On agent nominalizations and why they are not like event nominalizations[1]

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Abstract: This paper focuses on agent-denoting nominalizations in various languages (e.g. *the finder of the wallet*), contrasting them with the much better studied action/event-denoting nominalizations. In particular, we show that in Sakha, Mapudungun, and English, agent-denoting nominalizations have none of the verbal features that event-denoting nominalizations sometimes have: they cannot contain adverbs, voice markers, expressions of aspect or mood, or verbal negation. An apparent exception to this generalization is that Sakha allows accusative-case marked objects in agentive nominalizations. We show that in fact the structure of agentive nominalizations in Sakha is as purely nominal as in other languages, and the difference is attributable to the rule of accusative case assignment. We explain these restrictions by arguing that agentive nominalizers have a semantics very much like the one proposed by Kratzer (1996) for Voice heads. Given this, the natural order of semantic composition implies that agentive nominalizers must combine directly with VP, just as Voice heads must. As a preliminary to testing this idea typologically, we show how a true agentive nominalization can be distinguished from a headless subject relative clause, illustrating with data from Mapudungun. We then present the results of a 34-language survey, showing that indeed none of these languages allow clause-like syntax inside a true agentive nominalization. We conclude that a generative-style investigation into the details of particular languages can be a productive source of things to look for in typological surveys.

1. Introduction

Two common types of morphological derivation are the deriving of event-denoting

nominals from verbs and the deriving of agent-denoting nominals from verbs. The

morphosyntactic trappings of the two can be very similar. For example, in (2) and (3),

finding and *finder* both contain a verb root and a nominalizing suffix, both head phrases

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that occupy normal NP positions (here the subject of the finite clause), both appear with the determiner *the*, and both have a "genitive" object marked with the preposition *of*.

(1)   Chris found my wallet in the stairwell.   (English)

(2)   The finding of the wallet took all afternoon.

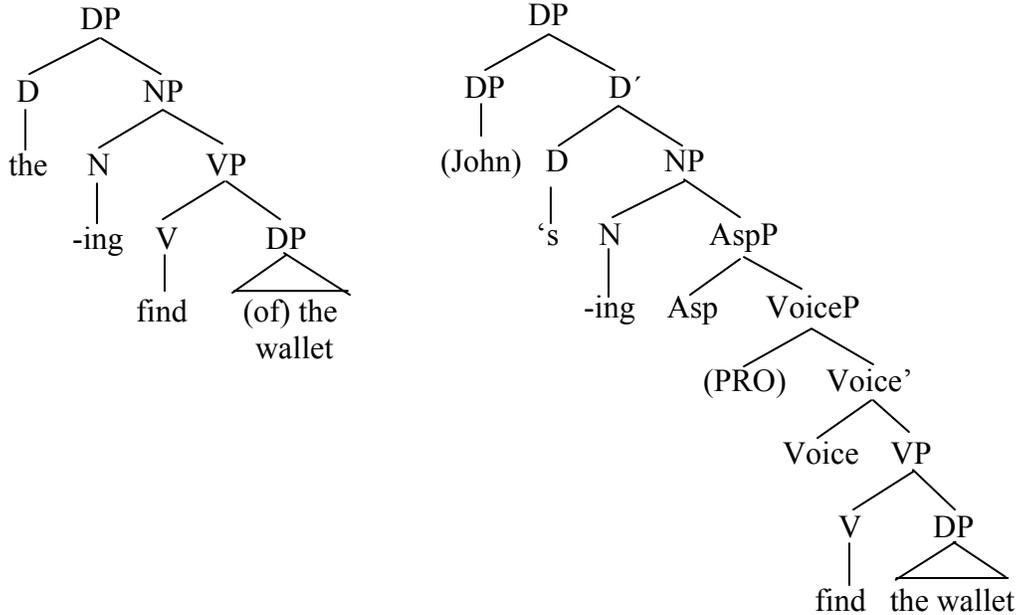(3)   The finder of the wallet returned it to the front desk.

Existing alongside the derived action/event nominal in English and many other languages is the gerundive nominal shown in (4). It too contains an affixed verb and occupies normal NP positions. In fact, it contains the same affix *–ing* that is seen in (2). But in other respects, the internal structure of the gerundive nominal is more verb-like. For example, there is no determiner in (4), and the object is not marked with *of*, but rather is a bare NP in accusative case. This sort of derived nominal can also be modified by an adverb, whereas simple nouns are modified adjectives, not adverbs:

(4)   Finding the wallet (so quickly) was a big relief.

Although some structures like (4) with a mixture of nominal and verbal properties exist, one cannot have arbitrary combinations of nominal and verbal properties. For example, one cannot have a noun-like determiner and mark the object with accusative case in English (*the finding the wallet*), nor can one have an *of*-marked object without a determiner (*finding of the wallet*). There has been extensive discussion in the literature about constructions like (4), (2), and the relationship between them. A common generative idea, which we assume is correct in some form, is that (2) has the nominal affix *–ing* added at a low level of structure, so that the phrase as a whole is mostly nominal, whereas (4) involves introducing the affix *–ing* higher in the phrase structure. As a result there are nominal projections but few if any verbal functional projections in *the finding of*

the wallet; in contrast, there are several verbal functional projections in *finding the wallet*, the constituent becoming distinctively nominal only at a high level:

(5)   a.   action nominal   b. gerundive nominal

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           DP                              DP
          /  \                            /  \
         D    NP                        DP    D´
         |   /  \                        |   /  \
        the N    VP                   (John) D   NP
            |   /  \                         |  /  \
          -ing V    DP                      's N    AspP
               |   /\                          |   /   \
             find (of) the                   -ing Asp   VoiceP
                   wallet                          /      \
                                              (PRO)   Voice'
                                                      /    \
                                                   Voice   VP
                                                          /  \
                                                         V    DP
                                                         |   /\
                                                       find the wallet
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The fact that the object 'the wallet' has accusative case in (4)/(5b) but not in (2)/(5a) follows if accusative case is assigned by the active Voice head, as is often assumed. (We take no particular stand on the source of the *of* in (5a), which is needed when accusative case is not available.) Furthermore, if adverbs like *quickly* are generated in a phrase higher than VP, it follows that there is room for them in (5b) but not in (5a). There is wide agreement among generative linguists that something like this underlies the cluster of differences between (2) and (4), although the details vary; see Abney 1987 for one of the origins of this line of research, and Alexiadou, Haegeman and Stavrou 2007:477-547 for a useful recent overview.[2] Other linguistic frameworks capture the idea that some

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[2] Some variants include whether *–ing* is literally a noun or some other head with nominal features, how much DP-like structure there is above the *–ing* head, and the exact functional heads that appear with the verb

mixtures of nominal and verbal properties are possible in technically different but conceptually somewhat similar ways, such as Malouf's (2000) feature-based theory couched within HPSG, and the various Deverbalization/ Deranking Hierarchies that have been proposed in the functionalist-typological literature (Comrie 1976, Croft 1991, Koptjevskaja-Tamm 1993, Croft 2001, Cristofaro 2003, Malchukov 2004). We have the strong impression that the empirical point we want to make here could be translated into these other frameworks and would be equally interesting within them, although we are not expert enough in these other frameworks to prove this. We couch our discussion in phrase-structural terms throughout, for the sake of consistency and concreteness.[3]

The little-discussed fact that we focus on here is that there is no more verbal version of the agent nominalization in (3); all of the "mixtures" in (6) are completely out.
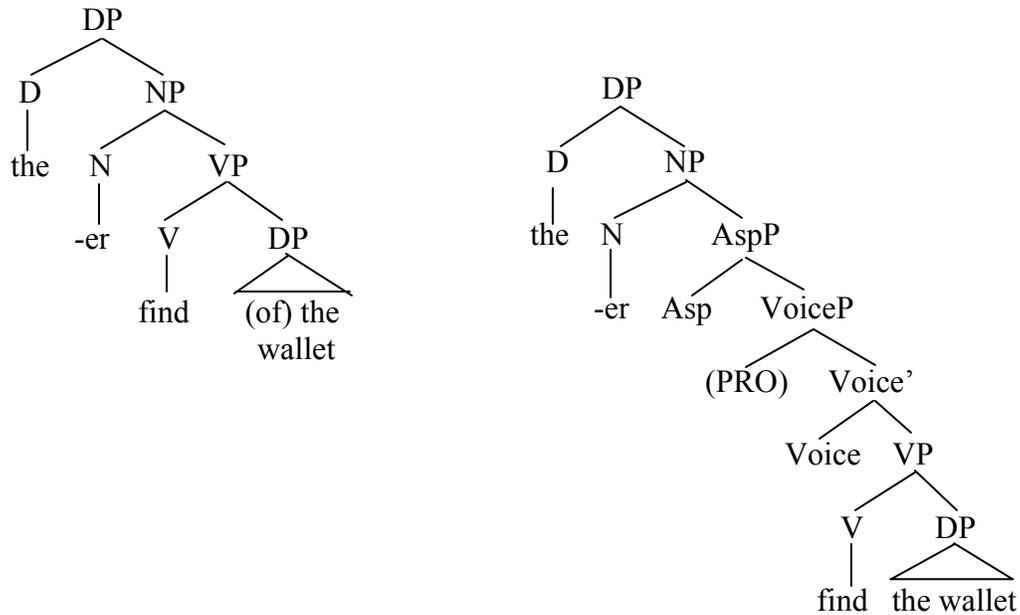
(6)   a.   *The finder the wallet (so quickly) returned it to the front desk.

        b.   *Finder the wallet returned it to the front desk.

        c.   *The finder of the wallet quickly returned it to the front desk.

Unlike some event-denoting nominalizations, the agent-denoting nominalization cannot appear without a determiner (when it is singular) ((6b)), cannot have a bare accusative object ((6a)), and cannot be modified by an adverb ((6c)) (Rappaport Hovav and Levin 1992, Alexiadou 2001). Indeed, it has no signs of verbal structure beyond the fact that it contains a verb root and the internal theme argument of that verb. Translated into structural terms, we claim that the structure in (7a) is attested in English, parallel to the structure in (5a), but the structure in (7b), although it is parallel to (5b), is not attested.

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in (5b). It is not our purpose to defend one particular version of this general idea here. The version in (5) comes from Baker 2005; it is most closely related to van Hout and Roeper 1998 and Alexiadou 2001.
[3] We do in fact also think that the phrase-structure-based theory of these mixed category constructions is the most restrictive and explanatory one available, although we do not insist on this point here. (See, for example, Baker 2005 for some comparison with Malouf's feature-based view.)

(7)   a. agentive nominalizations   b. an unattested structure

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            DP                                        DP
          /    \                                    /    \
        D       NP                               D        NP
        |      /   \                             |       /   \
       the   N      VP                          the    N      AspP
             |     /  \                                |     /    \
            -er   V    DP                             -er  Asp    VoiceP
                  |    /\                                        /      \
                find  (of) the                               (PRO)     Voice'
                      wallet                                           /     \
                                                                   Voice     VP
                                                                            /  \
                                                                           V    DP
                                                                           |    /\
                                                                         find  the wallet
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Transposed into Malouf's HPSG terms, the observation would be that agentive

nominalizations do not have any verbal features; in terms of Croft's Deranking Hierarchy,

it would be that agent-denoting constructions are more fully deranked than event-denoting

constructions are.

      More interestingly, we claim that the absence of (6)/(7b) in English is not an

accidental gap. Essentially the same contrast can be observed in other languages. The

difference was noted in the introduction to Comrie and Thompson's (1985) overview of

the types of nominalization found in languages of the world. They write (p. 349):

    The resulting nouns may be the name of the activity or state designated by the

    verb or adjective, or may represent one of their arguments. … The difference

    between the [two types] is that the A forms [action/state nouns] retain certain

    properties of the verbs or adjectives they are related to, while those in B

[argument-denoting nouns, including agentive nouns] typically behave

syntactically like other nouns in the language, bearing only morphological and

… semantic relations to the associated verb or adjective.

But linguists have not in general taken up this important preliminary observation, either to

demonstrate that it is true empirically, or to try to explain it theoretically. Rather, the vast

majority of the generative and typological work has concentrated entirely on the

action/event denoting nominals. In this paper, we propose to focus on the agent-denoting

nominals from a crosslinguistic perspective, and how they differ from event-denoting

nominals in not showing a mixture of verbal and nominal properties.

Our inquiry is structured as follows. We begin with a fairly detailed investigation

of agent-denoting nominals in Sakha, a Turkic language. This language is interesting

because it looks at first glance like it contains counterexamples to Comrie and

Thompson's generalization. Agentive nominalizations as well as eventive ones can have

accusative case objects in Sakha:

(8)   a. Masha   terilte-ni   salaj-yy-ta

          Masha   company-ACC   manage-EV.NOM-3sP

          'Masha's management of the company'

       b. Terilte-ni   salaj-aaccy   kel-le

          company-ACC   manage-AG.NOM   come-PAST.3sS

          'The manager of the company came.'

However, we show that this is the *only* respect in which agentive nominalizations act like

verbs in Sakha. For example, they do not allow adverbs any more than English ones do:

(9)   a. Misha tünnüg-ü   sorujan   aldjatyy-ta   aqa-tyn

Misha window-ACC intentionally break-EV.NOM-3sP   father-3sP.ACC

kyyhyr(t)-ta.

anger-PAST.3sS

'Misha's intentionally breaking the window angered his father.'

b. Tünnüg-ü   (*sorujan)   aldjat-aaccy   kel-le.

window-ACC intentionally   break-AG.NOM   come-PAST.3sS

'The one who (*intentionally) broke the window came.'

We use facts like these to argue that the more verbal structure for agentive nominalizations

in (7b) is not attested in Sakha any more than in English. The two languages differ not in

the structures of nominalizations, but rather in the nature of accusative case assignment.

Next, we apply Chomskian-style reasoning about the poverty of stimulus to

conclude that something about Universal Grammar is probably preventing language

learners from inferring that (6) is possible by analogy to (2), (3) and (4), or that (8b) is

possible by analogy to (7a-b) and (8a), and we make a proposal about what this is. In

short, we accept the widespread generative view that the agent of a clause is not a true

argument of the verb, but is added by a distinct head Voice (also known as v), which is

immediately above VP and below other clausal heads, a position apparently forced on it

by the natural (iconic) semantic composition of the clause. We then claim that an agent-

denoting nominalization must be formed at exactly this point: an agent nominalization is

the result of using an intrinsically nominal head in the position otherwise occupied by the

Voice head. This rules out the possibility of a structure equivalent to (7b) in any

language. Additional empirical consequences of this are that agent nominalizing

morphology is in complementary distribution with voice morphology, and can only attach to the same kinds of verbs that active and passive voice markers can in Sakha.

In the last phase of our discussion, we test typologically whether what is predicted to be universal by poverty of the stimulus reasoning really is universal. As a preliminary to this, we show that two morphemes in Mapudungun that might be translated with -*er* nominalizations in English actually have two quite different analyses: one is a true agentive nominalizer; the other is really a verbal ending that can appear in headless subject relative clauses. One needs to be able to distinguish between these two quite different constructions in order to test the predictions of our proposal.

We then close by presenting the results of a small typological survey. We choose 34 languages that are known to have event-denoting nominalizations with some verbal properties. We predict that none of them will have agent-denoting nominalizations with similar verbal properties. The prediction is upheld; roughly half the languages have true agentive nominalizers with no evidence of verbal properties; the others construct expressions that denote agents by other means (such as relative clauses), without containing a morpheme comparable to –*er*. We conclude with a brief reflection about how generative-style reasoning about individual languages might help typology to discover more substantive linguistic universals more generally.

2. Event nominalizations and agent nominalizations in Sakha

We begin by looking at the Sakha nominalizations in (8) and (9) in more detail. This provides us with a kind of a fortiori argument: if any language allows verbal functional structure inside an agentive nominalization, it seems like it should be this one, given the

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existence of accusative case nominals in (8b) and (9b) as well as in (8a) and (9a). But on closer examination, there is much evidence that event-denoting nominalizations permit verbal structure whereas agent-denoting nominalizations do not even in Sakha.

Sakha is a Turkic language spoken in Northern Siberia, also known as Yakuts. Although it is geographically far away from Turkey, it is nevertheless very much like Turkish in most major typological respects. It is a standard head-final language, with basic Subject-Object-Verb word order. Noun phrases are marked for case, with a nominative-accusative-dative system. The verb agrees in person and number with its subject, but not with the object or indirect object. Many of these features can be seen in the simple transitive sentence in (10) (compare with (8)).

(10)   Tobuukap-tar terilte-ni   salaj-al-lar.

        Tobuukap-PL company-ACC   manage-AOR-3pS

        'The Tobukovs (a family name) manage the company.'

Noun phrases are not in general marked for (in)definiteness in Sakha, but possessed nouns bear a suffix that agrees with the possessor in a way that parallels the agreement between a verb and its subject. More generally, Sakha has agglutinative morphology, with the possibility of a series of suffixes appearing on nouns and verbs. It also has a Turkish-like system of vowel harmony in backness and roundness; taken together with other assimilative processes, this means that most suffixes have many different allomorphs in Sakha. Some basic information on this language is available in Stachowski and Menz 1998, and much more can be gleaned from Vinokurova 2005.

One further similarity between nominalizations and clauses is that the object may or may not bear overt accusative case, depending its interpretation. Definite and specific

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objects have an overt accusative case suffix and can be separated from the verb; indefinite nonspecific objects have no overt case marking and must be next to the verb ((11a)). (11b) and (11c) show the same alternation inside the two kinds of nominalizations.

(11) a. Masha   ynax/ ynaq-y   kör-ör

Masha   cow   cow-ACC watch-AOR.3sS

'Masha is watching (a) cow(s)/the cow.'

b. Masha   ynax/ ynaq-y   kör-üü-te

Masha   cow   cow-ACC watch-EV.NOM-3sP

'Masha's watching of (a) cow(s)/of the cow'

c. Ynax/ ynaq-y   kör-ööccü   kel-le.

cow   cow-ACC watch-AG.NOM   come-PAST.3sS

'The watcher of (a) cow(s)/of the cow came.'

No morphologically simple noun behaves like this; an NP in construction with a morphologically simple noun bears genitive case regardless of definiteness, never accusative. So this is undeniably a verbal property. But we now show that this is the only distinctively verbal/clausal property that the agentive nominalizations display.

2.1 Adverbs

We already showed in (9) that an agent-oriented adverb is possible in event nominalizations but not in agentive nominalizations. (12)-(14) shows that the same contrast holds for other simple adverbs in Sakha.[4]

(12) a. Terilte-ni   ücügejdik salaj-yy   ülehit-ter

company-ACC well   manage-EV.NOM worker-PL

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[4] Note that these are some of the lowest adverbs in the hierarchy of adverbs identified in Cinque 1999, so if any adverbs are possible inside the domain of a nominalizer, one would expect these to be.

xamnas-tar-yn ürdet-ie.

salary-PL-3P.ACC increase-FUT.3sS

'Managing the company well will increase the workers' salaries.'

b. Terilte-ni (*ücügejdik) salaj-aaccy kel-le.

company-ACC well manage-AG.NOM come-PAST.3sS

'The one who manages the company (*well) came.'

(13) a. Misha tünnüg-ü xat aldjat-yy-ta aqa-tyn

Misha window-ACC again break-EV.NOM-3sP father-3sP.ACC

kyyhyr-ta.

anger-PAST.3sS

'Misha's breaking the window again angered his father.'

b. Tünnüg-ü (*xat) aldjat-aaccy kel-le.

window-ACC again break-AG.NOM come-PAST.3sS

'The one who breaks the window (again) came.'

(14) a. Misha sorudaq-y bütünnüü tolor-uu-ta aqa-tyn

Misha assignment-ACC completely finish-EV.NOM-3sP father-3sP.ACC

üör-te.

please-PAST.3sS

'Misha's completely finishing the assignment pleased his father.'

b. Beqehee Misha sorudaq-y (*bütünnüü) tolor-ooccu-nu

yesterday Misha assignment-ACC (completely) finish-AG.NOM-ACC

kytta kepset-te.

with talk-PAST.3sS

'Yesterday Misha talked with the executer of the assignment.'

(15) shows that complex telicity adverbs, which sensitive to the aspect of VP, are also bad in agentive nominalizations, although they are possible in eventive nominalizations.

(15)   a.   *Biir caas ustata etii-ni   yryt-aaccy   ucuutal-yn

           one   hour along   sentence-ACC analyze-AG.NOM   teacher-3sP.ACC

           sylat-ta.

           make.tired-PAST.3sS

           'The one who analyzes the sentence for an hour made his teacher tired.'

       b. *Biir   caas ih-inen   sorudaq-y   tolor-ooccu

           one   hour inside-3sP.INST assignment-ACC finish-AG.NOM

           ucuutal-yn   sohutta.

            teacher-3sP.ACC   surprise-PAST.3sS

           'The one who finished the assignment in one hour surprised the teacher.'

Indeed, we know of no type of adverb that is permitted in agent-denoting noun phrases, despite the fact that many are allowed in event-denoting noun phrases. There is thus a rather sharp distinction between core arguments of the verb, which are allowed in agentive nominalizations, and optional adverbs, which are not.

This difference can also be seen in the domain of dative-case noun phrases, which may count as either intrinsic arguments of the verb or as optional modifiers in Sakha, as in other languages. With verbs like 'give', the dative expression is an argument selected by the verb itself; such datives are possible in agentive nominalizations:

(16)   Oqo-lor-go   emp   bier-eecci   ol   tur-ar

       children-DAT medicine   give-AG.NOM   there stand-AOR.3sS

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'A giver of medicine to children is over there.'

In contrast, a dative expression with a verb like 'work' or 'sew' is a nonselected, benefactive adjunct. These adjuncts are not allowed in agentive nominalizations:

(17)   a.   *Masha-qa   ülelee-cci   kel-le.

            Masha-DAT work-AG.NOM come-PAST.3sS

            'The one who works for Masha came; The worker for Masha came.'

       b.   *Djoŋ-ŋo   son   tig-eecci   manna olor-or.

            People-DAT coat   sew-AG.NOM   here   live-AOR.3sS

            'The sewer of coats for people lives over here.'

In contrast, dative adverbs are permitted in event-denoting nominalizations:

(18)   djoŋ-ŋo   son   tig-ii

       people-DAT   coat   sew-AG.NOM

       'sewing coats for people'

Why do these contrasts exist? An influential view about adverbs in the generative syntax literature is that they are generated inside the projections of functional heads that are higher than the core VP (Cinque 1999). This assumption permits an account of the ordering constraints that hold between different classes of adverbs, among other things. Suppose then that the agentive nominalizer –*aaccy* can select only VP itself, whereas the event nominalizer –*yy* can select higher functional projections along with VP. In other words, a structure like (7a) is possible in Sakha, as in English, but no structure like (7b) exists in the language. From this assumption about the structure of agentive nominals together with Cinque's idea that adverbs are licensed in verbal functional projections higher than VP, it follows that only arguments can appear with the nominalized verb in an

agentive nominalization. In contrast, there is room for adverbs as well as arguments in an event nominalization that has the (5b)-type of structure.[5]

2.2 Aspectual suffixes

Another, more direct source of evidence for this conclusion comes from the distribution of aspectual morphology. Two types of suffixal aspect are known in Sakha: the frequentative-distributive aspect (marked with -*talaa*), shown in (19a), and the accelerative aspect (marked with -*baxtaa*), shown in (19b).

(19) a. Sargy onno-manna   bar-ytalaa-ta.

Sargy thither-hither go-FREQ-PAST.3sS

'Sargy went to various places repeatedly/several times.'

b. Suruj-baxtaa!

Write-ACCEL

'Write quickly; write a little bit!'

Both aspectual affixes can appear inside of the event nominalizer –*yy*:

(20) a. Misha onno-manna bar-ytalaa-hyn-a   miigin   kyyhyr-ta.

Misha here-there   go-FREQ-EV.NOM-3sP me.ACC anger-PAST.3sS

'Misha's repeated goings hither and thither bothered me.'

b. Misha onu-many suruj-baxtaa-hyn-a   miigin   kyyhyr-ta.

Misha this-that   write-ACCEL-EV.NOM-3sS me.ACC anger-PAST.3sS

'Misha's writing quickly various bits and pieces angered me.'

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[5] Cinque's (1999) theory of adverbs is somewhat controversial, even within the Chomskian community. Suppose instead that some adverbs are adjoined to VP, which is the more traditional assumption. Then in order to capture the facts in this section, one would have to say that constituents cannot be adjoined to the complement of –*aaccy*, whereas they can be adjoined to the same projection when it is embedded in a normal clause structure. This could perhaps be reduced to Chomsky's (1986:16) proposal that one cannot adjoin to argument phrases, if the notion "argument phrase" is understood as an extended projection that functions as the complement of an item with different category features.

But neither one can appear inside the agent nominalizer -*aaccy*:

(21)   a.   *Bar-ytalaa-ccy   kel-le.

          *go-FREQ-AG.NOM came

          'The frequent goer came.'

       b.   *Suruj-baxtaa-ccy   kel-le.

          write-ACCEL-AG.NOM come-PAST

          'A quick writer came.'

The standard generative view is that aspect suffixes are the heads of phrases in their own right (Aspect phrases) which can be built above the core VP. They then surface as suffixes on the verb root when the verb incorporates into the aspectual head (see again Cinque 1999). If something like this is correct, then the contrast between (20) and (21) also follows from the assumption that –*aaccy* can only take a VP as its complement, whereas –*yy* as an event nominalizer can select larger phrases that contain VP.

2.3 Periphrastic aspects

Essentially the same contrast can be seen with derived aspectual categories in Sakha. Various aspectual distinctions such as inchoative, progressive, completed, transitory, and resultative are marked with the help of auxiliary verbs. Two examples are given in (22).

(22)   a.   Masha   ülelee-n   bar-da.

          Masha   work-CON   go-PAST.3sS

          'Masha started working.' (inchoative)

       b.   Masha   ülelee-n   taqys-ta.

          Masha   work-CON   go.out-PAST.3sS

          'Masha kept working/worked incessantly.' (progressive)

It is completely impossible to form an agentive nominal out of one of these verbal

complexes; in comparison, they are considered grammatically possible (although not fully

felicitous) inside event nominals (I. Vinokurov, personal communication).

(23)   a.   ??ülelee-n   bar-yy/   taxs-yy

            work-CON   go-EV.NOM/   go.out-EV.NOM

            'starting to work; continuing to work incessantly'

       b.   *Ülelee-n   bar-aaccy/   taxs-aaccy   kel-le.

            work-CON   go-AG.NOM/   go.out-AG.NOM   come-PAST.3sS

            'The one who started working/who works incessantly came.'

Assuming that this contrast is real and significant, it has the same explanation as the

previous one: -*yy* can select for an Aspect Phrase that contains VP (or some still-higher

phrase that contains Aspect Phrase); -*aaccy* can only select for VP itself. The only

difference is in how the aspect is spelled out: the verb root itself unifies with the aspect

head in the morphosyntax in some cases (section 2.2) and not in others (this section).

2.4 Negation

A fourth difference between agentive nominalizations and eventive nominalizations in

Sakha concerns verbal negation, which is expressed by the suffix –*(i)ba*:

(24)   Misha suruj-ba-ta.

       Misha write-NEG-PAST.3sS

       'Misha didn't write.'

Here too there seems to be a contrast when it comes to using negation inside the two

nominalizing affixes. Negation is clearly impossible in agentive nominalizations:

(25)   *Suruj-um-aaccy   kel-le.

write-NEG-AG.NOM come-PAST.3sS

'The one who doesn't write came; The non-writer came.'

In contrast, with eventive nominals, negation is not impossible; whether it is accepted has

to do with considerations of usage, idiomaticity, and the like. Various negated –*yy*

nominals are listed in Russian-Sakha dictionaries. (26b) gives some forms from the 1968

edition, and (26c) gives some that were compiled by Okoneshnikov (1998).

(26)   a.   ?Suruj-um-uu   (coined)

           Write-NEG-AG.NOM

           'not writing'

    b.   tolor-um-uu;   toto ahaa-m-yy,   bil-im-ii

           carry.out-NEG-YY; OK   eat-NEG-YY,   know-NEG-YY

           'failure to perform', 'undernutrition' 'ignorance'

    c.   iteqej-im-ii,   tölöö-m-üü,   teŋne-h-im-ii

           believe-NEG-YY   pay-NEG-YY   be.equal-NEG-YY

           'disbelief, mistrust', 'non-payment', 'inequality'

Negation is often analyzed in generative treatments as heading a phrase of its own,

NegP (Pollock 1989, Zanuttini 1997). Assuming this, then once again we see that –*aaccy*

can only occur with a bare VP—the verb root and its arguments only—whereas –*yy* can

select higher projections, including NegP as well as AspectP and VP.

Summarizing this section, we have seen that, despite their superficial similarities,

event nominalizations and agentive nominalizations differ from each other in a variety of

ways. All of these differences can be unified in terms of the idea that event

nominalizations can include higher verbal functional categories inside of them (NegP,

AspPs of various types, and whatever projections license various types of adverbs),

whereas agentive nominalizations allow none of these extended verbal projections. In

other words, eventive nominalizations in Sakha are like gerunds in English, which also

allow adverbs, expression of aspect, and negation (e.g., *Mary's solving the problem*

quickly/well, Mary's having solved the problem, John's not doing his share). But there is

no agent-denoting gerund-like construction in either Sakha or English, despite the use of

accusative case in the Sakha agentive nominal. This is a curious and interesting gap.

3. Explaining the difference

Why is there this difference in the selectional properties of agentive nominalizers and

event nominalizers in Sakha? Classic poverty of stimulus considerations suggest that

Universal Grammar plays a role in this. Most of the grammatical Sakha data we have

surveyed would not be very frequent in the experience of the average speaker, the event

nominals belonging to a somewhat "high" or "learned" style.[6] It is thus unlikely that

language learners could infer that the ungrammatical examples seen in section 2 are bad

from indirect negative evidence. If they heard a certain density of examples of the

positive kinds, then they might be able to infer ungrammaticality for the bad examples

from their not having heard them, but this is unlikely to work in this case. It is easy to

imagine the Sakha language learner analogizing from the grammaticality of 'company-

ACC manager' and 'company-ACC well managing' to the notion that 'company-ACC

well manager' is possible. And yet speakers apparently resist the analogy, drawing subtle

contrasts between agent nominalizations and event nominalizations. Why is this?

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[6] There is also a system of participial verb forms that can be used to make nonfinite embedded clauses.
These can express the same notions as event nominals in many cases, and have a more "everyday" flavor.

The very same question arises in English. Adverbs are routinely possible in gerundive nominals (see (4)), and they are marginally possible even in so-called "action nominals", which mark the object with *of* and have a determiner:[7]

(27)　a.　the shutting of the gates regularly at 10:00 (was irksome to us)

　　　b.　John's reading of the Bible aloud comforted his mother.

　　　c.　?The finding of the solution so quickly surprised me.

But such adverbs are quite impossible with agent-denoting nominals:

(28)　a.　*The shutter of the gates regularly at 10:00 was very responsible.

　　　b.　*The reader of the Bible aloud has a beautiful voice.

　　　c.　*The finder of the solution so quickly got an award from the company.

Notice that there is nothing logically incoherent about the meanings intended in (28). These meanings can perfectly well be rendered using a relative clause, as in *The one who reads the Bible aloud has a beautiful voice* (see also Rappaport and Levin 1992:142). Moreover, Alexiadou (2001:129) and Alexiadou et al. (2007:512) observe the very same contrast between event nominalizations and agent nominalizations in Greek. This pattern of facts thus leads us to ask what it is about Universal Grammar that restrains speakers of English, Sakha, and Greek from generalizing from the grammaticality of adverbs with event nominals and the superficial similarity of agent nominals and event nominals to the grammaticality of adverbs with agent nominals. And the same question can be asked for aspect marking, verbal negation, and other clause-like elements that can be found in some event-denoting nominals but in no agent-denoting nominals.

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[7] Fu et al 2001 claims that adverbs are possible even with derived nominals that end in Latinate nominalizing suffixes like *–ion*, *-ment*, etc. in English. However, Alexiadou, Haegeman and Stavrou (2007:508) report that adverbs sound significantly more natural with *–ing* nominals than with Latinate ones, and the first author agrees with this judgment. We have nothing to say about this interesting difference.

3.1 Basic Proposal

Our answer to these questions has to do with the special status of agent arguments in the composition of clauses. In generative theory, agents are not analyzed as direct arguments of the verb (Marantz 1984, Kratzer 1996, Chomsky 1995, and many others). Rather, they are added by a separate head, Voice, which is above VP but otherwise low in the phrasal architecture of the clause. There are many more or less equivalent expressions of this in the literature, but since semantics plays a role in our discussion, we frame it in terms of the version that is the most semantically explicit, that of Kratzer 1996.

Kratzer adopts the view that verbs are predicates of events. They take arguments such as the theme and (for some verbs) the goal intrinsically,[8] but they do not themselves take agent arguments. The basic meaning of an ordinary transitive verb is given in (29a); it composes with the object DP to give (29b) as the meaning of a typical VP.

(29)   a.   manage = $\lambda x \, \lambda e$ (manage(e) & theme(e, x))

         b.   [$_{VP}$ manage the company] = λe (manage(e) & theme(e, the company))

Kratzer then proposes that the agentive Voice head has the following meaning:

(30)   ACTIVE = $\lambda x \, \lambda e$ (agent(e,x))

This Voice head takes a VP complement, which it combines with semantically by a special rule of event coordination:

(31)   [$_{VoiceP}$ Misha ACTIVE [$_{VP}$ manage the company]]

         = Misha $\lambda x \, \lambda e$ (manage(e) & theme(e, the company) & agent(e, x))

         = λe (manage(e) & theme(e, the company) & agent(e, Misha))

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[8] It is conceivable that even the theme is not an intrinsic argument of the verbal root, but is added by a functional head even lower than Voice; see Baker (2003:77-88) for such a proposal.

The active voice alternates in English and many other languages with the passive voice. For Kratzer (1996) and the broader tradition that she represents, passive is simply a different choice of Voice head. Although Kratzer does not give an explicit semantics for the verbal passive Voice head, her discussions suggest that it has essentially the same semantics as the active Voice head; the primary difference is that active Voice typically takes an overt NP in its specifier position and passive voice takes a phonologically null NP, which is interpreted as some kind of free variable.[9] Thus, a passive Voice Phrase would have the structure and interpretation in (32).

(32)   [$_{VoiceP}$ [Ø]$_{NP}$ PASSIVE [$_{VP}$ manage company]] =

    λe (manage(e) & theme(e, company) & agent (e, x))

It is particularly helpful to include passive as well as active verbs in our discussion, because unlike the active head in Sakha (or English), the passive voice head is realized by an overt suffix in Sakha. This is shown by the active-passive pair in (33).[10]

 (33)   a. Min oloppoh-u   aldjat-ty-m.

        I   chair-ACC   break-PAST-1sS

        'I broke the chair.'

    b. Caakky aldjat-ylyn-na.

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[9] In some other treatments the null agent NP is interpreted as an existentially bound variable. Kratzer seems to avoid this view because it does not account for the fact that the agent of a passive cannot be interpreted reflexively, as being the same as the theme/derived subject of the passive clause. However, the exact semantic interpretation of the covert agent argument is not crucial to us here.

[10] Comparing the transitive verb *aldjat* 'break' with its unaccusative counterpart *aldjan* 'break' (see (46b)) suggests that there is some kind of morpheme –*t* in the former (see Vinokurova 2005:437-444). Taken in isolation, one might think this –*t* is an overt realization of the active voice head. But (33b) shows that this cannot be correct, because this formative is not replaced by the passive morpheme, but rather comes before it. In contrast, the –*n* in the unaccusative version is in complementary distribution with passive –*ylyn*. Therefore, we can say that –*n* is a third voice head, in the same category as –Ø active and –*ylyn* passive; it denotes an identity function from a predicate of events to the same predicate of events, and does not license an NP in its specifier. Within Distributed Morphology, we can handle –*t* as an instance of stem allomorphy: the root meaning 'break' is realized as [aldja] before the voice marker [n] and as [aldjat] in other contexts. Other semi-systematic transitive-unaccusative pairs can be handled in the same way.

cup-Ø　　break-PASS-PAST.3sS

'The cup was broken (by someone).'

It is thus easier to see by simple inspection which structures have a Voice head, and how that head is ordered with respect to other elements, in the passive than in the active.

Of course, not all events involve an agent. In formal terms, the predicate agent(e,x) is defined for some events but not for all. For example, closing events can have agents, but falling events cannot, so (34b) is possible in English, but not (34d).

(34)　a.　The door closed.

　　　b.　Chris will close the door.

　　　c.　The book fell.

　　　d.　*Chris will fall the book.

Sakha is similar, in that some intransitive verbs have a simple transitive counterpart, and others do not (putting aside productive morphological causativization). Another reflection of this in Sakha is the fact that the passive morpheme can be attached to some verb roots but not to others. In particular, it can be attached to so-called unergative verbs, but not to so-called unaccusative verbs:

(35)　a.　Ülele-n-ne/　　　　　ystan-ylyn-na/　　　　　süür-ülün-ne.

　　　　　work-PASS-PAST.3sS/ jump-PASS-PAST.3sS /　run-PASS-PAST.3sS

　　　　　'It was worked/jumped/run.'

　　　b.　Setinnjik-ke　　taŋara djie-tiger　bar-yll-ar.

　　　　　Sunday-DAT　church-DAT　　go-PASS-AOR.3sS

　　　　　'On Sundays, one goes to church.'

(36)　a.　*Orguj-ulun-na/　　　　　*uulun-ulun-na/　　　　　*süt-ülün-ne.

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boil- PASS-PAST.3sS/ melt-PASS-PAST.3sS / disappear-PASS-PAST.3sS

'It was boiled/melted/disappeared.'

b. *Internak-ka   (ücügejdik) ulaat-yll-ar.

orphanage-DAT   (well)   grow-PASS-AOR.3sS

'One grows up well in the orphanage.'

c. *Bu örüs-ke   timir-ill-er/   suulun-ulun-na

this   river-DAT drown-PASS-AOR.3sS/   fall-PASS-PAST.3sS

'In this river, it was drowned/fallen.'

This is, we claim, because the passive morpheme in Sakha—like its less obvious active counterpart—adds the term agent(e, x) to a predicate of events, and this predicate is simply not defined for certain classes of events.

This background is relevant because –er in English and -aaccy in Sakha are crucially *agentive* nominalizers, not merely entity-denoting nominalizers, or even subject-denoting nominalizers. This can be seen in the fact that these nominalizers can combine productively with the same range of verbs that passive can combine with. -aaccy in particular can nominalize unergative verbs ((37)) and agentive transitive verbs, but not unaccusative verbs ((38)).

(37)   a. Ülel(ee)-eecci   'worker'

b. Ystan-aaccy   'jumper'

c. Süür-eecci   'runner'

(38)   a. *Üün-eecci   'grower' (one that grows)

b. *timir-eecci   'drowner'

c. *uull-aaccy   'melter'

    d. *suull-aaccy   'faller'

    e. *süt-eecci   'disappearer'

    f. *orguj-aaccy   'boiler'

–aaccy nominals differ crucially in this respect from *–yy* nominals in Sakha: the latter are

possible with unaccusative verbs as well as with unergative verbs.

(39)   a. *stansyja-qa cugah(aa)-aaccy

        station-DAT approach-AG.NOM

        'the approacher of the station'

    b. stansyja-qa cugahaa-hyn

        station-DAT approach-EV.NOM

        'approaching the station'

Much the same contrasts hold in English, as can be seen by considering the glosses of the

Sakha examples in (37)-(39) (see Levin and Rappaport 1988, 1992 for careful

discussion).[11] These facts suggest that the predicate agent(e, x) should be part of the

meaning of *–aaccy*, just like it is part of the meaning of Kratzer's active voice head and

the passive voice head *-ylyn*.

    The crucial difference between *–aaccy/-er* and the voice heads is that *–aaccy*

creates a nominal, something that is a predicate of an individual (or denotes an

individual/kind), not a verb, which is a predicate of events. Our idea is that *–aaccy* and *–*

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[11] More precisely, Levin and Rappaport argue that an *–er* nominal always refers to the *external argument* of
the verb it is attached to, where the notion of external argument includes agents (and not themes), but is
somewhat broader, including some instruments and experiencers as well. Kratzer assumes that these other
roles are also added by a Voice head, although perhaps a different one. One way of addressing this
complication would be to say that the predicate agent(e, x) does not have an invariant definition for all
events, but is to be understood as a prototype notion, along the lines of Dowty 1991. Other, more fine-
grained treatments are also possible. Since our account ultimately hinges on the natural order of semantic
composition, the semantic details might prove to be important. Nevertheless, we must leave them aside.

er are nominal versions of the Voice head, with a partially similar semantics, but belonging to a different category and hence having a systematically different denotation. We execute this as follows:

(40)   *–aaccy, -er* = $\lambda P \lambda x$ Gen e (P(e) & agent(e, x))

Like active and passive Voice, these lexical items are suitable for combining with a VP meaning. Doing so gives a denotation as follows:

(41)   [$_{NP}$ [$_{VP}$ company manage] *aaccy*] =

        λx Gen e (manage(e) & theme(e, company) & agent(e, x))

When this meaning combines with a definite determiner (or undergoes a type shift, if the language does have relevant determiners (Chierchia 1998, Dayal 2001)), the result would be "the x such that in typical events of managing the company, x is the agent of those events". This is partially similar to the VoiceP meaning in (31), but the event argument (e) is bound by a generic operator, so the expression is a predicate of individuals, not a relation between an individual and an event. As such, the meaning is similar to that of other NPs.[12] Similar remarks hold for *–er* in English.

3.2 Consequences

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[12] Alternatively, the expression in (41) could be the related kind (nominalized property), as in Baker (2003).
          The exact force of the implicit quantification over events in these examples is open to investigation. For Sakha, generic quantification seems about right, but for English it may not be. It is well known that calling someone a dancer or a runner in English implies that they dance or run regularly, habitually, or professionally, but someone who murdered only once can be called a murderer. The Sakha nominalizer is more consistently habitual or generic in its meaning, as shown by the following contrast:

(i)   a.   ynaq-y   ölör-ööccü
               cow-ACC kill-AG.NOM
               'a killer of cows, a butcher'

         b.   *Misha-ny   ölör-ööccü
               Misha-ACC kill-AG.NOM
               'the killer of Misha'

This is probably related to the fact that *–aaccy* is historically related to a verbal habitual participle in Sakha, whereas English *–er* has no such etymology; see the discussion of example (75) and note 19.

Now our key idea is that, given that the semantics of –*aaccy* and -*er* is similar to that of

Voice in attaching the predicate agent(e, x) to a predicate of events, it naturally follows

that –*aaccy* and -*er* will combine with the same kinds of complements as Voice does.

One immediate consequence is that -*aaccy* cannot attach outside of Voice itself.

The meaning of a sample VoiceP is λe (manage(e) & theme(e, company) & agent(e, x)),

as shown in (31) and (32). Since this is a predicate of events,–*aaccy* could conceivably

combine with it without creating a semantic type mismatch. But the result would be:

(42)   λx Gen(e) (manage(e) & theme(e, company) & agent(e, Misha) & agent(e, x))

        = 'the person who is the agent of events of Misha managing the company'

Both voice and -*aaccy* add the predicate agent(e, x) to the representation, and they

discharge its nonevent argument in different ways: Voice assigns it to an NP (overt or

covert) in Spec, VoiceP, whereas -*aaccy* has it bound by (say) an iota-operator (perhaps

contributed by a determiner). (42) is thus strangely redundant at best and contradictory at

worst. It could perhaps count as a strangely indirect way to refer to Misha. Alternatively,

if some principle of disjoint reference applies between NPs and NPs that properly contain

them (cf. Chomsky 1981:212), then (42) implies that someone else did the actions that

Misha did. Either way, we may assume that (42) violates a semantic coherence condition,

such as the uniqueness condition on theta-roles (Carlson 1984). Therefore, –*aaccy* cannot

be added to a structure that contains a Voice head, for much the same reason (we assume)

that one cannot have more than one voice head in a single clause. For –*aaccy* and active

voice, the predicted complementarity is not readily observable, the active Voice being

phonologically null. But for –*aaccy* and passive voice, it is observable: cannot construct

an –*aaccy* nominal from a passive verb stem in Sakha.

(43) a. *sab-yll-aaccy (close-PASS-AG.NOM) 'the one (a store) that is closed'

      b. *tal-yll-aaccy   (choose-PASS-AG.NOM)   'the one who is chosen'

In contrast, it is perfectly possible to form an event-denoting nominal out of a passive verb

stem in Sakha (e.g., *tal-yll-yy* (choose-PASS-EV.NOM) 'being chosen'); there is no issue

of semantic conherence, because *–yy* does not add a second agent(e, x) predicate.

   More generally, we claim that the semantic similarity of agentive nominalizers to

Voice heads implies that the agentive nominalizer can only select the same kinds of verbal

projections that Voice can select. Now, negation and aspect come outside voice marking

in the natural order of the clause, for reasons that are presumably ultimately grounded in

compositional semantics. Within the functionalist literature, Joan Bybee (1985: ch. 2)

takes this to be a consequence of her principle of relevance: voice is more "relevant" to the

meaning of the verb than tense, mood, aspect and negation are (pp. 20-24), and more

relevant affixes appear closer to the verb root than less relevant affixes do (pp. 33-35).

Within the formal literature, this is a common (re)interpretation of the universal hierarchy

of functional heads discovered by Cinque, in which Voice is one of the lowest functional

heads in the structure of the clause (Cinque 1999:106).[13] The fact that aspect and negation

come outside voice is directly observable in the passive voice: the passive affix can only

come before negative and aspectual morphology in Sakha:

(44) a. Misha tal-ylly-ba-ta.   (*tal-ym-ylyn-na)

          Misha choose-PASS-NEG-PAST.3sS (choose-NEG-PASS-PAST.3sS)

          'Misha was not chosen.'   (Passive and negation)

      b. Ojuur-ga   xaam-ylyn-ytal(aa)-ta.   (??xaam-ytala(a)-nylyn-na)

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[13] Cinque (1999) says that four very specific kinds of aspect do appear lower than voice in languages of the world; all the other, more familiar aspects come above it. We assume that these four super-low Aspect heads are not present (or are not marked morphologically) in Sakha.

Forest-DAT walk-PASS-FREQ-PAST.3sS (walk- FREQ-PASS-PAST.3sS)

'It was walked back and forth in the forest.'   (Passive and aspect suffix[14])

c. Masha   möq-üll-en   taxs-ar.   (*möq-ön taxs-yll-ar)

Masha   scold-PASS-CON exit-AOR.3sS (scold-CON exit-PASS-AOR)

'Masha is continuously scolded.'   (Passive and periphrastic aspect)

Whatever principles of semantic composition and/or iconic ordering account for these facts also imply that negation and aspect also cannot appear inside of –*aaccy* or -*er*, given that their meanings are similar to that of the passive Voice. Nor can verbal negation or aspect come outside of –*aaccy* or –er in a grammatical structure, because they cannot select a nominal complement (perhaps because the event argument that they operate over is already closed off by the generic quantification). It thus follows that these elements cannot cooccur with –*aaccy*. This accounts for the data in sections 2.2-2.4. This line of reasoning also extends to explain why adverbs are bad inside agentive nominalizations, assuming that adverbs are not generated inside VP itself, but rather in VoiceP or some higher category, depending on the semantic class of the adverb (Cinque 1999).

We admit that this account is not entirely complete. In particular, we have nothing special to say about *why* a head that introduces an agent must combine with VP before heads that express aspect, heads that express negation, and heads that host adverbs. We have merely assumed that this is part of some very general law of either semantic composition or of how human minds represent events cognitively. But this assumption is both widely made in the literature and independently observable in Sakha, given data like that in (44). What we do claim to have explained is the tight restrictions on agentive

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[14] The passive in Sakha seems to be incompatible with accelarative aspect, regardless of the morpheme order. We have no account as to why this should be.

nominalizations, given this accepted fact about the hierarchy of heads in a clause/the order of morphemes on a verb, together with our novel claim that agentive nominalizers have a semantics that is relevantly similar to that of Voice heads. This then is the fact about Universal Grammar that causes Sakha speakers to resist generalizing from (9a) to (9b), English speakers to resist generalizing from (27) to (28), and so on.

It is worth mentioning that although agentive nominalizations cannot be embedded under verbal functional heads like aspect and negation, they can be embedded under the same range of nominal functional categories as other NPs are. For example, -*er* nominals in English combine with the usual range of number markers, determiners, and quantifiers (*every dancer*, *no runner*, *five workers*, *the/a/*0 helper*). The same is true in Sakha: an –*aaccy* nominal can be possessed ((45a)), marked for plural ((45b)), and case marked ((45b)), just as other nominals can be.

(45)   a. Misha ynax kör-ööccü-te   kel-le.

          Misha cow watch-AG.NOM-3sP come-PAST.3sS

          'Misha's cow-caretaker came.'

      b. Ynax   kör-ööccü-ler-i   kör-dü-m.

          cow   watch-AG.NOM-PL-ACC see-PAST-1sS

          'I saw the cow herders.'

This is just what we would expect: since forms derived by –*aaccy* have the same sort of meaning as ordinary NPs do (they are predicates of individuals; see (41)), they can combine syntactically and semantically with the same range of elements as other NPs do.

3.3 On Case assignment in Sakha nominals

The one obvious property of agentive nominalizations that is not explained by our proposal so far is the fact that they can take accusative case objects in Sakha but not in English. This is a somewhat surprising difference, if there is really no significant difference between the structure of agentive nominalizations in the two languages, as argued in section 2 (both allow the structure in (7a) and forbid the structure in (7b)).   In particular, this difference is surprising if we follow the normal Chomskian assumption that case is assigned to the object by a designated functional head higher than the verb in the structure of the clause, such as Voice (or Aspect, or Object agreement, depending on the execution). No such functional head is present in the structure of an agentive nominalization, as we have seen; we therefore expect that the object could not be marked accusative in agentive nominalizations. This is correct in English but not in Sakha.

Fortunately, there is substantial independent evidence that accusative case is assigned differently in Sakha than in English and other Western European languages. For example, accusative case can be assigned to the theme argument of a passive verb in Sakha, although it cannot be assigned to the theme argument of an anticausative verb:

(46)   a. Caakky/ caakky-ny aldjat-ylyn-na.   (passive)   (Vinokurova 2005):335-36)

cup-Ø/   cup-ACC break-PASS-PAST.3sS

The cup was broken.

b. Caakky/ *caakky-ny aldja-n-na.   (anticausative)

cup/   *cup-ACC   break-INTR-PAST.3sS

'The cup broke.'

Second, accusative case can be assigned to the objects of certain postpositions in Sakha, but only if there is a thematic subject in the clause:

(47) a. Masha tünnük-(ü) utary olor-do

　　　Masha window-ACC opposite sit-PAST.3sS

　　　'Masha sat opposite the window.'

　　b. Tünnük-(*ü) utary tymnyy.

　　　window-ACC opposite cold

　　　'It is cold opposite the window.'

Third, the subject of an embedded verb in Sakha can receive accusative case, but only if it raises into the matrix clause ((48b) versus (48a)) (Vinokurova 2005):366), and only if the matrix clause itself has a thematic subject ((48b) versus (48c)).

(48) a. Keskil yesterday [Aisen kel-be-t dien] xomoj-do.

　　　Keskil yesterday Aisen come-NEG-AOR that become.sad-PAST.3sS

　　　'Keskil became sad that Aisen is not coming.'

　　b. Keskil Aisen-y yesterday [kel-be-t dien] xomoj-do.

　　　Keskil Aisen-ACC yesterday come-NEG-AOR that become.sad-PAST.3sS

　　　'Keskil became sad that Aisen is not coming.'

　　c. Masja-(*ny) bügün munnjax-xa [ehiil Moskva-qa bar-ar-a]

　　　Masha-(ACC) today meeting-DAT [next.year Moscow-DAT go-AOR-3sP]

　　　cuolkaj buol-la.

　　　certain be(come)-PAST.3sS

　　　'It became clear today at the meeting that Masha goes to Moscow next year.'

　　This range of data does not make much sense under the assumption that accusative is assigned by (say) an active Voice head, as in English. There is no active Voice head, by definition, in the passive sentence in (46a), yet accusative case can be assigned. Nor is

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there an active/transitive head in (47a), or in the matrix clause of (48b). Indeed, the matrix

verb in (48b) is a anticausative verb, the very sort that cannot assign accusative case in

(46b). Nor is there any evidence that (47a) or (48b) have a verbal functional head that is

missing in (47b) and (48c). Now if accusative case does not depend on there being an

active Voice head in the structure in Sakha, then it is not so surprising that it could have

accusative case marking in the (7a) structure as well as in the (5b) structure.

What the matrix clauses of (47a) and (48b) do clearly have that is missing in (47b)

and (48c) is a thematic subject, distinct from the NP that is under consideration for

accusative case marking. This generalization arguably extends even to the contrast

between (46a) and (46b), given that the passive sentence has an "implicit agent" whereas

the anticausative one does not, as just in English. (One way of confirming this intuition in

Sakha is the fact that (46a) can include an agent-oriented adverb like *sorujan*

'intentionally', whereas (46b) cannot; see Vinokurova 2005:336.)   This pattern of facts

recalls Marantz's (1991) proposal that accusative case is a "dependent case", which is

assigned to one NP if and only if there is another NP within the same local domain—if

there is a case competitor, in the terminology of Bittner and Hale (1996) (see also

McFadden 2004 and Bobaljik to appear for related ideas). Within this tradition, Baker and

Vinokurova 2008 argue that the correct rule of accusative case marking in Sakha is (49).

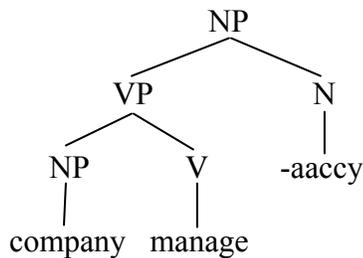(49)   X is assigned accusative case in Sakha if and only if there is another nominal

            expression Y (Y not already marked for case), such that Y c-commands X and X

            and Y are in the same phase.

Without going into technical details here about the exact locality domain, about c-

command and so on, it should be fairly clear how (49) might give the right results for (47)

and (48), and that it could also work for (46) if we assume that the implicit agent of the passive is represented by an NP in the syntax, although that NP is phonologically null.

The crucial point for current purposes is that (49) makes no direct reference to particular functional categories, the way that some other approaches to case assignment do. Hence it is potentially consistent with the fact that accusative case can be assigned agentive nominalizations in Sakha, given a structure like (7a). Verbal functional heads are not possible inside agentive nominalizations because the nominalizing head must combine semantically directly with VP; therefore, accusative case is impossible in English, where it is assigned by a verbal functional head. But in Sakha, accusative case is assigned by (49), and the agentive nominalization structure *does* contain a nominal element distinct from the thematic object, which c-commands it and is in the same local domain—namely the nominalizing affix itself. Therefore 'company' is assigned accusative by (49) in (50).

(50)

```
                NP
            /        \
          VP           N
        /    \         |
      NP      V      -aaccy
       |      |
   company  manage
```

There are admittedly some significant technicalities to face in filling out this account, concerning the exact definitions of "c-command", "phase", and "nominal expression", but this is not the place to pursue them fully (see Baker and Vinokurova 2008). The crucial point for now is that accusative case is possible in agentive nominalizations in Sakha not because these nominalizations have a different phrase structure from similar

nominalizations in languages like English, but rather because the rule of accusative case

assignment is different in Sakha, as shown by data like that in (46)-(48).[15]

4. Agentive nominalizations compared to headless relative clauses

If it is right to attribute the absence of a structure like (7b) to Universal Grammar, we

predict that the restrictions we have studied in detail in Sakha and English should hold of

other natural languages as well, all things being equal. In other words, these restrictions

should be universal in the typological sense. We now want to test this prediction.

Before we can do so, however, we need to distinguish between two kinds of

constructions, both common crosslinguistically, which can sometimes be translated into

English with –*er* nominalizations. One is the true agentive nominalization, and the other

is the headless relative clause. In other words, we need to distinguish expressions like 'the

manager of the company' from expressions like 'the [one who] manages the company',

where the pronominal head 'one' and the relative pronoun 'who' might both be

phonologically null, as is often the case in languages other than English. Our account of

the restrictions on –*aaccy* and –*er* follows from the fact that they are of category Noun and

they have agent(e, x) as an intrinsic part of their meanings. A reduced/headless relative

clause will not in general contain a morpheme that has either this category or this

meaning. Therefore, the restrictions that derive from these properties in interaction with

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[15] Another language to which these ideas might apply is Even, which is like Sakha having agentive
nominalizations that allow accusative case on the object, but that have no other verbal properties
(Malchukov 2004:68-69). In particular, this sort of nominalization can be modified by an adjective but not
an adverb. Malchukov reports that similar examples are found in other northern Tungusic languages and in
Mongolian languages, suggesting that this is a general property of (some) Altaic languages.

Nick Ostler (personal communication) says that Sanskrit also had accusative case objects inside
agentive nominalizations; we do not know whether these nominalizations had any other verbal properties.

universal facts about semantic composition and clause structure are not expected to hold for this second sort of construction, and we need to be able to tell it from the first sort.

To make the discussion concrete, we turn from Sakha to Mapudungun, an aboriginal language spoken in Chile (Augusta 1903, Salas 1992, Smeets 2008). Mapudungun has two distinct suffixes that can attach to verbs to produce the rough equivalent of an –er nominal in English, -fe and –lu:

(51) a. Kulpa-lu   llükake-i   (Augusta 1903:189)

         commit.sin-??   be.afraid-3sS

         'The sinner (the one who sinned) is afraid.'

     b. Tüfa   kom che   küpa-ke-ingün pentukupa-a-lu   chi weñang-küle-lu.

         these all   people come-HAB-3pS make.visit-IRR-?? the be.sad-STAT-??

         'All these people came to offer condolences to the mourners.'

(52) a. raki-fe   count-??   'counter, calculator'

     b. küdau-fe   work-??   'worker'   (Augusta 1903:247-48)

     c. weupi-fe   give.discourse-??   'orator'

     d. tralkatu-fe   shoot-??   'hunter'

     e. ülkantu-fe   sing-??   'singer'

Despite this superficial similarity, there is plenty of evidence that the "nominalizations" formed by –lu and –fe are different in many particulars. We show that –fe is a true agentive nominalizer, like –aaccy and –er, whereas –lu is a participle-like verbal affix that happens to occur in headless subject relatives, among other environments. The restrictions we observed for Sakha –aaccy in sections 2 and 3 hold as expected for verb+fe combinations in Mapudungun, but not for verb+lu combinations.

One direct sign that –*fe* is an agentive nominalizer is that –*fe* cannot attach to verb

roots that denote events that cannot have an agent. In other words, -*fe* cannot attach to

unaccusative verbs (xxx, personal communication):

(53) a. *la-fe   die-AG.NOM   'dier, one who died'

  b. *tran-fe   fall-AG.NOM   'faller, one who falls'

  c. *illkunnge-fe   get.angry-AG.NOM   'one who gets angry'

As such, it is appropriate to give it the same first-pass semantics as –*er* in English and –

aaccy in Sakha—a semantics that includes the predicate agent(e, x). In contrast, –*lu* does

not share this semantics, given that it can attach even to unaccusative verbs:

(54) a. la-ya-lu   (Augusta 1903:190)

    die-IRR-PTPL

    'the dying one'

  b. Wütre-lu   kon-pu-a-y   kütral mew.   (Augusta 1903:189)

    be.cold-PTPL enter-there-FUT-3sS   fire   POST

    'Whoever is cold may approach the fire.'

Since no agent predicate is included in the meaning of –*lu*, considerations of the natural

order of composition do not apply to it in the same way. Hence, we do not expect -*lu* to

have to combine with a bare VP complement, whereas we do expect this for –*fe*.

  In fact, -*lu* is not even intrinsically nominal in category. Rather, it is one of several

nonfinite verb forms found in Mapudungun. As such, it can be used in syntactic

environments where no truly nominal constituent could appear, including temporal and

causal modifiers ((55a)), complements of control verbs ((55b)), and main clauses of

sentences with a modal interpretation ((55c)) (Salas 1992:163-64, Smeets 2008:217-222).

(55) a. Ñuall dungu-a-lu   iñché, ka che   dungu-y.

    just speak-IRR-PTPL I   other person speak-3sS

    Just when I was about to speak, someone else spoke.

 b. Tripa-y   küdaw-a-lu.

    go.out-3sS work-IRR-PTPL

    'He went out to work.'

 c. Fey füta-nge-a-lu.

    she husband-be-IRR-PTPL

    'She'll get married (I expect).'

So –*lu* is not even (always) a nominalizer, much less an agentive nominalizer. Grammars

of Mapudungun record no similar verbal uses for verb roots bearing –*fe*.

Among the verbal uses of verb+*lu* forms, a very salient one is that verb+*lu* is used

to modify overt nouns in a kind of relative clause construction. A simple example is (56).

(56) che miaw-lu   (Smeets 2008:217, see also Salas 1992:164-65)

    person wander-PTPL

    'people who wandered'

If the head noun *che* were not present, we might be tempted to translate *miawlu* as a

nominalization, 'wanderer'. But this translation is not so tempting in (56), because nouns

do not generally modify other nouns in Mapudungun, any more than they do in English

(??*wanderer people*). Rather, this is a verbal use of –*lu* inside a relative clause.[16] Given

this, it costs nothing to consider the examples of verb+*lu* in (51) to be relative clauses too;

they are just *headless* relative clauses, which we take to be relative clauses that modify a

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[16] More specifically, -*lu* marks the verb in a relative clause in which the subject has been extracted.
Mapudungun uses other nonfinite endings when something other than the subject has been extracted; see
Smeets 2008 for discussion.

null pronoun head, similar to *one* in English. The more literal translation of (51a) is then 'the one who sinned' rather than 'the sinner'. On this view, productively formed verb+*lu* combinations are never truly nouns, but they can sometimes be mistaken for nouns when they are predicates of a relative clause inside a noun phrase with no overt head noun.

Given this difference in the categories and meanings of –*fe* and –*lu*, we expect verb+*fe* forms to behave differently from verb+*lu* forms in many other respects. Since –*fe* is a true nominalizer with an agentive meaning, it can only appear in a structure like (7a), not in a structure like (7b). Therefore it will not appear with tense/mood/aspect marking ((57)), it will not cooccur with verbal negation ((58)), it will not cooccur with passive morphology ((59)), and it will not be modifiable by an adverb ((60)). These expectations are all correct (data from xxxx, personal communication):

(57) a. *küdaw-a-fe 'one who will work'   (*a* = irrealis mood)

     b. *küdaw-fu-fe   'one who used to work' (*fu* = "impeditive")

     c. *küdaw-küle-fe 'one who is currently working' (*küle* = stative aspect)

(58) a. *küdaw-no-fe   work-NEG-AG.NOM 'one who won't work'

     b. *umautu-no-fe   sleep-NEG-AG.NOM 'an insomniac'

     c. *pütu-(ka)-no-fe   drink-FAC-NEG-AG.NOM 'a nondrinker'

(59) a. *küpa-l-nge-fe   come-CAUS-PASS-AG.NOM 'one which is brought'

     b. *dungu-ye-nge-fe speak-APPL-PASS-AG.NOM 'one who is talked about'

     c. *ñomüm-nge-fe   tame-PASS-AG.NOM 'one that has been tamed'

(60) a. *lef raki-fe   quickly count-AG.NOM

     b. *lef küdau-fe   quickly work-AG.NOM

     c *lef ñomüm-kawell-fe   quickly tame-horse-AG.NOM

'one who counts/works/tames horses quickly'

In addition, verb+*fe* cannot combine with an NP complement that is expressed in the same way as the object of a verb would be in Mapudungun. Objects in Mapudungun are morphologically unmarked and usually follow the verb (Smeets 2008:348). A verb+*fe* form cannot take a direct object in this sense (xxx, personal communication):

(61) a. *ñomüm-fe   kawell

           tame-AG.NOM horse

           'tamer of horse(s)'

       b. *fende-fe   kulliñ

           sell-AG.NOM   animal

           'a seller of domestic animals'

       c. *Lawen-tu-fe   che

           cure-VBL-FE   people

           'a healer of people, a doctor'

When –*fe* combines with a transitive verb, the object argument of the verb root (if it is expressed at all) must be compounded with the verb root before –*fe* attaches:

(62) a. ñomüm-kawell-fe tame-horse-AG.NOM   'a horse tamer' (Augusta 1903:248)

       b. fende-kulliñ-fe   sell-animal-AG.NOM   'an animal seller'

       c. lawen-tu-che-fe cure-VBL-people-AG.NOM 'a doctor' (Smeets 2008:311)

The contrast between (61) and (62) is also expected if the source of accusative case (direct object licensing) is a verbal functional head in Mapudungun, as in English (but different from Sakha). This verbal functional head must be absent in the true agentive nominalization, so the thematic object of the verb must find an alternative way to be

licensed. In Mapudungun, this can be done by compounding it with the verb root—which is a productive process in the language even apart from nominalization (it is analyzed as syntactic noun incorporation in Baker et al 2005). Overall, then, the cluster of results we observed and explained in Sakha and English is replicated in Mapudungun for *-fe*.

In contrast, verb+*lu* forms are not true nominalizations, but the verbs of relative clauses that modify a noun head, possibly null. As such, it is expected that these forms can contain tense-aspect-mood morphology, negation, passive voice marking, and can combine with adverbs, since all these elements are possible inside relative clauses in English and other languages. And in fact they can, as shown in (63)-(66).

(63) a. Umaute-le-lu   kim-kü-le-la-i.   (stative aspect)

sleep-STAT-PTPL   know-STAT-NEG-3sS   (Augusta 1903:189)

'The one who is sleeping does not know.'

b. Nge-la-y   katrü-dəngu-a-lu.   (irrealis mood)

be-NEG-3sS   cut-matter-IRR-PTLP   (Augusta 1903:190)

'There isn't anyone who will handle the matter.'

c. aku-fu-lu   (impeditive aspect)

come-IMP-PTPL   (Augusta 1903:182)

the one who had come'

(64)   aku-no-lu   (negation)   (Augusta 1903:182)

come-NEG-PTPL

'the one who did not come'

(65)   Küpa-l-nge-lu   (passive)   (Augusta 1903:183)

come-CAUS-PASS-PTPL

'the one that was brought'

(66)　a.　[Inan　tipa-lu]　　nürəf-kənu-a-i　　　puerta llafé meu.　(adverb)

　　　　last　　leave-PTPL closed-leave-IRR-3sS door　key　POST　(p. 189)

　　　　'The one who leaves last should leave the door closed with a key (locked).'

　　b.　[Lef　illkunnge-lu]　　müchai rupan illku-ke-i…　　　　　(adverb)

　　　　quick　get.angry-PTPL soon　　after　anger-REV-HAB-3sS

　　　　'The one who gets angry quickly calms down soon after.' (Aug 1903:189)

　　　　Smeets (2008) sums up many of these differences between –fe and -lu by calling –lu a "flexional nominalizer" whereas –fe is described as a purely derivational morpheme. This terminological distinction encodes the fact that –lu but not –fe can come after other inflectional morphemes. We agree that –lu is an inflectional morpheme/functional head, but we deny that it is a nominalizer; in fact, it is simply a nonfinite verb form.

　　　　Moreover, as a nonfinite verb form, a transitive verb with -lu can be followed by an ordinary direct object; there is no need for verb-noun compounding in this case:

(67)　*[Petu　kim-nu-lu　　[NP chem. wedá dəngu no rume]]* « inocente » pi-nge-ke-i.

　　　　still　　know-NEG-PTPL what bad　　thing　??　ever　innocent　call-PASS-HAB-3sS

　　　　'One that still does not know anything bad is called "innocent".' (Aug. 1903:189)

This example has negation and an adverb as well as a direct object, so it illustrates many of the verbal properties we have been discussing, all at once. Overall then, -lu might be mistaken for an agentive nominalizer in some simple examples, but upon examination it is seen to have essentially none of the properties of such a morpheme.

We can summarize what we have learned from Mapudungun as follows. Mapudungun has two possible correspondents to –*er* in English, -*lu* and –*fe*. Neither one has a true mixture of nominal and verbal properties. Phrases formed by V+*fe* are almost entirely nominal; phrases formed by V+*lu* are almost entirely verbal. More precisely, structures like (7a) exist, and structures with a purely verbal set of functional items exist, but hybrid structures like (7b) do not exist in Mapudungun, any more than they do in Sakha or English. Moreover, it is fairly easy to distinguish a reduced/headless relative clause from a true agentive nominalization once one is alert to the possible distinction.

5. A Typological Test

We are now therefore in a position to test the generality of our account typologically. The prediction is simply that the range of possibilities seen in Mapudungun will more or less exhaust the range of possibilities found in the languages of the world. A language might have a true agentive nominalization, which has no verbal properties beyond (maybe) the taking of an object. Or it might have a construction that is purely verbal other than (maybe) having a determiner and being used in an argument position—especially if the trappings are similar to what one would expect a headless subject relative to look like in the language. Or it might have both constructions, or neither. But it will not have an agent-denoting construction that has a fuller mixture of verbal and nominal properties, even though it might have event-denoting constructions that display just such mixtures.

5.1 The test in overview

To get a relatively principled sample of languages to test this prediction, we began with Koptjevskaja-Tamm's (2005) list of languages that have action (event) nominalizations

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with some verbal coding of their arguments.[17] Two of the subtypes she distinguishes are obviously relevant: languages in which both the subject and the object of an action nominalization are coded the way they are in an ordinary clause (her Sentential class, 25 languages), and languages in which the subject is coded like a possessor and the object is coded like the object of a clause (her Possessive-Accusative class, 29 languages). Our reason for starting with these is that languages which allow some clause-like coding in event nominalizations might be especially likely to allow a similar kind of clause-like coding in agent nominalizations, there being an analogy present in the language itself to tempt language users to generalize from the one kind of nominalizations to the other. Therefore, if there are counterexamples to our claim, we expect them to be especially likely to be found among these languages. On the contrary, if such counterexamples are not found, that supports our view that something about Universal Grammar actively biases language learners away from this sort of construction.

To make the study a bit more manageable (and more reportable) we intersected this set of 54 languages with the set of 100 languages in the *World Atlas of Language Structure's* core sample (in part, because we had some prior experience with these languages). This cut the sample of languages roughly in half, giving twelve languages from each of Koptjevskaja-Tamm's two types. In a few cases, we replaced one of Koptjevskaja-Tamm's languages with a related one that we could find better information on: Swahili and Chichewa for Luvale, Khmer for Vietnamese, Greenlandic for Yupik, and Sakha for Turkish. We then added to the sample a few additional languages that we knew and wanted to check anyway (Mohawk, Slave, Nahuatl, Mayali, Edo, and English). The

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[17] We thank Bernhard Waelchi (personal communication) for giving us the idea of constructing a sample of languages to check in this way.

result was a set of 34 languages that are typologically diverse, fairly well documented, and potentially friendly to the existence of agentive nominalizations with verbal properties.

We then proceeded to consult available materials on these languages to see how the closest equivalents to an –*er* nominalization are expressed in each. If the nominalization was restricted to refer to the subject argument of an agentive verb, we checked to see if it had any verbal properties beyond perhaps the taking of a theme argument. If the "nominalization" was not restricted to refer to subject argument of an agentive verb, then we checked to see if it had verbal properties; we also checked to see if it looked like a headless relative clause should look in that language. Since grammars often do not present ungrammatical examples, in some cases we needed to decide whether a grammar's failure to mention (for example) the possibility of an accusative object or an adverb with an agentive nominalization was significant or not. We decided that if the source in question was detailed enough to discuss explicitly the possibility of an accusative object or an adverb with an event nominalization, but had no parallel discussion of these possibilities with an agentive nominalization, it is reasonable to infer that they are probably not allowed with the agentive nominal. We do not expect this inference to be 100% accurate, but it seems a reasonable heuristic at this stage of inquiry.

The results of our investigation are summarized in Table One.

[Insert Table One about here]

Almost exactly half of these languages have what looks like a true agentive nominalizer, confirming that this is a reasonably common kind of derivation (although probably not as common as action/event nominalization). All of the languages that do not have a true agentive nominalization have some kind of relative-clause-like construction, giving them

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some way to express the agent of an event. The difference between Yes and No in the middle column of Table One is probably not theoretically significant: it is likely enough that *all* languages have relative clause constructions that can denote the agent of the event (among other things), and this column only records whether that construction is more or less likely to be mistaken for an agentive nominalizer. Most importantly, the fourth column records that our prediction held up: we found no true agentive nominalizer that allowed verbal elements other than (perhaps) the object in the sample. In particular, the kinds of verbal elements that are allowed in event nominalizations in these languages are not (known to be) allowed in agent nominalizations, unless they are really relative clauses.

It goes without saying that a study of this (or any) size cannot prove the absolute universality of the restrictions we have been considering.[18] Nevertheless, it is very suggestive that the hypothesis was not falsified when we "scaled up" to a much larger sample of languages. Perhaps even more importantly, the data clearly support the notion that something restrains the language learner from generalizing the verbal properties of event nominals to the domain of agentive nominals—and that is the core meaning of Universal Grammar for the Chomskian.

5.2 Issues arising

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[18] So far, we have encountered one apparent counterexample to our claims, in Gikuyu (related to Swahili and Chichewa), as described by Mugane 2003. This language allows manner adverbs and bare direct objects inside subject/agent-denoting nominalizations, as shown by the example in (i).

(i)   a-thĩnj-í   mbūri ũũru acio nĩ-má-á-tūm-a   tū-caamb-e.
         2-slaughter-AG.NOM   goats badly DEM FP-3pS-PERF-make-IND 1pS-bad.rep-SBJN
         'Those (people) who slaughter goats badly have given us a bad reputation.'

Unfortunately, all of Mugane's examples are variants of this one. More data would be needed to diagnose precisely exactly which of our claims this is a counterexample to (if any).

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The one interesting surprise that we encountered arose most clearly in Nahautl.

According to Launey (1981), agent nominalizations in Nahuatl are formed with the suffix

–k(i) (orthographic *–c* or *–qui*). Some of his examples are given in (68) (p. 154-55).

(68) a. tē-yacān-qu-ê   INDEF-direct-NOM?-PL   'rulers, leaders'

      b. tē-pix-qui   INDEF-guard-NOM?   'guard'

      c. tla-nāmaca-c   INDEF-sell-NOM?   'vendor'

      d. ichtec-qui   fly-NOM?   'flier'

      e. tlachix-qui   watch-NOM?   'sentinel'

These examples seem to meet the qualifications for being relative clause-like structures.

First, the affix *–k* has purely verbal uses: it is a kind of perfect participle, which is a

component of the perfect tenses in Nahuatl. An example of this usage is in (69).

(69) (ō)-ti-c-nōtz-qu-ê   (p. 75)

      AUG-1pS-3sO-call-NOM?-PL

      'We called him/her/it.'

Second, it appears on unaccusative verbs like 'die' as well as on unergative verbs:

(70) mic-qui   (p. 154)

      die-NOM?

      'the dead one, the corpse'

We thus have the evidence we need to analyze the examples in (68) as subject relative

clauses. We then predict that they can have verbal structure inside of them. For example,

when the verb root is transitive it could have a normal looking ("accusative case") object.

But this is apparently not true. Launey says explicitly that the object argument of

the transitive verb root in examples like (68a-c) cannot be a full-fledged direct object;

rather the verb must bear one of the indefinite object prefixes in Nahuatl, *tē-* (animate) or *tla-* (inanimate). Alternatively, the object can be incorporated, as in (71) (p.167):

(71) a. cal-pix-qui   house-guard-NOM?   'guardian of a house, majordomo'

      b. tlaxcal-nāmaca-c tortilla-sell-NOM?   'tortilla vendor'

      c. cac-chīuh-qui   shoe-make-NOM?   'shoe-maker'

In contrast, phrases like *cal-li qui-pix-qui* (house-NSF 3sO-guard-NOM) 'the guardian of the house', with *calli* 'house' coded as a full direct object (with no case marking and object agreement on 'guard') are apparently impossible. Launey (1981:155) also cites the minimal pair in (72), showing that in the Nahuatl equivalent of 'You are the guardian of me'/'You are the one who guards me' the understood object 'me' cannot be expressed as an accusative pronominal agreement prefix, but must be expressed as a possessive prefix.

(72) a. *ti-nēch-pix-qui

          2sS-1sO-guard-AG.NOM

          'You are the guard of me'

      b. ti-no-tē-pix-cā-uh

          2sS-1sP-INDEF-guard-AG.NOM-POSS

          'You are my guard.'

This looks like the dynamic equivalent in Nahuatl of the fact that *of*-insertion is needed in English examples like *You are a maker *(of) wine*. These facts are compatible with our predictions, but they are still a surprise, raising the concern that the space of grammatical possibilities allowed by Universal Grammar is not a narrow as we have been implying.

We think that the truth about –*k* in Nahuatl is that it is an agentive nominalizer after all, but it happens to be homophonous with a verbal participle suffix, probably for

historical reasons. An additional sign that –*k* is a real nominalizing affix is the fact that a complete range nominal suffixes can attach after it, including the vocative, honorific, diminutive, and possessive suffixes (see (72b)) (Launey 1981:155). One would probably not expect this if –*k* were only a verbal participle ending that can occur in a relative clause. There is also a phonological difference between the verbal participle ending –*k* and the nominalizer –*k*. Words cannot end in a sequence of consonants in Nahuatl. Therefore, when –*k* is added to a consonant final stem (and no other affix is added after it), a repair is needed. The difference is that verbal participle –*k* is deleted after a consonant at the end of the word, whereas nominalizer –*k* is retained and the vowel /i/ is epenthesized after it. As a result, the plural form *tē-yacān-qu-ê* is ambiguous between a nominal interpretation ('leaders', (68a)) and a verbal interpretation ('they directed people', compare (69)), but the singular forms are not ambiguous in this way (Launey 1981:155):

(73) a. Ø-tē-yacān-k → tēyacān   (by consonant deletion)

3sS-INDEF-direct-PTPL   'he directed (people)'

b. tē-yacān-k → tēyacānqui   (by vowel insertion)

INDEF-direct-AG.NOM   'the director, the leader'

This phonological difference confirms that there are two distinct suffixes –*k* in Nahuatl.

Putting these pieces together, we imagine the following history. At some point, -*k* was just a perfect participle ending in Nahuatl. Among its other uses, it was used in headless relative clauses (known to be possible in Nahuatl), much as Mapudungun –*lu* is. At this stage, we conjecture that a phrase like *cal-li qui-pix-qui* would have been possible, with the literal translation 'the one who has guarded the house'. Also possible at this stage were forms like *cal-pix-qui* and *tē-pix-qui*, with literal translations 'the one who house-

guards' and 'the one who guards (people)'. The –*k* suffix in these forms can be parsed as a verbal participle ending, but it can also be parsed as an agentive nominalizer. As such examples became sufficiently frequent and conventionalized, the analysis as an agentive nominalizer became attractive to language learners, and they began to posit two distinct suffixes where there had been only one before. Once a truly nominal suffix –*k* was born, it automatically gained the right to be followed by honorific, diminutive, and possessive suffixes—but it also lost the right to license a syntactic object. The result was that *cal-li qui-pix-qui* became impossible in Nahuatl, for the same reasons that *the guarder the house* is impossible in English. Finally, when participial –*k* began to be dropped after consonant final stems, the phonological change did not spread to nominal –*k*, because that was now seen as a different affix. On this interpretation, the Nahuatl facts are perfectly in line with our theory. Indeed, our UG theory plays an important role in the account: it explains why the (conjectured) loss of forms like *cal-li qui-pix-qui* should go along with the gain of truly nominal forms like *ti-no-tē-pix-cā-uh* 'you are my guardian'.

In fact, this sort of historical situation might be rather common. Something very much like it is found in Sakha too. –*aaccy* also exists as verbal ending in Sakha; in particular, it is the habitual participle, used in sentences like (74).

(74)   Misha türgennik/sorujan   tünnük   aldjat-aaccy e-te.

Misha quickly/intentionally window break-HAB AUX-PAST.3sS

'Misha used to break windows quickly/intentionally.'

This is surely not a coincidence; the nominal –*aaccy* must be historically related to this verbal one, perhaps arising from it via its use in relative clauses. But we do not say that nominalizer –*aaccy* reduces synchronically to verbal participle –*aaccy*; if it did, we could

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not explain why agent-denoting constructions cannot be used with adverbs, aspect, passive voice, or negation (section 2), since verbal *–aaccy* is compatible with all of these (for example, (74) contrasts with *(*sorujan) tünnük aldjat-aaccy* 'a breaker of windows (*intentionally)') A true agentive nominalizer can thus be homophonous with some other morpheme in a language for historical reasons, without undermining is nominal character. See also Mohanan 1995:98-100 for discussion of a similar case in Hindi. Indeed, it is very possible that if we knew more about the details of verbal morphology in the languages surveyed in Table One, we would have recognized more examples of this sort.[19] The upshot is that a morpheme that is used in apparent agentive nominalizations and also in verbal constructions may or may not display the restrictions we have discussed. This does not detract from our prediction, which is the converse: an agentive nominalization that is not directly related to a verbal affix will always show these restrictions. For this, we found no counterexamples in our survey of 34 languages.

6. Conclusions

In this paper, we have shown that agent-denoting nominalizations do not demonstrate the same mixtures of verbal and nominal properties that other, superficially similar constructions do. In particular, agentive nominalizations differ strikingly from event-denoting nominalizations in this respect in both Sakha and English, and they differ from headless subject relative clauses in Mapudungun. We went on to present a typological

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[19]Something similar might be at work in Yagua, where a set of endings that show the restrictions of agentive nominalizers also seem to be used as gender agreements on adjectives. We conjecture that this is another case of an agentive nominalizer that is homophonous with another morpheme for historical reasons.

     Not all agentive nominalizers have their origins in verbal aspect/participle markers. The affix *-er* in English has quite a different history, originating as a noun-to-noun derivational suffix (e.g., *hatter*, *lawyer*, *villager*), and then being extended to a verb-to-noun derivational suffix (OED). This is probably another fairly common path of historical development, since a number of the agentive nominalizers listed in Table One have cognates that function as noun-to-noun derivational affixes.

survey of 34 languages, which supports the claim that this phenomenon is a consequence of Universal Grammar. Finally, we offered an explanation of this interesting gap in the attested data, by saying that agentive nominalizing morphemes have a semantics similar to that of voice heads. From this it follows that they are like voice heads in needing to combine with a bare verb phrase constituent. As a result, this type of nominalization must happen at the deepest level of phrase structure.

We close with a more general point, concerning what our study illustrates about typology and its relationship to generative theory. We have shown that the detailed analysis of a particular construction in particular languages, strengthened by poverty of the stimulus considerations, can be a powerful source of ideas of what to look for in terms of typological universals. Many functionalist-oriented typologists now seem to think that virtually anything can happen in the languages of the world. Bickel (2007:245) writes:

> Large datasets almost invariably reveal exceptions to universals, and this, together
>
> with a substantial increase of newly described languages and assisted by
>
> prominent conceptual argumentation (e.g., Dryer 1998, Croft 2002: Chapter 8),
>
> has practically done away with notions of absolute universals and impossibilities.

But we have found here in an (admittedly only medium-sized) study that not everything is possible in the domain of agentive nominalization. The widespread impression that everything is possible could very well be an artifact of not imagining the full range of possibilities, and/or of looking at the space of possibilities at too coarse a level of resolution to notice the gaps. If one looks at the level of detail needed to accurately describe the space of possibilities in a particular language, like Sakha or Mapudungun, then it becomes quite plain that there are many gaps in the possibility space. Then, once

one compares languages at that same level of detail (as one surely must), it is quite

possible that some of these gaps are in fact universal. That is what we found in this study.

Extrapolating from it, we think that there could be many more true universals, and a much

richer universal grammar, than nongenerative typological techniques have discovered.

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Table One: Agent-denoting expressions in 34 languages

Language	Agentive nominal, no evidence of verb-like structure	Highly verbal structure, akin to relative clause	True agentive nominal with some verbal structure	Event nominalization type (from K-T 2005)	Primary source(s)
Amele	No	Yes (-ec)	No	Poss-Acc	(Roberts 1987)
Amharic	Yes (-täňňä)	(no)	no	Poss-Acc	(Leslau 2000)
Apuriña	Yes (-muna)	Yes (-kanu)	No	Sentential	(Facundes 2000)
Barasano	No	Yes	No	Sentential	(Jones and Jones 1991)
Basque	Yes (-(tzai)le)	No	No	sentential	(de Rijk 2008)
Burushaski	No	Yes (-s)	No	Sentential	(Lorimer 1935)
Canela-Krahô	Yes (-catê)	No	No	Sentential	(Popjes and Popjes 1986)
Edo	Yes (ò-)	No	No	--	(Agheyisi 1990)
English	Yes (-er)	No	No	(Poss-Acc)	---
Even	Yes (-mnge)	--	No	Poss-Acc	(Malchukov 2004)
Greenlandic	Yes (-si)	(no)	No	--	(Fortescue 1984)
Hindi	Yes (-vala)	(no)	no	Poss-Acc	(Mohanan 1995:98-100)
Im. Quechua	Yes? (-dur)	Yes (-j)	no	Sentential	(Cole 1985)
Khmer	(-m- infix?)	Yes	no	--	(xxx)
Korean	No	Yes	No	Sentential	(xxx personal communication)
Koyra Chinni	Yes (-koy)	(no)	no	--	(Heath 1998)
Lango	No	Yes	no	Poss-Acc	(Noonan 1992)
Lavukaleve	No	Yes	No	Sentential	(Terrill 2003)
Lezgian	No	Yes	No	Sentential	(Haspelmath 1993)
Mapudungun	Yes (-fe)	Yes (-lu)	No	Poss-Acc	(Augusta 1903, Smeets 2008)
Maricopa/Mojave	No	Yes	no	Poss-Acc	(Munro 1976, Gordon 1986)
Mayali	No	Yes	no	--	(Evans 2003)
Mohawk	No	Yes	no	--	(Deering and Delisle 1976)
Mongolian	Yes (-ee-či)	yes	no	Poss-Acc	(Poppe 1970)

Nahuatl	Yes* (-k(i))	No	No	--	(Launey 1981)
Nez Perce	Yes? (ʔe:t)	(No)	no	Poss-Acc	(Aoki 1973)
Pirahã	No	Yes (-sai)	No	Sentential	(Everett 1986)
Sakha	Yes (-aaccy)	No	No	(Poss-Acc)	xxxx
Slave	No	Yes	no	--	(Rice 1989)
Swahili/Chichewa	Yes (m- -(i))	No	No	(Poss-Acc)	(Mchombo 2004)
Tagalog	No	Yes	no	Poss-Acc	(Schachter and Otanes 1972)
Tamil	No	Yes	no	Sentential	(Asher 1985)
Yagua	Yes* (-nu, -ra)	No	No	Sentential	(Payne and Payne 1986)
Yimas	No	Yes	No	Poss-Acc	(Foley 1991)