realizes the Poss head when it projects a specifier, the nominalizations it creates should always contain a possessor. Finally, since *-dɨ* realizes Poss when it does not project a specifier, the nominalizations it creates should never be able to contain a possessor. All three of these predictions are borne out, as I show below.

3.1 Other nominal categories inside nominalizations

If the nominalizers *-na* and *-dɨ* realize the Poss head, then it should be possible to embed them under any higher nominal category in the hierarchy in (23). We have already seen that this is true for D. The nominalizations in (26) and (27), repeated from (7a) and (8a) above, both occur with overt determiners.

(26) **Su=kutsu patsa-dɨ** mia-hu.
DEF.NOM=cow kill.SG-NMLZ go-PUNC
'The cow killer left.' (elicitation, EM, BP37-1-s, 16)

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

The only other nominal category that is realized overtly in Northern Paiute is 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, since 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 (28), it occurs immediately below the accusative definite determiner *ka=*.

(28) 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. As we would expect, nominalizations with *-na* and *-dɨ* can show up embedded under the *mɨ=* plural marker:

(29) 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 sitting people.' (elicitation, EM, BP37-2-s, 7)

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

3.2 An obligatory possessor in nominalizations with *-na*

The difference between the two nominalizers is that, while *-na* projects a specifier, *-dɨ* does not. Consequently, nominalizations with *-na* should always contain a DP in Spec-PossP. Indeed, when

	NOMINATIVE	ACCUSATIVE		GENITIVE	
		strong	clitic	strong	clitic
1sg.	*nɨɨ*	*nɨka*	*i=*	*nɨga* (*nɨka*)	*i=*
2sg.	*ɨɨ*	*ɨmi*	*ɨ=*	*ɨga* (*ɨmi*)	*ɨ=*
3sg.[5]	*isu, usu, masu*	*ika, uka, maka*	*u=*	*iga, uga, maga* (*ika, uka, maka*)	*u=*
1dl.	*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=*	*umɨga* (*umɨ*)	*mɨ=*
4			*a=*		*a=*

Table 1: Nominative, accusative, and genitive pronouns in Northern Paiute (Thornes 2003:155–169); parenthetical forms from the Mono Lake dialect

the embedded predicate is a zero-place predicate—such as the weather verb *tɨɨggwa* 'snow'—an expletive proclitic pronoun *a=* is obligatory:[4]

(31) N**ɨɨ** ***(a=)ddɨɨggwa-wɨnnɨ-na** punni.
1SG.NOM **4.GEN=snow-STAT-NMLZ** see.DUR
'I see it snowing.' (elicitation, EM, BP37-3, 1:14:26)

Moreover, since Spec-PossP is the position where possessors get case, the DP that occupies this position in a nominalization should have the same realization as a possessor. As I show below, this is precisely the case.

3.2.1 Genitive pronouns

When the possessor in a possessive description is a full DP, as in (32), it bears no special morphology. The DP *nana* 'the man' is a bare noun, just like the corresponding DP in the nominalization in (33).

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

(33) Su=**nana** tɨ-koi-na oo kwida'ni.
DEF.NOM=**man** NSP-kill.PL-NMLZ there be.piled
'The man's kills are piled over there.' (elicitation, MS, BP32-4-s, 63)

[4]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 *toogga* is realized as a lenis stop (*d*) when it is preceded by the first-person singular genitive proclitic, but as voiced fortis stop (*dd*) when it is preceded by its second-person singular counterpart: i.e. *i=doogga* 'my dog' vs. *ɨ=ddogga* 'your (sg.) dog'. See Babel et al. 2012 for details.

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

When the possessor is a pronoun, however, it receives a special realization. There are two series of genitive pronouns in Northern Paiute, shown in Table 1 along with the language's nominative and accusative pronouns. The genitive strong pronouns are morphologically independent and are used when the possessor is focused, as in (34a). Otherwise, the genitive proclitic pronouns are used, which select the noun heading the possessive description as their host, as in (34b).[6]

(34) a. Su=nana ka=**nɨka** puggu patsa-hu.
DEF.NOM=man DEF.ACC=**1SG.GEN** horse kill.SG-PUNC
'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-PUNC
'The man killed my horse.' (elicitation, EM, BP32-3-s, 24)

The corresponding argument in a nominalization with *-na* can also be realized as one of these genitive pronouns:

(35) 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 the thing I cooked.' (elicitation, EM, BP37-2-s, 13)

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

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. And, in the Mono Lake dialect of Northern Paiute — on which I conduct fieldwork and 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 (Liljeblad 1966, Snapp et al. 1982, Thornes 2003), there are no attested examples of a nominalization with *-na* where the highest argument is a strong pronoun. From the examples in (35a–b), 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.

Luckily, all varieties of Northern Paiute have a genitive reflexive anaphor *tɨ=*, which Thornes (2003:175) calls '[t]he most important distinction between the possessor proclitics and transitive object proclitics…' In (36), the anaphor is the possessor of the noun *toogga* 'dog'. Crucially, it is ungrammatical in direct object position, as shown in (37).

(36) Su=naatsi'i bɨno'o **ka=tɨ=ddoogga** haanɨ kuyaa o=dda-yaggwɨne'e-hu
DEF.NOM=boy PTC **DEF.ACC=REFL=dog** scold far 3SG.ACC=IP.foot-kick-PUNC
tabbu'a.
look.like

[6]Observe that the proclitic pronouns are in complementary distribution with determiners, while the strong pronouns (and full DPs) can cooccur with an overt determiner. This is not an uncommon pattern crosslinguistically. Cardinaletti (1998:17) proposes that genitive clitic pronouns undergo head movement to D. If head movement is substitution, this accounts for their complementarity with determiners. Since D is occupied by the clitic, no determiner can be realized overtly. (See van Riemsdijk 1998 for discussion of head movement as substitution vs. adjunction.)

‘The boy$_i$ is scolding his$_i$ dog, and then he kicks him to go away.’ (prompted narrative, MS, BP24-1-t3, 41)

(37) * Su=naatsi’i t**ɨ**=bbuni.
DEF.ACC=boy REFL=see
Intended: ‘The boy sees himself.’ (elicitation, EM, BP37-2, 36:35)

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

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

In (38), the agent of the nominalized verb *patsa* ‘kill’ is understood as coreferential with the subject DP, *usu idza* ‘that Coyote’.

3.2.2 Case on adjectives

The case realization of adjectives shows more indirectly that nominalizations with *-na* contain a possessor. Since there is no genitive case marking for adjectives, whsen a possessor contains an adjective, it receives the case — either nominative or accusative — of the ENTIRE possessive description:

(39) a. [$_{DP}$ [$_{DP}$ **Miitsi-’yu** nana] dua] habi-hu.
short-NOM man son lie-PUNC
‘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 (39a), and the accusative case suffix *-ggu* in a possessive description that is the direct object (39b). When the possessor of a nominalization with *-na* contains an adjective, it exhibits the same pattern of case marking:

(40) a. [$_{DP}$ **Su=**[$_{DP}$ **miitsi-’yu nana**] **saa-na**] pisa kamma.
DEF.NOM=short-NOM man cook-NMLZ good taste
‘The short man’s cooking tastes good.’ (elicitation, EM, BP37-2-s, 19)

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

The adjective *waha* ‘two’ is realized with nominative case in (40a) since it is inside the possessor of a nominalization in subject position, and it is realized with accusative case in (40b) since it is inside the possessor of a nominalization in direct object position.

3.2.3 Possessor extraction and pied-piping

Possessors in Northern Paiute do not obey the Left Branch Condition. They can be extracted through obligatory wh-movement to sentence-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** **ɨɨ** **kaadzi** pisapi?
who.GEN 2SG.NOM **car** like
'Whose car do you like?' (elicitation, EM, BP33-5-s, 19)

b. **Haga** **kaadzi** **ɨɨ** pisapi?
who.GEN **car** 2SG.NOM like
'Whose car do you like?' (elicitation, EM, BP33-5-s, 18)

(42) a. **Haga** su=nana **tɨ-batsa-na** tɨdɨha-huka?
who.GEN DEF.NOM=man **NSP-kill-NMLZ** steal-INCH
'Whose kill did the man steal?' (elicitation, EM, BP33-5-s, 15)

b. **Haga** **tɨ-batsa-na** su=nana wadzi-hani-huka?
who.GEN **NSP-kill-NMLZ** DEF.NOM=man hide-do-INCH
'Whose kill did the man steal?' (elicitation, EM, BP33-5-s, 13)

The possessor 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). Optional pied-piping of nominalizations follows automatically if the DP that raises is a possessor.

3.3 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, whether this is a genitive pronoun (43b) or a full DP (43c).

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

b. * Su=mogo'ni **i=na-dɨka-dɨ** natɨɨna-hu.
DEF.NOM=woman **1SG.GEN=PASS-eat-NMLZ** take.away-PUNC
Intended: 'The woman took away my food.' (elicitation, EM, BP37-2, 57:04)

c. * Su=mogo'ni **ka=nana** **na-dɨka-dɨ** natɨɨna-hu.
DEF.NOM=woman **DEF.ACC=man** **REFL-eat-NMLZ** take.away-PUNC
Intended: 'The woman took away the man's food.' (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) is ungrammatical with a genitive proclitic pronoun, as shown in (44b).

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

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

Since the embedded verb is a zero-place predicate, the possessor would have to be the expletive *a=*. (See §5 for why *-dɨ* has an event interpretation only when it applies to weather verbs.)

I have argued that the deverbal nominalizers *-na* and *-dɨ* in Northern Paiute both realize Poss—the nominal functional head that assigns case to possessors. This accounts for the distribution of other nominal categories and possessors inside the nominalizations they create. I show next that it also accounts for why these nominalizations are able to describe both events and individuals.

4 The interpretation of nominalizations with *-na*

The basic examples of nominalizations with *-na* are presented again below. They can describe an event (45a–c) or an individual participating in an event (46a–b).

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

b. N**ɨɨ** **ka=nana** **poyoha-na** puni-hu.
1SG.NOM **DEF.ACC=man run-NMLZ** see-PUNC
'I see the man running.' (elicitation, EM, BP32-5-s, 23)

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

(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. **Pɨ-kuba** **ɨ=ggatɨ-na** nɨɨ tɨmɨ-kwɨ.
PRO-LOC **2SG.GEN=sit-NMLZ** 1SG.NOM buy-IRR
'I am going to buy the one you are sitting on.' (elicitation, MS, BP37-1-s, 15)

The nominalizations in (46) clearly refer to an individual since the matrix verbs express predicates that can only hold of individuals. But we should perhaps be a bit more cautious about the event nominalizations in (45).

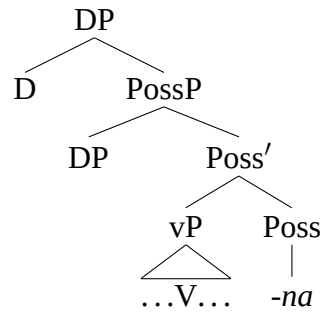
Perception verbs provide the clearest evidence that nominalizations with *-na* can describe an event. The sentences in (45a–c) all involve perception of an event, whether through hearing, sight, or smell. This event is described by the nominalization, which serves as the complement to the perception verb, either *naka* 'hear', *puni* 'see', or *ɨkwi* 'smell'. The nominalizations occur in canonical

direct object position (to the left of the verb), and they receive accusative case, which in (45a–b) is realized morphologically on the definite determiner.

In some of these examples, the nominalization might appear ambiguous between an event and individual interpretation. For instance, it is not implausible in (45b) that the speaker is simply perceiving the man — not the event of the man running. This kind of suspicion is easy to dispel. First, perception verbs can take nominalizations of zero-place predicates as complements, as in (45c). The weather verb *pauma* 'rain' takes no individual-type arguments; therefore, the speaker must be perceiving the event of raining itself. Second, in some cases, perception of an individual who is an event participant is truth-conditionally distinct from perception of the event itself. In (45a), for instance, if the speaker were perceiving the event of the woman cooking pinenuts through smell, she would not necessarily be perceiving the woman through smell.

Whether they describe an event or an individual, nominalizations with *-na* have the same basic structure, shown schematically in (47). The nominalizer overtly realizes Poss when it takes a vP complement, and it projects a DP specifier to which it assigns genitive case.

(47)



The Poss head does not itself contribute to the interpretation of the nominalization, as I show in §4.1. Consequently, when all of the embedded verb's individual-type arguments are saturated, the event interpretation is the only one possible, as I demonstrate in §4.2. The individual interpretation, I argue in §4.3, arises as a special case, when one of the verb's arguments is saturated by a variable that can be abstracted over. This variable is contributed in Northern Paiute by a resumptive pronoun, as I show in §4.4, accounting for why nominalizations with *-na* only describe individuals that are not the highest argument of the verb.

4.1 The possession relation

Possessors can bear a variety of different semantic roles, much like subjects. In (48a), for instance, the possessor *Kaabidzi* 'Kaabidzi' is interpreted as the spouse of the possessee, because the noun *nodɨkwa* 'wife' is inherently relational.

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

b. [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. [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.]

N**ɨɨ** **i=naa'a** **tɨhɨdda** patsa-hu.
1SG.NOM **1SG.GEN=father deer** kill-PUNC
'I shot my father's deer.' (elicitation, MS, BP37-3, 1:13:46)

For nouns that are nonrelational, the possession relation varies with the context of utterance. In (48b), an ownership relation holds between the speaker's younger brother and the frog, and in (48c), a seeing relation holds between the speaker's father and the deer.

It is usually assumed that inherently relational nouns take the possessor as an argument (Partee 1997). For these nouns, then, the possessor originates in the specifier of n — a nominal functional projection that relates the possessor thematically to the possessee (Valois 1991:15f., Sportiche 1998:216–230, Carstens 2000, Radford 2000, Bowers 2011). If there is no case available in this position, the possessor must get its case from elsewhere. It can be embedded under an adposition — e.g. English *of* or French *de* — or it can raise to Spec-PossP, where in Northern Paiute it gets genitive case.

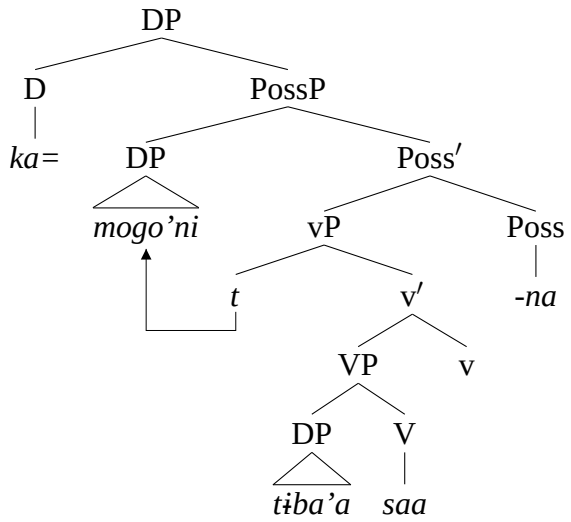
For nonrelational nouns, I assume that they are type-shifted into a relational meaning that is context dependent (Pustejovsky 1993, Jensen and Vikner 1994, Partee and Borschev 1998).[7] The relevant type shifter is encoded in an n head that takes a nonrelational noun as its complement. This permits a uniform syntax and semantics for possessive descriptions. The possession relation always comes from n, whether it is an inherent relation or a context-dependent one. Consequently, Poss serves a purely syntactic function. It assigns case to the possessor but contributes nothing to the meaning of the possessive description.

Nominalizations with *-na* are like possessive descriptions with an inherently relational noun — except that the possessor, instead of originating in Spec-nP, starts out as the argument of a verb. The event nominalization in (49), repeated from (45a) above, has the structure in (50).

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

[7] Partee and Borschev (2002:89–93) and Barker (2011:1114f.) contemplate the reverse possibility of assimilating relational nouns to nonrelational nouns. The possessive construction would contribute a context-dependent possession relation, which would be identified with the relation encoded by an inherently relational noun, if one is present. Since no authors are firmly committed to this position, it is hard to know how exactly to extend it to nominalizations. I expect, though, that whatever mechanism ensures that the possession relation is identified with the relation introduced by an inherently relational noun would also identify it with the unassigned theta-role of a nominalized verb.

(50)



Because *saa* ‘cook’ is transitive, v assigns accusative case to the direct object (Chomsky 2000:123f.). The external argument can only get case by raising, since the nominalization does not contain T. Spec-PossP is not a thematic position, so the possessor in this raising structure gets a single theta-role from the embedded predicate. In (49), the DP *ka=mogo’ni* ‘the woman’ originates in Spec-vP and is interpreted as the agent of the cooking event.

The possessor does not have to be the external argument. When *-na* embeds an unaccusative or passive verb, it can be an internal argument:

(51) **Su=toogga** **akwisi’e-na** i=masɨa-hu.
DEF.NOM=dog **sneeze-NMLZ** 1SG.ACC=scare-PUNC
‘The dog’s sneezing scared me.’ (elicitation, EM, BP33-3-s, 7)

(52) **I=bia** **na-bida-ggɨ-na** nai-hu.
1SG.GEN=mother **REFL-make.fire-APPL-NMLZ** burns-PUNC
‘The fire built for my mother burned.’ (elicitation, EM, BP34-2-s, 43)

In (51), the possessor is the patient of *akwisi’e* ‘sneeze’, and in (52), it is the beneficiary *i=bia* ‘my mother’, which is added by the applicative suffix before the predicate is passivized. Since these predicates lack an external argument, accusative case is not assigned by Burzio’s Generalization. It is consequently the internal argument of the verb that lacks case and raises to Spec-PossP.

This movement is overt, since the possessor occurs to the left of left-edge adverbs:

(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 possessor of the nominalization in (54) must have raised to Spec-PossP, since it appears to the left of *obida* ‘slowly’.

Since Spec-PossP is an athematic position and is, by hypothesis, projected obligatorily, when the embedded verb does not take any arguments, it is filled by an expletive pronoun. A clause with a zero-place predicate, such as the weather verb *tɬɬggwa* ‘snow’ in (55), does not contain an overt subject. But when the same verb is embedded in a nominalization with *-na*, as in (56), the expletive pronoun *a=* is obligatory.

(55) Tɬɬggwa-wɬnnɬ.
snow-STAT
‘It’s snowing.’ (elicitation, MS, BP32-4-s, 13)

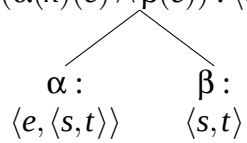
(56) Nɬɬ ***(a=)ddɬɬggwa-wɬnnɬ-na** punni.
1SG.NOM **4.GEN=snow-STAT-NMLZ** see.DUR
‘I see it snowing.’ (elicitation, EM, BP37-3, 1:14:26)

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.

4.2 The event interpretation

The event interpretation of *-na* follows straightforwardly from its syntax, once some additional assumptions are in place about how verb phrases are interpreted. Since Davidson 1967, it is generally 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 defines (p. 122) as follows:[8]

(57) Event Identification
$\lambda x \lambda e(\alpha(x)(e) \wedge \beta(e)) : \langle e, \langle s,t \rangle \rangle$



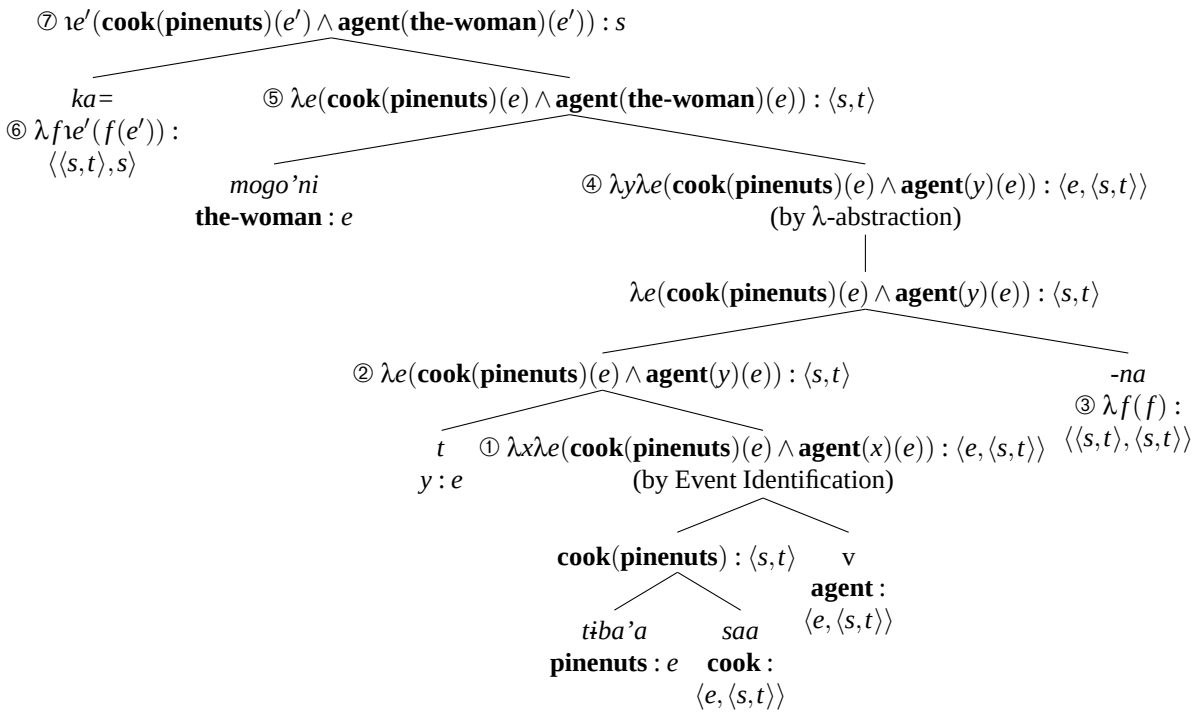
Event Identification takes one function of type $\langle e, \langle s,t \rangle \rangle$ (a function from individuals to functions from events to truth values) and another function of type $\langle s,t \rangle$ (a function from events to truth

[8] 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 and 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 individual-type entities (type *e*); *e*, *e′*, and *e″* as variables over event-type entities (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 entities to truth values (type $\langle e,t \rangle$ or $\langle s,t \rangle$).

values) and returns a function of type $\langle e, \langle s,t \rangle \rangle$. 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 (49) proceeds as follows:

(58)



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 the remainder of the noun phrase.[9]

In particular, the determiner calls for a set of entities as its argument (Barwise and Cooper 1981). Since the set of entities denoted by the vP (②) must be transmitted upwards to the determiner, the nominalizer *-na* itself must denote the identity function (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).[10] The entire DP refers to

[9]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 §4.3 below—I can think of no empirical reason to favor it.

[10]The determiner can be an overt demonstrative or definite determiner, as in (58), 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,

the event of the woman cooking pinenuts (⑦).[11]

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.

4.3 The individual interpretation

Leaving open the embedded predicate's event argument is not the only way to fashion a set of entities, though. There can also be a gap in an individual argument position, as in (59), repeated from (46) above. When this happens, the nominalization describes an individual.

(59) 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. **Ka=i=naa'a** **p**ɨ**-kuba** **kat**ɨ**-na** n**ɨɨ** t**ɨ**m**ɨ**-dua.
DEF.ACC=1SG.GEN=father PRO-LOC sit-NMLZ 1SG.NOM buy-FUT
'I will buy the one my father is sitting on.' (elicitation, MS, BP34-5-s, 6)

In (59a), there is no overt DP projected as the internal argument of the verb *saa* 'cook'; and, in (59b), the argument of the postposition *-kuba* is projected as the pronominal element *p**ɨ***.

There are two main mechanisms for creating gaps: A′-movement, like that found in English wh-questions or relative clauses (Chomsky 1977:87) or abstraction over a resumptive pronoun. It is this latter kind of dependency that gives rise to the individual interpretation. The nominalization in (59a) has the following structure:

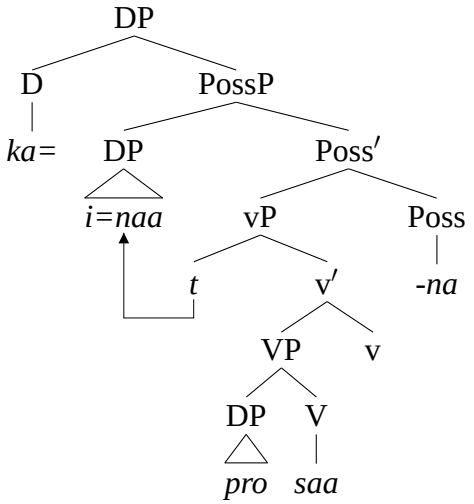
Caponigro 2003). This can give rise to a universal-like interpretation:

(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=tɨ**-dzapoka-na** n**ɨ**mmi ni=hi-kwai-ku n**ɨ**mmi, oo
1PL.EXCL.GEN=NSP-pick-NMLZ 1PL.EXCL.NOM 1PL.EXCL.GEN=what-LOC-LOC 1PL.EXCL.NOM so
tia' n**ɨ**mmi 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.

[11] 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.

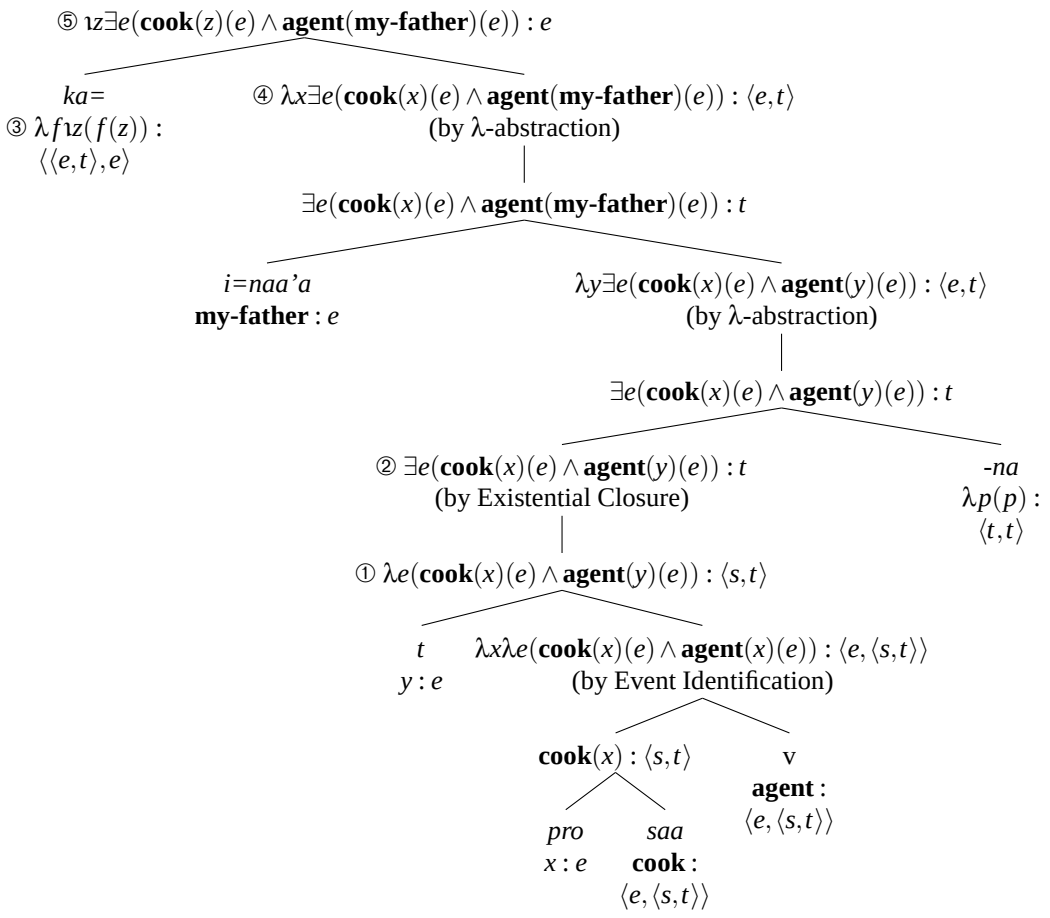
(60)



I assume that D in Northern Paiute can establish A′-dependencies. As we saw in §3.2.3, the language allows possessor extraction, suggesting that Spec-DP is an A′-position, much as in Greek or Hungarian (Szabolcsi 1983, 1989, Horrocks and Stavrou 1987). A null resumptive pronoun is therefore licensed as the direct object in (59a), and the overt resumptive pronoun *pɨ* as an oblique argument in (59b).

These resumptive pronouns contribute a variable that saturates an individual argument of the predicate. In (59a), it saturates the internal argument, as shown in the following parsetree:

(61)



The composition of this individual-denoting nominalization starts off much like the event-denoting nominalization in §4.2. Once the predicate's individual 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 resumptive pronoun inside vP. The determiner needs a set of entities as its argument (③), which is created by abstracting over the resumptive pronoun (④). In the end, the DP refers to the individual that is cooked by the speaker's father (⑤).

4.4 Resumptive pronouns in Northern Paiute

One might question whether the gap inside these nominalizations is really created by a resumptive pronoun, and not simply A′-movement. It is, after all, phonologically null in direct object position.[12] But resumptive pronouns have several properties that distinguish them from the gap created by A′-movement: i) insensitivity to constraints on movement, ii) absence of weak crossover effects, and iii) failure to license parasitic gaps.[13] In what follows, I show that the resumptive pronouns inside individual-denoting nominalizations with *-na* do not obey the standard constraints on extraction, insofar as they can be tested in Northern Paiute (§4.4.1), and that they do not exhibit weak crossover (§4.4.2). The third property above — resumptive pronouns fail to license parasitic gaps — is of little use, since Northern Paiute has null arguments anyway. So, I provide an additional argument from the antilocality condition on resumptive pronouns (§4.4.3).

[12]The resumptive pronoun ***pɨ*** that appears in oblique position is unusual from a crosslinguistic perspective. McCloskey (2006:96) writes that '. . .resumptive pronouns simply ARE (formally) pronouns. I know of no report of a language that uses a morphologically or lexically distinct series of pronouns in the resumptive function [original emphasis].' But ***pɨ*** is potentially unique to nominalizations with *-na*. Its closest correlate is an emphatic reflexive pronoun ***pɨɨ***, which shows up either by itself (i) or supported by the emphatic enclitic *=su* (ii) or *=sɨmɨ* 'alone, only' (iii).

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

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

(iii) Su=nana **pɨɨ=sɨmɨ** oo sɨggwi katɨ.
DEF.NOM=man PRO=alone there just sit.DUR
'The man is just sitting there by himself.' (elicitation, MS, BP33-3-s, 18)

Thornes (2003:171f.) observes that ***pɨɨ*** 'corefers to another noun phrase in the same clause.' In this respect, it differs from other pronouns, which cannot be coreferential with clausemate noun phrases.

[13]There are languages, such as Swedish (Engdahl 1985) and Vata (Koopman 1992), that have resumptive pronouns which 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 and Sells 1983, Sells 1984). I will not be concerned with these types of resumptive pronouns.

4.4.1 Constraints on movement

Like A′-movement, dependencies involving resumptive pronouns can be long distance. This is also true of the gap in an individual-denoting nominalization with *-na*. In (62), the nominalization describes the internal argument of the verb *tɨka* 'eat', which is embedded inside the quotative complement of *sunami* 'think'.

(62) **Ta=oha'a** [$_{CP}$ **tɨka-kwɨ mi**] **sunami-na** kai pisa-'yu.
1DL.GEN=baby **eat-IRR** **QUOT** **think-NMLZ** NEG good-NOM
'What our baby is thinking about eating is not good.' (elicitation, EM, BP35-3-s, 2)

(63) **Himma** [$_{CP}$ su=oha'a tɨka-kwɨ mi] sunami?
what.ACC DEF.NOM=baby eat-IRR QUOT think
'What do you think the baby will eat?' (elicitation, EM, BP37-3-s, 4)

The quotative complement is not an island for extraction, since wh-movement, which is obligatory in Northern Paiute, can take place across a quotative clause boundary, as shown in (63).

Resumptive pronouns come apart from A′-movement in not obeying the standard restrictions on extraction, such as island constraints. Unfortunately, Northern Paiute does not allow us to test many of these restrictions. It does not obey the Left Branch Condition (see §3.2.3), and it lacks the syntactic structures needed to construct the other islands. There are no coordinate structures to test the Coordinate Structure Constraint, and there are no embedded clauses to test the Sentential Subject — except, that is, for quotative complements, which we just saw in (63) are not islands for extraction. It might seem possible to test the Complex NP Constraint using nominalizations themselves, but embedding one nominalization inside another produces ungrammatical center embeddings (Toosarvandani 2011:160f.).

There is 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 (64a). Stranding the postposition, either by itself (64b) or with the pronominal element *pɨ* as its host (64c), is ungrammatical.

(64) a. **Hi-kuba** ɨɨ ka=wihi 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** ɨɨ ka=wihi **-kuba** tɨgɨ-hu?
what 2SG.NOM DEF.ACC=knife **-LOC** put-PUNC
Intended: 'What did you put the knife on?' (elicitation, EM, BP37-3, 19:57)

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

But a preposition can, of course, be stranded inside nominalizations with *-na*, since this is precisely how they describe an individual that is projected as an oblique argument. Consider, again, the sentence in (65), repeated from (59) above.

(65) Ka=i=naa'a **pɨ-kuba** katɨ-na nɨɨ tɨmɨ-dua.
DEF.ACC=1SG.GEN=father **PRO-LOC** sit-NMLZ 1SG.NOM buy-FUT
'I will buy the 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.

4.4.2 Weak crossover effects

While resumptive pronouns show strong crossover effects, just like the trace 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 (66).

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

b. * Haga t~~ɨ~~=bbia t~~ɨ~~ka-gg~~ɨ~~-ti?
who REFL=mother eat-APPL-TNS
Intended: 'Who$_i$ was fed by their$_i$ mother?' (elicitation, EM, BP37-3, 32:28)

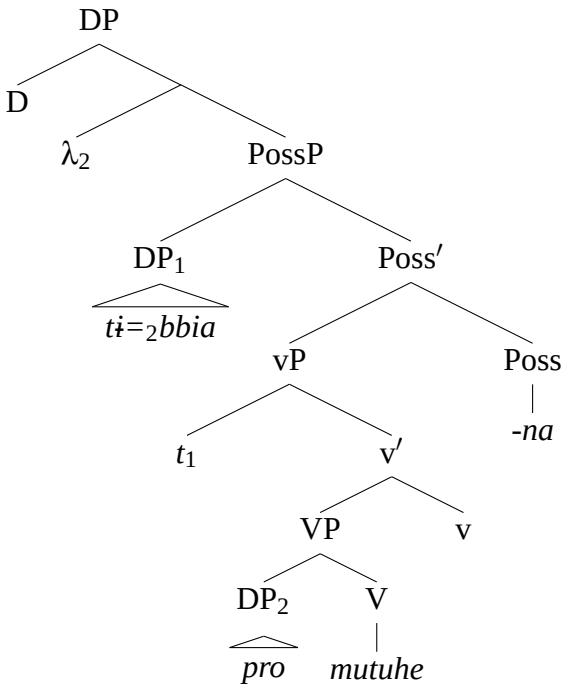
In (66a), the genitive reflexive anaphor *t~~ɨ~~=* can be bound by a subject wh-phrase when it occurs inside the object. But when the anaphor appears inside the subject, it cannot be bound by an object wh-phrase that has A′-moved past it.

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:

(67) T~~ɨ~~=bbia mutuhe-na yaka.
REFL=mother kiss-NMLZ cry.DUR
'The one$_i$ kissed by their$_i$ mother is crying.' (elicitation, EM, BP37-3-s, 15)

The nominalization in (67) describes the individual who was kissed by the individual's mother. The structure of this nominalization is shown in (68), which represents the point in the derivation where abstraction over the resumptive pronoun happens with a λ.

(68)



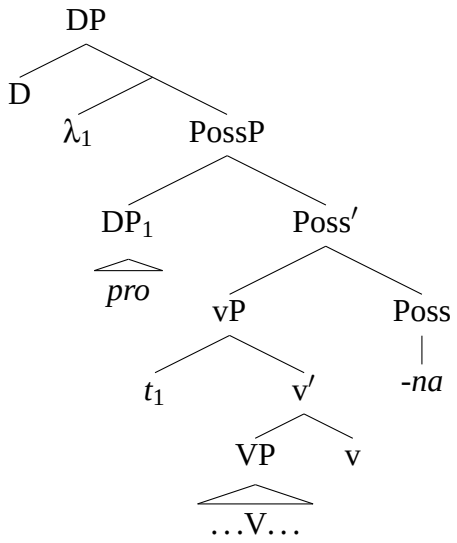
This is a weak crossover configuration since the λ-operator that binds the resumptive pronoun inside the vP also has the genitive reflexive anaphor *t1=* in its scope. Such a configuration is ruled out for operators that undergo A′-movement, but it is grammatical for the operators that bind resumptive pronouns.

4.4.3 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 emboded in Principle B (Borer 1984, McCloskey 1990; see McCloskey 2006 for additional discussion and references). I will not attempt to provide a theory of why resumptive pronouns should obey this constraint. I will simply use it to argue that the gap in individual nominalization with *-na* is created by a resumptive pronoun.

First, we need 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 by the Highest Subject Restriction:

(69) *



A nominalization with the structure in (69) would describe the highest argument of the embedded verb. But such nominalizations with a gap in the position of the POSSESSOR are never attested in Northern Paiute. That is, when nominalizations with *-na* describe an individual, this must be an argument of the embedded verb that is not the highest.

5 The interpretation of nominalizations with *-dɨ*

Nominalizations that describe the highest argument of the verb are created with the *-dɨ* nominalizer, regardless of the thematic role of this argument:

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

b. **Su=na-gwɨtama-dɨ** wadzi-mia-hu.
DEF.NOM=PASS-lock.up-NMLZ hide-go-PUNC
'The one who should be locked up ran away.' (elicitation, MS, BP34-4-s, 24)

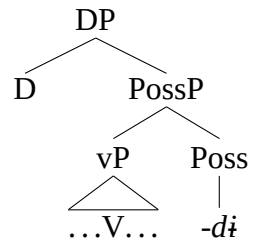
c. Ka=ɨdzɨggwi **ka=kwopika-wɨnnɨ-dɨ** nɨɨ ki'a.
DEF.ACC=blanket **DEF.ACC=shiver-STAT-NMLZ** 1SG.NOM give.DUR
'I gave the blanket to the one who is shivering.' (elicitation, MS, BP34-3-s, 28)

d. Su=nana **ka=patsiponoa-dɨ-ma** katɨ-hu.
DEF.NOM=man **DEF.ACC=be.round-NMLZ**-LOC sit-PUNC
'The man sat on the round thing.' (elicitation, EM, BP34-3-s, 34)

The nominalization in (70a) describes the agent of the transitive verb *patsa* 'kill'; the one in (70c) 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 (70a–d) all have the following schematic structure, where *-dɨ* is the realization of a Poss head that takes a vP complement:

(71)

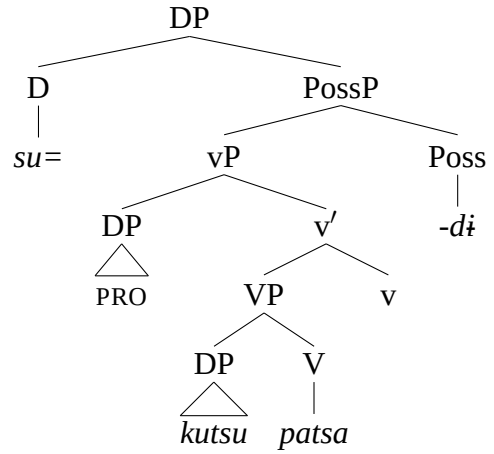


Since there is no T inside these nominalizations and *-dɨ* does not project a specifier, there is one case too few. In particular, as I discuss in §5.1, there is no case (nominative or genitive) to license an overt DP in the highest argument position of the embedded verb. Consequently, as I show in §5.2, this position is occupied by a phonologically null DP (PRO).[14] The event interpretation of nominalizations with *-dɨ* is restricted to zero-place predicates. This follows from the current account, as I show in §5.3, since when the embedded verb takes no individual arguments, its highest argument is the event argument.

5.1 The individual interpretation

The individual nominalization with *-dɨ* in (70a) has the following structure:

(72)

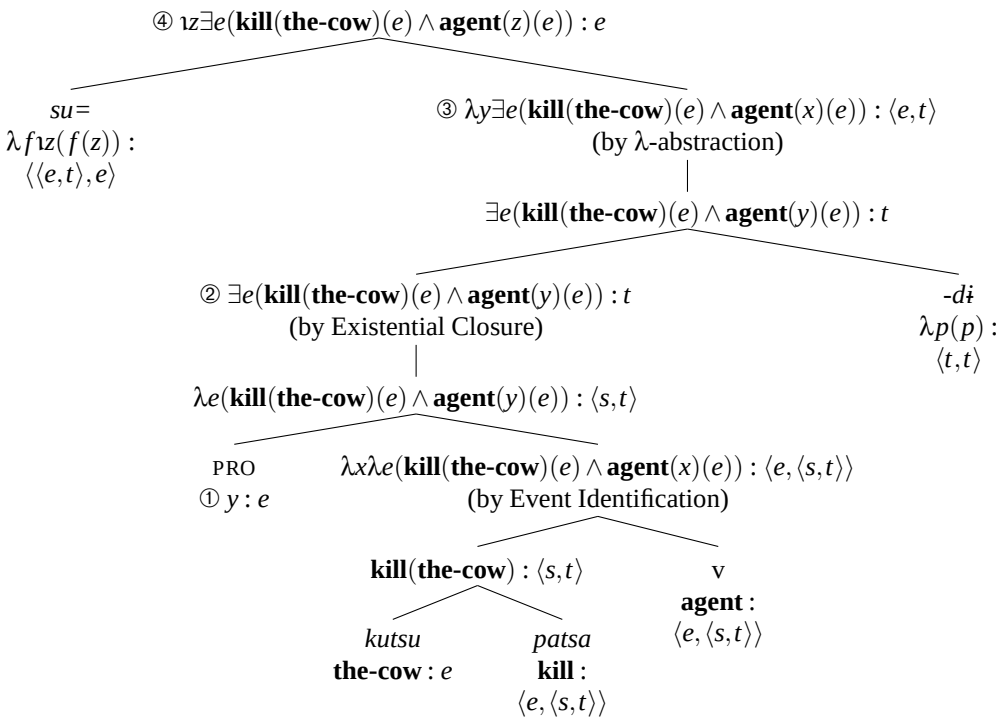


The direct object *kutsu* ‘cow’ gets accusative case from v. A DP in Spec-vP, however, would be unable to get case. There is no T inside the nominalization, and since *-dɨ* does not project a specifier into which the DP can raise and get genitive case, there simply is no case to assign it. Consequently,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

The nominalization describes an individual because PRO must be abstracted. The semantic composition of the nominalization in (70a) is shown below:

[14]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.

(73)



PRO 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). Since the variable contributed by PRO must be bound, it is abstracted over (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 *-dɨ* 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 a clause, the internal or stative arguments of these verbs would raise to subject position. But in a nominalization with *-dɨ*, it is realized as PRO, so that the nominalization describes an internal or stative argument.

5.2 Evidence for PRO

There is some evidence that the highest argument in a nominalization with *-dɨ* is syntactically projected, even if this is as a phonologically empty element like PRO. (Baker and Vinokurova (2009:548) use the same argument for so-called agent nominalizations in Gĩkũyũ; see §6.3.) In Northern Paiute, the genitive reflexive anaphor *tɨ=* must be locally bound, as shown in (74a), while the (nonreflexive) genitive proclitic pronoun *u=* must be locally free, as shown in (74b).

(74) a. **Su=nana** ka=**tɨ=**ggutsu kwati-hu.
DEF.NOM=man DEF.ACC=**REFL=**cow shoot-PUNC
'The man$_i$ shot his$_i$ cow.' (elicitation, EM, BP37-3-s, 32)

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

(75) a. N**ɨɨ** ka=**tɨ**=bbia mutuhe-d**ɨ** pisapi.
1SG.NOM DEF.NOM=**REFL**=mother kiss-NMLZ like.DUR
'I like the one$_i$ who is kissing his$_i$ mother.' (elicitation, EM, BP37-3-s, 36)

b. * N**ɨɨ** **u**=bbia mutuhe-d**ɨ** pisapi.
1SG.NOM **3SG.GEN**=mother kiss-NMLZ like.DUR
Intended: 'I like the one$_i$ who is kissing his$_i$ mother.' (elicitation, EM, BP37-3, 1:37:20)

The genitive reflexive anaphor and proclitic pronouns have the same referential possibilities in nominalizations with *-dɨ*. This is only possible if there is another DP inside these nominalizations to bind them. The sentence in (75a) is grammatical since *tɨ=* is bound by a PRO in Spec-vP. Similarly, the sentence in (75b) is ungrammatical under the intended interpretation since *u=* is not free. It is c-commanded by, and coreferential with, PRO in Spec-vP.

5.3 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 all of the verb's individual arguments were to get case. Then, a nominalization with *-dɨ* would still describe the verb's highest argument, which would be the event argument.

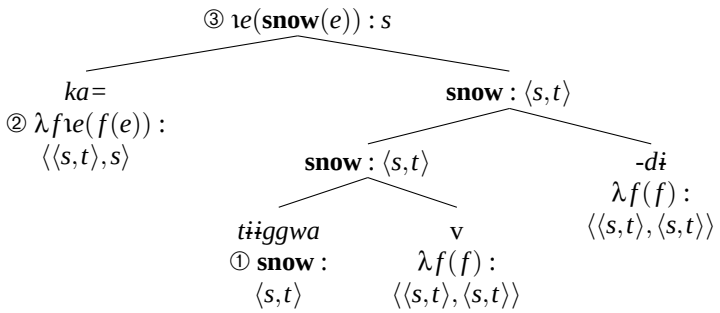
This happens in exactly one circumstance — when the embedded predicate takes NO individual arguments. The nominalizations of the weather verbs *tɨɨggwa* 'snow' and *pauma* 'rain' describe an event:

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

b. Su=nana **ka=pauma-dɨ**-ggwe nɨka-hu.
DEF.NOM=man **DEF.ACC=rain-NMLZ**-LOC dance-PUNC
'The man was dancing when it was raining.' (elicitation, EM, BP32-4-s, 25)

The nominalization in (76a) refers to an event of snowing that is perceived by the speaker. The one in (76b) 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 matrix dancing event. The semantic composition of both these nominalizations is nearly identical. It is illustrated for (76a) in the parsetree below:

(77)



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

The nominalizer *-dɨ* only has an event interpretation when it applies to a very small class of predicates. Unlike *-na*, it does not project a specifier, and consequently its nominalizations contain one case too few. This produces an individual interpretation when the highest argument of the embedded predicate does not need case. But it produces an event interpretation when there are no individual arguments. Since weather verbs only take an event argument, they describe an event when nominalized by *-dɨ*.

6 How English is (not) like Northern Paiute

Northern Paiute is not the only language to realize the Poss head overtly when it takes a verbal complement. Recall the two nominalization patterns in English from the introduction, agent nominalizations with *-er* and the POSS-ing gerund:

(78) a. **John's building the bridge** ruined the company.
b. **The builder of the bridge** quit.

The POSS-ing gerund, I argue, has the same basic structure as a nominalization with *-na*, even though it can only describe an event and not an individual (§6.1). The *-er* nominalizer in English bears a passing similarity to *-dɨ* in Northern Paiute, but I show that its structure and interpretation are actually quite different (§6.2). A closer analogue is found in Gĩkũyũ, whose 'agent' nominalizer has the same syntactic and semantic profile as *-dɨ* (§6.3).

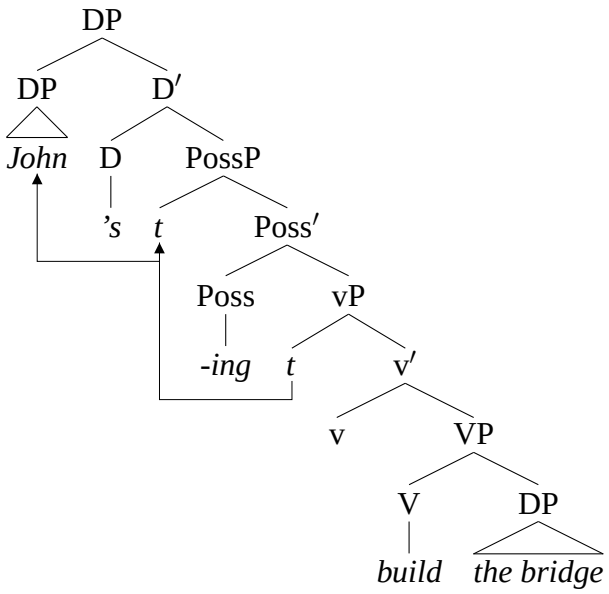
6.1 The POSS-ing gerund

Most generative approaches take the *-ing* suffix in POSS-ing gerunds to realize some head in the extended nominal projection.[15] 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 denote a set of entities like a common noun). Instead, we might think that *-ing* is a D. Abney (1987:193–209) rejects this possibility because it cooccurs 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 (78a) has the following structure:

[15] 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 1987:241–244, Yoon 1996). For reasons of space, I set these possibilities aside.

(79)



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. If *-ing* is the overt realization of the Poss head, POSS-ing gerunds should have the following properties: 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 do, in fact, have all three properties.

It is important to note that I am proposing the structure in (79) 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 (80) or derived nominals like (81).

(80) **John building the bridge** ruined the company.

(81) **John’s building of the bridge** ruined the company.

There have been attempts to unify the ACC-ing gerund and derived nominals with the POSS-ing gerund. For example, Abney (1987:222–230) 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 footnote 17 towards assigning the ACC-ing gerund the structure in (79), I set these other nominalization patterns aside to focus just on the POSS-ing gerund.

6.1.1 Other nominal categories inside POSS-ing gerunds

If *-ing* realizes the Poss head in POSS-ing gerunds, then they 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:

(82) 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-in gerund:

(83) * John's building**s** the bridge ruined the company.

But this restriction arises for independent reasons. Borer (2005:239–245) shows that other event nominalization can only bear plural marking when the embedded predicate is telic:

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

The predicate *cross the Pacific* has an inherent end point, while *swim laps* has no inherent end point. While derived nominals inherit the telicity of the embedded predicate, Alexiadou et al. (2010:552–556) argue that POSS-ing gerunds are always atelic.[16] Consequently, they do not allow plural marking for independent reasons, and the ungrammaticality of (83) 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 §3.1).[17]

6.1.2 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 indeed the case, as Abney (1987:183) observes. The possessor in a POSS-ing gerund cannot be omitted (85), unlike the possessor in either a possessive description (86a) or a derived nominal (86b).

(85) { John's / *The } building the bridge ruined the company.

[16] I leave for future research where this aspectual contribution comes from. Alexiadou et al. observe (p. 554 fn. 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.

[17] 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 (1987:222–231), is that the POSS-ing gerund embeds a smaller constituent, a vP or maximally a AspP, while the ACC-ing gerund embeds a full clause, a TP.

Portner (1992:88–145) shows 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, i.e. *him's* → *his* (Hudson 2003:603).

(86) a. { John's / The } bridge ruined the company.

b. { John's / The } building of the bridge ruined the company.

It is tempting to attribute the ungrammaticality of the POSS-ing gerund without a possessor in (85) solely 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 (87a) or a raising predicate (87b)—can be embedded in a POSS-ing gerund.

(87) 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, Abney 1987:208). But there are plenty of naturally occurring examples of both types:

(88) a. The idea is said to have originated in **its raining on the day on which it was intended to remove his remains**...[18]

b. Moreover, and this is part of Strawson's Point, indignation differs from **its seeming that a sanction would be desirable**...[19]

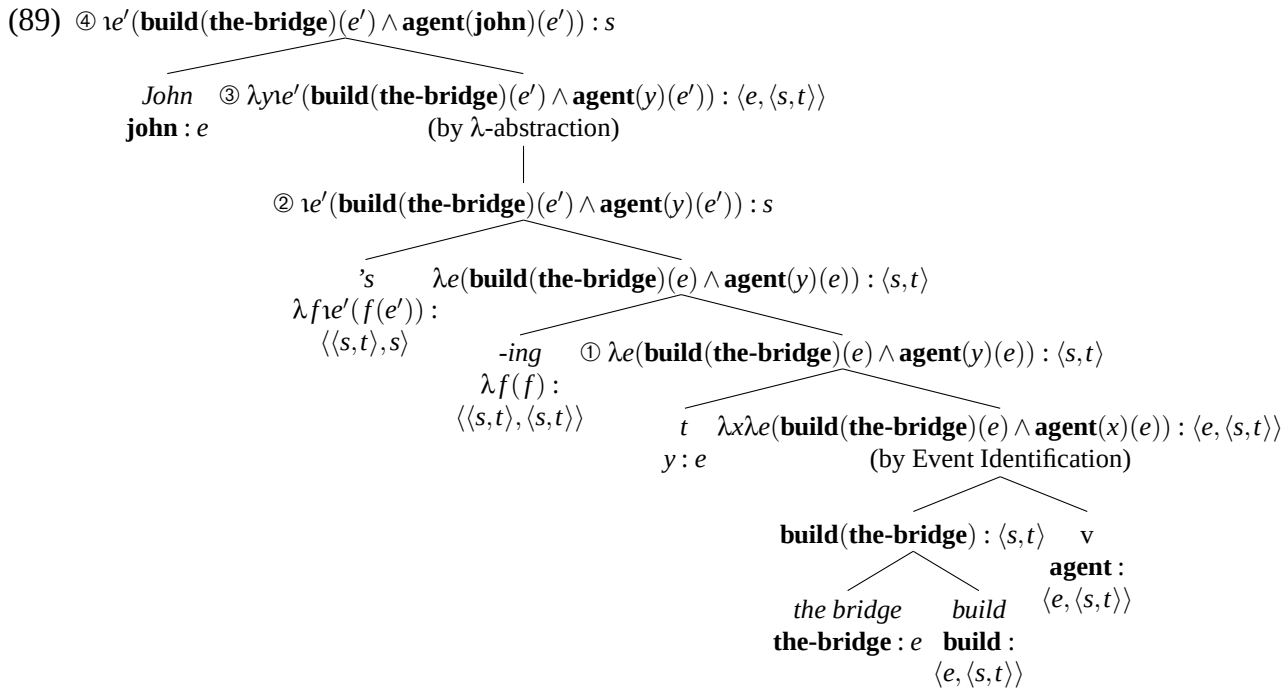
The predicates embedded in these POSS-ing gerunds in (87–88) take no arguments that need case. Nonetheless, they must have a possessor, even if it is nothing more than the expletive pronoun *its*.

6.1.3 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, which in §4.2 we saw comes for free when all the embedded predicate's individual arguments are saturated:

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

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

(89) 

The embedded predicate of the POSS-ing gerund in (78a) 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 John building the bridge (④).

The POSS-ing gerund does not have an individual interpretation. This is a possible interpretation for nominalizations with *-na* in Northern Paiute because it has resumptive pronouns that can be abstracted over. English has no way of constructing the relevant kind of dependency inside nominalizations. It is not possible for an internal argument of the verb to be gapped, regardless of whether this gap is null or overt:

(90) * You can still see $\left\{ \begin{array}{l} \text{Caesar's destroying} \\ \text{Caesar's destroying it} \end{array} \right\}$.
Intended: 'You can still see what Caesar destroyed.'

Probably, this is because D in English is not involved in establishing A′-dependencies. It does not allow possessor extraction, and more generally DPs are islands for movement (Horrocks and Stavrou 1987). Since a gap in an individual-argument position cannot be licensed inside POSS-ing gerunds, they only have an event interpretation.

6.2 The agent nominalization in English

If *-ing* in the POSS-ing gerund is parallel to *-na* in Northern Paiute, perhaps English also has a nominalizer that is parallel to *-dɨ*? At first glance, the *-er* nominalizer might seem a good candidate, but it in fact diverges from *-dɨ* in both its syntax and its semantics.

As we saw in the introduction, the 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*

builder the bridge); ii) they cannot be modified by adverbs (**the quickly builder of the bridge*); and, iii) they cannot contain aspectual morphology (**the haver built of the bridge*). Nominalizations with *-dɨ* pattern with the POSS-ing gerund in all three respects—see §2.

Moreover, nominalizations with *-er* describe individuals bearing a restricted set of theta-roles. In (91), repeated from (78b) above, the nominalization describes the agent of the embedded verb.

(91) **The builder of the bridge** quit.

Rappaport Hovav and Levin (1992) show that *-er* creates nominalizations that describe any external argument theta-role, as shown in (92a–c). But they can NEVER describe an internal argument. The nominalizations of unaccusative verbs in (93) are all ungrammatical.

(92) a. The bonya as an institute 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 and Levin 1992:130f.)

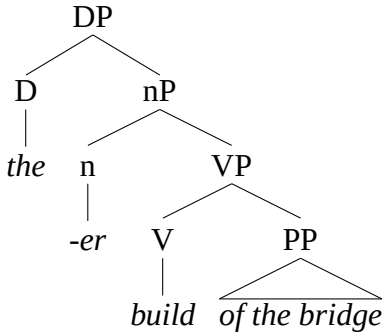
(93) *appearer, *collapser, *dier, *disappearer, *emanator, *ender, *exister, *happener, *laster, *occurrer, *transpirer, *waner, *wilter

(Rappaport Hovav and Levin 1992:148)

This contrasts strikingly with *-dɨ*, which in §5 we saw 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 that introduces an external argument theta-role (see also Bowers 2011:1200ff.):

(94)



The *-er* nominalizer realizes the n head when it takes a VP complement. Since v is not present inside this nominalization, the internal argument must be projected inside a PP and there can be no adverbs or aspectual morphology. Unlike either *-na* or *-dɨ* in Northern Paiute, *-er* itself contributes the agent theta-role:

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

Simplifying Baker and Vinokurova's lexical entry (p. 531) somewhat, the *-er* nominalizer takes a set of events and returns the set of individuals who are an agent in one of those events.[20] The nominalization in (94) consequently describes the individual who is the agent of an event of building the bridge.

[20] Baker and Vinokurova actually give the lexical entry in (i) for *-er*, where $^\cap$ is Chierchia's nominalization operator

6.3 An ‘agent’ nominalization in Gĩkũyũ

A more plausible counterpart to *-dɨ* is found in Gĩkũyũ (Niger-Congo, Bantu: Kenya), whose *-i* nominalizer is traditionally described as deriving agent nominalizations. The suffix appears on verbs, converting them into nominals that describe the verb’s agent:[21]

(96) **A-thĩnj-í** **mbũri ũ̋ũ̋ru acio** nĩ́-má-á-tūm-a
2-slaughter-NMLZ **10goats badly 2DEM** FOC-2.SBJ-PRF-make-IND
tũ-caamb-e.
2.SG.SBJ-bad.reputation-SBJV
‘**Those (people) who slaughter goats badly** have given us a bad reputation.’ (Mugane 2003:237)

Baker and Vinokurova (2009:547f.) argue that *-i* embeds a vP since the nominalizations it creates can contain a direct object or manner adverb, as in (96), or ‘even object pronouns, reciprocal derivations, and second objects—although they cannot contain tense or aspect marking’ (p. 547).

Like *-dɨ* in Northern Paiute, I propose that the *-i* nominalizer in Gĩkũyũ realizes the Poss head when it takes a vP complement and does not project a specifier:[22]

---

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

It is not clear to me why the *-er* nominalizer needs to return the individual correlate of the property of being an agent as opposed to the property of being an agent itself. By lowering it to its individual correlate with the $^{\cap}$ operator, the determiner will simply have to encode the inverse $^{\cup}$ operator to lift the individual correlate to a property denotation again, in the way that Chierchia (1998) describes.

[21]The numbers in the interlinears for the Gĩkũyũ examples represent noun class, not person.

[22]Baker and Vinokurova suggest that *-i* is the realization of a nominal equivalent of an aspectual head, since it contrasts with two other nominalizers, *-a* and *-u*:

(i) a. mu-thuur-**i**
SG-choose-**NMLZ**
‘one who chooses, selects; an elder’

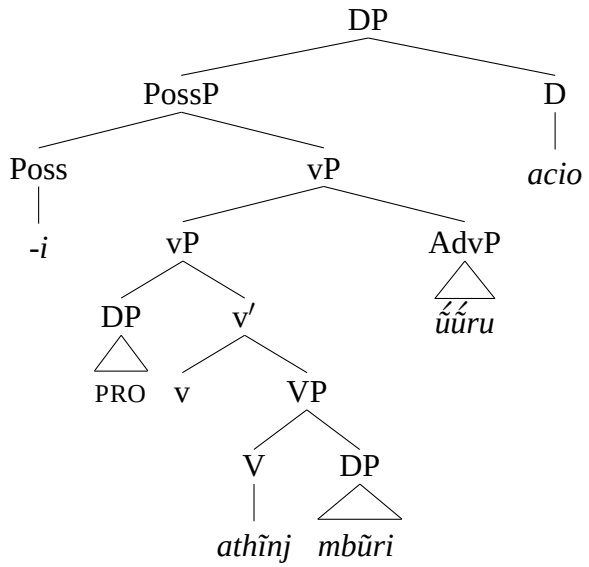
b. mu-thuur-**a**
SG-choose-**NMLZ**
‘one who always chooses’

c. mu-thuur-**u**
SG-choose-**NMLZ**
‘one who has selected’ (Baker and Vinokurova 2009:547)

The nominalization with *-i* appears to be episodic, while the nominalizations with *-a* and *-u* convey some sort of generic (or imperfective) and perfect aspect, respectively.

From just this contrast, I see no reason to analyze *-i* as the realization of an aspect head. While it may indeed contrast with these other nominalizers, Baker and Vinokurova do not show that *-a* and *-u* have the same syntax as *-i*. Do they derive nominalizations with the internal structure of a vP? Moreover, as I discuss below, *-i* does not just create nominalizations that describe the agent. When the embedded verb is unaccusative, the nominalization describes the internal argument. Are the nominalizations created by *-a* and *-u* similarly unrestricted in the individuals they can describe?

(97)



This accounts for the accusative case in these nominalization, as well as the availability of manner adverbs.

Since Poss does not project a specifier, genitive case is not available; and, since there is no T, nominative case is not available. The highest argument of the embedded verb consequently must be realized as PRO. In (96), this is the external argument, so that the nominalization describes the agent of a slaughtering event. This PRO argument is able to license reflexive pronouns, as in the two nominalizations in (98).

(98) Andű́ ma-ti-thũ-íre **mũ-ĩ́-end-i** ta **mũ-ĩ́-yamb-i**.
2people 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 assume (p. 548) that the *i-* prefix on the verb in both nominalizations is a procliticized reflexive pronoun saturating the verb's internal argument. These are bound by the PRO in external argument position, so that the nominalizations describe an individual who likes himself and an individual who is full of himself, respectively.

Under my proposal, the presence of PRO inside these nominalizations with *-i* is motived by the shortage of case. As with *-dɨ* in Northern Paiute, it should be possible for *-i* to create nominalizations that do not just describe the agent (or external argument). Indeed, as Baker and Vinokurova explicitly show, when the verb is unaccusative, the resulting nominalization describes the internal argument:[23]

(99) a. mu-ku-i
SG-die-NMLZ
'one that dies'

[23]Baker and Vinokurova omit tone markings from their own Gĩkũyũ examples, which they attribute to personal communications with John Mugane. Also, the *mu-* prefix on the nominalizations in (99a–b) are presumably the same noun class markers as on the nominalizations in (98).

b. mu-twek-i
SG-melt-NMLZ
'one that melts' (Baker and Vinokurova 2009:547)

Nominalizations with *-i* describe the highest argument of the embedded verb, even when this is a patient or another internal argument, as in (99a–b). Baker and Vinokurova write (p. 548) that they 'suspect that this sort of nominalization is relatively rare.' But I have argued that the *-i* nominalizer in Gĩkũyũ has the same syntax and semantics as the *-dɨ* nominalizer in Northern Paiute. Perhaps, then, this type of nominalization is not so rare after all.

7 Conclusion

Northern Paiute has two nominalizers that create deverbal nominalizations with the internal structure of a vP and the distribution of a DP. These nominalizations can describe either an event or an individual. The range of interpretations arises from the syntax of the nominalizers themselves.

Both *-na* and *-dɨ* are members of the nominal functional category Poss, which is responsible for assigning case to possessors. Since *-na* projects a specifier to which it assigns genitive case, all of the embedded verb's individual arguments can be saturated, in which case the nominalization describes an event. When one of the verb's individual argument positions is saturated by a resumptive pronoun, it is abstracted over, so that that nominalization describes an individual. Because of the antilocality property of resumptive pronouns, they can occur anywhere inside the nominalization but as the highest argument of the verb.

The *-dɨ* nominalizer, in contrast, does not project a specifier, so that there is always one case too few inside the nominalization. The highest argument of the verb must consequently be realized as a phonologically null element that is abstracted over (PRO), giving rise to the individual interpretation. If *-dɨ* applies to a transitive or unergative verb, the highest argument is the external argument, and if it applies to an unaccusative or passive verb, the highest argument is an internal argument. The event interpretation arises in very limited circumstances. When *-dɨ* embeds a zero-place predicate, such as a weather verb, the highest argument of the verb is the event argument, and so the nominalization describes an event.

My account of Northern Paiute deverbal nominalization is framed largely within the theory of nominalization formulated by Borsley and Kornfilt (2000). They propose that nominalizations are mixed projections in which a verbal projection is embedded inside a nominal one. I have assumed a somewhat strengthened version of Borsley and Kornfilt's hypothesis. Nominalizers realize nominal functional heads that select for a verbal projection as their complement. I state this extension of their proposal as follows:

> **Strengthened Functional Nominalization Thesis**
> Nominalizers realize a nominal functional head that embeds a verbal projection. The nominalization has verbal properties below this head, and nominal properties above it.

If a nominalizer selects for a small verbal projection, the resulting nominalization will be more verb-like, and if it selects for a larger verbal projection, the resulting nominalization will be less verb-like. Similarly, how noun-like a nominalization is depends on how high the nominalizer occurs in the extended nominal projection.

Which nominal functional head is realized by a nominalizer has consequences not just for the structure of the nominalization but also for its interpretation—as we saw through a comparison of nominalization patterns in Northern Paiute, English, and Gĩkũyũ. Because *-na* and the *-ing* suffix in the English POSS-ing gerund realize the semantically contentless Poss head when it projects a specifier, the nominalizations they create can describe an event. Nominalizations with *-na* also have an individual interpretation only because Northern Paiute is, unlike English, able to license resumptive pronouns inside nominalizations. Similarly, because *-dɨ* and the *-i* nominalizer in Gĩkũyũ realize the Poss head when it does not project a specifier, the nominalizations they create describe the individual that is the highest argument of the embedded verb. An event interpretation is only possible with predicates that do not take any individual arguments.

The Strengthened Functional Nominalization Thesis predicts that we should only find nominalizers in the world's languages that realize a nominal functional head whose existence can be shown independently. At least for the two nominalizers *-na* and *-dɨ* in Northern Paiute, this prediction is borne out. I argued that both nominalizers realize Poss, the nominal functional head responsible for assigning case to possessors. Clearly, much work remains to be done, but these results suggest that a theory of nominalization along these lines might be fruitfully pursued.

References

Abney, Steven. 1986. Functional elements and licensing. Ms., Paper presented at Generative Linguistics in the Old World, Gerona, Spain., URL http://www.vinartus.net/spa/86b.pdf.

Abney, Steven. 1987. The English noun phrase in its sentential aspect. Ph.D. Dissertation, Massachusetts Institute of Technology.

Alexiadou, Artemis. 2001. *Functional structure in nominals: Nominalization and ergativity*. Amsterdam: John Benjamins.

Alexiadou, Artemis, Liliane Haegeman and Melita Stavrou. 2007. *Noun phrase in the generative perspective*. Berlin: Mouton de Gruyter.

Alexiadou, Artemis, Gianina Iordăchioaia and Elena Soare. 2010. Number/aspect interactions in the syntax of nominalizations: A Distributed Morphology approach. *Journal of Linguistics* 46:536–574.

Babel, Molly, Andrew Garrett, Michael J. Houser and Maziar Toosarvandani. To appear. Descent and diffusion in language diversification: A study of Western Numic dialectology. *International Journal of American Linguistics* 77.

Babel, Molly, Michael J. Houser and Maziar Toosarvandani. 2012. Mono Lake Northern Paiute. *Journal of the International Phonetic Association* 42.

Baker, Mark C. 1985. Syntactic affixation and English gerunds. In *Proceedings of the West Coast Conference on Formal Linguistics*, eds. Jeffrey Goldberg, Susannah MacKaye, and Michael T. Wescoat, volume 4, 1–11. Stanford, CA: Stanford Linguistics Association.

Baker, Mark C. 2005. On gerunds and the theory of categories. Ms., Rutgers University, URL http://www.rci.rutgers.edu/~mabaker/gerunds&cattheory.pdf.

Baker, Mark C. and Nadya Vinokurova. 2009. On agent nominalizations and why they are not like event nominalizations. *Language* 85:517–556.

Barker, Chris. 2011. Possessives and relational nouns. In *Semantics: An international handbook*

of natural language meaning, eds. Claudia Maienborn, Klaus von Heusinger, and Paul Portner, volume 2, 1109–130. Berlin: Walter de Gruyter.

Barwise, John and Robin Cooper. 1981. Generalized quantifiers and natural language. *Linguistics and Philosophy* 4:159–219.

Borer, Hagit. 1984. Restrictive relatives in Modern Hebrew. *Natural Language and Linguistic Theory* 2:219–260.

Borer, Hagit. 2003. Exo-skeletal vs. endo-skeletal explanations: Syntactic projections and the lexicon. In *The nature of linguistic theory*, eds. John Moore and Maria Polinsky, 31–67. Stanford, CA: CSLI Publications.

Borer, Hagit. 2005. *In name only*. Oxford: Oxford University Press.

Borsley, Robert and Jaklin Kornfilt. 2000. Mixed extended projections. In *The nature and function of syntactic categories*, ed. Robert Borsley, volume 32 of *Syntax and Semantics*, 101–131. New York: Academic Press.

Bowers, John. 2011. Non-event nominals and argument structure. *Lingua* 121:1194–1206.

Bresnan, Joan. 1997. Mixed categories as head sharing constructions. In *Proceedings of the LFG97 conference*, eds. Miriam Butt and Tracy Holloway King. Stanford, CA: CSLI. URL http://csli-publications.stanford.edu/LFG/2/bresnan-lfg97.pdf.

Caponigro, Ivano. 2003. Free not to ask: On the semantics of free relatives and wh-words cross-linguistically. Ph.D. Dissertation, University of California, Los Angeles.

Cardinaletti, Anna. 1998. On the deficient/strong opposition in possessive systems. In *Possessors, predicates, and movement in the determiner phrase*, eds. Artemis Alexiadou and Chris Wilder, 17–54. Amsterdam: John Benjamins.

Carstens, Vicki. 2000. Concord in Minimalist theory. *Linguistic Inquiry* 31:319–355.

Chao, Wynn and Peter Sells. 1983. On the interpretation of resumptive pronouns. In *Proceedings of ALNE 13/NELS 13*, 47–61. Amherst, MA: GLSA.

Chierchia, Gennaro. 1998. Reference to kinds across languages. *Natural Language Semantics* 6:339–405.

Chomsky, Noam. 1977. On WH movement. In *Formal syntax*, eds. Peter W. Culicover, Thomas Wasow, and Adrian Akmajian, 71–132. New York: Academic Press.

Chomsky, Noam. 1981. *Lectures on government and binding: The Pisa lectures*. Amsterdam: Foris.

Chomsky, Noam. 1986. *Knowledge of language: Its nature, origin, and use*. Westport, CT: Praegers Publishers.

Chomsky, Noam. 2000. Minimalist inquiries: The framework. In *Step by step: Essays on Minimalist syntax in honor of Howard Lasnik*, eds. Roger Martin, David Michaels, and Juan Uriagereka, 89–156. Cambridge, MA: MIT Press.

Comrie, Bernard. 1976. The syntax of action nominals: A cross-language study. *Lingua* 40:177–201.

Comrie, Bernard and Sandra A. Thompson. 2007. Lexical nominalization. In *Grammatical categories and the lexicon*, ed. Timothy Shopen, volume 3 of *Language Typology and Syntactic Description*, 334–381. Cambridge: Cambridge University Press, 2nd edition.

Davidson, Donald. 1967. The logical form of action sentences. In *The logic of decision and action*, ed. Nicholas Rescher, 81–95. Pittsburgh, PA: University of Pittsburgh Press.

Engdahl, Elisabet. 1985. Parasitic gaps, resumptive pronouns, and subject extractions. *Linguistics* 23:3–44.

Golla, Victor. 2011. *California Indian languages*. Berkeley, CA: University of California Press.
Guéron, Jacqueline and Teun Hoekstra. 1995. The temporal interpretation of predication. In *Small clauses*, eds. Anna Cardinaletti and Maria Teresa Guasti, volume 28 of *Syntax and Semantics*, 77–107. San Diego, CA: Academic Press.
Hacquard, Valentine. 2010. On the event relativity of modal auxiliaries. *Natural Language Semantics* 18:79–114.
Heim, Irene and Angelika Kratzer. 1998. *Semantics in Generative Grammar*. Oxford: Blackwell.
Horn, G. M. 1975. On the nonsentential nature of the Poss-ing construction. *Linguistic Analysis* 1:333–387.
Horrocks, Geoffrey and Melita Stavrou. 1987. Bounding theory and Greek syntax: Evidence for *wh*-movement in NP. *Journal of Linguistics* 23:79–108.
Hudson, Richard. 2003. Gerunds without phrase structure. *Natural Language and Linguistic Theory* 21:579–615.
Jackendoff, Ray. 1977. *X-bar syntax: A study of phrase structure*. Cambridge, MA: MIT Press.
Jacobson, Pauline. 1995. On the quantificational force of English free relatives. In *Quantification in natural languages*, eds. Emmon Bach, Eloise Jelinek, Angelika Kratzer, and Barbara H. Partee. Dordrecht: Kluwer.
Jensen, Per Anker and Carl Vikner. 1994. Lexical knowledge and the semantic analysis of Danish genitive constructions. In *Topics in knowledge-based NLP systems*, eds. Steffen Leo Hansen and Helle Wegener, 37–55. Copenhagen: Samfundslitteratur.
Koopman, Hilda. 1992. Control from COMP and comparative syntax. *The Linguistic Review* 2:365–391.
Koptjevskaja-Tamm, Maria. 1993. *Nominalizations*. London: Routledge.
Kornfilt, Jalkin and John Whitman. 2011. Afterword: Nominalizations in syntactic theory. *Lingua* 121:1297–1313.
Koster, Jan. 1975. Dutch as an SOV language. *Linguistic Analysis* 1:111–136.
Kratzer, Angelika. 1996. Severing the external argument from its verb. In *Phrase structure and the lexicon*, eds. J. Rooryck and L. Zaring, 109–137. Dordrecht: Kluwer.
Krause, Cornelia. 2001. On reduced relatives with genitive subjects. Ph.D. Dissertation, Massachusetts Institute of Technology.
Laka, Itziar. 1990. Negation in syntax: On the nature of functional categories and projections. Ph.D. Dissertation, Massachusetts Institute of Technology.
Liljeblad, Sven. 1966. *Northern Paiute manual I: Grammatical sketch of the northern dialects*. Boise, ID: Department of Anthropology, Idaho State University.
Malouf, Robert. 2000a. *Mixed categories in the hierarchical lexicon*. Stanford, CA: CSLI Publications.
Malouf, Robert. 2000b. Verbal gerunds as mixed categories in HPSG. In *The nature and function of syntactic categories*, ed. Robert D. Borsley, number 32 in Syntax and Semantics, 133–166. New York: Academic Press.
McCloskey, James. 1990. Resumptive pronouns, $\bar{\text{A}}$-binding and levels of representation in Irish. In *Syntax of the modern Celtic languages*, ed. Randall Hendrick, volume 23 of *Syntax and Semantics*, 199–248. San Diego: Academic Press.
McCloskey, James. 2006. Resumption. In *The Blackwell companion to syntax*, eds. Martin Everaert and Henk van Riemsdijk, volume 4, 94–117. Oxford: Blackwell.
Milsark, G. L. 1988. Singl-*ing*. *Linguistic Inquiry* 19:611–634.

Mugane, John M. 2003. Hybrid constructions in Gĩkũyũ: Agentive nominalization and infinitive-gerund constructions. In *Nominals: Inside and out*, eds. Miriam Butt and Tracy Holloway King, 235–265. Stanford, CA: CSLI Publications.

Panagiotidis, E. Phoevos and Kleanthes K. Grohmann. 2009. Mixed projections: Categorial switches and prolific domains. *Linguistic Analysis* 36:141–161.

Partee, Barbara H. 1997. Uniformity vs. versatility: The genitive, a case study. In *The handbook of logic and language*, eds. Johan van Benthem and Alice ter Meulen, 464–470. New York: Elsevier.

Partee, Barbara H. and Vladimir Borschev. 1998. Integrating lexical and formal semantics: Genitives, relational nouns, and type-shifting. In *Proeedings of the second Tblisi symposium on language, logic, and computation*, eds. R. Cooper and Th. Gamkrelidze, 229–241. Tblisi: Center on Language, Logic, and Speech, Tblisi State University.

Partee, Barbara H. and Vladimir Borschev. 2002. Genitives, relational nouns, and argument-modifier ambiguity. In *Modifying adjuncts*, eds. Ewald Lang, Claudia Maienborn, and Cathrine Fabricius-Hansen, 67–112. Berlin: Mouton de Gruyter.

Pollock, Jean-Yves. 1989. Verb movement, Universal Grammar, and the structure of the IP. *Linguistic Inquiry* 20:365–424.

Portner, Paul. 1992. Situation theory and the semantics of propositional expressions. Ph.D. Dissertation, University of Massachusetts, Amherst.

Pullum, Geoffrey. 1991. English nominal gerund phrases as noun phrases with verb-phrase heads. *Linguistics* 29:763–799.

Pustejovsky, James. 1993. Type coercion and lexical selection. In *Semantics and the lexicon*, ed. James Pustejovsky, 73–94. Dordrecht: Kluwer.

Radford, Andrew. 2000. NP shells. Ms., University of Essex, URL http://privatewww.essex.ac.uk/~radford/PapersPublications/npshells.htm.

Rappaport Hovav, Malka and Beth Levin. 1992. *-er* nominals: Implications for the theory of argument structure. In *Syntax and the lexicon*, eds. Timothy Stowell and Eric Wehrli, volume 26 of *Syntax and Semantics*, 127–153. San Diego, CA: Academic Press.

van Riemsdijk, Henk. 1998. Head movement and adjacency. *Natural Language and Linguistic Theory* 16:633–678.

Ross, John Robert. 1973. Nouniness. In *Three dimensions of linguistic theory*, ed. O. Fujimara, 137–258. Tokyo: TEC Company.

Schachter, Paula. 1976. A nontransformational accout of gerundive nominals in English. *Linguistic Inquiry* 7:205–241.

Seiler, Hansjakob. 1977. *Cahuilla grammar*. Banning, CA: Malki Museum Press.

Sells, Peter. 1984. Syntax and semantics of resumptive pronouns. Ph.D. Dissertation, University of Massachusetts, Amherst.

Snapp, Allen, John Anderson and Joyce Anderson. 1982. Northern Paiute. In *Studies in Uto-Aztecan grammar*, ed. Ronald W. Langacker, volume 3, 1–92. Dallas, TX: Summer Institute of Linguistics and the University of Texas.

Sportiche, Dominique. 1998. Movement, agreement, and case. In *Partitions and atoms of clause structure: Subjects, agreement, case, and clitics*, 88–243. New York: Routledge.

Szabolcsi, Anna. 1983. The possessor that ran away from home. *Linguistic Review* 3:89–102.

Szabolcsi, Anna. 1987. Functional categories in the noun phrase. In *Approaches to Hungarian*, ed. István Kenesei, volume 2, 167–189. Jate Szeged.

Szabolcsi, Anna. 1989. Noun phrases and clauses: Is DP analogous to IP or CP? Ms., New York University, URL http://files.nyu.edu/as109/public/szabolcsi%20DP%20IP%20CP.pdf.

Szabolcsi, Anna. 1994. The noun phrase. In *The syntactic structure of Hungarian*, ed. Ferenc Kiefer, volume 27 of *Syntax and Semantics*. New York: Academic Press.

Thornes, Tim. 2003. A Northern Paiute grammar with texts. Ph.D. Dissertation, University of Oregon.

Toosarvandani, Maziar. 2011. The role of nominalization in Northern Paiute relative clause formation. In *Proceedings of the 16th Workshop on the Structure and Constituency of Languages of the Americas*, eds. Meagan Louie and Alexis Black, 151–165. Vancouver: UBCWPL. URL http://www.linguistics.ubc.ca/sites/default/files/2011WSCLA16-Toosarvandani-n.pdf.

Valois, Daniel. 1991. The internal syntax of DP. Ph.D. Dissertation, University of California, Los Angeles.

Yoon, James Hye Suk. 1996. Nominal gerund phrases in English as phrasal zero derivations. *Linguistics* 34:329–356.

Zucchi, Alessandro. 1993. *The language of propositions and events*. Dordrecht: Kluwer Academic Publishers.

Department of Linguistics and Philosophy
Massachusetts Institute of Technology
32-D808
Cambridge, MA 02139
toosarva@mit.edu
http://toosarva.scripts.mit.edu/