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1. Background

The generative theory of categories is characteristically discrete. Something is a noun, or it is not. It has the binary feature value +N, or it does not. This is especially true within the category theory of Baker 2003, where the feature +V, characteristic of verbs, is understood as the ability to license a specifier, while the feature +N, characteristic of noun, is taken to be the ability to bear a referential index. Either a category has a referential index, or it does not; either it has a specifier or it does not. It makes little or no sense to say that a category has 50% of a referential index, or two thirds of a specifier.

This discreteness seems well-justified for basic, morphologically simple lexical categories; see Newmeyer 1998 and Baker 2003 for some discussion. But in the realm of nominalization/complementation, one can observe some continuity, it seems. Some embedded clauses seem to have many nominal features and few clausal features; others have fewer nominal features and more clausal features. An early version of this observation was John Ross's (1973) "Nouniness Squish", where he investigated a seeming continuum of phrases that are more or less nominal in English. More recently, it is common to see discussions of degrees of nominalization in much functionalist-typological literature (Comrie 1976, Croft 1991, Koptjevskaja-Tamm 1993, Croft 2001, Cristofaro 2003, Malchukov 2004). The question, then, is how to reconcile this seeming-continuity of nominalization with the generative theory of discrete lexical categories.

The Sakha language presents an interesting case of this type. Sakha (also known as Yakut) a Turkic language spoken in Siberia; like Turkish, it is a head-final, SOV language, with a nominative-accusative case system, subject agreement on finite verbs, and extensive vowel harmony (see Vinokurova 2005 for more). In the domain of complement clauses and event-denoting nominalizations, Sakha has at least three distinct kinds of structures, illustrated in (1). First, it has ordinary finite CP complementation, consisting of a fully finite verb, identical to a verb that would be used in a matrix clause, followed by the complementizer (subordinating conjunction) *dien*, as shown in (1a).¹ Second, it has event-denoting gerunds, as shown in (1c). Here the verb has a nominalizing affix (-YY after consonants; -hYn after vowels) rather than a

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Abbreviations used:

¹ *Dien* is historically a nonfinite (converb) form of the verb 'say'. This plays a role in section 3 below.

tense suffix. Its subject is marked in genitive case (see xx below), the “nominalized” verb agrees with it the way that a possessed noun would agree with its possessor, and the gerund as a whole is marked with accusative case, showing that it is the internal argument of the verb. In all these respects, (1c) is “more nominal” than (1a) is. But it is not completely nominal, because the object of the nominalized verb is marked in accusative case, just as the object of a normal verb would be, whereas morphologically simple nouns in Sakha never take dependents in accusative case. Such gerunds can also contain verbal negation, aspect marking, and adverbs, just as clauses can (see B&V to appear a). These constituents thus have a mixture of nominal and verbal/clausal properties—but in a relatively familiar way. This is essentially the combination of properties that Poss-Ing gerunds have in English. Speaking very informally, we might say that gerunds in Sakha are 50% nominal, whereas finite CPs are only 5% nominal.

- (1) a. *Sardaanabügün Aisen kel-er dien ihit-te* (CP: least nominal)
Sardaana today Aisen come-AOR.3sS that hear-PAST.3sS
 ‘Sardaana heard that Aisen is coming today.’ (p. 363)
- b. *Min ehigi бүгүн kyaj-byk-kyt-yn ihit-ti-m.* (PtplP: slightly nominal)
I you today win-PTPL-2pP-ACC hear-PAST-1sS
 ‘I heard that you won today.’ (p. 361)
- c. *Min Masha coroon-u oñor-uu-tun kör-dü-m.* (GerP: fairly nominal)
I Masha goblet-ACC make-GER-3sP.ACC watch-PAST-1sS
 ‘I watched Masha making a goblet.’ (9-19-07)

The mystery deepens considerably, however, when participial clause complements like the one in (1b) are added into the picture. In these clauses, the verb bears one of several participle forms, a set that includes at least the aorist (present) participle *-A(r)*, the past participle *-bYt*, and the future participle *-yAx*.² The affixed verb then also bears possessive-style agreement with the subject and noun-like case marking (accusative in (1b)). In these morphological respects, it looks very much like the gerund in (1c). But a broader consideration of grammatical properties shows that these participial clauses are actually intermediate: they are more verbal/clausal than gerunds, but more nominal than true CPs. As we shall see below, participial clauses are like CPs but unlike gerunds in that they have a subject in nominative case, *wh*-phrases can scramble out of them, their subjects can “raise” into the matrix clause to get accusative case in an ECM-like construction, they can be used to express indirect questions, and their subject is in the scope of lower negation. In contrast, participial clauses are like gerunds and unlike CPs in that they are marked for structural case, they affect the case marking of other NPs

² Apparently also in this class is the habitual participle *-AacI* (cf. B&V to appear a:xx, also NV). Although I know of no differences between this participle and the others, I have not studied it in as much care. NV also mentions some complex forms made up of one of the basic participles plus the suffix *-xxx*. I have not studied these at all.

in the clause, they are possible in all argument positions, they show possessive-type agreement with their subject, they do not allow partial agreement under raising nor indexical shift, and internal arguments cannot be extracted out of them to form relative clauses. Finally, participial clauses have a few unique properties, that are not shared with either finite CPs or gerunds. For example, only they can serve as relative clauses in Sakha, and they alone participate in structures of obligatory control. Participial clauses truly seem to be nominal to an intermediate degree: they are more nominal than finite CPs, but they are less nominal than gerunds—which are themselves of intermediate nominality. So we seem to have at least two distinct kinds of intermediate category in Sakha: one that is roughly 50% (gerunds), and the other roughly 25% nominal (participial clauses). This provides a real challenge to the discrete view of functional categories that is characteristic of generative linguistics.

There is a rather widespread generative idea about how to approach problems of this sort, developed with some success for Poss-Ing gerunds in English, and similar structures in other languages. This is the idea that there are several—perhaps even many—different heads in the structure of a typical clause. These include at least V, v/voice, aspect, tense, mood, and so on (see Cinque 1999 for a relatively extreme version). Given this, different types of nominalization might come from different choices about which of these heads is replaced by a nominal analog (Borsley and Kornfilt 2000). Here the idea would be that each particular category is either fully nominal or fully verbal, but there is a rather wide range of choices as to which particular categories are nominal in a given structure. This could potentially give a rich range of different kinds of nominalizations.

But it is one thing to have a promising leading idea, and another to work it out in detail for particular cases. In this paper, I attempt to do this for the three constructions in Sakha shown in (1). In particular, I focus especially on the particularly mysterious intermediate case, the participial clauses, endeavoring to document and to begin to explain both the properties that they share with finite CPs, and those they share with Gerunds. This investigation leads to a sharpening of what it means for a category—in particular, for a functional category—to be nominal, within the general approach to the theory of lexical categories laid out in Baker 2003.

2. The Theoretical hypothesis: preliminary overview

I begin by laying out my hypothesis in a nutshell, so that it will be easier to locate various aspects of my argument within the overall framework. I claim that the structures of the different kinds of clauses/nominalizations found in Sakha are as summarized in (2).

(2)

Clause (CP)	Participle clause	Gerund/Event nominal	
C	H[+agr]	D _{poss} [+agr]	nominal categories
T[+agr]	Ptpl	Ger	
(Asp)	(Asp)	(Asp)	nonnominal categories
v	v	v	
V	V	V	

All three constituents seem to have essentially the same degree of articulation into functional heads. Each involves a core verbal structure, formed out of VP, vP (voice), and perhaps aspectual projections. This captures the fact that all three constructions are verbal/clausal in the sense that they contain normally case-marked direct objects, other internal arguments, VP adverbs, aspect marking, voice marking, and clausal negation (see BVa for data showing this for gerunds). It is only above this verbal core that differences among the three constructions begin to appear. Furthermore, all three constructions erect two distinguishable functional heads above this verbal core: an intermediate one, and a highest one. Where they differ is in the intrinsic properties of the heads making up this functional superstructure. I claim that it is the intermediate projection (Ger) that is inherently nominal in the case of the event nominal, whereas the corresponding projections in Participial clauses (Ptpl) and finite CPs (Tense) are not nominal. As a result, only the highest projection (H) is nominal in the participial clause, whereas in finite CPs neither functional projection is intrinsically nominal. The highest projection of a gerund (DP) is also nominal in the sense that it is a normal determiner, part of a nominal extended projection, but it is not nominal in the stronger sense that it anchors a new referential index (see section 6 on the significance of this distinction). Almost all of the differences in syntactic behavior are direct or indirect repercussions of this primary difference in structure, I claim.³

In addition, in order to make a hypothesis like this meaningful, it is important to know just what it means to say that a given category is “nominal”, and what the theoretical and empirical consequences of saying this are. Much generative discussion syntactic categories remains rather loose and informal, having advanced little from the generic sense of what a noun or verb is in traditional grammar. To avoid the limitations of this, I will take “nominal” to mean what it means in Baker 2003: a category is nominal if and only if it has a referential index.

A quick overview of the leading ideas of the Baker 2003 theory is given in (3) and (4). The theory is built on two syntactically significant features: the ability to license a specifier, which replaces the uninterpreted feature +V of standard Chomskian theory as the defining property of verbs, and the ability to bear a referential index and hence participate in binding relations of various kinds, which replaces the uninterpreted feature +N as the defining property

³ (2) might overstate the parallelism among the three structures somewhat. For example, a finite CP can have a participle projection below the tense node, as well as aspect and other elements of the VP core (see NV:xxx and xx below). In contrast, the Ger head is in complementary distribution with both T and Ptpl projections in Sakha.

While Ptpl and T both contrast with Ger with regards to nominality, these doesn't imply that they are categorially identical. An obvious difference is that T shows agreement with a subject and Ptpl does not. Related to this, T licenses an A-specifier (with which it agrees, in most cases), whereas there is no evidence that Ptpl does. If it does not, then T would count as a verbal head (it licenses a specifier and has no referential index) whereas Ptpl would count as an adjectival head (it has no specifier and no index) within the category theory of Baker 2003. The adjectival nature of participles is evident in some languages, where adjectives and participles share distinctive agreement properties, such as agreeing in number, gender and case but not in person. However, neither attributive adjectives nor participles agree overtly in Sakha, so this is not so striking in this language. The possibility of a categorial distinction between T and Ptpl is not important for the degrees of nominality data considered here, but it comes up in passing in section 9 below.

of nouns. As in standard Chomskian theory, adjectives are defined as a distinct combination of the same two features that define nouns and verbs: they lack both a specifier and a referential index. The range of lexical categories is thus as laid out in (3). (I take adpositions to be functional categories, as explained in Baker 2003.)

(3) The typology of lexical categories (Baker 2003)

Categories	Has criterion of identity/ referential index	No criterion of identity/ referential index
Has a specifier	***	Verbs
Has no specifier	Nouns	Adjectives

The primary syntactic principles that make use of these features are listed in (4).

- (4)
- a. *The Theta-Criterion*: All the θ -roles of a head must be coindexed with a maximal projection immediately dominated by a projection of that head.
 - b. *The Noun Licensing Condition* (NLC): A referential index must be coindexed with a dependent element that it c-commands (a theta-role, a bound pronoun, or a trace of movement).
 - c. *The Reference-Predication Constraint* (RPC): No syntactic node can both theta-mark a specifier and have a referential index.

(4a) is my version of one half of the Theta Criterion: it states that the vehicle of theta-role assignment is coindexing, and that all the theta-roles of a head must be assigned locally, within the maximal projection of that head. It follows from this that arguments must in general be nominal. (4b) is a version of the other half of the Theta Criterion: it says that something with a referential index (a nominal of some sort) must in fact be coindexed with a thematic role or some other dependent item, so as to link it into the overall interpretation of the clause. Finally, (4c) is a novel principle, stipulating that one cannot simultaneously be both nominal and verbal in these senses. Conceptually speaking, it is a syntactic version of the truism from logic that a single category cannot, by definition, be both a predicate and a referential term (Geach 1962). The most obvious effect of this principle is that it ensures that there is no fourth basic lexical category, which has the positive features of both nouns and verbs—no “noun-verb” as it were. There is thus a necessarily empty cell in the table in (3). Baker 2003 shows that it also explains certain asymmetries in derivational morphology, such as the fact that it is much easier to derive a verb from a predicate adjective than from a predicate noun.

(4a) and (4b) play a role in sections 3 and 5, giving us clear criteria for which categories are truly nominal and which are not. (4c) plays an even larger role in what follows: the negative correlation that it asserts between having a referential index and having a specifier can be seen as the key to what it means to be nominal, and several of the empirical asymmetries derive from this, directly or indirectly. In addition, we will see that the Sakha data motivate two distinct

refinements of the RPC, which gives some sense to the idea that some heads are actually “more nominal” than others. This is the single most theoretically significant result of this investigation.

3. The external distribution of clauses/nominalizations

With this theoretical background in hand, let us begin exploring the various syntactic properties that reveal differences among the different forms of complementation in Sakha. A first such difference concerns their external distribution—what positions they can occupy within a matrix clause, and what grammatical functions they can bear in that clause. In this respect, participial clauses clearly pattern with gerunds, and not with finite CPs. A gerund can occupy any position that a simple NP can occupy in Sakha: it can appear in direct object position ((5a)), in subject position of a transitive clause ((5b)), as the object of a postposition ((5c)), or as the sole argument of an unaccusative verb ((5d)).

- (5) a. Min Masha coroon-u oŋor-uu-tun kör-dü-m. (object of verb)
 I Masha goblet-ACC make-GER-3sP.ACC watch-PAST-1sS
 ‘I watched Masha’s making a goblet.’ (9-19-07)
- b. Misha xarcy sütter-ii-te ejiigin xomot-to (transitive subject)
 Misha money lose-GER-3sP you.ACC upset-PAST.3sS
 ‘Masha’s losing money upset you.’
- c. Min ehigi kyaj-yy-gyt tuhunan ihit-ti-m (object of P)
 I you win-GER-2pP about hear-PAST-1sS
 ‘I heard about your winning.’ (about= side-3s-INST) (9-28-07)
- d. Masha massyyna-ny atyylah-yy-ta coulkajdan-na (Arg of unacc)
 Masha car-ACC buy-GER-3sS become.clear-PAST.3sS
 ‘Masha’s buying a car became certain.’ (8-13-08)

Participial clauses can also appear in any of these argument positions, as shown in (6).

- (6) a. Min ehigi bügün kyaj-byk-kyt-yn ihit-ti-m. (object of verb)
 I you today win-PAST-2pP-ACC hear-PAST-1sS
 ‘I heard that you won today.’ (NV:361)
- b. Masha kingie aaq-ar-a aqa-tyñ üörd-er. (transitive subject)
 Masha book read-AOR-3sP father-3sP.ACC make.glad-AOR.3sS
 ‘Masha’s reading books makes her father glad.’ (8-20-07)
- c. Masha Misha bar-ar-yn kyтта djie-ni xomuj-da. (obj of P)

Masha Misha leave-AOR-3sP.ACC with house-ACC clean-PAST.3sS
 ‘Masha cleaned the house with (immediately after) Misha leaving.’ (9-4-07)

- d. Misha kyaj-ar-a coulkajdan-na (argument of unacc)
 Misha win-AOR-3sP become.clear-PAST-3sS
 ‘It became clear that Misha will win.’ (9-10-08)

In contrast, finite CPs only appear in a subset of these positions, as shown in (7). They can function as the object of a verb ((7a)), or as the sole argument of an unaccusative predicate ((7d)), but not as the subject of a transitive clause ((7b)) or the argument of a postposition ((7c)).

- (7) a. Sardaana бүгүн Aisen kel-er dien ihit-te (object of verb)
 Sardaana today Aisen come-AOR.3sS that hear-PAST.3sS
 ‘Sardaana heard that Aisen is coming today.’ (NV:363)
- b. *Saaska Baaska-ny üöx-te dien bihigi-ni sohup-put-a. (subject)
 Saaska Baaska-ACC scold-PAST.3sS that us-ACC surprise-PTPL-3sS
 ‘That Saaska scolded Baaska surprised us.’ (reconstructed)
- c. *Masha Misha bar-da dien kyтта djie-ni xomuj-da. (object of P)
 Masha Misha leave-PAST.3sS that with house-ACC clean-PAST.3sS
 ‘Masha cleaned the house with (immediately after) Misha left.’ (9-4-07)
- d. Mashaehiil Moskva-qa bar-ya dien cuolkajdan-na. (argument of unacc)
 Masha next.yearMoscow-DAT go-FUT.3sS that become.certain-PAST.3sS
 ‘It became clear that Masha will go to Moscow next year.’

Finite CPs in Sakha are thus only licit when they are generated as the complement to a verb.

In another respect, however, the distribution of finite CPs is broader than that of gerunds or participial clauses. Finite CPs can also function as adjunct clauses. For example, they can be used to express the cause of an emotion, as in (8a), and they can be used as a kind of causal adjunct that expresses a future event that motivates an action being done, as in (8b).

- (8) a. Min ehigi kyaj-dy-gyt dien üör-dü-m. (CP)
 I you win-PAST-2pS that be.glad-PAST-1sS
 ‘I was glad that (because) you won.’ (prolep paper)
- b. Masha ehigi kel-iex-xit dien djie-ni xomuj-da. (CP)
 Masha you come-FUT-2sS that house-ACC tidy-PAST.3sS
 ‘Masha tidied up the house (thinking) that you would come.’ (NV)

Simple participial clauses and gerunds cannot be used as adjuncts in these ways, or in any other known ones, as shown for example in (9).

- (9) a. *Minehigi kyaj-byk-kyt-(yn) üör-dü-m. (Participial clause)
 I you win-PTPL-2pP-ACC be.glad-PAST-1sS (prolepsis paper)
 ‘I was glad that (because) you won.’ (OK with kyaj-byk-kyt-yttan, -ABL)
- b. *Masha et atyylah-yy-ta miin buhar-da. (Gerund)
 Masha meat buy-GER-3sS soup cook-PAST.3sS (6-??-07)
 ‘Masha having bought meat, she made soup.’ (OK with buy+(a)n , converb form)

(9a) becomes grammatical if the participial verb form bears oblique (ablative) case rather than null case or accusative case, but then I assume that it is really the argument of a postposition, and is not by itself an adjunct to the VP. This case then reduces to the one shown in (6c). (9a) also demonstrates that what I call the gerund in Sakha is different from *-ing* forms in English, which can be used not only as the heads of NP-like arguments, but as modifying clauses. (Rather, Sakha has a distinct nonfinite verb form that would be used in structures like (9b), the so called converb form created by adding the suffix *-(A)n*. Such clauses do not have nominal properties, and I do not consider them here.)

In all these respects, gerunds and participial clauses have exactly the distribution that one would expect within the theory of Baker 2003 if one says that they are fully nominal in the sense that they have a referential index. This allows them to bind any theta-role associated with a verb or other theta-role assigning head (such as P), in accordance with (4a), my version of the Theta Criterion. At the same time, a constituent that has a referential index is ruled out if it is not associated with some theta-role (or equivalent bound element), by the Noun Licensing Condition in (4b). Hence, NPs are the quintessential arguments, but cannot in general be used as adjuncts in the way that PPs, adverbs, and some CPs can be. This pattern extends to gerunds and participial phrases in Sakha too. In contrast, we can say that finite CPs do not have referential indices in Sakha. As such, they cannot bind either the external theta-role of a transitive verb, or the theta-role of a P. This explains the ungrammaticality of (7b) and (7c), given (4a). Conversely, CPs are possible as adjuncts, precisely because they do not have referential indices. Given this, they can fail to be associated with a theta-role of a verb or other argument-taking item without running afoul of the Noun Licensing Condition in (4b).

Overall, then, the distribution of finite CPs overlaps with the distribution of Gerunds and Participle clauses in just one way: all are possible as the complement/inner argument of the verb. In this respect, CPs in Sakha are similar to other non-nominal categories such as AP and VP in Sakha and other languages. An AP, for example, can be used as an adjunct (i.e., as a secondary predicate, (10a)), but it cannot be used as a subject ((10b)) or as the object of a preposition ((10c)). APs can, however, function as selected phrases in the complement positions of transitive or unaccusative verbs. This is the only sort of position they share with referential NPs.

- (10) a. Chris drove home drunk
 b. *Drunk caused Chris to get into an accident
 c. *Drinking wine on an empty stomach sent Chris to drunk
 d. Drinking wine on an empty stomach made Chris drunk
 e. Chris became drunk.

The distribution of VPs is similar, as is the distribution of APs in Sakha. In Baker (2003:150-51), I interpreted this as meaning that APs do not have referential indexes, so they cannot in general be assigned thematic roles. If however they appear in the complement position of the verb, they can be interpreted by way of an alternative path: they can undergo a kind of complex predicate formation, by incorporating covertly into the nearby verb. Given this, both nominal phrases and nonnominal phrases are possible in complement positions, although for somewhat different reasons: nominal phrases are possible because they can locally bind a theta-role of the verb from that position (since they c-command the verb); nonnominal phrases are possible because their heads can incorporate into the verb from that position, to form a complex predicate. This account of the similarities and differences in the distribution of APs versus NPs carries over immediately to the distribution of finite CPs versus participial clauses and gerunds in Sakha, if we say that only the latter have referential indices.⁴

Finite CPs in Sakha are more restricted even than CPs in English, in that finite CPs can be the subjects of transitive verbs in English but not in Sakha (see (7b)). Based on the English facts, I said that CP in English can have a referential index, although perhaps not phi-features. This is a way of addressing the fact that finite CPs in English are similar in distribution to NPs, although not identical. The fact that English CPs have an index and Sakha CPs do not correlates with the fact that their complementizers have very different etymologies. English *that* is cognate with the demonstrative pronoun *that*, hence is more or less nominal in origin. In contrast, Sakha *dien* is historically derived from the verb *die* ‘to say’; it is a nonfinite (converb) form. Although there is ample reason synchronically to say that the complementizers are not identical to their historical sources in either language (for Sakha *dien*, see B&Vb), it is plausible to assume that some vestiges of these origins remain. It is thus not particularly surprising that the English CP is nominal in having a referential index, whereas the Sakha CP is not. This then accounts for the languages’ different abilities to have finite CPs in the subject position. On the other hand, English finite CPs are not as readily used as adjunct clauses as Sakha CPs are; one typically uses a combination of words like ‘so that’ or ‘in order that’ to express an adjunct CP in English (*Chris stopped drinking *(so) that she would not drive home drunk*). So finite CPs in Sakha are even less nominal than they are in English, presumably in part because of the different origin of its complementizer.

4. External case marking

⁴ Another sort of category that is possible as complement of V (transitive or unaccusative) but not as subject or object of postpositions in Sakha (as in Turkish) are “Pseudo-Incorporated” bare NPs, which do not have number marking or case-marking. This is plausibly another situation in which we have complex predicate formation rather than true theta-role assignment, and hence a relatively limited syntactic distribution. (See Öztürk 2005 on Turkish, plus some relevant comments on Sakha in B&Vb.)

A second, rather similar way in which participial clauses pattern with gerunds rather than with finite CPs concerns the principles of Case assignment. Sakha is a nominative-accusative language, in which (definite or specific) NPs which are lower than the subject are marked overtly with accusative case, realized at PF as the affix $-(n)I$ (plus special allomorphs after possessive agreement markers). This can be seen in many of the examples above. This also holds true for participial clauses and gerunds; they must be marked accusative when they are the internal argument of a transitive verb:

- (11) a. Min ehigi kyaj-byk-kyt-*(yn) ihit-ti-m. (Participial clause)
 I you win-PAST-2pP-ACC hear-PAST-1sS
 ‘I heard that you won.’ (NV: 361, 9-28-07)
- b. ?Min ehigi kyaj-yy-gyt-*(yn) ihit-ti-m. (Gerund)
 I you win-GER-2pP-ACC hear-PAST-1sS
 ‘I heard of your winning, your victory.’ (9-28-07)

In contrast, finite CPs in Sakha never undergo accusative case marking. Thus, the complementizer is never followed by an accusative case marker, resulting in a form like **dien-i*; see for example (7a).

This can be captured simply by saying that it is nominal constituents that participate in the case marking rules in Sakha (and presumably many other languages). B&Vb argue at length that the rule for assigning accusative case in Sakha is the one stated in (12). In other words, accusative case in Sakha is a dependent case, in the sense of Marantz 1991.

- (12) If there are two distinct argumental NPs in the same phase such that NP1 c-commands NP2, then value the case feature of NP2 as accusative unless NP1 has already been marked for case.

In the current context, we must simply recognize that an NP is, by definition, a constituent that has a referential index. Hence, (12) should more properly read “If there are two distinct phrases X1 and X2 that bear referential indices ... then value the case of X2 as accusative ...” With this understanding in place, then the accusative case marking rule automatically applies in (11a) and (11b) to mark the clause-like constituents, since we know from section 3 that they have referential indexes. However, the case marking rule automatically does not apply to a CP like the one in (7a), because we have seen that this constituent does not have a referential index.

There is a second way in which participial clauses and gerunds are actively involved in case theory, but finite CPs are not. This concerns the triggering of dative case. B&Vb argue that dative case in Sakha is also a dependent case. It is assigned to the higher of two NPs when both are contained in the same VP—hence for example to the goal argument of a ditransitive verb like ‘give’, as shown in (13).

- (13) Masha Misha-qa at-y bier-de. (*Masha-ny)
 Masha Misha-DAT horse-ACC give-PAST.3sS (Masha-ACC)
 ‘Masha gave Misha a horse.’

B&Vb state the rule of dative case marking as in (14).

- (14) If there are two distinct argumental NPs in the same VP-phase such that NP1 c-commands NP2, then value the case feature of NP1 as dative unless NP2 has already been marked for case.

Once again, “NP” in this rule is technically to be understood as “constituent that bears a referential index”. So participial phrases and gerunds naturally count, but finite CPs do not. Suppose then that a clause-like constituent is the innermost argument of a verb like ‘promise’ or ‘cause X to believe’. According to (14), if the clause-like argument is a participial phrase or a gerund, it should trigger dative assignment on the other internal argument, whereas if it is a finite CP it should not. (15) shows that this prediction is correct.

- (15) a. Sargy Keskil-ge/*i Aisen kel-er-in erenner-de. (Ptpl clause)
 Sargy Keskil-DAT/*ACC Aisen come-AOR-3sP.ACC promise-PAST
 ‘Sargy promised Keskil that Aisen will come.’ (4-11-08, vs NV:367)
- b. Sargy Keskil-ge/*i Aisen kel-ii-tin erenner-de. (Gerund)
 Sargy Keskil-DAT/*ACC Aisen come-GER-3sP.ACC promise-PAST
 ‘Sargy promised Keskil that Aisen will come.’ (4-11-08)
- c. Sargy Keskil-i Aisen kel-le dien erenner-de.⁵
 Sargy Keskil-ACC Aisen come-FUT.3sS that promise-PAST
 ‘Sargy promised Keskil that Aisen will come.’ (NV:367)

So participial clauses and gerunds not only act like NPs in receiving accusative case, but also in triggering dative case on some other NP, whereas CPs do not act like NPs in either respect. Within a Marantz-style framework for case assignment, it is very natural that these things should go together, because the intuitive functional motivation of rules of dependent case marking is to distinguish morphologically two constituents of the same type found in the same domain. Hence if a clause-like constituent counts as nominal for one kind of calculation, it stands to reason that it will count as nominal for the other kinds as well.

⁵ This particular example is also OK with *Keskil* marked dative (NV:367). I assume that in this situation dative is an inherent case, assigned by a null adposition, as is certainly also possible in Sakha (BVb:xx). The point is that the internal NP argument may be accusative if the theme argument is CP, but not if it is a participial clause or gerund.

5. Nominalizations without the highest agreement bearing head

So far the patterns we have considered have been rather straightforward: participial clauses have consistently patterned with gerunds in ways that show that both constituents as a whole—HP and DP, in terms of (2)—bear referential indices, whereas CP does not. Next let us investigate the intermediate heads in the functional superstructure: the Ptpl head in participial phrases and the Ger head in gerunds. We do this by considering contexts in which a participial verb form or gerund verb form is *not* followed by agreement drawn from the possessive paradigm, the way they are in the examples considered so far. In such cases, it is plausible to assume that the higher agreement-bearing functional category (H or D) is absent. When we do this, we observe a marked difference: bare gerunds continue to have an NP- like distribution, whereas bare participle phrases do not. This is clear evidence that Ger is also a nominal head, but Ptpl is not.

Consider first participle phrases. When they do not have possessive agreement on them, they can be used in nonargument positions, where they cannot bind a thematic role. This happens in at least three contexts, as shown for the aorist (present) participle in (16). First, a participial verb can be the only verb in a simple matrix clause, as in (16a). Here the participle is inflected for present tense and 3rd singular agreement from the predicative/verbal paradigm, but both happen to be phonologically null in (16a). Second, a participial verb can be the main verb, as the syntactic complement of an inflected auxiliary, as in (16b). In this context, the participial verb is completely uninflected. Third, a participial verb can function as the predicate of a relative clause, where it modifies a head noun, as in (16c). Here too the participle is uninflected.

- (16) a. Kesha sarsyarda et sii-r (Matrix clause)
 Kesha morning(LOC) meat eat-AOR(3sS)
 ‘Kesha eats meat in the morning.’ (NV:216)
- b. Baaska ülelii-r e-t-e. (complement of Aux)
 Baaska work-AOR AUX-PAST-3sS
 ‘Baaska was working.’ (NV:219)
- c. Masha cej ih-er caakky-ta (Relative clause)
 Masha tea drink-AOR cup-3sP
 ‘a cup that Masha drinks tea from’

(17) shows that phrases head by a past participle formed by *-bit* have the same distribution:

- (17) a. Ölöksöj Lenin-y kör-büt-e.
 Ölöksöj Lenin-ACC see-PTPL-3sS
 ‘Ölöksöj saw Lenin (long ago).’ (NV:223)
- b. Min alta-qa ahaa-byt e-ti-m.
 I six-DAT eat-PTPL AUX-PAST-1sS

‘I had already eaten before 6:00.’ (NV:224)

- b. Masha atyylas-pyt at-a
Masha buy-PTPL horse-3sP
‘the horse Masha bought’

The future participle $-yAx$ is also used in a similar range of environments.

The distribution of bare participle phrases is thus markedly different from the distribution of participle phrases that bear possessive agreement: the former occur systematically in nonargument positions (pace note 6); the latter systematically in argument positions. (18) further underlines this difference, by showing that participle phrases bearing possessive agreement are ungrammatical as relative clauses in Sakha (see also Kornfilt 2005, to appear on this fact).

- (18) a. *aaq-a-qyn kinige
read-AOR-2sS book
‘a book that you read’
- b. *Masha atyylas-pyt-a at-(a)
Masha buy-PTPL-3sP horse-3sP
‘the horse Masha bought’

On the other hand, a participial phrase with an overt subject in argument position is ungrammatical if it lacks possessive agreement.⁶ So PtplP not dominated by HP must not have a referential index, or (16)-(17) would violate the NLC. In contrast, PtplP dominated by HP does have a referential index, since (18) does violate the NLC. I conclude that the H head is intrinsically nominal, contributing a novel index to the structure it appears in, whereas Ptpl is not nominal/is not associated with a referential index, as anticipated in (2).

Now let us consider gerund phrases that do not bear possessive agreement. These are quite different from bare participle phrases: gerund phrases without possessive agreement have essentially the same NP-like distribution as gerund phrases with possessive agreement. (19a) shows that the gerund form of a verb cannot be used as the main verb of a matrix clause, either on its own, or as the complement of a non-theta-marking auxiliary. (19b) shows that a relative clause modifier cannot be built out of a gerund form of the verb. (19c) shows that a gerund cannot be the basis of an adjunct modifier when it is uninflected, any more than it can be when it is inflected for the subject (compare (9b) above).⁷

⁶ PtplP can be in an argument position without overt agreement on it if and only if it has a null subject. In this case, I tentatively assume that its subject is an arbitrary PRO, and that H is present, but it is phonologically null because uncontrolled PRO has no intrinsic phi-features for it to agree with (cf. Landau 2004).

⁷ Participle phrases without possessive inflection also cannot be used as adjoined modifiers in Sakha, although such a usage is allowed by the NLC within my set of assumptions. There is a specialized verb form that can be used in this environment: the so-called converb form.

- (19) a. *Masha miin-i buhar-yy (buol-ar/e-t-e). (not as main verb, not with aux)
 Masha soup-ACC cook-GER be-AOR/AUX-PAST-3sS
 ‘Masha is/was making soup.’ (6-??-07)
- b. *Masha buhar-yy miin-e (not as relative clause)
 Masha make-GER soup-3sP
 ‘the soup that Masha made’ (6-??-07)
- c. *Masha et atyylah-yy miin buhar-da. (not as adjunct)
 Masha meat buy-GER soup make-PAST.3sS
 ‘Masha having bought meat made soup.’ (6-??-07)

In contrast, gerund phrases without possessive agreement can be used in argument positions such as subject ((20a)) and direct object ((20b)), just as gerunds with possessive agreement can be:

- (20) a. Sibekki-ni olord-uu bies-ke saqalan-ar.
 Flower-ACC plant-GER five-DAT begin-AOR.3sS
 ‘The planting of flowers begins at 5:00.’
- b. Min coroon-u oŋor-uu-nu kör-dü-m.
 I goblet-ACC make-GER-ACC watch-PAST-1sS
 ‘I watched the making of the goblet.’ (9-19-07)

From this I conclude that the Gerund head itself is nominal in the sense of introducing a referential index, in contrast to the Ptpl head. The higher agreement bearing head (D_{poss}) thus does not introduce a referential index the way that H does; rather it simply passes on that index by some kind of feature percolation (or more semantically based equivalent). Gerunds are thus more nominal than participial clauses in the sense that their nominality begins earlier, at the intermediate level of structure, not just at the highest level of structure.

6. The nature of DP in event nominals, compared to HP in participle clauses

-
- (i) Masha et atyylah-an miin buhar-da.
 Masha meat buy-CONV soup make-PAST.3sS
 ‘Masha having bought meat made soup.’

I do not offer an analysis of this kind of nonfinite clause in Sakha, these clauses having no nominal properties. I assume that the availability of these converb forms somehow blocks the use of participial forms in this context.

Masha-GEN father-3sP-GEN horse-3sP
 ‘Masha’s father’s horse’

- b. Masha-(Ø) aqa-ta kel-le. (Nominative always null)
 Masha-GEN father-3sP(NOM) come-PAST.3sS
 ‘Masha’s father’s horse’

Now consider then the subjects of participial clauses and gerunds. We do not observe any difference in case when the subject is a simple one, because of the loss of the nominative-genitive distinction on such NPs. But when the subject is a possessive DP, a difference in case does appear: the subject of the gerund may be marked as genitive, whereas the subject of the participial phrase cannot be:

- (23) a. Masha aqa-ty-n terilte-ni salaj-yy-ta⁸ (Genitive in gerund)
 Masha father-3sP-GEN company-ACC manage-GER-3sS
 ‘Masha’s father’s management of the company’ (10-10-07)
- b. Masha aqa-ta bu miin-i söbül(ee)-üür-e ücügej. (Nominative in PtplP)
 Masha father-3sP this soup-ACC like-AOR-3sP good (10-10-07)
 ‘It is good that Masha’s father likes this soup.’ (?*Masha aqa-tyn (GEN))

This is consistent with the idea that the agreement-bearing functional head at the top of the gerund is nothing other than the usually possessive D in Sakha, whereas the agreement-bearing functional head at the top of the participle phrase is something else. For lack of a better term, I just call it H (for ‘head’). Although these two heads are both phonologically null and take agreement from the same paradigm in Sakha, they assign different cases, as well as having different selectional properties.

Given that the agreement bearing functional category at the top of a gerund is D_{poss} , we expect its specifier to be a thematic position, just as it is in (21c). Gerunds by themselves, without possessive inflection, have null subjects with generic/arbitrary interpretations, as can be seen in the examples in (20); presumably this is a form of PRO_{arb} in the thematic position, Spec vP. An overt NP is not licensed in this position, if D is not present:

- (24) (*Masha) terilte-ni salaj-yy
 Masha company-ACC manage-GER
 ‘the management of the company’
 = [_{NP} [_{VP} PRO/*Masha [_{VP} company manage] v] –GER]

When DP is present, then, there are two thematic positions, Spec, vP, assigned the agent role by v, and Spec, DP, assigned the highly underspecified theta-role that is characteristic of specifiers

⁸ Unmarked nominative is also possible here, unless the subject is adjacent to the nominalized verb. I take this to be a marked phenomenon, related to the near loss of morphological genitive in Sakha.

(Barker 1995). Thus, gerunds in Sakha with overt subjects are a kind of control structures, as shown in (25).

- (25) Masha terilte-ni salaj-yy-ta
 Masha company-ACC manage-GER-3sP
 ‘Masha’s managing the company’
 = [DP Masha[GEN] [NP [VP PRO [VP company manage] v] –GER] D+agr]
 [] control

In fact, this would not be unique to Sakha; in Baker 2005, I claimed that English gerunds that have the possessive determiner ‘s (so-called Poss-Ing constructions) are also control constructions. Evidence for this is that there cannot be a true expletive *it* or *there* in the Spec, DP position, and idiom chunks are degraded, just as they are in ordinary control constructions.

- (26) a. *It’s seeming that the world will end tomorrow is very upsetting.
 b. *There’s being a riot in the town square is very upsetting.
 c. ??All hell’s having broken loose was very upsetting.
 Compare: *I persuaded it to seem that the world will end tomorrow.
 ??I persuaded all hell to break loose.

In contrast, gerunds that do not have the possessive determiner—the so called Acc-Ing gerunds in English—are much better with nonreferential subjects:

- (27) a. I anticipate it seeming that the world will end tomorrow.
 b. I anticipate there being a riot in the town square tomorrow.
 c. I anticipate all hell broking loose tomorrow.

The analysis of the Sakha gerund in (25) thus has both intralanguage and interlanguage resonances.

Now consider H, the agreement-bearing head at the top of a participial clause. Since it is not the same item as D_{poss} , we have no independent window on its properties. There is thus no independent reason to take Spec, HP to be a theta-position the way that Spec, DP is. On the contrary, the RPC in (4c) implies that it should not be. Recall that the RPC expresses a negative relationship between having a referential index and licensing a specifier. Although Baker 2003 considered this only for lexical categories, it is desirable to apply it to functional categories as well. The RPC is repeated in (28), with the small change that I replace the somewhat vague predicate “*having a referential index*” with the somewhat more precise predicate “*introducing a referential index*”.

- (28) *The Reference-Predication Constraint 1 (RPC1):* No syntactic category can both theta-mark a specifier and introduce a referential index.

This refinement means that the RPC applies to H, which is the original source of the index of a participial clause, but not to D_{poss} , which only passes on the index already present on GerP (or on NP, in examples like (21)). Thus, H is nominal but D_{poss} is not in the relevant sense, even though HP and DP are both nominal. (Of course, D_{poss} is nominal in the broader sense that it is part of the nominal system, selecting a nominal complement and creating a nominal maximal projection.) The fact that H agrees fully with the subject of the verb in Sakha suggests that the subject moves to Spec, HP, at least if it is a first or second person nominal (see the Structural Condition on Person Agreement of Baker 2008). So I analyze participial clauses as a kind of raising construction, whereas gerund clauses are a kind of control construction.

These assumptions provide an explanation for a subtle and somewhat surprising way that participial clauses behave like finite CPs rather than like gerunds. This concerns the licensing of negative polarity items. Sakha has a set of negative polarity items (NPIs) that are formed from a *wh*-word together with a special particle *daqany*. As in many other languages, these NPIs are interpretable only if they are in the scope of a nearby clausal negation; roughly, the two must be in the same clause. Unlike English, but like many other languages, NPIs are possible even in the subject position of a simple clause in Sakha, as shown in (29).

- (29) Kim daqany kyaj-ba-ta. (Matrix clause)
 who PRT win-NEG-PAST.3sS
 ‘Nobody won (in the lottery).’ (lit. ‘Anyone didn’t win.’)

Since the negative morpheme is closer to the verb root than tense and subject agreement, I assume that it has scope only over vP, but the subject in Spec, TP can be understood as reconstructed into its original Spec, vP position, making an example like (29) possible. Not surprisingly, an NPI can also be the subject of a finite CP, licensed by lower clause negation:

- (30) Min kim daqany kyaj-ba-ta dien ihit-ti-m. (CP)
 I who PRT win-NEG-PAST.3sS that hear-PAST-1sS
 ‘I heard that nobody won (the lottery).’ (NV:364)

But there is a difference in this domain between participial clauses and gerunds, shown in (31). Like finite CPs, participial clauses can have an NPI in their subject position licensed by negation in the lower verb; gerunds, however, cannot:

- (31) a. Min kim daqany kyaj-bataq-yn ihit-ti-m (Participial clause)
 I who PRT win-NEG.PTPL-3sP.ACC hear-PAST-1sS
 ‘I heard that nobody won.’ (9-4-07)
- b. *Kim daqany Masha-ny iteqej-im-ii-te kuhaqan. (Gerund)
 who PRT Masha-ACC believe-NEG-GER-3sP bad

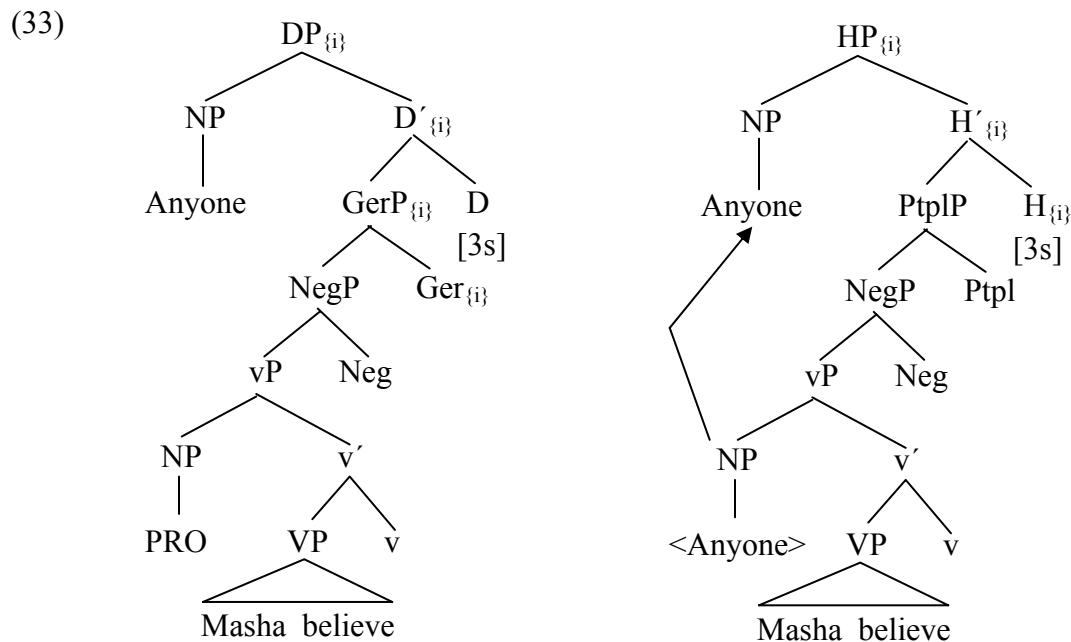
‘Nobody’s believing Masha is bad.

Example (32) shows that this difference only appears in the subject position. An NPI in object position is allowed in both participial clauses and gerunds:

- (32) a. Masha kim-i daqany iteqej-be-t kuhaqan. (Participial clause)
 Masha who-ACC PRT believe-NEG-AOR.3sS bad
 ‘Masha’s not believing anyone is bad.’ (6-26-08)
- b. ?Masha kim-i daqany iteqej-im-ii-te kuhaqan. (Gerund)
 Masha who-ACC PRT believe-NEG-GER-3sS bad
 ‘Masha’s not believing anyone is bad.’ (6-26-08)

Thus negation on gerunds does have a well-defined syntactic scope that can include other NPs. It is simply that the subject happens not to be in that scope of negation in the case of gerunds.

This difference follows almost immediately from the analysis we have already given, especially the claim that gerunds are a kind of control construction, while participial phrases are a kind of raising construction. The two structures are compared in (33).



In the gerund construction, the original theta-position of the NPI is Spec, DP. Negation is above vP, but below both Ger and D, as shown by the morpheme order *believe-NEG-GER-AGR*, assuming that morpheme order reflects syntactic hierarchy (the Mirror Principle of Baker 1985). Hence, the NPI is never in the scope of negation in the gerund construction, and it cannot be interpreted. In contrast, the original position theta-position of the NPI cannot be Spec, HP (by

the RPC1), and hence must be Spec, vP in the participle clause. If the NPI appears in Spec, HP, this is the result of movement. Hence, the NPI can reconstruct into the Spec, vP position at LF, just as in ordinary TPs, and thereby be interpreted. In contrast, if the NPI is generated in the object position, as in (32), then it is inside VP (at least originally) and hence inside the scope of negation in both structures. Therefore, no difference between the two is seen in this case. We should not be too surprised, then, that participial phrases pattern with finite CPs rather than with the superficially more similar gerunds in this respect, given that it is a natural consequence of the current theory. In particular, it follows from the RPC plus the assumption that a different head is intrinsically nominal in the two structures.

7. Scrambling out of CPs and Participial clause but not Gerunds

Next let us investigate the possibility of moving phrases out of the various types of clauses/nominalizations. Here too there is a somewhat surprising difference, which depends on the type of movement that is involved. On the one hand, for purposes of scrambling-type movements, participial phrases behave like CPs rather than gerunds, in that it is relatively easy to move a variety of constituents out of them. On the other hand, for purposes of relative clause formation, participial clauses behave like gerunds rather than CPs in that extraction from them is quite restricted: only the subject argument can be extracted. This section considers the data from scrambling-type movements, whereas the next takes up the case of relative clause formation.

In fact, there is a family of descriptively different constructions that we can group together under the rubric of scrambling-type movement. The first is a kind of “raising to object” that can happen with finite clauses in Sakha. (There is a similar, though not identical, construction in some varieties of Turkish; see Moore 1998 and Sener to appear.) Starting with finite CPs, when the subject is unambiguously contained inside the clausal complement of a transitive matrix verb, it can only receive nominative case, as expected ((34a)). However, when it is at the left edge of the embedded clause, it can be marked with accusative case ((34b)).

- (34) a. Min [sarsyn ehigi>(*ni) kel-iex-xit dien] ihit-ti-m. (unraised)
 I(NOM) tomorrow you-(*ACC) come-FUT-2pS that hear-PAST-1sS
 ‘I heard that tomorrow you will come.’
- b. Min [ehigi/ehigi-ni [bügün kyaj-yax-xyt dien]] erem-mit-im. (raised, CP)
 I you/you-ACC today win-FUT-2pS that hope-PTPL-1sS
 ‘I hoped that you would win today.’

This is similar to so-called Exceptional Case Marking in English, in that the relevant NP is case marked as if it were the object of the matrix verb, even though semantically it is the subject of the embedded verb. Note also that, unlike in English, this “raising to object” is possible even though the embedded clause is a fully finite CP. This construction is discussed in some detail in Vinokurova 2005, B&Vb, Vinokurova ms, and Baker to appear; see also Sener to appear on

Turkish, plus references cited there. Roughly speaking, the analysis is that the lower subject can move (“scramble”) to adjoin to the CP projection (and perhaps higher). When it does, it is at the edge of the embedded CP phase, and does not undergo spell-out with the rest of this phase. It is then visible on the matrix phase. It can then be case-marked accusative within the matrix clause, either as the goal of an Agree initiated by the matrix *v* (Sener’s view), or (better) by the rule of dependent case marking given in (12), since it is now the lower of two NPs in the matrix CP phase (N&Vb’s view).

What is interesting for our purposes is what happens when the internal argument of a verb like ‘hope’ or ‘hear’ is a participial clause or gerund, rather than a CP. We observe a difference: the subject of the participial phrase clearly can raise and receive accusative case (NV, etc.), but the subject of a gerund cannot:

- (35) a. Min ehigi/ehigi-ni бүгүн kyaj-byk-kyt-yn ihit-ti-im. (raised, Ptpl clause)
 I you/you-ACC today win-PTPL-2pP-ACC heard-PAST-1sS
 ‘I heard you won today.’
- b. Min Masha-(??ny) (бүгүн) kyaj-yy-tyn kör-dü-m (gerund)
 I Masha-(ACC) today win-GER-3sP.ACC watch-PAST-1pS
 ‘I watched Masha’s winning/Masha’s victory today.’ (10-10-07)

The gerund here is again acting like an ordinary possessed NP; it is impossible for the possessor of the object of a transitive verb to “raise to object” in Sakha:⁹

- (36) Min Masha-ny massyyna-tyn aldjat-ty-m.
 *I Masha-ACC car-3sP.ACC break-PAST-1sS
 ‘I broke Masha’s car (on her).’

So raising to object is a property of clauses and not of nominals, and gerunds act like nominals in this respect, but participial phrases act like clauses.

Sakha also has more garden-variety scrambling. For example, (37a) shows scrambling out of an embedded finite CP into the matrix clause, the embedded object appearing separated from its clause and before the matrix subject and a matrix adverb. There is no change of case associated with this kind of movement; the object is already marked accusative in the embedded clause, and this marking is essentially indelible (see B&Vb for discussion). (37b) shows that the same kind of scrambling is also possible out of a participial clause.

- (37) a. Massyyna-ny Misha beqehee [Mashaxampyryp-pyt dien] ihit-te. (from CP)

⁹ There are some forms of possessor raising in Sakha, but not this kind. The possessor of an unaccusative verb can raise into the clause and be marked dative (or genitive); see B&Vb. There is also a construction rather like (36), but where the possessed NP must be a body part (NV:359). Whatever their analysis, these are not directly relevant here.

car-ACC Misha yesterday Masha crash-PTPL.3sS that hear-PAST.3sS
 ‘Misha heard yesterday that Masha had crashed the car.’ (re SS)

- b. Massyyna-ny Misha beqehee [Mashaxampyryp-pyt-yn] ihit-te. (from PtplP)
 Car-ACC Misha yesterday Masha crash-PTPL-3sP.ACC hear-PAST.3sS
 ‘Misha heard yesterday that Masha had crashed the car.’ (re SS)

However, I have never observed similar scrambling out of a gerund, and presume that it is impossible.

One other type of scrambling that is relevant here concerns the scrambling of *wh*-phrases for the purposes of scope assignment. Any kind of clausal or nominal constituent --CP, HP, GerP, or simple NP—can undergo a certain amount of scrambling in Sakha. These constituents can scramble leftward, giving word orders like XP-Adv-V; they can also scramble rightward, such that they appear after the verb. (38) gives examples of rightward scrambling for the three constructions of primary interest here:

- (38) a. Bil-l-er Misha massyyna-ny atyylas-ta dien (CP)
 know-PASS-AOR.3sS Misha car-ACC buy-PAST.3sS that
 ‘It is known that Misha bought a car.’ (4-2-08)
- b. Kuhaqan e-t-e Misha massyyna-ny atyylah-ar-a (Ptpl clause)
 bad AUX-PAST-3sS Misha car-ACC buy-AOR-3sP
 ‘It was bad that Misha bought a car.’ (4-2-08)
- c. Kuhaqan e-t-e Misha massyyna-ny atyylah-yy-ta (Gerund)
 bad AUX-PAST-3sS Misha car-ACC buy-GER-3sP
 ‘It was bad Misha’s buying a car.’ (4-2-08)

It is also possible for any of these clause-like constituents to contain a *wh*-phrase in situ, with scope over the matrix clause. However, just as in other better-studied SOV languages, a rightward scrambled constituent cannot contain a *wh*-phrase that takes scope outside of that constituent (for discussion, see for example Bhat and Dayal 2007 on Hindi). Hence, all of the examples in (38) become bad if *tugu* ‘what.ACC’ is substituted for *massyynany* ‘car-ACC’ in the hopes of creating an interrogative sentence like ‘What is it known/bad that Misha bought?’ This defect can in principle be avoided by first scrambling the *wh*-phrase to the left, out of the embedded clause/nominalization, so that it remains to the left of the matrix verb when the rest of the clause scrambles rightward. This recipe creates a grammatical outcome when the clause-like constituent is a finite CP or a participial phrase, but not when it is a gerund:

- (39) a. Tug-u bil-l-er Misha atyylas-ta dien (CP)
 what-ACC know-PASS-AOR.3sS Misha buy-PAST.3sS that

‘What is it is known that Misha bought?’ (4-2-08)

- b. Tug-u kuhaqan e-t-e Misha atyylah-ar-a (Ptpl clause)
what.ACC bad AUX-PAST-3sS Misha buy-AOR-3sP
‘What was it bad that Misha bought?’ (4-2-08)
- c. *Tug-u kuhaqan e-t-e Misha atyylah-yy-ta (Gerund)
what.ACC bad AUX-PAST-3sS Misha buy-GER-3sP
‘What was it bad Misha’s buying?’ (4-2-08)

Presumably the leftward scrambling of the *wh*-phrase that is part of the derivation of (39a) and (39b) is essentially the same as the leftward scrambling seen (37). The fact that it is impossible out of a gerund in (39c), even when it is de facto necessary to satisfy other grammatical constraints, strongly suggests that it is impossible across the board.

Why can’t NPs move out of gerunds, whereas they can move out of participial clauses as well as CPs? I suggest that this derives from the fact, established in section 5, that the intermediate head Ger is intrinsically nominal, whereas its analogs T and Ptpl are not. Indeed, I will go a bit further, and say that Ger is even more like a lexical noun than either D or H is. Two bits of superficial evidence suggest this. First, the Ger suffix, in addition to its productive and semantically transparent uses, also shows up as a kind of derivational morpheme in Sakha. It is part of many listed words that have specialized, not fully compositional means, such as *üün-üü* (grow+GER) meaning ‘harvest’, *yjaa-hyn* (weigh+GER) meaning ‘scales’, and so on. In contrast, there are (as far as I know), no listed items that contain possessive agreement as part of their representation. Assuming that derivational morphemes correspond more or less to lexical heads in the syntax, and inflectional morphemes correspond to functional heads in the syntax, this suggests that Ger is on the lexical side of the divide. Second, it is striking that H and D (and T) bear agreement, whereas Ger does not. In Baker 2008:xx, I claimed that only functional heads can be probes for agreement crosslinguistically. If so, then the inertness of Ger with respect to agreement could be an indication that it counts as a lexical category.¹⁰

Next let me propose that lexical categories are subject to a stronger version of the RPC than functional categories are, as stated in (40).

- (40) *The Reference-Predication Constraint 2 (RPC2)*: No lexical category can both introduce a referential index and bear an EPP feature.

¹⁰ In contrast, in Baker 2005 I argued on the basis of Li’s Generalization concerning proper head movement that the Ger heads were functional. The relevant constituents in Mapudungun seem more like participial clauses than like gerund clauses, however, now that the distinction between the two is clearer (to me).

Previously we saw that functional nominal categories like H cannot both introduce a referential index and theta-mark a specifier. As such, they cannot have a category base-generated in their specifier position; one can only arrive there by movement (see (33)). (40) adds the idea that a lexical nominal category cannot even acquire a specifier by movement, because it cannot have the feature that would attract such a phrase. One kind of nominal category cannot have a thematic specifier; the other cannot have any specifier at all. (40) even blocks movement to adjoin to a lexical nominal projection—a not unnatural generalization, given the kinship (even identity) between specifiers and adjuncts that has been discussed by many.

The RPC2 has strong implications for extraction from gerunds if we add the additional assumption that Ger is a phase head. We saw in section 5 that GerPs can function as arguments of a higher predicate (unlike TP or PtplP). When they do, they are thematically complete, have no unsatisfied properties that not to be licensed from the outside, can move as units, and so on. This suggests that GerPs themselves are phases—quasi-independent subchunks of the overall derivation. Suppose so. Then the RPC2 together with Chomsky’s (2000, 2001) Phase Impenetrability Condition (PIC) implies that nothing can move out of GerP. Phrases cannot move out of GerP in one step, because GerP is a phase and the PIC states that only things at the edge of GerP can move out of GerP. But there are no phrases on the edge of GerP (except the head Ger itself). No phrases are generated there, because Ger cannot assign a thematic role (the RPC1). And no phrase can move there, because Ger cannot attract a phrase (the RPC2). Hence, it is impossible to move anything out of a GerP. In contrast, PtplP and TP are not phase heads, creating complete propositional constituents. Nor are they nominal, so they are not barred from having a specifier or being adjoined to by either version of the RPC. This version of the RPC thus goes a long way toward explaining the difference between gerund phrases and both participial clauses and finite CPs with respect to extractions of the scrambling type.

Something more needs to be said, however, about scrambling the subject of a gerund, located in Spec, DP. This is not trapped inside the GerP phase the way that internal arguments are, because it is originally merged in Spec, DP, as discussed in section 6. The DP as a whole is probably another phase, but the subject in Spec, DP is already on its edge, so it should be extractable. That this is correct for another kind of movement (relative clause formation) is seen in the next section. Why then can’t the subject of a gerund be marked accusative in the matrix domain, whereas the subject of a participial phrase can be?

We can bring this data into the fold with two additional assumptions. The first concerns a clarification of what it means for two NPs to be in the same phase for the purposes of the accusative case assignment rule stated in (12). Let us assume that an NP that is adjoined to some phase XP counts as visible for case assignment in a larger phase, but an NP that is in the Spec, XP does not. This can be stated as in (41).

- (41) If there are two distinct argumental NPs such that NP1 c-commands NP2 and there is no XP, XP a phase, such that XP dominates NP1 but not NP2, then value the case feature of NP2 as accusative unless NP1 is already marked for case.

This proposal is in line with the intuition, familiar from Chomsky 1986, that positions adjoined to a given phrase are in a kind of no-mans land, not fully inside the phrase, but not fully outside it either. Technically, we say that a phrase Y is dominated by a phrase X if and only if Y is contained in every segment of X, where adjoining something to X creates a two segment category (Chomsky 1986:7). In fact, we need this clarification anyway for the subject of participial clauses. These can be in either nominative or accusative case as shown in (42), with no obvious difference in position.

- (42) Min ehigi/ehigi-ni бүгүн kyaj-byk-kyt-yn ihit-ti-im. (raised, Ptpl clause)
 I you/you-ACC today win-PTPL-2pP-ACC heard-PAST-1sS
 ‘I heard you won today.’

The fact that H agrees with the subject ‘you’ in person in both variants shows that ‘you’ must have merged directly with a projection of H, given the SCOPA of Baker 2008. But one can say that in one case ‘you’ is in Spec, HP whereas in the other case it is adjoined to HP. If it is in Spec, HP, it is contained in every segment of HP (there is only one), hence it does not count as being in the same phase as the matrix subject ‘I’. Thus accusative case marking does not apply. In contrast, if it is adjoined to HP, then it is in the larger segment of HP but not in the smaller one, so it is not dominated by HP, and it is visible along with ‘I’ in the matrix CP phase. Then accusative case marking does apply, deriving the other variant of (42). Given these assumptions, it also follows that the subject is not case marked accusative when it is in Spec, DP of a gerund.

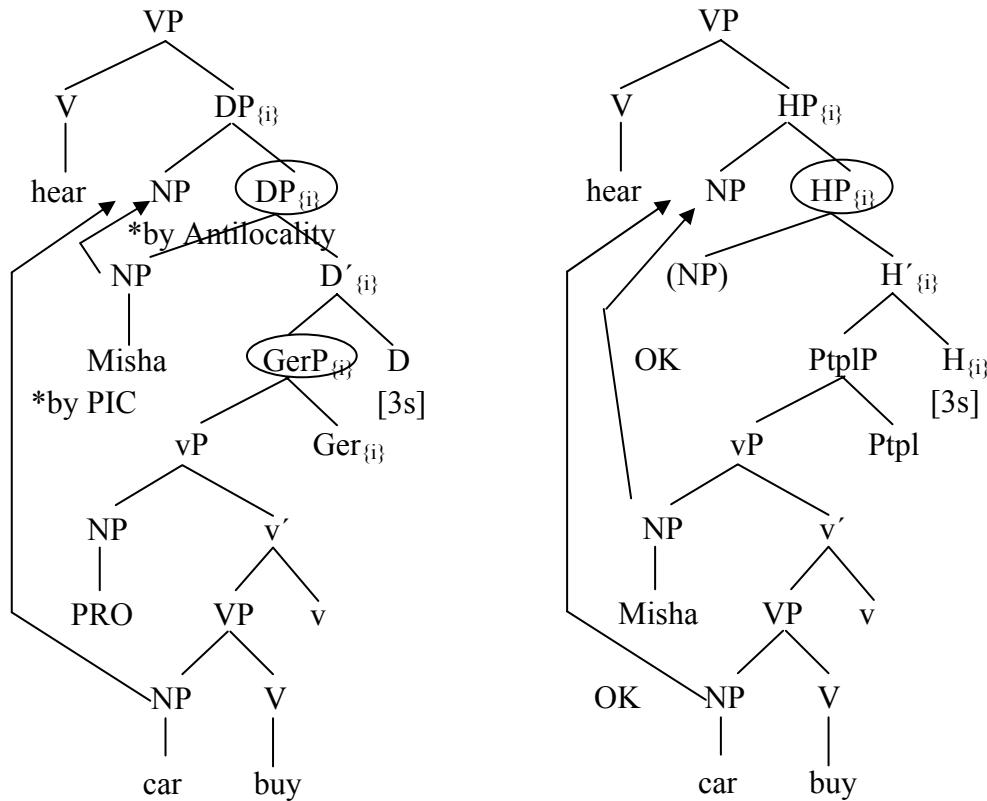
It follows from this that the subject of a gerund would have to move higher than Spec, DP to receive accusative case. But there is no higher head in the nominalization to host this movement. The only plausible landing site for this raising within the DP phase, then, is adjoining to DP itself. But there is reason to think that such a movement, from the Spec of a phrase to adjoin to that very same phase, is ruled out as being too short. Such movements from one position to another within the very same phrase are forbidden by Grohmann’s (2003) Anti-Locality Hypothesis, stated in (43).

- (43) Anti-Locality Hypothesis
 Movement within a Prolific Domain is ruled out. (Prolific Domains: the extended verb phrase, the extended IP, and the extended CP.)

See also Lasnik and Saito 1992:110-11 for evidence that it is bad to topicalize a subject in English, moving NP from Spec, TP to adjoin it to that same TP. Taking this to be an accurate restriction on movement, then, we complete the account of why “raising to object” is not possible from a gerund. In contrast, the subject of a participial clause originates lower, in Spec, vP. It can thus move from Spec, vP directly to adjoin to HP, without passing through the Spec, HP position. This movement goes from the thematic domain into the phi-feature domain, and hence does not count as too short for the Antilocality condition.

The differences in movement out of gerunds and participial clauses are summarized in the diagrams in (44), with categories that are phases circled.

(44)



Arguments can move directly out of PtplP (and TP) but not GerP because GerP is a phase and PtplP is not. Internal arguments cannot move out of GerP in two steps, because as a lexical nominal projection GerP does not license an intermediate landing site at its edge. Finally, the subject of the gerund is in Spec, DP, outside the GerP island. But this position is not high enough to be visible for case assignment in the matrix clause, nor can the subject of the gerund adjoin to DP, due to the Antilocality condition. The differences we observed in scrambling and raising thus follow.¹¹¹²

¹¹ These principles might actually allow scrambling of the subject of a gerund as long as it doesn't adjoin to DP, but goes directly to some higher position. This sort of movement path is certainly allowed for relative clause extraction, as discussed in the next section (see (48b)). One might also expect to see it in scrambling examples like (39c), with the subject scrambled out of the gerund rather than the object (meaning 'Who is it bad that (he/she) bought a car?'). Unfortunately, my data contains only one example of the relevant type, and its acceptability was judged intermediate (?). More research would be needed to tell if such examples are essentially good or essentially bad.

¹² Vinokurova 2005 observes an interesting difference between raising to object from CPs and raising to object from participial clauses. When a first or second person pronoun is a subject of the embedded clause and raises to be

Before going on, I mention one more empirical phenomenon that might form a natural class with the topics discussed in this section. This concerns indirect questions in Sakha. Sakha is a language with *wh*-in-situ, as many head-final languages are (although *wh*-phrases may undergo scrambling, as for example in (39)). So an indirect question is simply an embedded clause-like constituent with an in situ *wh*-phrase contained within it. But the sort of clause matters: a finite CP or a participial clause can function as an indirect question when it is the complement of a verb like ‘ask’, but a gerund cannot, as shown in (45).

- (45) a. Min Masha-ttan Misha tug-u atyylas-da dien yjyt-ty-m. (CP)
 I Masha-ABL Misha what-ACC buy-PAST.3sS that ask-PAST-1sS
 ‘I asked Masha what Misha bought.’ (4-11-08)
- b. Min Masha-ttan tug-u aaq-ar-b-yn yjyt-ty-m. (Participial clause)
 I Masha-ABL what-ACC read-AOR-1sP-ACC ask-PAST-1sS
 ‘I asked Masha what I should read.’ 9-19-07 (4-11-08)
- c. *Min Masha-ttan tug-u aaq-yy-b-yn yjyt-ty-m.
 I Masha-ABL what-ACC read-GER-1sP-ACC ask-PAST-1sS
 ‘I asked Masha what I read.’ (lit: what my reading) 9-19-07 (4-11-08)

This can be seen as essentially the same phenomenon as in (34)-(39), given the classical assumption that *Wh*-phrases need to move to take scope over their domain, either overtly, as in English, or covertly, as in Chinese, Japanese, etc. (Huang 1982). Finite CP has a Spec position that is dedicated for operators, so this is always possible with CPs. Participial clauses do not have a dedicated Spec position for this purpose, but it is possible to adjoin any argument to HP, as shown in (44). Gerunds also do not have a dedicated Spec position for operators, but neither can anything inside the gerund adjoin to DP, as also shown in (44). Thus, assuming that the relevant principles apply to covert movement as well as to overt movement (the PIC, Antilocality), it follows that gerunds cannot be indirect questions, whereas participial phrases can be.

8. Extraction to form a relative clause: HP and DP versus CP

marked accusative, the embedded verb can agree with it in number but not person if the embedded clause is a finite CP, but full person-number agreement on the embedded verb continues to be needed if it is a participle. See Baker to appear for an analysis of this difference using the structure in (44) and the SCOPA of Baker 2008. The analysis hinges on the fact that the phase head is the same as the agreeing head in participial clauses but not in CPs.

Possibly similar is the fact that finite CPs in Sakha allow shifted indexical readings, in which first person pronouns in the embedded CP can refer to the (third person) subject of the matrix clause (Vinokurova 2009 ms.), whereas this is not possible for first person pronouns contained in participial clauses or gerunds. This probably means that there are special operators that refer to the speaker and the hearer, and these are located in CP projections but not in HP or DP projections (cf. Baker 2008:ch 4, and references cited there).

There is, however, one kind of movement that behaves rather differently in Sakha, namely relative clause formation. Relative clauses in Sakha precede the head noun, as is common in head final languages. One peculiarity they have is that the relative clause cannot be a full TP or CP; it must be a PtplP. Indeed, it must be a bare PtplP, not an HP, as explained already in section 5. In addition, a possessive determiner associated with the head of the relative clause agrees with the subject of the relative clause and assigns it (genitive) case in the absence of any agreeing and case-assigning head like T or D inside the relative clause itself; see Kornfilt xxxx.¹³ A simple example illustrating these features is repeated in (46).

- (46) [Masha -- atyylas-pyt] at-a
 Masha buy-PTPL horse-3sP
 ‘the horse Masha bought’

Not only is there a gap in the relative clause related to the head, but the dependency respects most of the island effects that are characteristic of A-bar movement in generative theory: the complex NP constraint, the coordinate subject constraint, adjunct islands, etc.¹⁴ I thus assume that A-bar movement is involved in the derivation. Whether it is the head NP itself that moves, as in Kayne 1994, or an empty operator, I leave open. For concreteness, I will assume that the NP itself moves to land in some A-bar position to the right of the relative clause (on the surface).

The question of interest to us here, then, is which clause-like constituents are islands for this kind of movement. Not surprisingly, any major constituent can be extracted out a finite CP to form a relative clause. For example, (47) shows that either the embedded subject or the embedded object can be extracted from the base structure in (47a).

- (47) a. [Saaska Baaska-ny üöx-te dien] san-yy-gyn.
 Saaska Baaska-ACC scold-PAST.3sS that think-AOR-2sS
 ‘You think that Saaska scolded Baaska.’ (relC)
- b. [-- Baaska-ny üöx-te dien] san-yyr uol-un.
 -- Baaska-ACC scold-PAST.3sS that think-AOR boy-2sP
 ‘the boy that you think scolded Baaska’ (relC)
- c. [Saaska -- üöx-te dien] san-yyr uol-un.
 Saaska -- scold-PAST.3sS that think-AOR boy-2sP
 ‘the boy that you think that Saaska scolded’ (relC)

¹³ This agreement is suppressed if the extraction site is itself the subject of the relative clause or is contained in the subject—a kind of Anti-agreement effect; again see Kornfilt.

¹⁴ A possible exception is the subject condition. One can extract the possessor of a transitive subject in Sakha, or (similarly) the subject of a participial clause or gerund in subject position.

Sakha is no different from English in this respect. Presumably the relativized element moves first to Spec, CP of the embedded clause, and from there to the head position of the relative clause as a whole, each step respecting locality conditions on movement in the usual way.

Consider now gerunds. The subject in Spec, DP can be extracted from these, but internal arguments cannot be, as shown in (48).

- (48) a. [Misha kiine-ni kördör-üü-te] bies-ke saqalan-ar.
 Misha movie-ACC show-GER-3sP five-DAT begin-AOR
 ‘Misha’s showing of the movie begins at five.’
- b. [-- kiine-ni kördör-üü-te] bies-ke saqalan-ar uol
 -- movie-ACC show-GER-3sP five-DAT begin-AOR boy
 ‘the boy whose showing of the movie begins at five’
- c. *[Misha -- kördör-üü-te] bies-ke saqalan-ar kiine
 Misha -- show-GER-3sP five-DAT begin-AOR movie
 ‘the movie the showing of which by Misha begins at five’

This pattern is not too surprising given the discussion in the previous section. Internal arguments generated inside the vP complement of Ger are trapped there, since Ger is a lexical nominal head, so it is both a phase head and it cannot attract anything to the edge of GerP. Thus, internal arguments cannot move out of GerP by relativization for the same reason that they cannot move out by scrambling. The Spec, DP position, where the overt subject sits, does however count as at the edge of DP for purposes of extraction (although not for accusative case marking, given the special formulation in (41)). Hence NPs in this position can move directly out of HP without violating the PIC. Indeed, extracting the subject of a gerund should be no different from extracting the possessor from a possessive DP in Sakha, because both originate in the same position, namely the specifier of D_{poss} . (49) shows that indeed the extraction of a possessor is perfectly fine in Sakha (unlike in English).

- (49) [-- uol-a] balyk sie-bit kihi
 -- son-3sP fish eat-PAST person
 ‘a person whose son ate fish’

Recall also that GerP can be used in argument positions even if there is no DP projection above it. In that case, the subject is a null category—tentatively a PRO_{arb} sitting in Spec, vP. We then expect that no internal argument can be extracted from the GerP phase in these circumstances either. (50) shows that this prediction is correct (compare (20a), without relativization).

- (50) *[--olord-uu] bies-ke saqalan-ar sibekki(-te)
 -- plant-GER five-DAT begin-AOR flower-(3sP)

‘flowers the planting of which begins at 5:00’

Now for the surprise: relative clause formation from a participial clause shows the same pattern as relative clause extraction from a gerund—not not the pattern of extraction from a finite CP. In particular, the head of the relative clause can bind a gap that functions as the subject of a participial clause, but it cannot bind a gap that functions as its internal argument:

- (51) a. Min [kuoska balyg-y uor-an sie-bit-in] bil-e-bin
 I cat fish-ACC steal-CON eat-PTPL-3sP.ACC know-AOR-1sS
 ‘I know that the cat stole and ate the fish.’ (RelC)
- b. Min [-- balyg-y uor-an sie-bit-in] bil-er kuoska-m
 I fish-ACC steal-CON eat-PAST-3sP.ACC know-AOR-1sS cat-1sP
 ‘the cat that I know stole and ate the fish.’ (RelC)
- c. *Min [kuoska -- uor-an sie-bit-in] bil-er balyg-ym
 I cat steal-CON eat-PAST-3sP.ACC know-AOR fish-1sP
 ‘the fish that I know that the cat stole and ate.’ (RelC)

This is rather surprising, given that for other kinds of movement participial clauses patterned with the finite CP, not with the gerund. We thus want to say something about why this sort of extraction works differently.

Nothing special needs to be said about why the subject can be extracted from Spec, HP of a participial clause. Like the subject of a gerund, this is already at the edge of the relevant phase (HP) for purposes of extraction. Hence, its accessibility to further movement is expected. If there is a problem with moving anything from an HP, it is not surprising that it is internal arguments that pose the difficulty. They start out crucially internal to the HP phase, and will not be able to move out of it in one step, by the PIC. Nor does the HP constituent have a specifier position that is designated for operator movement the way that finite CPs do (spec, CP); rather, Spec, HP seems to be more like an A-position, where the subject of the participial phrase undergoes case-licensing and person agreement. So it is not entirely unexpected that it should be harder to move internal arguments out of a participial clause than out of a CP.

The problem is that we saw clearly in the last section that NPs inside PtpIP can adjoin to HP in Sakha. Then from that position they can scramble even higher, into the matrix clause. The remaining question, then, is why an NP cannot adjoin to HP as an intermediate landing site in the course of relative clause formation, whereas it can in the course of scrambling.

To fill this gap in the account, I conjecture that moving from a theta-position to adjoin to HP and on to the head position of a relative clause counts as a kind of improper movement. It is well known that some combinations of movement steps are allowed, and others are not. The classic example is that it is possible for an A-movement like raising to feed an instance of A-bar movement like wh-movement, but it is impossible for an instance of A-bar movement to feed an

instance of A-movement. Generalizing from this, let us assume (like many others) that there are different subtypes of A-bar movement as well. If scrambling (including adjunction to HP) is type 1 and relative clause movement is type 2, it is not hard to imagine that a movement of type 1 could feed a second instance of type 1 movement, but not an instance of type 2 movement.

One way to formalize this would be in terms of subtypes of the operator feature. (Here I co-opt within a feature-based framework some ideas about topic, focus, questions, relative pronouns, and the relationships among them presented in Bresnan and Mchombo 1987:757-64. See also Rizzi 1997 for some relevant material.) Generally operator movements come in two broad types, focus and topic. These two classes of operator movement share certain features, properties, and vocabulary items, but they also have some differences. Let us call the general feature that they share [+Op], and the features that distinguish them [+Foc] and [+Top]. Anything with a [+Foc] or [+Top] feature also has a [+Op] feature, but nothing can be specified as being both [+Foc] and [+Top]. We then have the following possible feature bundles:

- (52) a. [--]
 b. [+Op]
 c. [+Op, +Foc]
 d. [+Op, +Top]
 e. * [+Op, +Foc, +Top]

Now let us say that interrogative phrases and other focused items the feature bundle [+Op, +Foc], whereas NPs that are destined to become the heads of relative clauses (or relative operators) have the feature bundle [+Op, +Top] (Bresnan and Mchombo 1987:757). Somewhere at the top of a relative clause is a category that attracts something with matching features, a category that seeks only [+Op, +Top]. However, I assume that scrambling in Sakha in general—and scrambling to the edge of HP in particular—is a focus type movement, undergone only by categories that are [+Op, +Foc]. (Note that wh-phrases rather like to undergo it, as seen in (39).) Now the badness of an example like (51c) follows. If the thematic object of the embedded verb ‘fish’ is to become the head of the relative clause, it must be [+Op, +Top]. But if it is [+Op, +Top], then it cannot also be [+Foc], by (54e). If it is not [+Foc], then it cannot scramble to adjoin to HP. If it cannot adjoin to HP, then it cannot escape the HP phase without violating the PIC. We then explain why extraction from participial clauses is like extraction from gerunds in this domain: adjunction to DP is impossible across the board, whereas adjunction to HP is possible but only for something whose features would not allow it to become the head of a relative. It would however, be possible in principle for a [+Op, +Foc] NP to be attracted first to one +Foc position, and then to another one. On this view, the deviance of (51c) is akin to the badness of (53c) in English (see Bresnan and Mchombo 1987:758-59).

- (53) a. It’s a new car that John should buy.
 b. What is it that John should buy?
 c. *This is the car that it is that John should buy.

(53a) illustrates clefting in English, an A-bar movement from the focusing family. (53b) shows that the clefted NP can then undergo normal question movement, another sort of A-bar movement within the focusing family. However, (53b) shows that it is quite bad for the clefted NP to undergo relative clause movement—an A-bar movement formally similar to question formation, but from the topicalization family. The common intuition is that a focus-type movement can feed another focus type movement, but not a topic-type movement, because of a clash in features (ultimately perhaps reducible to a clash in pragmatic function).

In contrast, the paradigms that we have seen imply that an NP can move through Spec, CP as an intermediate step in both scrambling into the matrix clause (see (37a)) or in relative clause formation (see (47)). Thus, Spec, CP is a more flexible position than adjoining to HP: it can participate in both focus movements and topic movements. This can be captured in the feature system in (52) by saying that C simply attracts NPs that bear the feature [+Op]; it is not specified for either [+Foc] or [+Top]. Hence, [+Op, +Foc] noun phrases can move via Spec, CP, as in (37a), but so can [+Op, +Top] noun phrases, as in (47). This relative flexibility of CP can be seen in English too, in examples like (54).

- (54) a. It's a new car that I think that John should buy.
b. This is a car that I think that John should buy.

(54a) shows that clefting, a focus-type movement, can proceed successive cyclically through Spec, CP. (54b) shows that relative clause formation, a topic-type movement, can also proceed successive cyclically through Spec, CP. There are thus restrictions on what movements can be fed by clefting, but not on what movements can be fed by movement through Spec, CP. I claim that the Sakha patterns are similar, with adjunction to HP in Sakha acting like clefting in English in the relevant respects.

If this is the right way to think about these paradigms, we might be able to observe the difference between Spec, CP and adjunction to HP in other ways. For example, Vinokurova (2009) shows that accusative case marked subjects raised out of finite CPs in Sakha can be interpreted as either discourse topics or as discourse foci. (This is different from what Sener reports for Turkish, where accusative case marked subjects can only be discourse topics.) This confirms the pragmatic neutrality of the edge of CP in Sakha. All things being equal, then, it would confirm my theory if accusative case marked subjects raised out of participial phrases in Sakha can only be interpreted as foci, expressing new or contrastive information, not as topics. That would be independent evidence that adjunction to HP is more restricted than movement to Spec, CP. Unfortunately, Vinokurova does not give similar data for raising from participial clauses, so the status of this prediction is unknown.

In any case, I do not offer this sketch as a fully realized theory of the different kinds of A-bar movement in Sakha (or any other language). It is simply a sample of how one might reasonably develop the idea that adjunction to HP can feed some kinds of A-bar movement but not others. For those it cannot, participial clauses behave predictably like the more nominal

gerunds, because neither has a designated operator position like Spec, CP. For those it can, participial clauses behave predicatably like the less nominal finite CPs, because they do not have an intermediate nominal projection comparable to GerP in gerunds.

9. Control of subjects and its effect on extraction

The last difference between participial clauses and other clauses/nominalizations concerns the possibility of obligatory control and its implications for extraction. The Sakha equivalents of control structures in English invariably use some form of participial clause as the controlled complement—not a finite CP or a gerund. (55) provides two typical examples.

- (55) a. Min Misha-qa miin buhar-yax-p-yn baqar-a-byn.
 I Misha-DAT soup cook-FUT-1sP-ACC want-AOR-1sS
 ‘I want to cook soup for Misha.’
- b. Masha kinigie-ni aaq-ar-yn astyn-ar.
 Masha book-ACC read-AOR-3sP.ACC enjoy-AOR.3sS
 ‘Masha likes to read the book.’

The participial verbs here are case-marked accusative as befits nominal internal arguments of a dyadic predicate. They also bear person-number agreement from the possessive paradigm with the understood subject. These features show that the HP layer is present, dominating PtplP, as is normal for participial clauses in argument positions.¹⁵

Since there is agreement with the embedded subject, and since Sakha is a pro-drop language, it is possible to think that the embedded subjects in (57) are pros that are “accidentally” coreferential with the matrix subject, not PROs in a syntactically special relationship of control. But there is clear evidence that something more than this is at work here. Surprisingly, in these structures that correspond to control complements in English, internal arguments can be extracted by relativization in Sakha. Thus, the examples in (56) are grammatical, in marked contrast to example (51c) in the previous section.

¹⁵ There are a few verbs that do not allow (or do not require) agreement on the participle with the understood/controlled subject. An example is *sat* ‘know how to, be-able to’, as shown in (i).

- (i) Min coroon oŋor-or-u sat-yy-byn.
 I goblet make-AOR-ACC know.how-AOR-1sS
 ‘I know how to make a goblet.’ (?? with oŋor-or-b-un ‘know-AOR-1sP-ACC’)

(The object ‘goblet’ can be extracted by relativization from this structure.) This seems to be the minority pattern, and I don’t have enough data to discuss it here. It is possible that these are restructuring predicates, in which there is no PRO subject for the embedded verb (so nothing to agree with) and the PtplP is really a kind of (extended) VP complement, as in Wurmbbrand’s (2003) theory of restructuring. Such complements would be licensed by complex predicate formation (covert incorporation) rather than by theta-role assignment, given my assumptions.

- (56) a. Min -- miin buhar-yax-p-yn baqar-ar kihi-m
 I -- soup cook-FUT-1sP.ACC want-AOR person-1sP
 ‘the person that I want to cook soup for’
- b. Min Misha-qa -- buhar-yax-p-yn baqar-ar miin-im
 I Misha-DAT -- cook-FUT-1sP.ACC want-AOR soup-1sP
 ‘the soup that I want to cook for Misha’
- c. Masha -- aaq-ar-yn astyn-ar kinige-te
 Masha -- read-AOR-3sP.ACC enjoy-AOR book-3sS
 ‘the/a book that Masha likes to read.’

(57) is a minimal pair with (55a)/(56b), showing that extraction out of a participial clause is possible only if the subject of the participial clause is in some sense coreferent with the subject of the matrix clause:

- (57) a. (?)Masha min Misha-qa miin buhar-ar-b-yn baqar-ar.
 Masha I Misha-DAT soup cook-AOR-1sP-ACC want-AOR.3sS
 ‘Masha wants me to cook soup for Misha.’
- b. *Masha min Misha-qa -- buhar-ar-b-yn baqar-ar miin-e.
 Masha I Misha-DAT -- cook-AOR-1sP-ACC want-AOR soup-3sP
 ‘the soup that Masha wants me to cook for Misha.’

The examples in (58) feature the matrix predicate ‘know that’, a predicate that in English cannot take a control complement, although the subject of the embedded clause can of course be “accidentally” coreferent with the subject of the matrix clause. The Sakha participial clause in (58a) does not look different from the one in (55b) in any obvious way. Nevertheless, in (58) extraction of the object of the participial clause is ruled out.

- (58) a. Min at-y atyylah-ar-b-yn bil-e-bin.
 I horse-ACC buy-AOR-1sS-ACC know-AOR-1sS
 ‘I know that I will buy/am supposed to buy a horse.’
- b. *Min -- atyylah-ar-b-yn bil-er at-ym.
 I -- buy-AOR-1sS-ACC know-AOR horse-1sP
 ‘The horse that I know that I will buy/am supposed to buy.’

I take this to mean that (58) is not a control construction in Sakha either, and that mere coreference between a pronoun and the matrix subject is not enough to affect extraction

possibilities (as expected). The contrast between (58) and (55)-(56) underscores the fact that something more than simple pronominal coreference must be going on in those examples.

As an additional piece of the puzzle, gerunds can have null subjects as well. In some instances, it even looks like there might be a control relationship between the matrix subject and the understood subject of the gerund—as in (59). (It is not clear if this is better glossed as “I know how I can make goblets” or “I know how goblets are made”.) But even in these most favorable circumstances, it remains impossible to extract the internal argument of the gerund:

- (59) a. Min coroon oŋor-uu-nu sat-yy-byn.
 I goblet make-GER-ACC know.how-AOR-1sS
 ‘I know how to make goblets.’
- b. *Min -- oŋor-uu-nu sat-yyr coroon-un.
 I -- make-GER-ACC know.how-AOR goblet-1sP
 ‘the goblets that I know how to make.’

So even if the subject of a gerund can be controlled, this does not void the islandhood of the gerund for extracting internal arguments, the way control does with participial clauses. In this respect, participial clauses seem less nominal than gerund clauses.

The question, then, is how is control possible in participial clauses, and why does it affect extraction patterns. To address this, I adopt the essential features of Idan Landau’s (2004) “calculus of control”. The leading idea of this approach is that Tense and/or Complementizer heads license PRO subject under agreement *unless* they are both +Agreement and +Tense. PRO thus occurs in a nonnatural class of environments: it occurs for example as the subject of infinitives in English that are +tense (semantically) but –agreement (morphologically); it also appears as the subject of certain subjunctive clauses in Balkan languages, which are –tense (semantically) but +agreement (morphologically). Where PRO cannot occur is in the subject position of finite indicative clauses, which are both +agreement and +tense. As perhaps the most crosslinguistically aware theory of control, this provides a good starting point for investigating control in Sakha.

Consider in this light participial clauses and gerunds. There is no significant difference between them when it comes to morphological agreement: in both cases, the intermediate head (Ger, Ptpl) does not bear agreement, and the higher one does. There is, however, a difference in semantic tensedness. Participial clauses in Sakha clearly have tense values that are interpreted relative to the tense of the matrix clause, but which are not anaphorically identical to it. This is already suggested by the fact that there are three different participles, aorist, past, and future, with systematically different meanings. Indeed, a verb like ‘forget’ can take participial clauses in different tenses, with control possible with either tense. (The examples are presented as relative clauses with the object extracted to insure that both are truly control constructions.)

- (60) a. Min aaq-ar-b-yn umnu-but kinige-m (relative present)

I read-AOR-1sP.ACC forget-PTPL book-1sP
 ‘the book that Masha forgot to read’

- b. Min aax-pyp-p-yn umnu-but kinige-m. (relative past)
 I read-PTPL-1sP-ACC forget-PTPL book-1sP
 ‘the book that I forgot I had read’

So the Ptpl heads are clearly +tense in Landau’s terms. There are also selectional relationships between the tense of the participial head and the matrix verb in Sakha. For example, the control complement of the verb ‘want’ must a future participle; if it appears with an aorist participle, the subject of the participial phrase must be distinct from the subject of the matrix clause:

- (61) a. Min Misha-qa miin buhar-yax-p-yn baqar-a-byn. (Control: Ptpl=FUT)
 I Misha-DAT soup cook-FUT-1sP.ACC want-AOR.1sS
 ‘I want to cook soup for Misha.’ (*with AOR) (9-19-07)
- b. (?)Masha min Misha-qa miin buhar-ar-b-yn baqar-ar. (9-19-07)
 Masha I Misha-DAT soup cook-AOR-1sP-ACC want-AOR.3sS
 ‘Masha wants me to cook soup for Misha.’ (* with FUT) (no control: Ptpl=AOR)

In contrast, the verb ‘enjoy’ does select a control complement with an aorist participle ((56c)), and ‘forget’ can select either an aorist participle or a past participle ((60)). Since selection is strictly local, and the HP projection intervenes between the matrix verb and the PtplP (and necessarily so, so that the participial clause will bear the index it needs to be an argument), these selectional relationships must be mediated through H. Therefore, H must also bear the feature +Tense, just as Landau assumes for the C of tensed infinitival clauses in English.

In contrast, Ger in Sakha is clearly not marked for Tense. There is only one Gerund morpheme, and it does not vary for tense, or express a distinct tense from the matrix in any way. Verbs that permit a gerund as complement thus have no selectional requirement for tense, and there is no selectional pressure to motivate placing a +tense feature of the D_{poss} head either. The fact that participial clauses have tense features as well as agreement features, whereas gerunds do not is the basis for the difference between the two with respect to control and extraction.

In order to relate the properties of C and T to the licensing of PRO, Landau proposes the feature assignment rule in (62).

- (62) R-assignment Rule: (Landau 2004:842)
 For $X^0_{[\alpha T, \beta Agr]} \in \{I^0, C^0, \dots\}$
 $\emptyset \rightarrow [+R]/X^0_{\square}$, if $\alpha = \beta = ‘+’$
 $\emptyset \rightarrow [-R]/\text{elsewhere}$

This says that, in essence, for heads that have values for both tense and agreement, those that have + values for both are also +R, whereas heads that have a negative value for either are –R. ±R is a feature (borrowed from Reinhart and Reuland 1993) that distinguishes PRO from all other NPs, lexically overt ones as well as the null pronoun *pro*: PRO is +R, everything else is –R. Thus heads that are marked for both tense and agreement but have a negative value for either will only agree with a PRO subject; heads that are positively marked for both features will only agree with a subject other than PRO.

Let us apply this system to participial clauses in Sakha. The one feature value that remains to clarify is the agreement feature on Ptpl. Ptpl is clearly not +agreement, since we see no overt agreement on bare participles in Sakha (but only on H, when that is present, see section 5). The two plausible choices, then, are –agreement or unspecified for agreement. Let us suppose that either feature assignment is possible. Saying that Ptpl is –agreement would be treating it like the infinitival marker *to* in English, which is plausible. Saying that it is unmarked for agreement would be treating it like an adjectival head, outside the verbal system all together, which is also plausible (see note 3). (Similarly, Landau 2004 says that *to* in English is –agreement in control structures and unmarked for agreement in infinitives without control.) So we have two possibilities, one of which yields control, the other does not.

The first possibility is that H is [+T, +Agr] and Ptpl is just [+T]. The rule in (62) applies to H, marking it +R, but it fails to apply to Ptpl, giving it no value of R. H then must agree with something that is +R, and Ptpl cannot be that thing. Hence, the subject must be +R—in other words in must not be PRO. This is the analysis of participial clauses that have subjects distinct from the subject of the matrix clause—all the examples we have seen except in this section. The analysis is essentially the same as Landau’s (2004: 863) analysis of *for-to* infinitives in English.

The second possibility is that H is [+T, +Agr] and Ptpl is [+T, -Agr]. If so, then (62) applies to mark Ptpl as –R and H as +R (as before). Because of this conflicting feature assignment, H cannot check the –R feature of Ptpl under agreement. In this situation, then, the subject must be –R, so as to agree with Ptpl. In other words, the subject must be PRO. The result is control participial clauses. This analysis is essentially the same as Landau’s (2004:848) analysis of infinitival clauses selected by verbs like *want* in English. We thus derive in a natural way the fact that participial clauses may undergo control in Sakha, but they also may not. Technically, the difference hinges on whether Ptpl is taken to agree covertly (-agreement, like nonfinite T) or to be outside the agreement system entirely (unmarked for agreement).¹⁶

Following Landau’s analysis, then, these control constructions (like tensed infinitival clauses in English) have an unusual property. The features of H cannot be satisfied internal to the HP projection, since H is +R, but both the Ptpl head and the subject are –R. As a result, it must enter into a direct agreement relationship with some higher category, outside of HP—

¹⁶ My data does not make it clear whether every matrix verb allows both control and no control options for its participial clause complement or not. If control is always optional, one would say that the Ptpl heads freely take the feature –agreement or not. If some verbs select only controlled complements, then I would say that those verbs select for the –agreement version of Ptpl only (by way of the H head, presumably).

specifically, the controller and/or the functional head in the matrix clause that agrees with it. Thus, HP as a whole is featurally incomplete in these control configurations. But phases are supposed to be self-contained propositional units, semantically and featurally independent in the relevant respects. I thus conclude that HP cannot count as a phase in this type of control construction—even though it does in noncontrol constructions, where H checks all its features against the non-PRO subject. Then if HP is not a phase in control constructions the way it is in noncontrol constructions, then the PIC does not block movement of an NP directly from inside the PtplP to the head position of the relative clause. This accounts for the contrast between (56) on the one hand and (51c)/(57b) on the other hand.

Landau himself uses the fact that in certain clauses C does not agree with the embedded subject, but rather with the controller in the matrix clause in another way, to explain why some constructions tolerate so-called partial control, whereas others do not. (63a) is felicitous in English, where the controller ‘John’ is understood as being one member of a group of people who are to meet at 6:00, whereas (63b) has no similar reading.

- (63) a. John wants PRO to meet at 6:00.
 b. #John managed PRO to meet at 6:00.

Landau relates this difference to the infinitival complement of *want* being semantically tensed, whereas the infinitival complement of *manage* is not. Hence the C in (63a) is also +T and (if it is +Agr), it is +R, a feature not satisfiable inside the infinitive. It therefore undergoes agreement with the controller *John*. This means that there is no direct control relationship between *John* and PRO in (63a), but only an indirect one, mediated by the +R, +T, +Agr C. This indirect relationship is what allows the minor mismatch in semantic number features that is partial control. In contrast, C in (63b) is –Tense, hence also –Agr and –R; it does not intervene between the controller and PRO, and only perfect, exhaustive control is observed. Now the property of C to which Landau attributes partial control is the same as the property of H to which I attribute nonphasehood. Hence, I predict that participial clauses in Sakha that contain agreeing H should allow partial control as well as exhaustive control. Unfortunately, I do not have the crucial data from Sakha on this point, but the prediction does check out for very similar participial clauses in Mapudungun, discussed (without distinguishing them from gerunds) in Baker 2005. Thus, (64b) contains a kind of participial clause in Mapudungun, with *-l* the equivalent of Ptpl, and *mi* the equivalent of the head H. (H remains an independent head in Mapudungun, whereas in Sakha it shows up as a suffix on the verb.) (64b) does not have the semantic anomaly that (64a) has, showing that partial control is indeed possible. Furthermore, H is singular, agreeing with the controller in the matrix clause, not plural, as the PRO subject of the participial clause must be, given the collective nature of the predicate.

- (64) a. #Trawü-w-ün wario-mew.
 gather-REFL-1sS town-LOC
 ‘I gathered in town.’

Table One. This confirms that participial clauses behave like tensed CPs and like gerunds in an approximately equal number of respects. It seems accurate, then, to say that participial clauses are nominal to an intermediate degree: they are more nominal than CPs, but less nominal than gerunds (which are themselves less nominal than simple underived nouns).

	Finite CP	Participial clause	Gerund
Argument positions	complement of V	Any	Any
Adjunct positions	OK	Bad	Bad
Bear accusative case	No	Yes	Yes
Trigger dative case	No	Yes	Yes
Usable as argument without agreement	N/A	No	Yes
Case of subject	Nominative	Nominative	Genitive
Subject NPI licensed	Yes	Yes	No
Subject can raise to object	Yes	Yes	No
Objects scramble out	Yes	Yes	No
Can be indirect Q	Yes	Yes	No
Relative extraction	Any argument	Subject only	Subject only
Obligatory control	No	Yes	(No?)

But even if it is accurate to say this, it is not complete or insightful to leave the matter there. One should aspire to take the further step and (try to) explain why the pattern in Table One is the way it is. Why do participial clauses behave like finite TPs in just these particular respects, and why do they behave like gerunds in the opposite respects? The pattern is somewhat complex, but it is presumably not random or unprincipled. In this paper, I have taken this additional step by attributing “nominality” to different heads in the structures of the various constituents: the highest head (H) is nominal in participial clauses, a lower head (Ger) is nominal in gerunds, and no head is nominal in finite CPs. Moreover, I have tried to explicate what it is for a functional category to be nominal, by starting from the framework of Baker 2003. A category is nominal if it bears a referential index and (thus) phi-features, and there is a negative correlation between having such an index and licensing a specifier (the Reference Predication Constraint). Pursuing this, I was led to distinguish two subcases of the RPC: a weaker one that applies to all categories that introduce a new referential index and rules out a thematic specifier, and a stronger one that applies to lexical categories with an index and rules out specifiers (or adjuncts) of any kind. These leading ideas, plus certain auxiliary assumptions, go a long way toward explaining why the pattern of facts in Table One is the way it is.

References:

- Baker, Mark. 1985. The Mirror Principle and morphosyntactic explanation. *Linguistic Inquiry* 16:373-415.
- Baker, Mark. 2003. *Lexical categories: Verbs, Nouns, and Adjectives*. Cambridge: Cambridge University Press.
- Baker, Mark. 2005. On gerunds and the theory of categories. Ms.
- Baker, Mark. 2008. *The syntax of agreement and concord*. Cambridge: Cambridge University Press.
- Baker, Mark, and Vinokurova, Nadezhda. In press-a. Two modalities of case assignment in Sakha. *Natural Language and Linguistic Theory*.
- Baker, Mark, and Vinokurova, Nadezhda. in press-b. On agentive nominalizations and how they differ from event nominalizations. *Language* 85.
- Baker, Mark. to appear. When agreement is for number and gender but not for person. *Natural Language and Linguistic Theory*.
- Barker, Chris. 1995. *Possessive Description*. Stanford, Calif.: CSLI.
- Borsley, Robert, and Kornfilt, Jaklin. 2000. Mixed extended projections. In *Syntax and semantics 22: the nature and function of syntactic categories*, ed. Robert Borsley, 101-131. San Diego, Calif.: Academic Press.
- Bresnan, Joan, and Mchombo, Sam. 1987. Topic, pronoun, and agreement in Chichewa. *Language* 63:741-782.
- Chomsky, Noam. 1986. *Barriers*. Cambridge, Mass.: MIT Press.
- Chomsky, Noam. 2000. Minimalist inquiries: the framework. In *Step by Step*, eds. Roger Martin, David Michaels and Juan Uriagereka, 89-155. Cambridge, Mass.: MIT Press.
- Chomsky, Noam. 2001. Derivation by phase. In *Ken Hale: A life in language*, ed. Michael Kenstowicz, 1-52. Cambridge, Mass.: MIT Press.
- Cinque, Guglielmo. 1999. *Adverbs and functional heads: a cross-linguistic perspective*. New York: Oxford.
- Comrie, Bernard. 1976. The syntax of action nominals. *Lingua* 40:177-201.
- Cristofaro, Sonia. 2003. *Subordination*. Oxford: Oxford University Press.
- Croft, William. 1991. *Syntactic categories and grammatical relations*. Chicago: University of Chicago Press.
- Croft, William. 2001. *Radical construction grammar*. Oxford: Oxford University Press.
- Geach, Peter. 1962. *Reference and generality*. Ithaca, New York: Cornell University Press.
- Grohmann, Kleanthes. 2003. *Prolific domains: on the anti-locality of movement dependencies*. Amsterdam: John Benjamins.
- Huang, C.-T. James. 1982. Logical relations in Chinese and the theory of grammar, MIT.
- Kayne, Richard. 1995. *The antisymmetry of syntax*. Cambridge, Mass.: MIT Press.
- Koptjevskaja-Tamm, Maria. 1993. *Nominalizations*. London: Routledge.
- Kornfilt, Jaklin. 2005. Agreement and its placement in Turkic nonsubject relative clauses. In *The Oxford handbook of comparative syntax*, eds. Guglielmo Cinque and Richard Kayne, 513-541. New York: Oxford University Press.
- Kornfilt, Jaklin. to appear. Subject case and Agr in two types of Turkic RCs. Paper presented at *WAFI 4*.
- Landau, Idan. 2004. The scale of finiteness and the calculus of control. *Natural Language and Linguistic Theory* 22:811-877.
- Malchukov, Andrej. 2004. *Nominalization / verbalization: constraining a typology of transcategorical operations*. Munich: LINCOM Europa.

- Marantz, Alec. 1991. Case and licensing. Paper presented at *The 8th Eastern States Conference on Linguistics*, University of Maryland, Baltimore.
- Moore, John. 1998. Turkish copy-raising and A-chain locality. *Natural Language and Linguistic Theory* 16:149-189.
- Newmeyer, Frederick. 1998. *Language form and language function*. Cambridge, Mass.: MIT Press.
- Öztürk, Balkiz. 2005. *Case, referentiality and phrase structure*. Amsterdam: John Benjamins.
- Reinhart, Tanya, and Reuland, Eric. 1993. Reflexivity. *Linguistic Inquiry* 24:657-720.
- Rizzi, Luigi. 1997. The fine structure of the left periphery. In *Elements of grammar*, ed. Liliane Haegeman, 281-338. Dordrecht: Kluwer.
- Ross, John. 1973. Nouniness. In *Three dimensions of linguistic theory*, ed. O. Fujimura, 137-258. Tokyo: TEC Company.
- Sener, Serkan. to appear. Non-canonical case marking is canonical: accusative subjects in Turkish. *Natural Language and Linguistic Theory*.
- Vinokurova, Nadezhda. 2005. Lexical categories and argument structure: a study with reference to Sakha, University of Utrecht: Ph.D dissertation.
- Wurmbrand, Susanne. 2003. *Infinitives: Restructuring and Clause Structure*. Berlin: Mouton de Gruyter.