Chapter 15

Nominal verbs and transitive nouns: Vindicating lexicalism

Paul Kiparsky
Stanford University

Event nominalizations and agent nominalizations provide evidence that all affixation is morphological, and that phrasal categories are projected from words in the syntax. Departing from both transformational and earlier lexicalist approaches to nominalizations, I first argue on the basis of English and Finnish evidence that gerunds are not DPs built on heads that embed an extended verbal projection (Baker & Vinokurova 2009; Kornfilt & Whitman 2011), but IPs that need Case. They are categorially verbal at all levels of the syntax, including having structural subjects rather than possessor specifiers. Their nominal behavior is entirely due to the unvalued Case feature borne by their Infl head, which they share with all participial verb forms. I then argue that agent nominalizations are categorially nominal at all levels of the syntax, and that the verb-like case assignment of transitive agent nominalizations is due to the verbal Aspect feature borne by their nominalizing head. Vedic Sanskrit, Northern Paiute, and Sakha evidence is shown to favor this analysis over B&V's analysis of intransitive agent nominalizations as nominal equivalents of Voice heads and transitive agent nominalizations as Aspect heads. The two "mixed" categories – gerunds and transitive nominalizations – thus prove to be formally duals: respectively verbs with Case and nouns with Aspect.

1 Nominalizations

The earliest generative work derived all nominalizations syntactically (Chomsky 1955; Lees 1960). Chomsky (1970) then argued that only *-ing* gerunds are derived syntactically, while all other types of event nominals, such as *refutation, acceptance, refusal*, are derived morphologically in the lexicon from bases that are unspecified between nouns and verbs. The suffix *-ing* was shown to serve both as the gerund formative and as one of the formatives that derive lexical event nominals. Chomsky's main argument was based on the fact that gerund phrases have the structure of verb phrases whereas other event

Paul Kiparsky. 2017. Nominal verbs and transitive nouns: Vindicating lexicalism. In Claire Bowern, Laurence Horn & Raffaella Zanuttini (eds.), *On looking into words (and beyond)*, 311–346. Berlin: Language Science Press. DOI:10.5281/zenodo.495452

nominals have the structure of noun phrases.[1] The differences are completely systematic. Unlike derived event nominals, gerunds are modifiable by adverbs, assign structural case to their complements (Table 1a,b), disallow articles and other determiners (Table 1c) and plurals (Table 1d), allow aspect (Table 1e) and negation (Table 1f), and they have a grammatical subject which is assigned a Th-role as in finite clauses (Table 1g), and which may be an expletive (Table 1h). In (Table 1g), *reading* refers to an event and *her* to its agent, the reader. In the derived nominal, *her* could also be a sponsor, organizer, or some other participant of a reading event not necessarily identical with the reader (Kratzer 1996; 2004), and *reading* could also mean 'manner of reading', 'interpretation'. Without an *of* complement, derived nominals are also interpretable in a passive sense: in *Mary's confirmation*, Mary could be the confirmer or the confirmee.

Table 1: Gerunds vs. Nominals.

		Gerunds (*-ing*^{V})	Nominals (*-ing*^{N}, *-ion, -al, -ance…*)
a.	Adjectives	*her quick signing the document	her quick signing of the document
b.	Adverbs	her immediately reciting it	*her immediately recital of it
c.	Determiners	*the/a/this/each performing it	the/a/this/each performance of it
d.	Plural	*her readings it / *her reading its	her readings of it
e.	Aspect	by her having sung it	*by her having sung of it
f.	Negation	by her not approving it	*by her not approval of it
g.	Subject	we remembered her reading it	we remembered her reading of it
h.	Expletives	it(s) seeming to me that I exist[2]	*it(s) appearance to me that I exist

The lexicalist line of analysis continues to be developed in different ways (Malouf 2000; Blevins 2003; Kim 2016). But many recent treatments have reverted to a uniformly syntactic derivation of nominalizations, in which nominalizing heads project a nominal structure and have a verbal complement whose type determines the nominalization's properties. The differences between the two types in Table 1 is captured by introducing

[1] Chomsky also contrasted the uniformity, regularity and full productivity of gerunds with the morphological and semantic diversity, idiosyncrasies, and limited productivity of derived event nominals. As Anderson 2016 notes, these points played a subsidiary role in Chomsky's argument. Indeed, they are not compelling criteria by themselves, for there is no shortage of productivity and regularity in the lexicon, and syntax has its share of idiosyncrasy.

[2] *I can't help but feel a little despondant* ***due to it seeming to me*** *that the TIE/fo and the T-70 make the original TIE and T-65 somewhat redundant* (Internet), *evidence that "explains away"* ***its seeming to me*** *that p is the case* (James Pryor, The Skeptic and the Dogmatist, *Noûs* 34: 534, 2000). The variation between Poss-*ing* and Acc-*ing* gerunds seen here is briefly addressed in 2.3 below.

them at different levels in the functional structure. The gerund *-ing*^{V} is structurally high, and derived nominals in *-ing*^{N}*, -ion, -al, -ance* are structurally low.

Kornfilt & Whitman (2011) dub this the Functional Nominalization Thesis (FNT), and propose a typology of four levels of nominalization, CP, TP, vP and VP. In this typology, English gerunds are TP nominalizations, while derived nominals are VP nominalizations.[3] This paper vindicates a uniform treatment of nominalizations in a different way: all true nominalizations are derived lexically; gerunds are not nominalizations at all – they are neither DPs nor NPs but IPs that need Case.

As my point of departure I take Baker & Vinokurova's (2009) theory, which extends the FNT from event nominalizations to agent nominalizations. For gerunds, B&V posit the structure (1a), based on the version of the DP analysis originated (along with the DP itself) by Abney 1987. The DP's complement here is an NP headed by the gerund nominalizer *-ing*^{V}, below which the structure is entirely verbal: an AspP which hosts aspectual material and certain adverbs, and which has a vP complement whose v (v=Voice) head assigns structural case and introduces an external agent argument. This external agent argument shows up as a genitive in D head. B&V do not say exactly how it gets there in (1a); perhaps it is base-generated in D and bears a control relation to the PRO in the Spec-vP position where the agent role is assigned.

For derived nominals B&V propose the structure (1b), where the head (*-ing*^{N}, *-ion*, etc.) takes a bare VP complement. Because it has no Asp or v projection, it contains neither adverbs, agents, nor structural case.[4]

The structures in (1) take care of the contrasting properties Table 1b, e, f, and g, but leave the remaining four properties (Table 1a, c, d, and h) to fend for themselves. On the one hand, the DP in (1a) provides too little structure: expletive *it*-subjects are believed to occupy Spec-IP or Spec-TP, but (1)a provides no Spec-IP or Spec-TP for them.[5] On the other hand, the DP, needed in the analysis as a site for the gerund's subject, generates unwanted structure. Since DPs can have plural heads, adjective modifiers, determiners, and quantifiers, the DP analysis wrongly predicts that Table 1a, c, and d should be grammatical. To maintain it one must somehow prevent functional projections like AP, QP, and NumP from appearing in DPs that have NP complements that have AspP complements, while allowing them in other kinds of DPs, and one must prevent the head of a

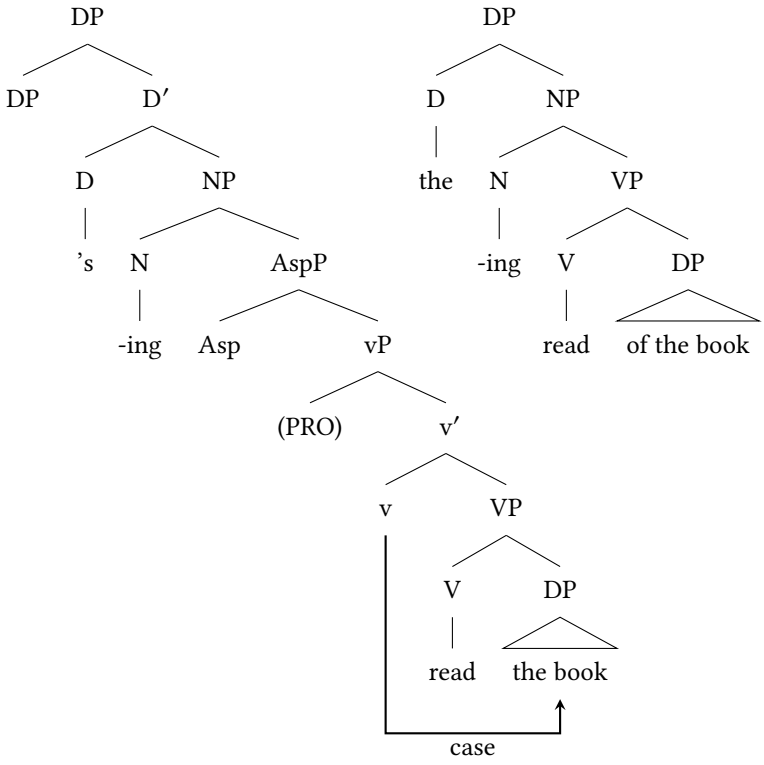
[3] A syntactic derivation of gerunds from TP/IP is also developed by Pires 2006. The aspectual content of the gerund is treated in Pustejovsky 1995; Alexiadou 2001, and Alexiadou, Soare & Iordăchioaia 2010. Alexiadou and her co-workers conclude that gerunds are imperfective Aspect heads that dominate VoiceP and vP, while nominalizers are n heads that also dominate VoiceP and vP, but under NumberP and ClassifierP, housing adjective modifiers, determiners, and plural.

[4] All analyses have to contend with the fact that certain adverbs can occur as postmodifiers with derived nominals, and even with some underived ones (Payne, Pullum & Huddleston 2010); they cite examples such as *the opinion generally of the doctors*, *a timber shortage nationally*, *the people locally*, and *the intervention again of Moscow*. We shall see similar Finnish data in §3 below.

[5] Expletive *there*, which likewise appears in gerunds, may sit in a lower subject position, since it is sensitive to the argument structure of the predicate – the absence of Cause according to Deal 2009, who puts it in the specifier of v. Like expletive *it*, *there* does not appear in derived nominals (**there's appearance to be a problem*). On Deal's analysis, the distribution of expletive *there* is consistent with my IP analysis of gerunds, but adds no further support to it.

DP whose complement is an NP whose complement is an AspP from being an article or a demonstrative pronoun.[6]

(1) a. his reading the book (high)



b. the reading of the book (low)

Contrary to what the FNT seems to promise, then, the morphosyntactic properties of a nominalization cannot be fixed just by locating its nominal head in a universal hierarchy of verbal functional categories, or even in a language-specific one. In that approach to mixed categories, it seems that the functional content that a given nominalizing head may combine with must be specified on an item-specific basis. But not just any arbitrary mixed category is possible. Consider the awesome unused power unleashed by the FNT. If functional N heads can convert AspPs into NPs in the syntax, as in (1a), why aren't there such things as Q heads with vP complements (**[some [he read it]$_{vP}$]$_{QP}$*), let alone multiple verbalizing and nominalizing syntactic heads interspersed to generate phrases in which layers of verbal and nominal structure alternate in various combinations?

[6] Some of the overgeneration could be curbed by by eliminating the DP layer, or by eliminating the NP layer and having D select for AspP directly. But these projections cannot be struck from (1) because their heads are essential to the analysis. The D head serves as the site of the structural subject, and the N head houses the nominalizer *-ing*. Neither of these elements can be accommodated in the Asp head, for that is required for the aspectual auxiliary *have*.

The empirical problem of overgeneration is a direct result of the theoretical approach behind the FNT-style analysis. The derivation of gerunds in (1a) involves syntactic affixation of *-ing* to the phrasal projection AspP.[7] A lexicalist perspective rules out affixation to phrases. It dictates an entirely different kind of derivation, in which the gerund suffix *-ing* is added to verbs in the morphology to build words (e.g. *reading*), which are then inserted in terminal nodes in the syntax. On this view, a gerund phrase is the syntactic projection of a gerund, not of a determiner as in (1a). On that basis we can build a simple and restrictive theory of nominalizations that explains *all* the data in Table 1.

The key idea is that gerunds are participles, and that participial suffixes, *-ing* included, are Infl heads that differ from finite and infinitive Infl heads in that they bear a Case feature. The extended projection of a gerund is then an IP with a Case feature, which needs to be checked (or, from a non-lexicalist perpective, valued) in the syntax. The Case feature restricts participial phrases to two syntactic functions: arguments – gerunds – in positions where their value for Case can be checked by a predicate, and participial modifiers in positions where their value for Case can be checked by head-modifier agreement.

Lexicalism excludes not only FNT-style analyses of gerunds, but every kind of syntactic affixation to phrasal categories. This means that no syntactic process can have the effect of changing the category of a word. That holds for all types of nominalization: event nominalizations, result nominalizations, and agent nominalizations. All "mixed categories" must then arise from morphological specifications of lexical heads, rather than from syntactic embedding as in (1). In §3 I support this more general prediction by showing that transitive agent nouns do not have an embedded vP projection and that their verbal properties come from a Tense/Aspect feature on the agent suffix.

I assume that a phrasal constituent is a projection of its head, which inherits its category (Noun, Verb, etc.), its inflectional features (such as Aspect and Case), and its thematic roles (Agent, Patient, Instrument, Event, etc.).[8] Mixed categories are verbs, nouns, and adjectives that have an extra phi-feature. Their extended projections behave like extended projections of ordinary verbs, nouns, and adjectives, modulo the properties enforced by that feature content. The language-specific syntax of gerunds is determined by their Case feature. A gerund that can bear any Case projects a phrase with the distribution of a DP. A gerund that has a partially specified Case feature projects a phrase that is restricted to positions compatible with the specified values of the feature. For example, Finnish gerunds are restricted to internal argument positions (section 2.2). Similarly, the verbal properties of transitive agent nouns are due to a Tense/Aspect feature assigned to these nouns by the agent affix that forms them. This feature may likewise be lexically unvalued and specified by additional aspectual morphology (as in Northern Paiute), or inherently specified on the agent noun affix itself (as in Sanskrit and Sakha), see 3.3. Since the mixed categories under lexicalist assumptions are projected from a single head, we correctly predict the absence of mixed categories in which verbal and nominal structure

[7] A similar earlier proposal is Yoon (1996).

[8] E.g. ⟦-er⟧ = λPλxλe[P(e) ∧ Agent(e,x)] (the set of human individuals that are the Agent of some event), ⟦-ee⟧ = λPλxλe[P(e) ∧ human(x) ∧ Undergoer(e,x)] (the set of human individuals that are the Undergoer of some event).

is alternately layered in weird combinations, of vPs that function as DPs, and of the other abovementioned monstrosities.

A theoretical gain is that we need not divide nominalizations into a syntactic type and a lexical type, as in standard lexicalist analyses. Once gerunds are recognized as IPs, we can maintain that all nominalizations are derived morphologically in the lexicon. This can be done either in a realizational morphology of the type pioneered by Anderson (1992), or in a morpheme-based one such as the minimalist morphology of Wunderlich (1996a). It remains to be seen whether the analysis can be recast in a DM-friendly syntax-based format. What is clear is that it does not *follow* from any theory that countenances structures like (1). To that extent at least, its empirical success constitutes new empirical support for lexicalism.

I begin in §2 with "high" event nominalizations. I show that the lexicalist approach correctly predicts the syntax of English and Finnish gerund phrases, including aspects that go unexplained in FNT analyses, and that it curbs the typology in a good way. In §3 I apply the same idea to agent nominals, and support the resulting analyses with data from Vedic Sanskrit and Finnish that is new to the theoretical literature.

2 Gerunds

2.1 English gerunds

Gerunds and participles are formally identical in English (Pullum 1991; Yoon 1996; Huddleston & Pullum 2002; Blevins 2003). For example, they are the only verb forms that overtly distinguish perfect aspect but not progressive or past tense. Given the modest morphology of English this identity might be dismissed as an accident, but the testimony of richly inflected languages, such as Finnish (2b), Classical Greek (2c), Sanskrit (2d), and Latin (2e) leaves no doubt that participles are systematically used in two functions: adjectivally as modifiers and nominally as arguments.

(2) a. English *-ing* participle
   i. *Modifier:* I saw Bill reading the book. (⇒ I saw Bill.)
   ii. *Argument:* I hated Bill's reading the book. (⇏ I hated Bill.)

   b. Finnish participles
   i. *Modifier:*
   Muist-i-n hunaja-a syö-vä-n karhu-n.
   remember-PST-1SG honey-PRTC eat-PTC-GEN bear-ACC
   'I remembered the/a bear (that was) eating honey.'
   ii. *Argument:*
   Muist-i-n karhu-n syö-vä-n hunaja-a.
   remember-PRTC-1SG bear-GEN eat-PTC-GEN honey-PRTC
   'I remembered that the/a bear ate honey.'

c. Classical Greek participles
   i. *Modifier:*
   tòn adikoũ-nt-a Phílippo-n apéktein-a
   the-ACC act-unjustly-PRTC-ACC Philip-ACC kill-AOR-1SG
   'I killed the unjustly acting Philip.'
   ii. *Argument:*
   adikoũ-nt-a Phílippo-n eksélenk-s-a
   act-unjustly-PRTC-ACC Philip-ACC prove-AOR-1SG
   'I proved that Philip acted unjustly.'

d. Sanskrit participles
   i. *Modifier:*
   rājān-am ā-ga-ta-ṃ śṛ-ṇo-mi
   king-ACC to-go-PRTC-ACC hear-PRES-1SG
   'I hear the king (who has) arrived.'
   ii. *Argument:*
   rājān-am ā-ga-ta-ṃ śṛ-ṇo-mi
   king-ACC to-go-PRTC-ACC hear-PRES-1SG
   'I hear that the king has arrived.'

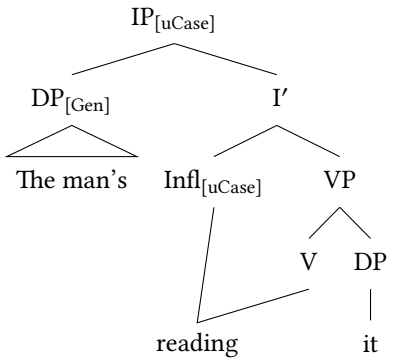
e. Latin participles
   i. *Modifier:*
   Hannibal vic-tu-s ad Antiochu-m confug-i-t
   Hannibal.NOM defeat-PRTC.MASC-NOM to Antiochus-ACC flee-PERF-3SG
   'Defeated, Hannibal took refuge with Antiochus.'
   ii. *Argument:*
   Hannibal vic-tu-s Romano-s metu
   Hannibal.NOM defeat-PRTC.MASC-NOM Roman.ACC.PL fear.ABL
   libera-vi-t
   free-PERF-3SG
   'Hannibal's being defeated freed the Romans from fear.'

Traditional grammars of these languages treat participles as verb forms which are inflected for Case, for good reasons. Participles distinguish the verbal categories of voice and tense/aspect, and they are formed off the same tense/aspect stems as the finite verbs. They supply the periphrastic forms that complete gaps in inflectional paradigms. They assign the same cases to their objects as the corresponding finite verbs and infinitives do. They are modified by adverbs, not by adjectives. They select for the same prefixes as the corresponding finite verbs and infinitives, with the same (often idiosyncratic) meanings. Those languages that disallow noun+verb compounds (such as classical Greek and Sanskrit) also disallow noun+participle compounds. As I show below, participles have structural subjects.

So there must be some property that distinguishes participles from finite verbs and infinitives, and which supports the double function of participles as nominal arguments and adjectival modifiers. The obvious candidate is Case. Suppose then that participial formatives are Infl heads that need Case. On lexicalist assumptions, they are affixed in the morphology to a verb to make a participle, which is then inflected for case if the language has case morphology, and enters the syntax with a specified Case feature that – like any Case feature – must be checked in the syntax. In a language that lacks case morphology, such as English, the participle remains unvalued for Case, and projects an IP with a Case feature that must be valued in the syntax. Both "checking" and "valuing" can be formalized as identical operations of feature unification, or as optimal matching in OT Correspondence Theory.

As an illustration consider first the derivation of gerunds in English. Prescinding from vP, AspP, VoiceP, and other possible functional projections, their syntactic structure is as in (3).

(3)



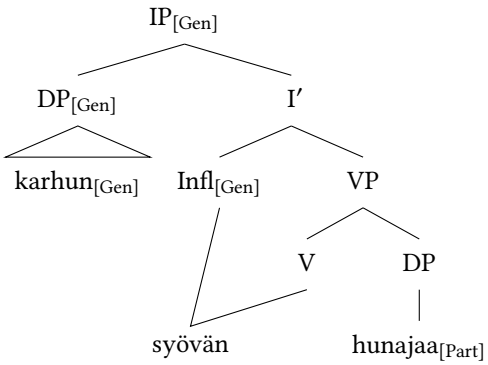
$Infl_{[uCase]}$ combines with V in the same way as Tensed Infl does. How this happens depends on the model of grammar. If we assume both lexicalist syntax and lexicalist morphology, the case-needing Infl *-ing* is suffixed to V in the morphology to form a participle, and the participle then projects a case-needing IP in the syntax, where the Case feature is valued. In argumental participles (gerunds), it is valued by the governing Case-assigner, and in participial modifiers it is valued by agreement with the nominal they modify.

If we assume minimalist syntax, we can comply with lexical morphology by using spanning (Svenonius 2016), which allows the lexically generated participle to be inserted under the two corresponding syntactic terminal nodes. In DM, *-ing* would be a syntactic terminal that is postsyntactically Lowered onto V. Thus, the idea that gerunds are case-needing IPs can probably be implemented in any grammatical architecture. However, in non-lexicalist frameworks this analysis is merely motivated on empirical grounds. In lexicalist frameworks that prohibit affixation to phrases it is required on principled grounds as well.

In languages where participles are morphologically inflected for Case, such as (2b-e), participles project an IP that bears a specified Case value that must be checked in the

syntax. The lexicalist approach now makes an interesting prediction: in such languages, gerunds may be morphologically restricted to particular Case features, which restrict their syntactic distribution to contexts compatible with those features. This prediction is confirmed in Finnish. Finnish gerunds bear an oblique Case – glossed as Genitive in (2b.ii) – which confines them to internal argument positions (section 2.2).[9]

(4)



Returning to English, the analysis of participial clauses as IPs that have the single special property of needing structural Case explains at a stroke which clausal and nominal properties they have and which ones they lack. To start with the latter, it explains why gerund phrases, unlike DPs, have no articles, quantifiers, or numerals, why they cannot be modified by adjectives and relative clauses, why their head cannot be genitive or plural.

(5) a. * The/a/each compiling the corpus took over a year.
b. * Both/every compiling corporas took over a year.
c. * His two compilings corpora each took over a year.
d. * His careful compiling the corpus was a turning point.
e. * His editing texts that is funded will take a year.
f. * His compiling corpora's results were dramatic.

The missing categories are just the ones that would originate in a DP.

As for the nominal properties that gerunds do have, they are accurately covered by the generalization that gerunds appear in Case positions. They function as subjects, objects, and predicates, as objects of prepositions (6e,f,g), and as objects of a small set of transitive adjectives (6f,g), all diagnosed as Case positions by the fact that full-fledged DPs occur in them.

(6) a. [Bill's leaving Paris] was unexpected.
b. I regret [Bill's leaving Paris].
c. The problem is [Bill's leaving Paris].

[9] There is no agreement relation between the genitive subject and the gerund in (4).

d. Because of Bill's leaving Paris we'll be hiring new personnel.
e. We are worried about Bill's leaving Paris.
f. This event is worth my visiting Paris.
g. It's no good my playing this sort of game.[10]

This does not mean that all transitive verbs take gerund complements. Particular verbs can select for whether they take gerunds, *that*-clauses, or infinitive complements, just as they can select for whether they take DPs:

(7) a. * I said Bill's leaving Paris.
b. I said it/something/several things.

What the analysis correctly predicts is that gerunds, unlike *that*-clauses and infinitives, appear *only* in Case positions:

(8) a. i. * I hope Bill's leaving Paris.
ii. * I hope it.
iii. I hope that Bill is leaving Paris.
iv. I hope to leave Paris.
b. i. * It is rumored Bill's leaving Paris.
ii. * The proposal is rumored.
iii. It is rumored that Bill is leaving Paris.
iv. It is rumored to be happening.
c. i. * It seemed / was expected Bill's leaving Paris.
ii. * It seemed / was expected this event.
iii. It seemed / was expected that Bill would leave Paris.
iv. It seemed / was expected to happen.

A further consequence is that the subjects of gerunds are IP specifiers. If overt, they are Genitive or Accusative,[11] just as the subject of a finite IP is Nominative, and the overt subject of an infinitive requires a Case-assigning *for*. Crucially, they are true structural subjects analogous to subjects of finite clauses, not necessarily "agents" as in B&V's Table 1a, nor "possessors" with their varied functions as in derived nominals. This prediction is confirmed by three generalizations. Unlike genitive specifiers of nouns (including derived nominals), but like structural subjects of finite clauses, the specifiers of gerunds can be expletives:

(9) a. It(s) seeming to you that you dreamt is not evidence of it(s) being the case that you dreamt.
b. * It(s) appearance to you that you dreamt is not evidence of it(s) truth that you dreamt.

[10] Cf. *It's no good this sort of game.* (Dickens, *Our Mutual Friend)*
[11] On Acc+*ing* gerunds see the brief and inconclusive remarks in §2.3 below.

Like structural subjects of finite clauses, they are subject to control (Huddleston & Pullum 2002: 1190):

(10) a. Mary remembered locking the door. [the rememberer is the locker]
b. Mary remembered the/a locking of the door. [the rememberer might not be the locker]

like structural subjects of finite clauses, and unlike genitive agents of nominals, they cannot be paraphrased with *of* or *by*:

(11) a. the Persians' quick run = the quick run of/by the Persians
b. the Persians' quick running = the quick running of/by the Persians
c. the Persians' quickly running ≠ *quickly running of/by the Persians
d. the Persians' quickly attacking the Greeks ≠ *quickly attacking the Greeks of/by the Persians
e. the Persians quickly attacked the Greeks ≠ *of/by the Persians quickly attacked the Greeks

To summarize: the analysis of gerunds as IPs with Case explains the cross-linguistically common convergence of nominal and adjectival functions in a single morphological class of verbal forms. By not positing any DP or NP structure over the IP it avoids the overgeneration problem that FNT-type analyses face. It excludes the possibility of multiple alternating verbalizing and nominalizing syntactic heads to which the FNT opens the theoretical door, and gets rid of the constraint that heads of DPs whose complements are NPs whose complements are verbal projections may not be articles or demonstrative pronouns. It provides the basis for a uniform structure for all DPs, and for a uniform lexical derivation of all nominalizations. It correctly predicts that gerunds and participles have subjects – specifiers of Infl that are structural counterparts to the subjects of finite clauses. What is important is that the analysis is not motivated merely by these empirical arguments; it is a consequence of lexicalism, and, if correct, supports the lexicalist organization of grammar.

The question arises whether there might be a CP layer above the IP, headed by a null complementizer. This additional structure is not justifiable for English, because the distribution of gerunds differs from that of any type of CP. First, gerunds need Case, whereas CPs do not (Vergnaud 1977). Secondly, gerunds are permitted in clause-medial position, while *that*-clauses and other CP clauses must extrapose.[12]

That gerund phrases are full IPs with a structural subject, that they bear Case, and that, unlike derived nominals, they have no DP or NP projection, and in particular no possessor-type Specifier, makes many additional predictions that are testable in morphologically richer languages. They turns out to be abundantly supported, as demonstrated for Finnish in the next section.

[12] However, the case marking of participles in inflected languages could be considered as a kind of complementizer, as conjectured for the inherent case affix *-n* on Finnish gerunds in §2.2.

2.2 Finnish gerunds are IPs

Finnish participial propositional complement clauses are the closest functional counterparts of English gerunds, and I will call them gerunds here. They are not DPs with possessors but IPs with true structural subjects. Their Case is inherently marked by the oblique suffix *-n*, arguably functioning as a complementizer, which restricts them to internal argument positions. This illustrates how the typology of gerunds emerges from variation in what cases they can bear.[13]

Unlike English gerunds, Finnish gerunds are never external arguments. Thus they can be objects of transitive verbs such as *say*, *think*, *want*, *prove*, *remember* and *hear*, and subjects of presentational intransitives like *appear* and *become evident*, but they cannot be subjects of such predicates as *be obvious*, *prove*, and *mean*.[14]

(12) a. Selvis-i Mati-n ampu-nee-n karhu-n.
become-clear-PST.3SG Matti-GEN shoot-PERF.PRTC-GEN bear-ACC_{GEN}
'It became clear that Matti had shot the/a bear.'

b. * Mati-n ampu-nee-n karhu-n suututt-i
Matti-GEN shoot-PERF.PRTC-GEN bear-ACC_{GEN} anger-PST.3SG
Liisa-a.
Liisa-PART
'That Matti had shot the/a bear angered Liisa.'

This distribution suggests that the ending *-n* that participles bear in their gerundial function, glossed "GEN" in (12), marks an object Case that is compatible with internal arguments but not with external arguments. Historically, it is probably the old dative ending, which has fallen together phonologically with the genitive, but persists as a morphosyntactically distinct type of genitive which (unlike the structural genitive) cannot function as a subject (Kiparsky In press).

As shown in (13), Finnish gerunds behave more like bare finite CP clauses with *että-* (*that-*) than like DPs, whether nominal DPs (13c) or pronoun-headed finite clauses with *se että-* (*it that-*) (13d).

(13) a. Huomas-i-n / ymmärrä-n / luule-n / otaksu-n tilante-en
notice-1SG / understand-1SG / think-1SG / assume-1SG situation-GEN
ole-va-n hankala-n.
be-PRTC-GEN difficult-GEN
'I noticed / understand / think / assume that the situation is difficult.' [lit. 'the situation's being difficult.']

[13] The data and analysis of Finnish gerunds presented in this section is condensed from my treatment of Finnish nonfinite complementation in Kiparsky (In press), to which I refer the reader for the details.

[14] In the glosses, ACC_{GEN} and ACC_{NOM} both refer to morphosyntactic Accusative structural case. The subscripts show three different morphological case realizations of this morphosyntactic Case. They will become important shortly, but for now the reader may ignore them.

b. Se-n huomat-tiin / ymmärre-tään / luul-laan / otaksu-taan
It-GEN notice-PASS-PST / understand-PASS / think-PASS / assume-PASS
ole-va-n hankala-n.
be-PRTC-GEN difficult-GEN
'It is noticed / understood / thought / assumed to be difficult.'

c. Huomas-i-n / ymmärrä-n / *luule-n / *otaksu-n häne-t /
notice-PST-1SG / understand-1SG / think-1SG / assume-1SG him-ACC$_{ACC}$ /
se-n seika-n.
that-ACC$_{GEN}$ thing-ACC$_{GEN}$
'I noticed / understand / think / assume him / this point (fact).'

d. Huomas-i-n / ymmärrä-n / *luule-n / *otaksu-n se-n, että
notice-PST-1SG / understand-1SG / think-1SG / assume-1SG it-ACC$_{GEN}$ that
tilanne on hankala.
situation.NOM is difficult
'I noticed / understand / think / assume that the situation is difficult.'

The distinction between verbs that allow DP objects (*huomat-* 'notice' and *ymmärtä-* in (13)) and verbs that do not allow DP objects (*luule-* 'think' and *otaksu-* 'assume' in (13)) is correlated with factivity, but the correlation is not exact and my argument does not depend on it.

Since gerunds are not DPs but case-marked IPs, their genitive subjects behave like structural subjects and not like genitive specifiers of DPs. This is shown by five arguments.

The first argument that the genitive specifier of gerunds is a grammatical subject is that it gets assigned exactly the same Th-roles as the subjects of the corresponding finite clause, not the diverse range of interpretations that "possessors" of derived nominals receive (see above under Table 1). So *Matin* in (12a) picks out the agent of the shooting event, whereas the specifier *Matin* of the derived nominal (14) could be, among other things, the organizer or theme of the rescue.

(14) Muista-n Mati-n pelastukse-n.
remember.PRES-1SG Matti-GEN rescue-NOM-ACC
'I remember Matti's rescue.'

The second argument comes from extraction. The subjects of gerunds can be extracted as readily as objects:

(15) a. Kene-n väit-i-t ampu-nee-n hän-tä?
who-GEN claim-PST-2SG shoot-PFP-GEN he-PART
'who did you claim shot at him?'

b. Ke-tä väit-i-t häne-n ampu-nee-n?
who-PART claim-PST-2SG he-GEN shoot-PFP-GEN
'who did you claim he shot at?'

But possessors cannot be extracted (16a), and neither can genitive specifiers of tenseless nonfinite complements such as the third infinitive (16b) and the second infinitive (16c) (the Left Branch Condition, Ross 1967: 127).

(16) a. * Kene-n$_i$ väit-i-t ammu-tu-n t_i karhu-n / että
who-GEN claim-PST-2SG shoot-PERF.PRTC-GEN bear-GEN / that
ammu-ttin t_i karhu?
shoot-PASS.PST bear.ACC$_{NOM}$
'Whose bear did you claim (that) was shot?'

b. * Kene-n$_i$ väit-i-t e_i ampu-ma-n karhu-n paina-nee-n
who-GEN claim-PST-2SG shoot-3INF-GEN bear-GEN weigh-PERF.PRTC-GEN
500 kilo-a?
500 kg-PART
'The bear shot by whom did you claim weighed 500 kg?'

c. * Kene-n$_i$ itk-i-t e_i ampu-e-ssa karhu-n?
who-GEN claim–PST-2SG shoot-2INF-INESS bear-ACC$_{GEN}$
'Who did you weep while he shot the/a bear?'

A third diagnostic which shows that gerunds have structural subjects and not possessors is that they do not undergo possessor agreement. Nouns and infinitives agree with their genitive specifiers, as exemplified for nouns in (17a), for the second infinitive in (17b), and for the third infinitive in (17c).

(17) a. (Minu-n$_i$) karhu-ni$_i$ paino-i 500 kilo-a
(My-GEN) bear.NOM-1SG weigh-PST-3SG 500.ACC kg-PART
'My bear weighed 500 kilograms.'

b. Matti itk-i (minu-n$_i$) ampu-e-ssa-ni$_i$ karhu-n
Matti.NOM weep-PST.3SG (my-GEN) shoot-2INF-1SG bear-ACC$_{GEN}$
'Matti wept as I shot the/a bear.'

c. (minu-n$_i$) ampu-ma-ni$_i$ karhu
(my-GEN) shoot-3INF-1SG bear.NOM
'the/a bear I shot.'

But gerunds do not possessor-agree with their subjects, as we can see in (18a,b) and (with a raised subject) in (18c).

(18) a. Matti ties-i minu-n$_i$ ampu-nee-n
Matti.NOM know-PST.3SG me-GEN shoot-PRF.PRT-GEN
(*ampu-nee-ni$_i$) karhu-n
(shoot-PRF.PRT(-GEN)-1SG) bear-ACC$_{GEN}$
'Matti knows that I've shot the/a bear.'

b. Selvis-i häne-n_i ampu-nee-n
become clear-PST-3SG he-GEN (shoot-PRF.PRT(-GEN))
(*ampu-nee-nsa$_i$) karhu-n
(shoot-PERF.PRTC(-GEN)-3P) bear-ACC_{GEN}
'it became clear that he had shot the/a bear.'

c. Näytä-t_i ampu-nee-n (*ampu-nee-si$_i$) karhu-n
seem-2SG shoot-PRF.PRT-GEN (shoot-PERF.PRTC-(GEN)-2SG) bear-ACC_{GEN}
'you seem to have shot the/a bear.'

Of course the subjects of gerunds cannot subject-predicate agree with the gerunds like nominative subjects of finite clauses agree with the finite verb, for genitive subjects never subject-predicate agree in Finnish.

The fourth argument that gerunds have structural subjects comes from the distribution of accusative Case morphology. Descriptively, Finnish morphosyntactic Case is realized as morphological case as follows.[15]

(19) a. The subject of a participial clause is always Genitive.
b. The object of a participial clause can be morphosyntactic Accusative or Partitive. Partitive is assigned to objects under the same conditions as in finite clauses:
i. Objects under overt or implicit negation are Partitive.
ii. Objects of certain predicates (such as *love* and *touch*) are Partitive.[16]
iii. Otherwise objects are Accusative.

Morphosyntactic Partitive is always realized as morphological partitive. And now comes the essential and trickiest part. Morphosyntactic Accusative is realized by three morphological cases:

(20) a. as morphological accusative on personal pronouns,
b. otherwise as morphological genitive if the object is plural, or if the clause has a subject with structural case (this last condition is called JAHNSSON'S RULE),
c. otherwise as morphological nominative.

Clause types that lack subjects with structural case for purposes of Jahnsson's Rule include imperatives, bare infinitives ("to see Naples and to die"), passives (which in Finnish do not involve "promotion" of the object), and clauses with "quirky case" subjects.

Since the argument to be presented below uses Jahnsson's Rule as a diagnostic for the presence or absence of a structural subject, I will gloss the examples in such a way that the reader can see whether Jahnsson's Rule has taken effect in them. This means glossing not only morphosyntactic Accusative Case, but whether morphosyntactic Accusative

[15] For details see Kiparsky 2001; a sophisticated OT treatment of the variation is developed by Anttila & Kim (2016).

[16] The class of partitive-assigning predicates is often called "telic" (e.g. Kratzer 2002). This is not quite correct; for an attempt at a more accurate formulation see Kiparsky 2005a.

Case is realized as morphological accusative case or nominative case. So I will mark morphosyntactic Case by the main gloss and morphological case with a subscript on it. For example, in (21) both objects bear morphosyntactic Accusative Case, realized in (21a) as morphological genitive case and in (21b) as morphological nominative case.

(21) a. Matti ampu-i karhu-n
Matti.NOM shoot-PST(3SG) bear-ACC_{GEN}
'Matti shot the/a bear.'

b. ammu karhu!
shoot-IMPER bear-ACC_{NOM}
'shoot the bear!'

Through the rest of the text in this section I use capitalization to distinguish morphosyntactic Case (such as Accusative) from morphological case (nominative, accusative, etc.).

At last we are ready for the argument. Nonfinite complement clauses are translucent to the triggering of Accusative and Partitive Case and to the realization of Accusative case as genitive or nominative, in the sense that (19) and (20) can be conditioned either within the gerund clause or in the larger domain of the higher clause with its gerund complement. So in (22a) the object of the lower clause, which contains no negation, can have either Accusative Case (realized as morphological genitive case by (20a)), or Partitive Case from the negated main clause by (19b.ii). In (22b) the morphosyntactic Accusative Case on the object of the gerund is realized either as morphological genitive case because the main clause has a subject, or as morphological nominative case, because the participle, being passive, is subjectless (Jahnsson's Rule, (20b)).[17] In (22c) the morphosyntactic Accusative Case on the object can only be realized as morphological nominative case because both the matrix verb and the participle are subjectless.

(22) a. En tien-nyt heidä-n ampu-nee-n /
Not-1SG know-PERF.PTC they-GEN shoot-PERF.PRTC-GEN /
ampu-va-n karhu-n / karhu-a
shoot-PRS.PRTC-GEN bear-ACC_{GEN} / bear-PART
'I didn't know that they had shot / were (would be) shooting the/a bear.'

b. Ties-i-n metsä-ssä ammu-tu-n karhu-n / karhu
know-PST-1SG forest-ILLAT shoot-PASS.PRTC-ACC_{GEN} bear-ACC_{GEN} / bear.ACC_{NOM}
'I knew a bear to have been shot in the forest.'

c. Eilen ilmen-i ammu-tu-n *karhu-n / karhu
Yesterday turn.out-PST.3SG shoot-PASS.PRTC-GEN bear-ACC_{GEN} / bear.ACC_{NOM}
'It turned out yesterday that a bear was shot.'

[17] The variation between case governed locally within the subordinate clause and in the larger domain that includes the main clause is sensitive to as yet poorly understood semantic, stylistic and discourse factors. The distribution of the Partitive in particular is affected by factivity and the scope of negation ("Lausetyyppien käsittely transformaatioteoriassa [The treatment of sentence Types in Transformational grammar]" 1970: 31, Hakulinen & Karlsson 1979: 365). For example, in (22a), the Partitive registers surprise or skepticism, and in (22b) the Accusative (realized as nominative) is likely to be interpreted factively.

The crucial case is (23), where the morphosyntactic Accusative Case of the object may be realized as morphological genitive case. Since the matrix verb is subjectless, the object's realization as morphological genitive case must be licensed by the subject of the gerund, *Matin*. Therefore the subject has structural Case.

(23) Ilmen-i Mati-n ampu-nee-n karhu-n / karhu.
turn.out-PST.3SG Matti-GEN shoot-PERF.PRTC-GEN bear-ACC_{GEN} / bear.ACC_{NOM}
'It turned out that Matti shot the/a bear.'

This completes the fourth argument that the genitive subject of gerunds is a structural subject.

In contrast, the fact that "quirky" genitive subjects induce the nominative form of the object tells us, by Jahnsson's Rule, that they are non-structural:

(24) a. Hänen pitää osta-a auto.
He-GEN must-3SG buy-1INF car.ACC_{NOM}
'He has to buy the/a car.'

b. Hänen on helppo nosta-a tämä säkki.
He-GEN be-3SG easy lift-1INF this.ACC_{NOM} sack.ACC_{NOM}
'It is easy for him to lift this sack.'

This is as expected, since they are not assigned structurally but idiosyncratically by particular predicates.

A fifth argument that gerunds have structural subjects is that they can have a generic null subject pro_{arb}. In Finnish pro_{arb} can be a subject (Hakulinen & Karttunen 1973) but it cannot be a possessor: contrast (25a) and (25b). So, the fact that gerunds can have a generic pro_{arb} subject, as seen in (25c), is another datum in support of the claim that gerunds have structural subjects and not possessors. Moreover, gerunds can be subjectless under the same conditions as subjects of finite clauses. For example, gerunds can have the impersonal passive form, see (25d).

(25) a. Siellä ∅ voi tanssi-a.
there *pro* can-3SG dance-1INF
'One can dance there.'

b. * On mukava katsel-la ∅ valokuv-i-a.
be-3SG nice look.at-1INF *pro* photo-PL.PART
* 'It's nice to to look at one's photos.' (OK without ∅: 'It's nice to look at photos.'

c. Siellä väite-t-ään ∅ voi-va-n tanssi-a.
there claim-PST.PASS *pro* can-PRES.PRTC-GEN dance-1INF
'It is claimed that one can dance there.'

d. Siellä väite-tt-iin voi-ta-va-n tanssi-a.
there claim-PST.PASS can-PASS-PRES.PRTC-GEN dance-1INF
'It was claimed that there is dancing there.'

I conclude that Finnish gerunds are IPs like English gerunds, albeit with a different syntactic distribution due to their oblique Case specification.

2.3 Desultory remarks on Acc-*ing*

The English "Acc-*ing*" construction differs in many ways from the "Poss-*ing*" gerund considered here so far. I have no serious analysis of it to offer. Its behavior resembles Acc-Inf ("ECM") constructions in some ways. First, unlike gerunds with genitive subjects, it is degraded by intervening adverbs, extraposition, and fronting, under roughly the same conditions as nominal objects ("Quantification, Events, and Gerunds"; Pires 2006):

(26) a. We anticipated (*?eagerly) him leaving Paris.
b. (We anticipated his resignation, but) *?him/his leaving Paris we did not anticipate.

This is the same pattern as:

(27) a. We believe (*?strongly) him to have told the truth.
b. (We believed him to have been mistreated, but) *?him to be telling the truth we did not believe.

Acc-Inf gerunds allow extraction, like Acc-Inf complements and unlike Poss-*ing* gerunds:

(28) a. Which city do you remember him/*his describing? (Portner 1995: 637, citing L. Horn)
b. Who do you resent Bill/*Bill's hitting? (Williams 1975: 263)
c. Who/*whose do you resent hitting Bill? (cf. *Who do you resent (it) that hit Bill?)
d. Who do you believe to be telling the truth?
e. What do you believe him to be saying?

Another frequently noted difference between the constructions is that the genitive subject of gerunds is preferentially human, and cannot be expletive *there* at all, whereas the accusative is unrestricted in this respect, again like Acc-Inf subjects.

(29) a. There (*there's) being no objection, the proposal is approved.
b. ? I imagined the water's being 30 feet deep.

Accusative subjects of gerunds do not seem to be getting their case from the main verb, since they can appear in gerunds that function as subjects. Possibly the accusative case assigner is a null preposition or complementizer, an analog of the overt *for* of *for-to* infinitives.

3 Agent nominals, transitive and intransitive

Like the FNT, my alternative theory of nominalizations is in principle applicable to every type of nominalization, including agent nominalizations and result nominalizations. The mixed category that most gravely challenges analyses of agent nominals is transitive agent nouns, which function as nominals except for assigning structural case to their objects and allowing some adverbial modifiers. I will make a case that, just as gerunds are categorially verbal at all levels of the syntax and their noun-like behavior is entirely due to a nominal Case feature borne by their Infl head, such transitive agent nominalizations are categorially nominal at all levels of the syntax and their verb-like behavior is entirely due to a verbal feature borne by their nominalizing head, namely Aspect. Gerunds and transitive nominalizations thus prove to be duals in a sense – respectively verbs with Case and nouns with Aspect.

I show that this idea predicts the distinction between transitive and intransitive agent nouns, whereas the functional properties of nominalizations neither correlate with each other as the FNT predicts, nor match the height of their nominalizing heads in syntax or word structure. In Vedic Sanskrit (sections 3.1-3.3) and in Finnish (2.2), high agent nominalizations *do not* assign structural case if they lack Tense/Aspect features, and even low agent nominalizations *do* assign structural case if they have Tense/Aspect features.

3.1 Agent nominals and subject nominals

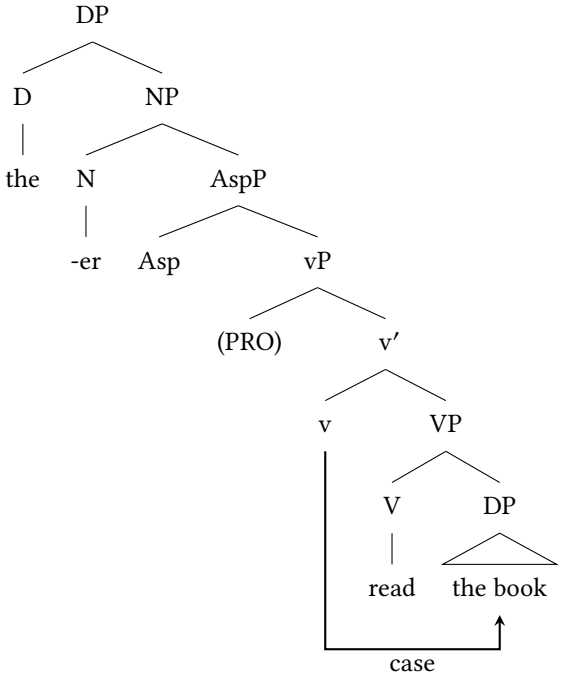
In their illuminating study based on the FNT approach, Baker & Vinokurova (2009) propose an analysis and typology of agent nominalizations similar to the one I have called into question for event nominalizations. They begin by noting an asymmetry between agent and event nominals. "High" event nominals like (1a) have no agent noun counterpart such as (30).

B&V claim that this is a systematic gap, and propose to explain it on the basis of two key assumptions. First, agentive nominalizing morphology is added by a nominal head immediately above VP.[18] Secondly, in some languages, such as English, structural case is assigned to objects by an active Voice/v head, whereas in other languages, structural case is assigned configurationally (dependent case).[19] Together, these assumptions rule out transitive agent-denoting nominalizations, such as (30) **the reader the book*. Instead, they require the structure (31). Here the agent nominalizer pre-empts the case-assigning active Voice morpheme in v that assigns structural case to objects in English, but (by hypothesis) has no case-assigning force itself.

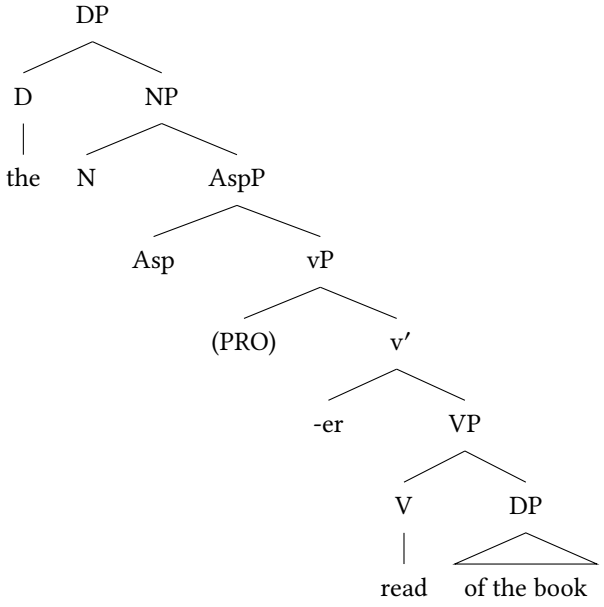
[18] It is fair to ask why it is added there and not in a higher position. B&V hint that this is "a position apparently forced on it by the natural (iconic) semantic composition of the clause" (Baker & Vinokurova 2009: 521), but this remains to be justified.

[19] B&V equate Voice with v, following Kratzer (2004), but contra Alexiadou (2001); Alexiadou, Soare & Iordăchioaia (2010); Harley (2012), among others.

(30) * the reader of the book



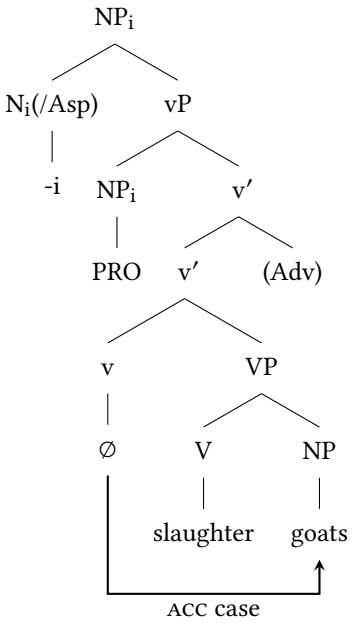
(31)



The analysis further predicts that, since voice markers cannot attach to unaccusatives,[20] such agent nouns cannot attach to unaccusative verbs.

B&V then draw a distinction between agentive and non-agentive "agent" nominalizers – let's call the latter SUBJECT NOMINALIZERS. Subject nominalizers do assign structural case, and can be attached to unaccusative verbs. B&V (p. 547) analyze them as "nominal equivalents of an ASPECT head", in the sense in which agentive nominalizers like *-er* are nominal equivalents of a VOICE head. Their example is Gikũyũ *-i*, another example is Northern Paiute *-dɨ* (Toosarvandani 2014). B&V propose the structure (32):

(32) Subject nominalizers (high)



As an immediate challenge to the FNT in the domain of agent nominalizations, B&V note that otherwise low agent nominalizations unexpectedly assign structural case in some languages. For B&V, these languages must be special in that they assign structural case by a dependent case mechanism, whereas languages in which low agent nouns have oblique complements assign structural case by little v. The need to maintain two entirely distinct mechanisms of structural case assignment on the basis of evidence that cannot loom large in the learner's experience would be another disappointing consequence of the FNT.[21] We'll also see that B&V's analysis of agent nominals imposes a functional

[20] In fact an incorrect premise: unaccusative verbs passivize in numerous languages, including Finnish and Sanskrit (Kiparsky 2013).

[21] Levin, Preminger & Omer (2015) propose that *all* structural case can be assigned by dependent case, provided that the algorithm is parametrized in certain ways. However, they do not touch on the case variation in objects of agent nominalizations, and the parametrization of structural case assignment that they propose does not account for it, as far as I can tell.

overload on little v that makes the FNT's various criteria for syntactic height mutually irreconcilable.

In summary, B&V's proposal generates the typology of agent nouns shown in Table 2. In the remainder of this section I show that the predicted correlations do not hold for agent nouns of Vedic Sanskrit and Finnish, and propose a much simpler alternative that does justice to the data.

Table 2: Typology of agent nouns predicted by Baker & Vinokurova (2009).

Agent Nominalizers (low, v)	Subject Nominalizers (high, Asp)
always agentive	non-agentives OK
no unaccusatives	unaccusatives OK
structural case only if dependent case	structural case
no adverbs	adverbs OK
no Aspect	compatible with Aspect
no Voice	compatible with Voice

3.2 Vedic agent nouns

Vedic and Pāṇinian Sanskrit has a large number of agent noun suffixes, which fall into two clearly demarcated types. A minimal pair that highlights the contrast are the two agent noun types in accented *-tár-*^{N} and preaccenting *´-tar-*^{V}.[22] Agent nouns in accented *-tár-*^{N} have genitive objects and get only adjective modifiers, never adverbs, e.g. (33a). Agent nouns in preaccenting *´-tar-*^{V} (boldfaced in (33)) regularly assign structural case to their objects and, can get certain aspectual adverb modifiers, such as *punaḥ* 'again' in (33b).[23]

(33) a. tvā́-m hí satyá-m … vid-má **dātā́r-am** iṣ-ā́m
you-ACC PRT true-ACC … know-1PL **giver-ACC** good.thing-PL.GEN
'we know you as the true giver of good things.' (*RV.* 8.46.2)

b. **íṣ-kar-tā** víhruta-m púnaḥ
fixer-NOM wrong-ACC again
'the maker right again (of) what has gone wrong.' (*RV* 8.1.12)

Both suffixes are true nominalizers: they form nouns, not verbs. They have a complete nominal case and number inflection paradigm, take denominal derivational suffixes, such

[22] Their Indo-European provenance is guaranteed by Greek and Avestan cognates (Lowe 2014). The following exposition of their contrasting semantics, morphophology, and syntax draws on the generalizations and evidence in Kiparsky 2016, to which the reader is referred for details.

[23] Other agent nouns with verbal properties are attested in early Vedic include *-i-*^{V} RV 9.61.20 *jághnir vṛtrám* 'killer of Vṛtra', *-(i)ṣṇu-*^{V} RV 1.63.3 *dhṛṣṇúr etā́n* 'bold against them', *-u-*^{V} AV 12.1.48 *nidhanám titikṣuḥ* 'enduring poverty', *-∅-*^{V} RV 1.1.4 *yáṃ yajñám … paribhū́r ási* 'the sacrifice that you embrace'.

as derived feminines, and can be compounded.[24] They allow adjectival modification (in addition to adverbial modification, in the case of *´-tar-*^{V}). These nominal properties are unsurprising for the noun-like *-tár-*^{N} formations; that they hold also for the more verb-like *´-tar-*^{V} is documented in (34).

(34) a. āśúṃ jétāram
āśú-m jé-tār-am
quick-ACC win-er-ACC
'the quick (Acc.) winner (Acc.)' (*RV* 8.99.7)

b. táṣṭeva pṣṭyāmayí́
tákṣ-tar iva pr̥ṣṭya-āmay-ín
carve-er.NOM like back-ache-ed.NOM
'like a notalgic (Nom.) carpenter (Nom.)' (*RV* 1.105.18)

Semantically both *-tár-*^{N} and *´-tar-*^{V} are *agent* nominalizers, not *subject* nominalizers: they are never added to non-agentive verbs or unaccusatives of any kind, and the meaning of the nominalization is canonically agentive.[25] So by these criteria both nominalizations are "low" in the sense of B&V, not Gikũyũ-type "high" nominalizations.

The agent nominalizers *´-tar-*^{V} and *-tár-*^{N} form a *privative* semantic opposition, missed in the modern philological literature but correctly delineated already by Pāṇini, whose description turns out to tally perfectly with the Vedic data. The unmarked member of the opposition is *-tár-*^{N}, which simply denotes agency (like English *-er*). The marked member *´-tar-*^{V} has two additional meaning components:

(35) a. *´-tar-*^{V} denotes agency in ONGOING TIME.
b. *´-tar-*^{V} denotes HABITUAL, PROFESSIONAL, or EXPERT agency.

The criteria of the FNT make contradictory predictions. Since both nominalizations are agentive, both should be structurally low "little v" heads. On the other hand, *´-tar-*^{V} nominalizations, which have the verbal properties of assigning structural case and allowing adverbial modification, should be structurally high, while *-tár-*^{N} nominalizations, which have strictly nominal properties, should be structurally low. Neither of these is the case. In fact, as far as the case and adverb properties are concerned, the structure is just the opposite of what is predicted: verbal *´-tar-*^{V} is low and nominal *-tár-*^{N} is high. This is shown by four arguments (details in Kiparsky 2016).

The first argument that verbal *´-tar-*^{V} is low and nominal *-tár-*^{N} is high is their morphological position in the word. *´-tar-*^{V} always follows the bare verbal root directly, without

[24] E.g. *kṣirá-hotar-* 'milk-offerer' (ŚBr.), and *neṣṭā-potárau* 'leader and purifier' (TS.), co-compounds (Kiparsky 2010b) denoting pairs of priests.

[25] Thus, the following roots do *not* take either *-tár-*^{N} and *´-tar-*^{V} or any other agent suffixes for that matter: *as* 'be', *ás* 'sit', *śī* 'lie', *sru* 'flow', *plu* 'float', *tras* 'tremble', *vyath* 'sway', *bhraṃś* 'fall', *svap* 'sleep', *kṣudh* 'be hungry', *tr̥ṣ* 'be thirsty', *svid* 'sweat', *r̥dh* 'flourish', *ru(d)h* 'grow', *pyā* 'swell', *riṣ* 'sustain damage', *mr̥* 'die', *śam* 'become calm', *mad* 'get drunk', *mud* 'rejoice', *hr̥ṣ* 'get excited', *dhr̥ṣ* 'dare', *bhī* 'fear', *hīḍ* 'be angry', *krudh* 'become angry', *gr̥dh* 'be greedy', *ruc* 'shine', *śubh* 'shine, be beautiful', *bhā* 'shine' *bhās* 'gleam', *dyut* 'to strike' (of lightning), *pat* 'to fall'.

any other intervening suffix; it cannot be added to compound or prefixed bases. *-tár-*^{N}, on the contrary, can be separated from the root by verb-to-verb suffixes commonly analyzed as Voice/v heads (causative, denominative, intensive, desiderative). It is affixed to the whole verb base, including the extended root plus any prefix that combines with it:

(36) a. RV *cod-ay-i-tr-ī́-* 'impeller (fem.)' (caus. *cod-áy-a-ti* 'impels')
b. TS *pra-dāp-ay-i-tár-* 'bestower' (caus. *prá-dāp-ay-a-ti* 'bestows'),
c. *ni-dhā-tár-* 'one who sets down' (*ní-dadhā-ti* 'sets down')

The morphological data point to the respective constituent structures in (37):

(37) a. *Low:* [Prefix [Root *´-tar-*^{V}]]
b. *High:* [[Prefix [Root (Caus)…]] *-tár-*^{N}]

The second argument that verbal *´-tar-*^{V} is low and nominal *-tár-*^{N} is high comes from word accentuation. The morphological conditioning of accent placement provides a convenient probe into the constituent structure of words. In Vedic and Pāṇinian Sanskrit, the accentuation of words is computed cyclically from the accentual properties of the morphemes from which they are composed. Morphemes may be accented or unaccented, and at the word level, all accents but the first in a word are erased (Kiparsky 2010a). Both of our agent suffixes (like the majority of derivational suffixes) belong to the accentually DOMINANT type: they erase the accent off the bases to which they are added. The crucial fact for present purposes is that dominant affixes exercise this erasing effect exactly on the stems to which they are added, no more and no less. Thanks to this property we can use accentuation to diagnose constituent structure in morphologically complex words.

The empirical generalization is that prefixes always prevail over low (bare-root) suffixes, including *´-tar-*^{V}, whereas high suffixes always prevail over prefixes, dictating the place of the word accent. The reason is that prefixes are added after the low suffix *´-tar-*^{V}:

(38) Prefixation to nouns with the the low suffix *´-tar-*^{V}:

bhar-	Root
bhár-tar^{V}	add dominant preaccenting *´-tar-*^{V}
prá-[bhár-tar]	add accented prefix
prábhartar-	erase all accents but the first

On the other hand, *-tár-*^{N} is accentually dominant, causing all accents on its base to be deleted, and attracting accent to itself. This shows that it is added to the entire stem including the prefix, causing the resulting word to be accented on the suffix.

(39) Suffixation of high *-tár-*^{N} to prefixed verbs:

bhar-	Root
ápa-bhar	add accented prefix
[apa-bhar]-tár^{N}	add dominant accented *-tár-*^{N}
apabhartár-	

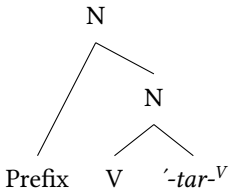
The third argument that verbal *´-tar-*^{V} is low and nominal *-tár-*^{N} is high comes from tmesis, the splitting of prefixes from stems. Prefixes can be separated from verbs and from nominals formed with low suffixes like verbal *´-tar-*^{V}.

(40) a. *sáttā ní yónā (= nísattā yónā)* 'a sitter down in the womb' (*RV* 9.86.6)
b. *úpa sū́re ná dhā́tā* (= *sū́re nópadhātā*) 'like the Placer of the Sun' (*RV* 9.97.38).

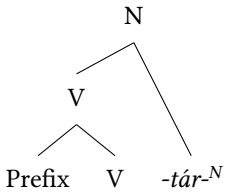
Prefixes are never separated from nominals formed with high suffixes such as nominal *-tár-*^{N}.

The explanation comes from the same constituent structure that accounts for the accentual difference: low suffixes such as the agent suffix *´-tar-*^{V} are added directly to the root to form a noun, which can then be composed with a prefix (see (41a)), while high suffixes such as the agent suffix *-tár-*^{N} are added to the entire verb, which may already bear a prefix and/or another suffix (41b,c).

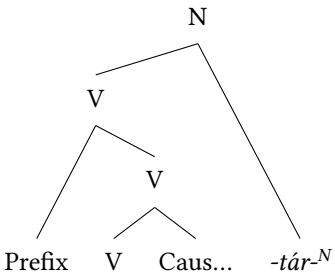
(41) a.



b.



c.



It will be seen the prefix is an immediate constituent of the word in (41a), but not in (41b) or in (41c). The natural generalization is that a prefix can only be split if it is an immediate constituent of the word.

The fourth argument that verbal *´-tar-*^{V} is low and nominal *-tár-*^{N} is high comes from selectional properties of prefixes. Prefixes that only combine with verb roots require high *-tár-*^{N}, because the right-branching constituent structure (41a) would require them to combine with nouns.[26] Conversely, prefixes and other elements that cannot be combined with roots, only with nouns, require the right-branching constituent structure (41a), which is available either with *-tár-*^{N} or with *´-tar-*^{V}.[27]

[26] Many examples are given in Kiparsky 2016. One will have to suffice here. The interjection *hiṁ* 'the sound *hmm*' cannot be compounded with nouns. It can only combine with the root *kṛ* 'do', 'make'. The agent noun from *hiṁ-kṛ-* 'to make the sound *hmm*' must therefore have the high suffix *-tár-*^{N}, viz. *hiṁkartár-*.

[27] Again we must make do with a couple of examples. There is no compound verb such as **para-apara-i-* 'to go far and near' from which *párāpara-etar-* 'one who goes far and near' might be derived. In fact *párāpara-* 'far and near' is never compounded with verbs. Instead, the agent noun is a nominal compound formed from *para-apara-* 'far and near' plus *e-tár-* 'goer' (← *i-tár-*^{N}). Another illustration of this generalization is that the negation *a-* combines only with nouns. From *hótar* 'priest' (← *hu-´tar-*^{V}) we get *á-hotar-* 'a non-priest'.

The above arguments establish the morphological constituency displayed in (37) and (41). But Distributed Morphology is a resourceful theory that makes available various movement operations that cause mismatches between morphology and syntax. So could the morphologically low nominalizing morphemes be spelled out high where B&V predict they should be, and then undergo Lowering to their actual position? And conversely, could the high nominalizing morphemes be spelled out low as predicted, and then undergo Raising to their actual position? The answer is negative on both counts.

The way morphologically low suffixes such as the agent suffix *´-tar-*^{V} could be syntactically high for purposes of the FNT is by DM's Lowering operation, which applies before Vocabulary insertion to adjoin a head to the head of its complement (Embick & Noyer 2001):

(42) X_0 lowers to Y_0:
$[_{XP}\ X_0 \ldots[_{YP} \ldots Y_0 \ldots]] \rightarrow [_{XP} \ldots[_{YP} \ldots[Y_0\ Y_0{+}X_0]\ldots]]$

In English, Lowering of T is assumed to adjoin T to v (Embick & Marantz 2008). But if *´-tar-*^{V} is generated in the N head of (32) and is lowered from there into the v, it would, on B&V's assumptions, have the properties of a subject nominalizer, forming nouns from unaccusative and non-agentive verbs. But it does *not* have any properties of a subject nominalizer – it is a true agent nominalizer, as we showed above.

The other thing required to maintain the FNT is to generate *-tár-*^{N} low in v (as in (31)) and then raise it to its actual high position. This is not going to work in the DM model either, for morphological head-raising can only adjoin a head to the next head above it (Harizanov & Gribanova 2016), and in this case it would have to skip intervening heads, including the v head that may be occupied by causative and other V⟶V suffixes, which must not raise. Moreover, in more recent DM (Embick 2010), phonology is cyclically interleaved with morphology, and this would cause problems with the abovementioned accent erasure and tmesis phenomena.

It should also be noted that *´-tar-*^{V} is overwhelmingly preferred when its special meaning and morphological restrictions allow its use, and *-tár-*^{N} is used elsewhere. Moreover, other agent suffixes supersede each of them with particular roots and/or in particula special meanings. Since competition in DM obtains only between morphemes that have the same meaning and are realized in the same slot (such as English plural *-s* and *-en*), all these competing suffixes would have to be generated in the same syntactic position.

The conclusion from the Vedic data is that the nominalizations' verbal vs. nominal properties do not correlate with structural height of their heads in the word or in the syntax. In fact, the majority of morphologically high nominalizers in Vedic have nominal properties, and the majority of morphologically low nominalizers have verbal properties – the opposite of what the FNT predicts.

3.3 Aspect in Vedic agent nouns

A preliminary survey of nominalizations suggests that the Aspect feature of a nominalizer is the best predictor of verbal properties. Consider the following alternative to the FNT.

(43) The Aspect hypothesis
Nominalizations assign structural case if and only if they have Aspect, either as an inherent feature of the nominalization, or in virtue of combining with overt Aspect morphology.

By aspect features I mean outer aspect features such as imperfective and habitual, not inner aspect (Aktionsart), such as telicity. Sanskrit agent nouns in *´-tar-*^{V} are inherently present/imperfective and habitual. Those in *-tár-*^{N}, English agent nouns made with *-er*, and Finnish agent nouns made with *-ja* have no inherent aspect: a *driver* can be a habitual or professional driver, or just someone who happens to be at the wheel on a particular occasion.[28]

The Aspect hypothesis is not implausible a priori because Aspect features are cross-linguistically known to affect case assignment – think of split ergativity based on imperfect vs. perfect aspect, and accusative vs. partitive objects in Finnish depending on gradability (Kiparsky 2005a). It looks promising for Vedic Sanskrit in particular because nominalizing endings with verbal properties, such as *´-tar-*^{V}, are added to the bare root, in the same morphological position as the Aorist and Perfect Tense/Aspect suffixes. It is also consistent with the fact that Northern Paiute deverbal nominalizations, which assign structural accusative case, can have overt aspectual morphology below them (Toosarvandani 2014: 793, fn. 6).

The Aspect hypothesis is compatible with a lexicalist treatment of morphology. A Distributed Morphology analysis of Vedic agent nouns is problematic because of the conflicting criteria for structural height. In addition, they show a type of competition between morphemes that DM rejects. The semantically nondescript *-tár-*^{N}, structurally low by B&V's criteria but high in word structure, is the default (elsewhere) case. The semantically restricted *´-tar-*^{V} suffix, structurally high by B&V's syntactic criteria but low in the word morphology, is strongly preferred whenever it is applicable, namely to denote habitual agency in ongoing time with morphologically simple verbs. Elsewhere the default is *-tár-*^{N}, structurally low by B&V's syntactic criteria but high in the word morphology – for past or future agency, or occasional agency, *or* when the verb is morphologically complex (causative, intensive, desiderative, denominative, or prefixed. Suppose then that a structurally low agent is added in a syntactic derivation. The derivation must crash if and only if a structurally high agent can be successfully added in a competing derivation. But DM does not allow rules that spell out syntactico/semantic features in different positions to compete with each other. Moreover, if we assume bottom-up morphological spellout of the syntax (by cycles or phases), the syntactically low agent would have to "know" about the upstairs high agent in order to be blocked by it. On the other hand, in a *morphological* theory of word-formation, morphologically low items naturally block morphologically high items. Besides, blocking of affixes with general meanings by affixes with special meanings regardless of the locus of affixation is straighforward in lexicalist approaches such as those of Wunderlich (1996b; 2001) and Kiparsky (2005b).

[28] Gerunds are arguably inherently imperfective (Alexiadou 2001; Alexiadou, Soare & Iordăchioaia 2010).

3.4 The Finnish subject nominalizer *-ja*

B&V's formulation of the FNT entails that agent nominalizations don't assign case and subject nominalizations do (§2). We have seen that Vedic falsifies the first of these claims. Finnish (among many other languages) falsifies the second. The fully productive Finnish suffix *-ja* is not an agent nominalizer, but a subject nominalizer, which is to say a high nominalizer in B&V's typology. It can go on non-agentive/unaccusative verbs, and freely attaches to causatives, often assumed to be under v, as well as denominatives, reflexives, inchoatives, and inner aspect morphemes such as frequentatives and semelfactives, thus testing positively for high position by several diagnostics.

(44) a. *kuolija* 'one who dies', 'dier', *eläjä* 'one who lives', 'liver', *toipuja* 'one who gets well', 'convalescent', *olija* 'one who is', *osaaja* 'one who is able to', *syntyjä* 'one who is born', *hikoilija* 'one who sweats', *putoaja* 'one who falls', *turpoaja* 'one who swells', *pelkääjä* 'one who fears', *luulija* 'one who supposes', *tuntija* 'one who knows, expert', *muistaja* 'one who remembers', *jääjä* 'one who remains', *palelija* 'one who feels cold', *tarvitsija* 'one who needs', *hukkuja* 'one who drowns'

b. i. Frequentative *-ele-*: *kys-eli-jä* 'inquirer', from *kys-ele-* 'to make inquiries' (cf. *kysy-jä* 'asker', from *kysy-* 'ask'). Similarly *ryypiskelijä* 'tippler', *lähentelijä* 'harasser', *myyskentelijä* 'peddler', *rehentelijä* 'bragger', *riitelijä* 'quarreler'.

ii. Causative: *laula-tta-ja* 'one who makes sing', from *laula-tta-* 'to make sing', cf. *lauja-ja* 'singer', from *laula-* 'to sing'.

iii. Inchoative + causative: *selv-en-tä-jä* 'clarifier', ← *selv-en-tä-* 'make clear, clarify' (← *selv-en-* 'become clear' ← *selvä* 'clear').

iv. Causative + frequentative: *sopi-ja* 'agreer', *sovi-tta-ja* 'fitter, arranger', *sovi-tt-el-ija* 'reconciler, negotiator'

v. Reflexive: *puolusta-ja* 'defender' *puolusta-utu-ja* '(self-)defender'

vi. Denominative: *testamentt-aa-ja* 'bequeather' (← *testamentt-at-* 'to bequeath' ← *testamentti* 'testament')

However, nominals in the suffix *-ja* do not assign structural case, whether they have any of these suffixes below them or not. Their object complement (unlike that of passive verbs) can only receive genitive case.

(45) a. palkinto-j-en (*palkinno-t) saa-ja
prize-PL-GEN (prize-PL.ACC) get-er.(NOM)
'the/a winner of the prizes'

b. minu-n (*minu-t) käv-el-ytt-eli-jä-ni
me-GEN (*me-ACC) walk-FREQ-CAUS-FREQ-er.(NOM)-1SG.POSS
'(the) one who frequently takes me around for walks'

Nominals in *-ja* do take oblique nominal modifiers, as do all nominalizations, including action nominalizations, and even to some extent ordinary basic nouns.

(46) a. Saksa-sta voitta-ja-na palaa-ja / pal-uu
Germany-ELAT win-er-ESSIVE return-er.(NOM) / return-ing.(NOM)
'(the) one who returns / a return from Germany as a winner'

b. hallitse-va-ssa asema-ssa oli-ja / ol-o
govern-in-INESS position-INESS be-er.(NOM) / be-ing.(NOM)
'(the) one who is in a governing position'

c. palatsi Cannesi-ssa
palace Cannes-INESS
'the/a palace in Cannes'

They generally do not take adverbs, except for certain perfectivizing adverbs (47d,e):

(47) a. * nopea-sti juoksi-ja
quick-ly run-er.(NOM)
'(the) one who runs/ran/will run quickly'

b. * kilpailu-n taas voitta-ja
competition-GEN again win-er.(NOM)
'(the) one who wins/won/will win the/a competition again'

c. * aina matkusta-ja
always travel-er.(NOM)
'(the) one who always travels'

d. kilpailu-sta pois jää-jä
competition-ELAT away remain-er.(NOM)
'one who does not join the competition', 'eliminee'

e. viime-ksi tuli-ja
lat-TRANSL come-er.(NOM)
'the last to arrive'

In (48) (an example adapted from the internet) the adverb *jälleen* 'again' appears with an agent noun.

(48) Cannesi-ssa jälleen palkinno-tta jää-jä
Cannes-INESS again prize-ABESS remain-er.(NOM)
'one who ended up prizeless again in Cannes' (lit. 'a remainer prizeless again…')

Possibly it modifies not the nominalization but the abessive modifier *palkinno-tta* 'prize-less'.

Since Finnish *-ja* must be high in order to get a non-agentive interpretation and to scope over every kind of verb-to-verb suffix, it should assign structural case, which it doesn't. So it does not fit into B&V's syntactic typology, and constitutes a problem for the FNT generalization. In this case, morphological raising or lowering, even if they were available and motivated, would not help to resolve the contradiction.

The lexicalist alternative, however, holds up. Like English *-er*, nouns in *-ja* are morphologically incompatible with overt Aspect or Voice morphology, and they refer indifferently to prospective, present, or past events, hence have no inherent Aspect features.

(49) *maksaja* 'payer' (one who has paid, is paying, or will pay), similarly *ostaja* 'buyer', *vuokraaja* 'renter', *maahanmuuttaja* 'immigrant', *lähtijä* 'goer', *siittäjä* 'inseminator'

Since *-ja* has no Aspect features and no verbal properties, the fact that it doesn't assign structural case is consistent with the Aspect hypothesis but inconsistent with the FNT. I conclude that Finnish *-ja* supports the lexicalist analysis of nominalizations.

3.5 The Sakha agent nominalizer *-AAccY*

Baker & Vinokurova (2009: 536) note that the correlation predicted by the FNT breaks down for Sakha agent nominalizations, which have structural accusative objects but otherwise conform to the low type, in that they have no Aspect morphology or adverbs. Their solution is that Sakha accusative case is not assigned by Voice/v but by a different mechanism, DEPENDENT CASE assigment.

(50) Dependent case assignment (Marantz 1991; Baker 2015)

a. If there are two distinct NPs in the same spellout domain such that NP_1 c-commands NP_2, then value the case feature of NP_2 as accusative unless NP_1 has already been marked for case.

b. If there are two distinct NPs in the same spellout domain such that NP_1 c-commands NP_2, then value the case feature of NP_1 as ergative unless NP_2 has already been marked for case.

Their main argument that Sakha accusative is dependent case is that objects of passives receive accusative case. This argument depends on the fragile assumption that the implicit agent of Sakha passives is a syntactically visible but phonologically null NP, which receives nominative case and serves as the NP_1 that triggers the assignment of accusative case to the object of the passive by (50a).

I am skeptical of this solution for both theoretical and empirical reasons. It would be strange for UG to offer two entirely different methods of structural case assignment, since their empirical differences are rather obscure, and offer learners of most languages little core data to choose between them. Secondly, the analysis of impersonal passives as having an invisible nominative agent subject is excluded on general grounds by any kind of demotion analysis of passive, including the typologically grounded theory proposed in Kiparsky 2013. Finnish provides empirical evidence against the idea that objects of passives receive dependent structural case because of a syntactically visible but phonologically null nominative implicit agent. The object of passives in Finnish is assigned structural case as in Sakha, but the case cannot possibly be assigned by the dependent case algorithm (50), for the implicit agent of passives in Finnish is *invisible* to case assignment, as clearly demonstrated by Jahnsson's Rule (20b), see e.g. (22c,d).

Our approach predicts the transitivity of Sakha agent nouns in *-aaccy* out of the box. The reason is that they have an aspect feature. Agent nouns in Sakha *-aaccy* denote specifically habitual or generic agents. B&V (p. 531) illustrate this generalization with the following examples:[29]

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

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

The habitual aspect feature of the Sakha agent nouns licenses its structural case assignment just as the habitual aspect feature of agent nouns formed by the Sanskrit agent suffix *´-tar-*^{V} does, as opposed to aspectually void agent nouns in *-tár-*^{N}, Finnish *-ja*, and English *-er*. This accounts fully for the case data without resorting to the unsupported syntactic height distinctions demanded by the FNT.

Summing up our conclusions about agent nominalizations so far: the syntactic FNT is falsified by Vedic agent nominalizations in one direction, and by Finnish subject nominalizations in the other, and it requires an otherwise unsupported parametric choice between two heterogeneous structural case assignment algorithms. The analysis reveals that little v can't do *all* of the following things: (1) introduce Agents, (2) host voice heads or agent nominalizer heads, (3) host causative V affixes, (4) host aspectual material, and (5) assign structural case. In agent nominals it is not possible to place nominalizing heads above or below little v in a consistent way that satisfies all of (1)-(5). (1) and (5) cannot be reconciled with an agent nominalizer that assigns structural case such as Sanskrit *´-tar-*^{V}, or with a subject nominalizer that does not assign structural case such as Finnish *-ja*. The Sakha nominalizer *-AAccY* can dominate causatives (high) but not aspectual adverbs – a conflict between (3) and (4) – and introduces agents (low) but assigns structural case (high) – a conflict between (2) and (5).

These difficulties fall away if we assume that that agent nominals are nouns, and that nouns assign structural case if and only if they have Aspect features.

4 Conclusion

The Functional Nominalization Thesis claims that so-called "mixed categories" arise when a nominal head is affixed to an extended verbal projection that is its syntactic complement. My findings instead support a lexicalist approach, in which mixed categories are projections of a nominal or verbal heads with an extra phi-feature. Their extended projections behave like normal extended projections modulo the properties enforced by that feature.

[29] This component is foregrounded in the related habitual participle function of the same suffix: e.g. *salaj-aaccy* means both 'manager' (agent noun) and 'habitually managing' (participle), see Vinokurova (2005: 123).

In §2 I argued that gerund phrases are not DPs/NPs with AspP complements. They are not even nominalizations. They are participial phrases – IPs with a Case feature that is checked or valued in an argument position. In all other respects their syntax is entirely clausal: they lack DP material such as articles, demonstratives, quantifiers, and adjectives, and they are formally built like IPs, complete with structural subjects. The lexicalist analysis explains these properties.

In §3 I argued that agent nominalizations that assign structural case to their objects are not nouns with vP complements (or with any other phrasal complements), but deverbal nouns derived by agent suffixes that have an Aspect feature. The Aspect feature makes the nouns transitive, and modifiable by aspectual adverbs. Otherwise their syntax is entirely nominal. The merit of this analysis is that it tightly correlates the transitivity of agent nouns with their aspectual meaning. Also, by relieving the burden on little v, it eliminates the mismatches between word structure and syntax that we found in Vedic and Finnish agent nouns under the FNT analysis.

The lexicalist approach retains the key idea of the FNT without the typologically unwarranted overgeneration caused by allowing syntactic affixation. It preserves a uniform mechanism of structural case assigment, a unified analysis of true nominalizations, and the insights that originally led Chomsky to lexicalism.

Acknowledgements

I am grateful to Vera Gribanova and to an anonymous reviewer for their very helpful comments and queries.

References

Abney, Steven. 1987. *The English noun phrase in its sentential aspect*. Massachusetts Institute of Technology PhD dissertation.

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

Alexiadou, Artemis, Elena Soare & Gianina Iordăchioaia. 2010. Number/aspect interactions in the syntax of nominalizations: a distributed approach. *JL* 46. 537–574.

Anderson, Stephen R. 1992. *A-morphous morphology*. Cambridge: Cambridge University Press.

Anderson, Stephen R. 2016. The role of morphology in transformational grammar. In Andrew Hippisley & Gregory T. Stump (eds.), *The Cambridge handbook of morphology*, 587–608. Cambridge: Cambridge University Press.

Anttila, Arto & Jong-Bok Kim. 2016. Locality and variation in Finnish structural case. *Natural Language and Linguistic Theory*. DOI:doi:10.1007/s11049-016-9352-x

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

Baker, Mark C. 2015. *Case: Its principles and parameters*. Cambridge: Cambridge University Press.
Blevins, James P. 2003. Remarks on gerunds. In Peter Sells & C. Orhan Orgun (eds.), *English morphology and the web of grammar*. Stanford: CSLI Publications.
Chomsky, Noam. 1955. *The logical structure of linguistic theory. ms. published 1985*. Chicago: University of Chicago Press.
Chomsky, Noam. 1970. Remarks on nominalization. In R. Jacobs & P. Rosenbaum (eds.), *Readings in English transformational grammar*, 184–221. Waltham, MA: Ginn.
Deal, Amy Rose. 2009. The origin and content of expletives: evidence from "selection". *Syntax* 12. 285–323.
Embick, David. 2010. *Localism versus globalism in morphology and phonology*. Cambridge: MIT Press.
Embick, David & Alec Marantz. 2008. Architecture and blocking. *Linguistic Inquiry* 39(1). 1–53.
Embick, David & Rolf Noyer. 2001. Movement operations after syntax. *Linguistic Inquiry* 32(4). 555–595.
Hakulinen, Auli & Fred Karlsson. 1979. *Nykysuomen lauseoppia*. Vol. 350. Suomalaisen kirjallisuuden seura.
Hakulinen, Auli & Lauri Karttunen. 1973. Missing persons: on generic sentences in Finnish. In *Cls9: papers from the ninth regional meeting*, 157–71. Chicago Linguistic Society, Chicago.
Harizanov, Boris & Vera Gribanova. 2016. *Whither head movement?* Workshop on the Status of Head Movement in Linguistic Theory. Stanford.
Harley, Heidi. 2012. External arguments and the mirror principle: on the distinctness of voice and v. *Lingua* 125. 34–57.
Huddleston, Rodney & Geoffrey Pullum. 2002. *The cambridge grammar of the English language*. Cambridge: Cambridge University Press.
Kim, Jong-Bok. 2016. *The syntactic structures of Korean: a construction grammar perspective*. Cambridge: Cambridge University Press.
Kiparsky, Paul. 2001. Structural case in Finnish. *Lingua* 111. 315–376.
Kiparsky, Paul. 2005a. *Absolutely a matter of degree: The Semantics of Structural Case in Finnish*. https://web.stanford.edu/.
Kiparsky, Paul. 2005b. Blocking and periphrasis in inflectional paradigms. In Geert Booij & Jaap van Marle (eds.), *Yearbook of morphology 2004*, 113–135. Dordrecht: Springer.
Kiparsky, Paul. 2010a. Compositional vs. paradigmatic approaches to accent and ablaut. In Stephanie W. Jamison, H. Craig Melchert & Brent Vine (eds.), *Proceedings of the 21st annual UCLA Indo-European conference*. Bremen: Hempen.
Kiparsky, Paul. 2010b. Dvandvas, blocking, and the associative: The bumpy ride from phrase to word. *Language* 86. 302–331.
Kiparsky, Paul. 2013. Towards a null theory of the passive. *Lingua* 125. 7–33.
Kiparsky, Paul. 2016. The agent suffixes as a window into Vedic grammar. In Joshua Katz Dieter Gunkel Brent Vine & Michael Weiss (edd (eds.), *Sahasram ati srajas: Indo-Iranian and Indo-European studies in honor of Stephanie W. Jamison.*

http://web.stanford.edu/ kiparsky/Papers/agentnouns.final.pdf. Ann Arbor: Beech Stave Press.
Kiparsky, Paul. In press. *Paradigm effects and opacity*. Stanford: CSLI.
Kornfilt, Jaklin & John Whitman. 2011. Afterword: nominalizations in syntactic theory. *Lingua* 121. 1297–1313.
Kratzer, Angelika. 1996. Severing the external argument from its verb. In J. Rooryck & L. Zaring (eds.), *Phrase structure and the lexicon*. Dordrecht: Kluwer Academic Press.
Kratzer, Angelika. 2002. *The event argument and the semantics of verbs*. Manuscript, University of Massachusetts, Amherst.
Kratzer, Angelika. 2004. Telicity and the meaning of objective case. In Jacqueline Lecarme & Jacqueline Guéron (eds.), *The syntax of time*. Cambridge, MA: MIT Press.
Lausetyyppien käsittely transformaatioteoriassa [The treatment of sentence Types in Transformational grammar]. 1970. *Ajatus (Journal of the Finnish philosophical society]* XXXII. 150–159.
Lees, Robert B. 1960. The grammar of English nominalizations. *International Journal of American Linguistics* 26(3).
Levin, Theodore, Preminger & Omer. 2015. Case in Sakha: are two modalities really necessary? *Natural Language and Linguistic Theory* 33. 231–250.
Lowe, John J. 2014. Transitive nominals in Old Avestan. *Journal of the American Oriental Society* 134(4). 553–577.
Malouf, Robert. 2000. *Mixed categories in the hierarchical lexicon*. Stanford: CSLI Publications.
Marantz, Alec. 1991. Case and licensing. In German Westphal, Benjamin Ao & Hee-Rahk Chae (eds.), *Proceedings of the 8th Eastern States Conference on Linguistics (ESCOL 8)*, 234–253. Ithaca: CLC Publications.
Payne, John, Geoffrey K. Pullum & Rodney Huddleston. 2010. The distribution and category status of adjectives and adverbs. *Word Structure*. 31–81.
Pires, Acrisio. 2006. The derivation of clausal gerunds. *Syntax* 10. 165–203.
Portner, Paul. Quantification, events, and gerunds. In Emmon Bach, Eloise Jelinek, Angelika Kratzer & Barbara Partee (eds.), *Quantification in natural language*, 619–659. Dordrecht & Boston: Kluwer Academic Publishers.
Pullum, Geoffrey. 1991. English nominal gerund phrases as noun phrases with verb-phrase heads. *Linguistics* 29. 763–799.
Pustejovsky, James. 1995. *The generative lexicon*. Cambridge, MA: MIT Press.
Ross, John. 1967. *Constraints on variables in syntax*. Massachusetts Institute of Technology Ph.D. dissertation.
Svenonius, Peter. 2016. Spans and words. In Daniel Siddiqi & Heidi Harley (eds.), *Morphological metatheory*. Amsterdam & Philadelphia: John Benjamins.
Toosarvandani, Maziar. 2014. Two types of deverbal nominalization in Northern Paiute. *Language* 90. 786–833.
Vergnaud, Jean-Roger. 1977. Open letter to chomsky and lasnik. *LingBuzz* 461. http://ling.auf.net/lingbuzz/000461.

Vinokurova, Nadezhda. 2005. *Lexical categories and argument structure*. Utrecht: LOT Publications. http://www.lotpublications.nl/Documents/103_fulltext.pdf.

Williams, Edwin S. 1975. Small clauses in English. In John Kimball (ed.), *Syntax and semantics*, vol. 4, 249–273. New York: Academic Press.

Wunderlich, Dieter. 1996a. A minimalist model of inflectional morphology. In Chris Wilder, Hans-Martin Gärtner & Manfred Bierwisch (eds.), *The role of economy principles in linguistic theory*, 267–298. Berlin: Akademie Verlag.

Wunderlich, Dieter. 1996b. Minimalist morphology: the role of paradigms. *Yearbook of Morphology*. 93–114.

Wunderlich, Dieter. 2001. How gaps and substitutions can become optimal: the pronominal affix paradigms of Yimas. *Transactions of the Philological Society* 99. 315–366.

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