

Simple Event Nominalizations: roots and their interpretation

Keir Moulton
Simon Fraser University

April 2013

In one popular view, expressed most fully in Borer (2005), word meanings are nothing but unstructured, polysemous ‘blobs’ of content, with no formal properties. It is the syntactic context that shapes their meaning, and only this functional scaffolding delivers the kinds of meanings that the compositional semantics trades in. I call this the ‘Blob Theory’ of root meanings. I am going to argue against the Blob Theory by investigating an overlooked class of nominalizations that show properties unexpected under most classifications (Grimshaw 1990, and following): they exhibit some properties of event nominals (they can be modified by *frequent/constant*, cf. Borer 2003, Alexiadou 2009) but they nonetheless do not have argument structure. I provide an account of these nominalizations as eventive root nominalizations. I then examine the behaviour of these nominalizations with respect to clausal arguments. I argue that their ability to combine with clausal complements shows that roots have a structured semantics that interacts, as unexpected by Blob Theory, with the compositional semantics.

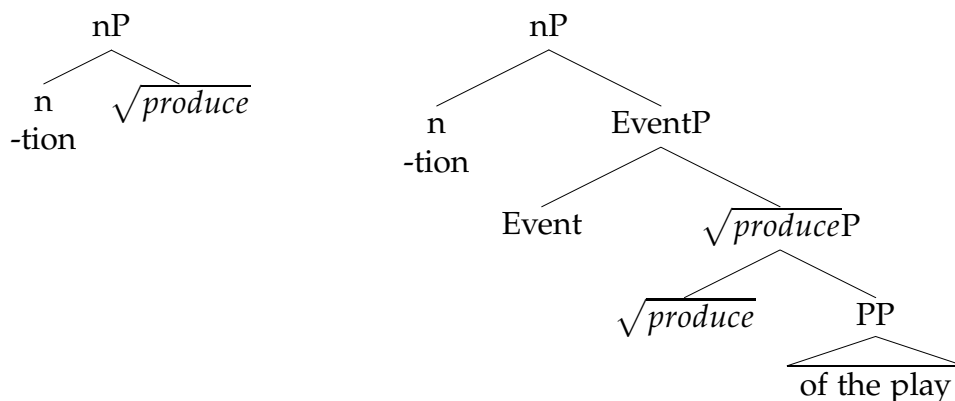
1 Attack of the Blob

Nominalization has always been a fertile testing ground for Blob Theory. It’s a well-rehearsed observation, since the seminal work of Grimshaw 1990, that nominalizations are multi-ways ambiguous. Some describe events, and these have at least some verbal properties, like the presence of argument structure and a systematic meaning relationship to their verbal counterparts. These Grimshaw called *complex event nominals*, CENs (the complex part will be important in a bit). Another kind of nominalization, a result nominal (RN), refers to a grab-bag of things related to the verb, as in (1b).

- (1) a. His deliberate production of bad plays never took long. CEN
b. His production was the most remarkable play ever staged. RN

In frameworks like Distributed Morphology (Marantz 1997, 2001, Alexiadou 2001), these differences are typically characterized by differences in what chunk of syntax is nominalized. On this view, roots are category-neutral and their meanings are highly under-specified. The syntactic context of the root plays a large role in that roots are only associated with meaning in the Encyclopedia once the syntax has been assembled. Nominalizing the root delivers the idiosyncratic grab-bag of things that characterize RNs. CENs involve the nominalization of larger structures, ones that at the very least include the internal argument.¹ If we subscribe to a view where eventive interpretations are contributed by separate pieces of morphology (which is surely true in some languages as shown by Travis 2010), then the CEN might also include heads that introduce events. This is all to say that a plausible analysis might include more ‘stuff’ in CENs, as Alexiadou (2001) and Fu, Roeper, and Borer (2001) argue. I’ll represent this with an Event phrase, following the tradition set by Travis.

- (2) a. Result Nominal b. Event nominal



This characterization, it turns out, is both too simple for RNs and, in some circumstances, too complex for event nominals. One reason that it is too simple is that both a CEN and RN can contain the same verbalizing derivational morphology, as Ackema and Neeleman (2004), Harley (2009) and others point out:

- (3) a. His constant nominalization of verbs was incessant. CEN
 b. This word is a nominalization. Result

The presence of verbalizing morphology (*-ize*) in (3a) and (3b) poses a puzzle for the syntax of nominalization. If *-ize* is a type of *v* (Harley 2009), why does it not license accusative case (Harley 2009, Alexiadou 2009, Mathieu to appear (this volume))? But these examples also present a semantic problem from the DM perspective: we get a typical RN in (3b), but the it’s not just a root that’s being nominal-

¹The fact that the internal argument combines with a root allows for typical verb-object idiosyncratic meanings (Marantz 1984, Kratzer 1996). ‘Severing’ the internal argument would not capture such idiomatic dependencies.

ized; in DM, the presence of a morpheme implies the presence of a syntactic head. Moreover, on any reasonable semantic analysis *-ize* will have to introduce events. It's a causativizer, after all, and it's going to be impossible to define a causativizer without mentioning events or propositions. This means that the 'resources' for an eventive interpretation are available within the RN in (3b). But if that's the case, then the idiomatic interpretation of RNs cannot be attributed to their being 'low' nominalizations.

The reason that the characterization in (2) is, on the other hand, too complex comes by way of a third type of nominalization, one that has not been adequately recognized in the literature. For reasons that will become clear, this type can be called a *simple event nominalization* (SEN) (Borer 2003, Alexiadou 2009).²

- (4) a. Nominalization is a process that renders words longer
and takes place in the lexicon. SEN
b. Constant observation is required to ensure the child's safety. SEN

The important thing I will demonstrate is that SENs describe the same event that their related verbs and CENs do and they accept event modifiers like *frequent/constant* (a novel observation, as far as I know), but they nonetheless lack the full verbal properties of CENs. The characteristic that primarily distinguishes SENs from CENs is that the former do not take internal arguments nor aktionsart modifiers. I am then going to argue that capturing the difference between RNs, SENs, and CENs requires that roots be more than underspecified blobs of meaning (cf. Borer 2005). Roots, at least some of them, need to have the semantics of verbs. Put technically, some roots must be just as the neo-Davidsonians have it: as denoting relations between eventualities and individuals (Parsons 1990, Kratzer 1996).

The rest of the paper is outlined as follows. I begin in §2 with background on the three types of nominalizations, simple, complex and result. I then refine the diagnostics for simple event nominals, focusing on the elements *frequent/constant*. That done, we will be able to identify (derived) SENs as a distinct class (and handle apparent counterexamples that Grimshaw herself was aware of). I will offer then a way to derive the three nominalizations. In §3 I turn to CP complements of nouns, which will provide evidence that root nominalizations have denotations that interact with the compositional semantics. I'll end in §4 with a demonstration that another class of clause-taking predicate (*belief, claim, etc.*) must be formed from roots that *don't* have event arguments. Taken together, the diversity of root meanings suggests that for other DM assumptions to be maintained, we can't maintain Blob Theory.

²Grimshaw (1990) used this term for non-derived event nouns like *party* and *trip* (Zucchi 1989). As far as I can tell, Borer (2003), Alexiadou (2009) do call these simple event nominals, but put them in a class with RNs. I'll offer reasons to suggest that derived SENs are very much their own class.

2 Complex vs. simple vs. Result: the diagnostics

The picture we inherit from Grimshaw (1990), later refined in (Borer 2003), recognizes three types of nominalizations: complex event nominal (CEN), simple event nominal (SEN) and result nominal (RN). CENs describe an event in much the way their counterpart verb does, and they take internal arguments (with the help of *of*). SENs likewise describe the event associated with their parent verb, but lack an internal argument. The third type of nominalization does not denote anything like the event described by the parent verb. These RNs describe a variety of things related to the verb: a participant of the verb (e.g. an internal argument as in *a belief, an assignment*), a result state (*the destruction*), or a related concrete object (*an examination*).

- | | | | |
|-----|----|---|-----|
| (5) | a. | The examination of the students lasted a long time. | CEN |
| | b. | The examination lasted a long time. | SEN |
| | c. | The examination was photocopied on green paper. | RN |

Being able to appear in the frame *lasted/took x time* separates CENs and SENs from RNs.

Grimshaw's important discovery was that CENs require their internal arguments, just like their verbal counterparts. Grimshaw uncovered this generalization by finding various ways to independently disambiguate the nominal. One kind of disambiguation Grimshaw makes use of, following an observation by Lebeaux (1986), involves possessors. Possessor arguments can be understood as merely related to the nominal or as *bona fide* agents, but the latter is possible only with a CEN. The agent interpretation can be forced by agent-oriented modifiers.

- | | | | |
|-----|----|--|-----|
| (6) | a. | The instructor's deliberate examination of the patient took a long time. | CEN |
| | b. | *The instructor's deliberate examination took a long time. | SEN |
| | c. | *The instructor's deliberate examination was on the table. | RN |
- (Grimshaw 1990: 51–52(11))

When the subject is necessarily an agent, the internal argument is required, i.e. it must be a CEN. Here's another example with *construction*, which is also three-ways ambiguous between a CEN, SEN and RN:

- | | | | |
|-----|----|---|-----|
| (7) | a. | The construction of the building lasted a long time. | CEN |
| | b. | The construction lasted a long time. | SEN |
| | c. | New construction is widespread in downtown Vancouver. | RN |
-
- | | | | |
|-----|----|---|-----|
| (8) | a. | His deliberate construction of the building took forever. | CEN |
| | b. | *The contractor's deliberate construction lasted a long time. | SEN |
| | c. | *His deliberate construction is in downtown. | RN |

Another property that distinguishes event nominals from RNs is adjectival modification by *frequent* and *constant*. CENs allow these modifiers, but an RN must be pluralized to accept *frequent/constant*:

- (9) a. The constant examination of Sally bothered people.
- b. *The constant exam was written on blue paper.
- c. Frequent/constant exams from the teacher annoyed the students.

Grimshaw takes *frequent/constant* as diagnostic of argument-taking event nominals, i.e. CENs. In a footnote, however, she cites (10) as a counter-example:

- (10) Only frequent examination by the doctors kept John healthy.
(Grimshaw 1990: 178 fn.1)

If *frequent* can combine only with CENs, then it's a mystery why *examination* in (10) can go without its internal argument. (10), in fact, represented a major counterexample for Grimshaw, as she acknowledged (fn.1, p. 178) since it suggests that event interpretations do not always go hand-in-hand with the obligatoriness of the internal argument. But (10) is no isolated counterexample. Many more examples can be constructed.³

- (11) a. The constant construction next door will bother me.
- b. More frequent demonstration is required.
- c. Frequent change is necessary if you want your organization to stay competitive.

Sometimes it takes a bit of contextual support to let the nominal go without its internal argument and still be modified by *frequent*.

- (12) A man should not just demonstrate his love for his partner once and a while...
 More frequent demonstration is required.

As far as I know, this is a novel observation (save Grimshaw's example (10)), one that is important for the classification of nominalizations. It seems that Borer (2003) and Alexiadou (2009), unaware of these modification possibilities, classify derived SENs as subtypes of RNs. It's true that SENs pattern in many ways like RNs. And it's true that some RNs, such as the RN *destruction*, describe eventualities. But in this case the RN denotes an eventuality very distinct from the verb and the CEN: the result eventuality is not the event of destroying. But the nominals above, these SENs, always describe the same eventuality as their counterpart CENs and

³Only those SENs that are derived nominalizations can be modified by *frequent* in this way:

- (i) a. *The frequent trip/party/sad event bothers me.
- b. The frequent trips/parties/sad events bother me.

verbs. The meaning of an SEN is clearly the ‘same’ as a CEN—minus an internal argument.

- (13) a. They constructed a building. That lasted a long time verb
 b. The construction of the building lasted a long time. CEN
 c. The construction was frequent and lasted a long time. SEN
 d. The new (*frequent) construction he built was tall. RN
- (14) a. They destroyed the building. That took a long time. verb
 b. The destruction of the building in an hour was hard to watch. CEN
 c. The constant destruction took place all day long. SEN
 d. The (*constant) destruction they left was widespread. RN

RN *construction* denotes constructed things; SEN *construction* denotes events of constructing, just like its CEN and verbal counterparts. RN *destruction* denotes a result state; SEN *destruction* denotes an event of destroying, just like its CEN and verbal counterpart.

(15) summarizes the properties of CENs, SENs, and RNs.

(15) Nominalization properties (first version)

	___ take place	poss = agent	int. argument	<i>frequent/constant</i>
CEN	✓	✓, obligatory	✓	✓
SEN	✓	no	no	✓
RN	no	no	no	no

To review, *frequent/constant* are compatible with SENs. And this means that the event interpretation of a nominal is not necessarily tied to the presence of an internal argument.

SENs and CENs differ, however, in one other important way: aktionsart. Aktionsart modifiers are another tool Grimshaw uses to diagnose event nominals. The first thing to know is that CENs, but not RNs, show the same aktionsart distinctions as their associated verb phrases (Vendler 1967, Dowty 1979). So *destruction+NP* is telic (allowing *in*-phrases but not *for*-phrases). The reverse holds for *observation+NP*.

- (16) a. The Romans destroyed the city in three hours/*for three hours.
 b. The doctor observed the patient for three hours/*in three hours.
- (17) a. The total destruction of the city in two days/*for two days appalled everyone.
 b. Only observation of the patient for several weeks/*in several weeks can determine the most likely [course of action].
 (Grimshaw 1990:58(28b/29b))

The aktionsart modifier requires the presence of the internal argument. RNs cannot take aktionsart modifiers. Importantly, SENs cannot take aktionsart modifiers either.

- (18) a. Construction of buildings in/for days annoyed everyone. CEN
 b. *Construction in/for five days annoyed everyone. SEN
 c. *The construction in/for five days was widespread. RN
- (19) a. The doctor’s examination of the patient in four minutes surprised everyone. CEN
 b. *The doctor’s examination in four minutes surprised everyone. CEN
 c. *The examination in four minutes was photocopied. CEN

Summarizing again, we have the following:

- (20) Nominalization properties (revised)

	___ take place	poss = agent	int. arg.	<i>frequent/constant</i>	aktionsart
CEN	✓	✓, obligatory	✓	✓	✓
SEN	✓	no	no	✓	no
RN	no	no	no	no	no

What explains these patterns? How come SENs denote events, just like their verbal counterparts, but can go without internal arguments? This is just what Grimshaw (1990)’s theory was designed to prevent: she tied the presence of argument structure to events. Moreover, why do SENs not accept aktionsart modifiers but they do accept modification by *frequent/constant*? What is different about these event diagnostics? In the next section I am going to provide a simple, semantically-based, DM-compatible theory of nominalization that captures these divisions. The central implication is that SENs are *root* nominalizations. As such the next section constitutes the first half of our argument against Blob Theory.

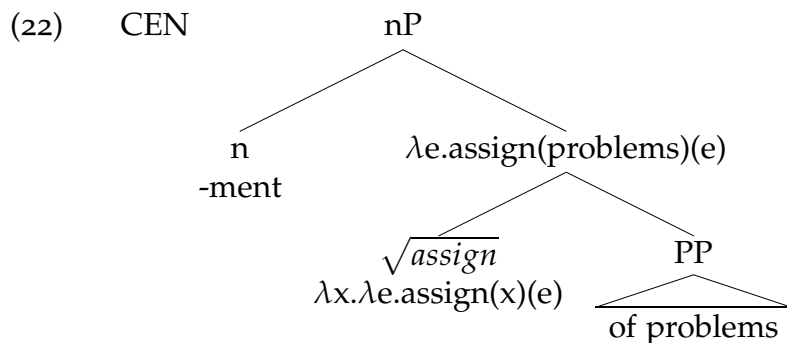
2.1 On the formation of RNs, CENs, and SENs

In this section I am going to walk through the semantic composition of RNs, CENs, and SENs. I will attempt to capture their characteristics with as few assumptions as possible.

Roots may call for an internal argument and an event(uality) argument. (The external argument is added by a separate head, *v* (Chomsky 1995, Kratzer 1996). ‘Eventuality’ here includes states and event proper (Bach 1986). For instance, $\sqrt{\text{assign}}$ denotes a function from individuals (type *e*) to events (type *s*) to propositions/truth values (type *t*).

- (21) $\sqrt{\text{assign}} = \lambda x.\lambda e.\text{assign}(x)(e) \langle e, \langle s, t \rangle \rangle$

On this set-up, it's easy to see how a CEN is formed (Salanova 2010): the internal argument saturates the root, giving a predicate of events. I take n as the nominalizing head, associated with various pieces of nominalizing morphology, like *-ment/-ation* (Marantz 2001). Both it and the preposition *of* I take to be semantically vacuous. (I've omitted Voice/ v here; what I say is compatible with it in or out. Later in this section I will add a functional projection to CENs.)



This nP denotes a set of events of assigning problems, and that is exactly what it seems to describe in (23). And we can imagine that a determiner, say *the*, may combine with properties of events just as it does with properties of individuals.

- (23) a. Assignment of difficult problems should take place early in the semester.
 b. The assignment of difficult problems should take place early in the semester.

CENs, then, are formed just like a verb phrase but with the help of nominal morphology can then combine with the determiner system.

RNs take a different compositional path. Recall that many RNs describe the thing that their parent predicate's internal argument does:

- (24) a. He was assigned to fix the sink.
 b. The assignment was to fix the sink.
 (25) a. He explained that he was innocent.
 b. His explanation was that he was innocent.

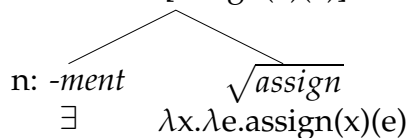
While the range of things that RNs can describe is heterogeneous and somewhat unpredictable, we do know that they don't describe the eventuality described by their related verb phrase (see previous section). A (quasi) explanation for this is easy to concoct: in RNs the eventuality argument is existentially closed off and this must be done so 'low' in the tree that the eventuality argument is not available to modification (I'll explain why below). I'll use \exists in the object language to signal existential closure of the event argument. It will be housed on n . \exists has the following denotation:

$$(26) \quad \llbracket [n \exists] \rrbracket = \lambda P_{\langle e, \langle s, t \rangle \rangle} . \lambda x . \exists e [P(x)(e)] \qquad \langle \langle e, st \rangle, \langle e, t \rangle \rangle$$

In the simple case, this will give rise to the variety of RN known as an object nominal—those RNs that describe what their parent verb’s object usually does. Think of it like a little relative clause. The RN of *assignment* makes for a good example:

(27) One of the assignments was to fix the sink.

(28) RN nP: $\lambda x. \exists ev [\text{assign}(x)(e)]$



(28) captures just what the nominalization in (27) means: a set of things such that there was an event of assigning them. (In this respect, the proposal makes a prediction that RNs may entail an event; see §4 for discussion.)

We further predict correctly that RNs don’t take arguments:

(29) *The assignment of the problem is on the table.

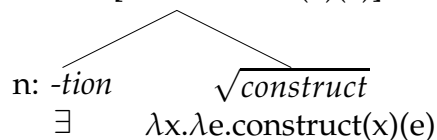
If the internal argument were saturated, you wouldn’t derive the required NP meaning for *assignment*—you’d get a truth value, not a common noun phrase meaning.

I now propose that SENs are identical to RNs, save for one minor semantic twist: in SENs, \exists in *n* existentially closes off the internal argument (the individual) not the event, leaving the whole nP to denote an event. This \exists has the following denotation:

(30) $\llbracket [n \exists] \rrbracket = \lambda P_{\langle e, \langle s, t \rangle \rangle}. \lambda e. \exists x [P(x)(e)]$ $\langle \langle e, st \rangle, \langle s, t \rangle \rangle$

(31) SEN: *frequent construction took place at the corner*

nP: $\lambda e. \exists x [\text{construction}(x)(e)]$



This nP denotes an eventuality of construction. Its object is implicit (in virtue of existential closure). In this way we have a term that denotes the eventuality described by the root, but can lack its internal argument. The existential closure operator essentially obviates the Projection Principle/theta-criterion. This nP can now easily be modified by event-modifying adjectives like *frequent/constant*.

In contrast, on the natural assumption that *frequent/constant* are event modifiers (say type $\langle \langle s, t \rangle, \langle s, t \rangle \rangle$), then such modifiers cannot compose with RNs: neither the root nor the nP in (28) is of the right type.

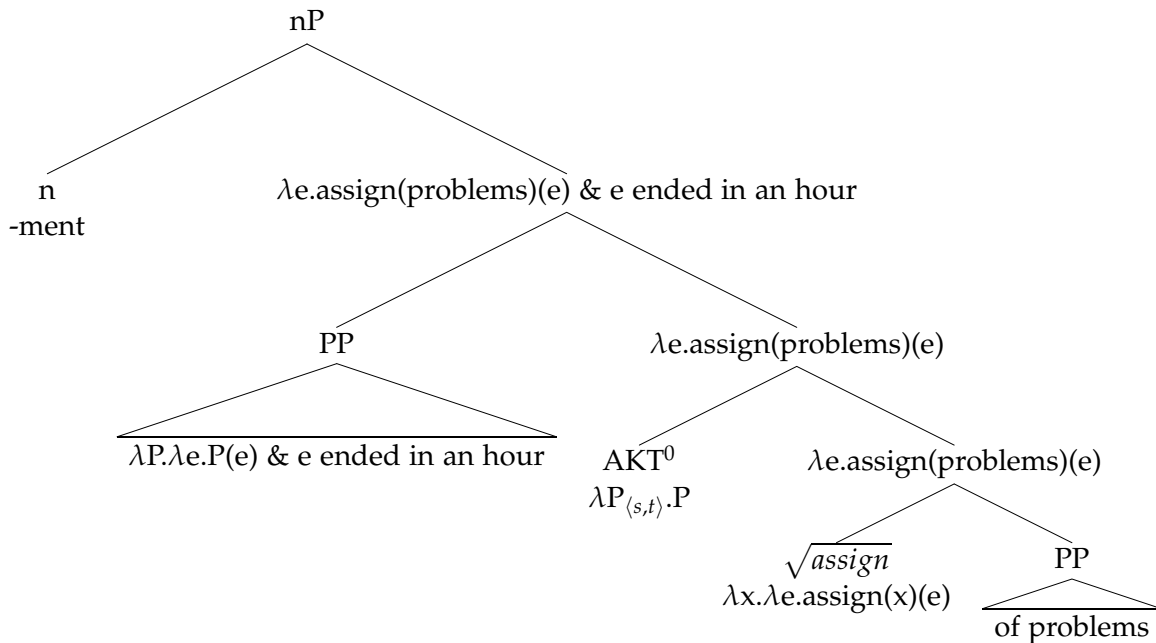
But why can't SENs be modified by aktionsart modifiers? Aktionsart modifiers describe events, so they too combine with event-denoting phrases. Here are some informal denotations (Rothstein 2004).

- (32) a. $\llbracket \text{in an hour} \rrbracket = \lambda P.\lambda e.[P(e) \ \& \ \text{and } e \text{ ended in an hour}] : \langle\langle s,t \rangle, \langle s,t \rangle\rangle$
 b. $\llbracket \text{for weeks} \rrbracket = \lambda P.\lambda e.[P(e) \ \& \ e \text{ lasted for weeks}] : \langle\langle s,t \rangle, \langle s,t \rangle\rangle$

Like *frequent/constant*, aktionsart modifiers are type $\langle\langle s,t \rangle, \langle s,t \rangle\rangle$: they modify properties of events.

In the tradition of much work on telicity and its interaction with objects (Kratzer 2004, Borer 2005, Ramchand 2008, Travis 2010) suppose there is a functional head AKT^0 that sits above the root (but below nominalization) that 'licenses' an aktionsart modifier in its specifier. I am going to keep the term 'license' as vague as it sounds, giving to AKT^0 the trivial meaning of an identity function: it passes up a property of events to its specifier.

- (33) CEN: assignment of problems in an hour



(Movement will have to deliver the word order that puts the PP to the right of the rootP.)

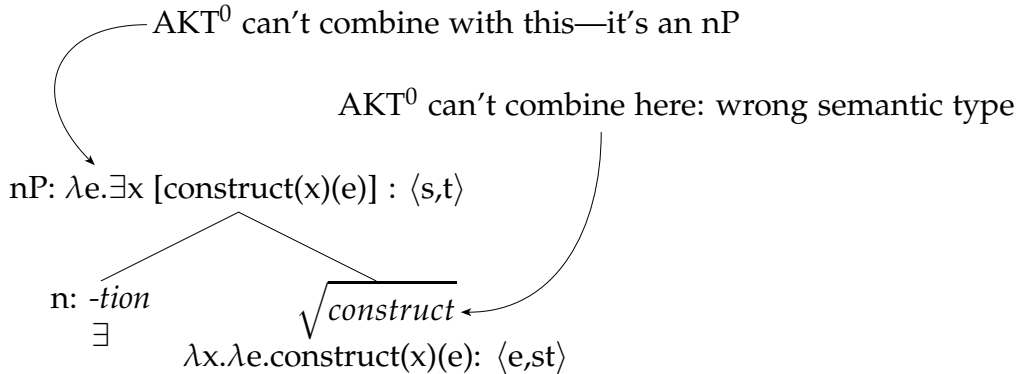
The next question is why AKT^0 can't appear in SENs? Answer: if AKT^0 attaches above the unsaturated rootP of SENs, then it will combine with the wrong semantic type: $\langle e, st \rangle$ not $\langle s, t \rangle$. So then we ask why AKT^0 cannot merge with nP, since the nP of a SEN does denote the right type, $\langle s, t \rangle$. Proposal: AKT^0 is a verbal functional head; it cannot combine with an nP⁴ (but apparently it can combine

⁴This is most true in the case of non-derived nouns: *The party for an hour/the trip for days.

with category-free phrases).

- (34) a. *construction in an hour SEN
 b. construction of the building in an hour CEN

(35) Nowhere for the AKT^0 in SENs



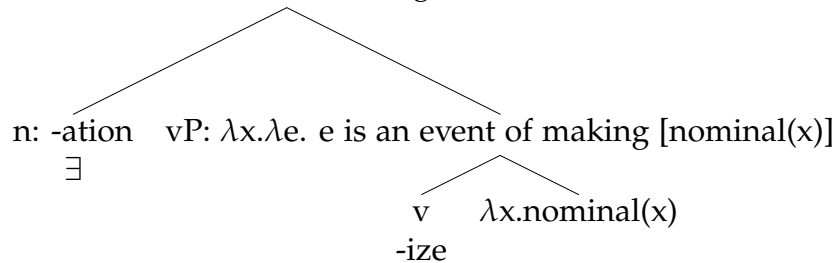
SENs do not denote what verb phrases do until they are categorized. Before that, they denote relations (not properties of events). After nominalization, the semantic type admits the modifiers in (34), but the syntax prevents it. Put another way, SENs denote events but they don't denote properties of events without being nominalized. That, I contend, prevents them from being modified like CENs and verbs, with aktionsart PPs.

This line of attack even gives us a purchase on the RN *nominalization*, which we saw poses a problem for DM and Blob Theory too. There must be reference to events within this RN, because *-ize* creates (complex) event descriptions. Here's a toy denotation for *-ize* (it doesn't really matter what it is, but I give it a causative analysis here). I'll take it to be of category *v* (Harley 2009).

- (36) $\llbracket -ize \rrbracket = \lambda P_{\langle e, t \rangle}. \lambda x. \lambda e [e \text{ is an event of making } P(x)]$

This *-ize*, while it introduces an eventuality and is of category *v*, doesn't admit aktionsart modifiers if it forms part of an RN. Here's why. I won't decompose *nominal*, to keep the tree simpler (even though it is itself complex); it describes nominal things (or maybe the corresponding nominal states).

- (37) nP: $\lambda x. \exists e [e \text{ is an event of making } [\text{nominal}(x)]]$



The result here is an RN, but it contains more than just a root; it contains the ‘resources’ for an event interpretation. And this is what we want, at least if we wish to maintain the DM assumption that the presence of a morpheme (here *-ize*) reflects syntactic structure. (Again, the implication of this RN is that there is some event of making the nominal. See §4 on this prediction.)

Moreover, even though there are the ‘resources’ for an event interpretation in (37), that event is not available for modification. Just as with SENs, there is no node in (37) that isn’t a nP that is of the right type for AKT⁰ (and therefore an aktionsart modifier) to combine with. The node *nominal* is not an event. The vP node does describe events, but the individual argument is not saturated, so it’s not the right type yet. And the whole nP denotes a thing such that there is an event of making that thing nominal: there’s no event here to modify. Also ruled out is modification by *frequent/constant* on the hypothesis that these can only modify event-denoting nouns.

Stepping back from these details, an important conclusion here is that SENs are root nominalizations. They are no ‘bigger’ than RNs—and sometimes they’re smaller, as with (37). Both have the ‘resources’ for an event interpretation, but only in the latter is it available.

So far none of this has directly been an argument against Blob Theory. And at this point Blob Theorists might be thinking of all sorts of ways to syntacticize the observations I’ve documented. How would such approaches capture the differences between SENs, CENs and RNs.

Take the difference between SENs and RNs? Can we ‘construct’ those meanings from blobby roots? To do so we would need to make decisions about the content of the root. Do we ‘sever’ the internal argument (Borer 2003, Ramchand 2008, but cf. Kratzer 2002)? Do we ‘sever’ the event argument? What would such a root even mean? Or do we say nothing about the root, and only assign it meaning if there are functional heads above it? If the latter is the case, then RNs and SENs would both require some functional structure above them, and I see no reason to think that SENs would have more such structure than RNs. One could postulate that SENs differ from RNs in having an Event phrase (see (2)), but given the discussion of the RN *nominalization* above, this in itself won’t deliver the difference between RNs and SENs.

In sum, the present proposal captures the form and meanings of SENs (particularly, their heretofore undocumented status as non-argument taking, event-denoting phrases). In the next section I want to show an interesting interaction between SENs and CP complements that, given the above conclusions about SENs as root nominalizations, argues for structured root meanings.

3 CPs and the Blob

In this section I show that clause-taking verbs can only form SENs and RNs (see Travis, Jeannot-Fils, and Botouhely 2013 (this volume) for related observations about Malagasy *fact-* and *claim-*nominals). I then show that CP complements can appear with SENs (and RNs), but not as arguments. I will offer an explanation for this based on some new proposals about the denotations of CPs (Kratzer 2006, Moulton 2009, Caponigro and Polinsky 2011, Moulton 2013a,b). Finally, I demonstrate that in order to capture this state of affairs, roots must have a structured meaning, one with which CPs compose by known compositional mechanisms (in this case, *Restrict*, Chung and Ladusaw 2004).

3.1 Nominalization of clause-taking roots

When clause-taking predicates are nominalized, they often don't refer to the eventuality described by the verb, but to the thing "verbed" (Higgins 1972).

- (38) Paul's explanation/claim/observation/belief **was** that he was temporarily insane. (Stowell 1981: 199(154))

The copular relation here is specificational (or 'equative') and this means that whatever the CP refers to, so does the nominalization. So these are RNs.

Some clause-taking nominalizations can also be predicated of event predicates, showing that they can be SENs.

- (39) a. Paul's explanation that he was insane took too long. SEN
b. Sue's demonstration that she wanted the job lasted all day. SEN

Crucially, however, clause-taking nominalizations never form CENs. The aktionsart modifier diagnostics show this the best. Grimshaw's minimal pair with DP- vs. CP-taking *observe/ation* illustrates the striking contrast.

- (40) DP-taking *observation*
a. We observed the butler for several weeks.
b. Observation of the butler for several weeks is needed.
- (41) Clause-taking *observation*
a. They observed [that the butler was likely the killer] for several weeks.
b. *Their [observation [that the butler was likely the killer] for several weeks] was not supported by evidence.
c. cf. Their observation that the butler was likely the killer was not supported by evidence.

This is an entirely systematic property of CP-taking predicates when nominalized (whether by zero-derivation as *claim/belief* or with various kinds of overt nominal-

izing morphology). More examples are in (42). The aktionsart modifiers in (42) are to be interpreted high, modifying the event described by the embedding noun. The possible garden-path effect here has been countered by choosing embedded VPs that are incompatible with the modifier or simply placing the modifier before the CP.

- (42) a. I decided that he was a fraud in 5 minutes
 b. *My decision that he was a fraud in 5 minutes
 c. *My decision in 5 minutes that he was a fraud
- (43) a. Blogs suggested that he fathered a child in 1992 for years
 b. *The suggestion that he fathered a child in 1992 for years
 c. *The suggestion for years that he fathered a child in 1992
- (44) a. John proved that he was competent in only a few minutes
 b. *John's proof that he was competent in only a few minutes
 c. *John's proof in only a few minutes that he was competent
- (45) a. I explained in under an hour that I was innocent.
 b. *My explanation that I was innocent in under an hour.
 c. *My explanation in under an hour that I was innocent.
- (46) a. John claimed for two years that the earth was flat.
 b. *John's claim for two years that the earth was flat.

This isn't just a property of these particular predicates. Nor is it some deep incompatibility between the meanings of these predicates and event nominalization. Some DP and CP-taking verbs (not all, of course, but some) can form event nominalizations with their DP objects (expressed in *of*-PPs)—even those DP arguments that bear the same relation to the verb that the CP appears to. But no CP is allowed.

- (47) a. Lisa explained the problem in two minutes flat.
 b. Lisa's explanation of the problem in two minutes flat (impressed me).
 c. *Lisa's explanation that there was problem in two minutes flat (impressed me).
- (48) a. John suggested that possibility for so many years.
 b. John's suggestion of that possibility for so many years (got tiresome)
 c. *John's suggestion that he father a child for so many years (got tiresome).

Nominalizations that take CPs just cannot form complex eventuality nominals.⁵

⁵Incidentally, the fact that *proof* is a RN (see (44)) means that our analysis is immune to those criticisms levelled against Stowell's (1981) apposition analysis of CPs in NPs. Another counter-example involves the noun *knowledge*, which Grimshaw (1990) claims does not allow the CP in post-copular position:

(i) *The knowledge was that Dukakis was ahead. (Grimshaw 1990: 98(122a))

Can clause-taking nouns be modified by *frequent/constant*? Grimshaw gives (49) as evidence that they cannot. But Pesetsky and Torrego (2002) offer (50) and (51), which they claim shows that the presence of the CP is necessary to license the adjective, something we'd expect if clause-taking nouns were CENs (Ogawa 2001).

- (49) a. *Their frequent/constant announcement that they were the greatest eventually became tiresome.
b. *His frequent/constant statement that he was about to resign was intended to mislead.
(Grimshaw 1990: 75–76)
- (50) a. His frequent/constant claim that he was about to resign annoyed us.
b. *His frequent/constant claim annoyed us. (Pesetsky and Torrego 2002)
- (51) a. The constant belief that someone is trying to poison you is a sure sign of insanity.
b. *The constant belief is a sure sign of insanity. (Pesetsky and Torrego 2002)

We saw in §2 that certain contexts help in letting *frequent/constant* modify an SEN. It seems that as long as we put the CP in a discourse preceding Pesetsky and Torrego's examples, things become better with *frequent/constant*—even without their CPs arguments:

- (52) A: The constant belief that someone is trying to poison you is a sure sign of insanity, don't you think?
B: Yes, that/such a constant belief is a sure sign of insanity.

And here's a naturally occurring example:

- (53) Don't forget that the liberals still claim that it was the fault of all the idiots that voted for him. That constant claim by the liberals still sticks in my mind.
(<http://www.freerepublic.com/focus/f-news/1627062/posts>) accessed Oct 14 2012 42 posted on 4 May, 2006 8:00:47 PM PDT by jerry639

While not perfect, the context in (53) makes it clear what the claim is. Of course, the skeptic might say that this context pretty much just makes these CEN, with the object implied (perhaps present as a null *pro*). That can't be the answer though,

Some naturally occurring examples, however, suggest that *knowledge* is not a counter-example:

- (ii) a. Our current knowledge is that light exhibits a dual nature or behaviour.
b. My limited knowledge of returning missionaries was that they were basically hands off until they were "debriefed"; is this unusual?
c. My only knowledge of it was that there was an image of it on a punt coin at some stage. The first thing that struck me was how modern it was.

because an implied or null object, if it were there, should allow an SEN to be modified by an aktionsart PP. As we know, however, that is not possible.

- (54) a. *The destruction in an hour disturbed me.
b. *The explanation for an hour that John was the murderer.

In sum, clause-taking verbs form SENs (and RNs) but not CENs. And when they are SENs they can combine with CPs (see (39)). That in itself is a puzzle: if CPs are arguments, how come they don't serve to make CENs? The answer to this puzzle comes from the semantic type of CP complements, and it is to this proposal I turn next. Once I introduce this proposal, I will turn back to the argument from CPs against Blob Theory.

3.2 A predicative analysis of CPs

Building on (Kratzer 2006), Moulton (2009, 2013a,b) develops an analysis which argues that CPs are predicative and do not saturate argument positions. There is a very straightforward argument that CPs do not saturate nouns (see Moulton 2013b on how CPs combine with verbs and adjectives). CPs can appear with nouns that have no arguments to begin with! Nouns can, in general, take DP arguments as long as case is made available, with a preposition. This can be seen for de-verbal nouns in (55) and relational nouns in (56):

- (55) a. John's repetition of his claim
b. the Romans' destruction of the city
(56) a. The niece of one of my friends (is nice).
b. The capital of Wisconsin (is a friendly place).

It is not possible, however, to replace the CP complements of some nouns with a DP—even with the help of a preposition. This is true for non-derived nouns, as in (57a).⁶

- (57) a. *I don't believe { the idea, idea, notion, theory, scoop, myth } of that.
b. I don't believe { the idea, idea, notion, theory, scoop, myth } that Edna left.

And it is true of many derived nominals: the verbs in (58)–(60) take DP internal arguments but their object nominalizations cannot (Zucchi 1989).

⁶To the extent that speakers allow such PPs to surface, the DPs inside them do not correspond to the propositional argument of the predicate but often to what the propositional content of the myth/idea/idea is about:

- (i) The myth/claim/idea of that/his birth/that event is that it was a hoax.

See Moulton (2013a) for the role of so-called *res* arguments in nouns.

- (58) a. *John's belief of that idea.
b. John believed that idea.
- (59) a. *John's claim of something.
b. John claimed something.
- (60) a. *Her thought of that.
b. She thought that.

These are object (RN) nominalizations, of course, and we've re already seen why these are not internal argument-takers. This then is an existence argument for CPs that don't to saturate nouns.

The idea that CPs don't saturate the nouns they appear with goes back to at least Higgins (1972) and Stowell (1981), who recorded the intuition that CPs in post-copular position can sometimes even explicitly *identify* the content of the noun.

- (61) a. The fact that Edna was stealing (is apparent).
b. The fact is that Edna was stealing.
- (62) a. The belief that Edna was stealing (is false).
b. The belief is that Edna was stealing.
- (63) a. Paul's explanation that he was temporarily insane.
b. Paul's explanation was that he was temporarily insane.
(Stowell 1981: 199(154))

As Grimshaw (1990) shows, true arguments cannot be separated from their selecting nouns like this, across a copula. To make this point, Grimshaw contrasts genitives in two roles. In (64), the genitive is possessive (hence, in Grimshaw's system, a modifier). It can be post-copular.

- (64) a. John's dog.
b. The dog is John's (Grimshaw 1990: 97(118a))

The genitive in (65), on the other hand, is an argument—this construction being a passive nominal. This genitive cannot occur in post-copular position.

- (65) a. The building's construction.
b. *The construction was the building's. (Grimshaw 1990: 97(121b))

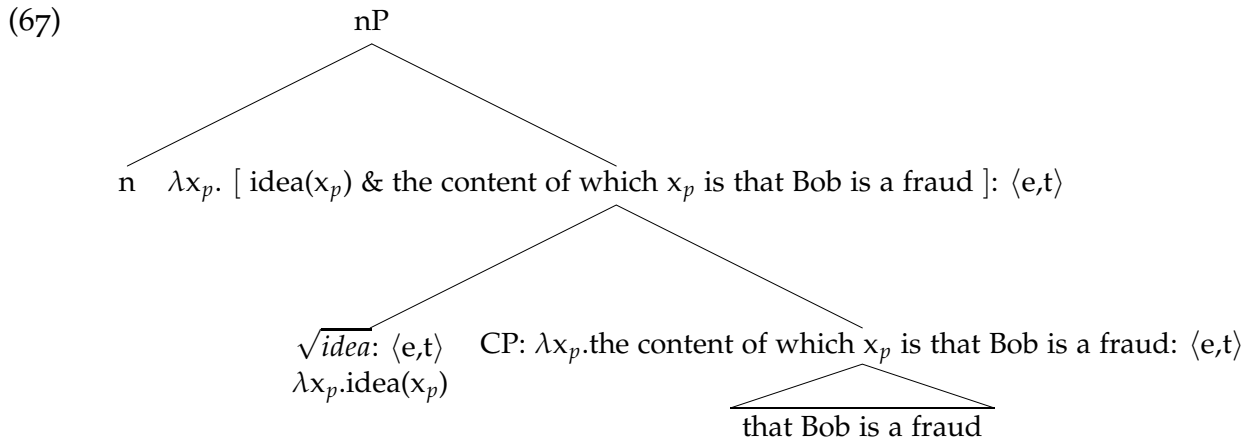
Arguments cannot appear in post-copular position. Since clausal complements of nouns *can* appear in post-copular position, they are not arguments. For further evidence for the non-argument status of CP complements of nouns (for instance, their counter cyclic behaviour, typical of adjuncts) see Moulton (2013a).

I know of at least two worked-out semantic proposals that capture the non-argument status of CPs that appear with nouns. Both Potts (2002) and Kratzer

(2006) treat CPs, when they combine with nouns, as restricting rather than saturating.⁷ Here I follow Kratzer, and the development of her proposal in Moulton (2009) and Moulton (2013a). I will not rehearse the semantics here, but the proposal likens CP complements to relatives in the sense that they do not saturate argument positions. Rather, CPs identify the content of an argument position. They are predicative type, and combine with nouns by Predicate Modification, not function application (see references above for details). An adequate paraphrase for CPs, one that captures the likeness to relative clauses, is the following:⁸

- (66) The idea that Bob is a fraud
 ≈ The idea *the content of which* is that Bob is a fraud

The noun *idea*—like *myth*, *idea*, *fact*—is a non-derived nominal that denotes a thing with propositional content. It's common noun, type $\langle e,t \rangle$. I use x_p for variables that pick out things with propositional content (to distinguish them for 'ordinary' individuals). These content nouns simply combine with a CP by Predicate Modification (Heim and Kratzer 1998).



Now let's examine how this works with nominalizations. A root like *explain* or *propose* or *believe* can form a RN, in which case the eventuality argument is closed off. It's an object nominal. What kind of object does *explain*, *propose* and *guess* take? A thing that has propositional content: they take as their internal argument the kinds of nouns like *idea*, *story*, *rumour*, *content*.

- (68) John explained/believed/proposed that idea/story/myth/proposition.

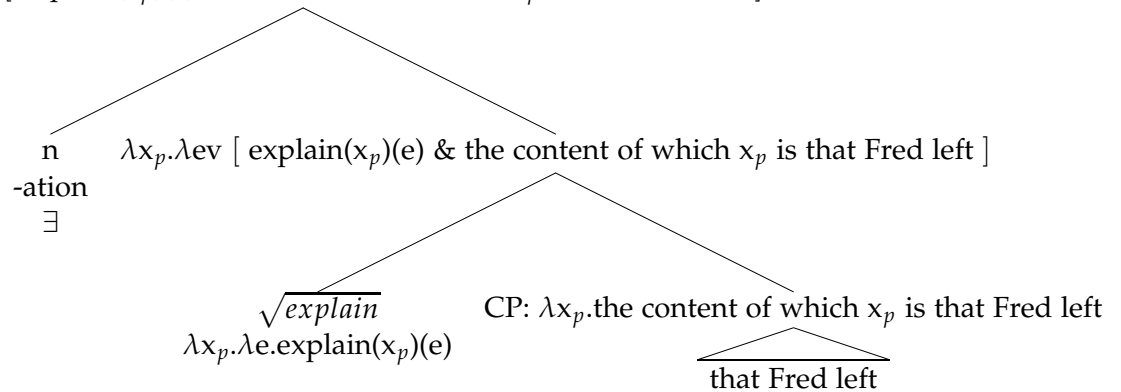
⁷The difference is in whether the basic type of CPs is type e or $\langle e,t \rangle$. There are arguments on both sides (see Moulton 2009), but the evidence from the ban on CENs motivates the predicative denotation.

⁸Kayne (2009) and Arsenijevic (2009) actually postulate a gap corresponding to something like this meaning, a predicate of which they derive by relative operator movement. Caponigro and Polinsky (2011) offer morphological evidence for such a gap in complement declarative clauses (among others) in Adyghe. In the present account there is no such gap or relativization operation, but the net result is a predicative meaning.

So a RN of *explain* denotes a property of ‘things explained.’ The CP can then restrict this noun. Alternatively, following (Kratzer 2006) the CP can restrict this argument of the root via a mode of composition Chung and Ladusaw (2004) call *Restrict*.⁹

(69) explanation that Fred left.

nP: $\lambda x_p. \exists ev [\text{explain}(x_p)(e) \ \& \ \text{the content of which } x_p \text{ is that Fred left }]$



But *explain*+CP cannot form a CEN: an event description (with a saturated internal argument) will never be formed with a CP complement, given the hypothesis that CPs don't saturate.

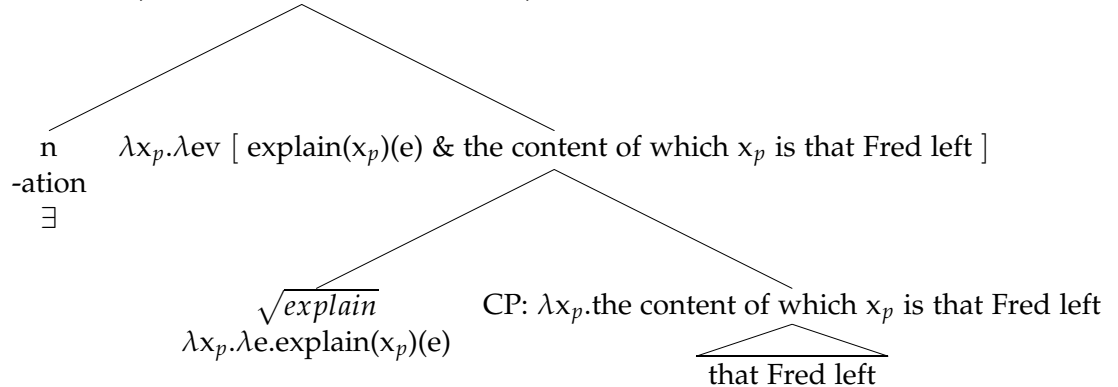
⁹*Restrict* is defined as:

- (i) Let α and β be sisters such that $\llbracket \alpha \rrbracket$ and $\llbracket \beta \rrbracket$ are of type $\langle e, st \rangle$ and type $\langle e, t \rangle$, respectively. Then, $\llbracket [\alpha \ \beta] \rrbracket = \lambda e. \exists x [\llbracket \alpha \rrbracket(x)(e) \ \& \ \llbracket \beta \rrbracket(x)]$

Now let's examine how SENs of clause-taking predicates are formed. Recall that SENs are formed by closing off the object argument (here the 'propositional' x_p argument). This produces a property of events. Where does the CP then attach? The only place it can attach is where the internal argument slot is still open — before that gets closed off by \exists . It must combine with the root by *Restrict*:

(70) SEN with CP

nP: $\lambda e v_p . \exists x [\text{explain}(x_p)(e) \ \& \ \text{the content of which } x_p \text{ is that Fred left }]$



This whole nP describes an event of explaining something, which is (the content of which is) that Fred left. The whole nP denotes an event of doing this. And this is what we want. As we saw, clause-taking predicates can form SENs with CP complement (repeated from (39)):

- (71) a. Paul's explanation that he was in trouble was long/lasted all day.
 b. Sue's demonstration that she was innocent took way too long.

These SENs can no more be modified by aktionsart PPs than the SENs we examined in §2.

What's particularly instructive about (70) and (71) is that the root makes the individual argument (x_p) available to the CP via *Restrict*, but the nominalization is an event nominal. And because of this I can now finally make my case against Blob Theory. If SENs are, as they are shown here in (70), 'root' nominalizations, and if CPs combine by *Restrict*, then the root must be a piece of language with the kinds of truth-conditional meanings that the compositional semantics trades in.

Clause-taking predicates are unique in letting us see this because CPs can *Restrict* their argument positions. Other arguments, like DPs and PPs, can only saturate, so they can't combine with SENs. Further, CP arguments are different from CP relatives and adjectives in this respect as well. A garden-variety adjective or headed relative clause must combine with an NP that saturates an argument position: John ate the cake that Mary baked/*John ate that Mary baked. That's why we would never know with non-CP arguments whether there was an internal argument slot hanging around inside SEN roots. But there are such 'slots', which

means that roots are more than just polysemous blobs of content.

4 Event-less roots

The claim has been that *some* roots must specify an internal and an event argument. This doesn't necessarily mean that *all* roots that form verbs have event arguments. There is another class of clause-taking predicates that never forms an event nominal. These include zero-derived clause-taking predicates:

- (72) a. *The claim that John was guilty was long.
b. *The belief that pigs fly occurred for a long time.

Not only do these predicates not form SENs, the way they form RNs can't be the same as, say, *explanation*. The reason is that there is no entailment that there is an event at all in (73):

- (73) The claim that pigs fly is a claim that no one has or would make.

If we gave nominal *claim* the same kind of derivation that we gave RN *explanation* (see (69)) it would commit us to the following meaning:

- (74) *claim* = the set of things x_p such that **there was an event of claiming** x_p and the content of x_p is that pigs fly.

But (73) does not entail there was such an event. Claims are like ideas and proposals: no event of claiming, formulating or proposing them needs to have happened.

Event control also diagnoses that there is no event argument hanging around in these nominalizations. Event nominals allow an implicit event to be picked up by a controlled PRO (Grimshaw 1990):

- (75) a. The translation of the book (in order) to make it available to a wider readership.
b. The assignment of hard problems (in order) to challenge students is encouraged.

Unambiguous RNs do not allow event control:

- (76) a. *The translations of the book in order to make it available to a wider readership
b. *The assignment to fix the sink in order to challenge students is encouraged.

Zero-derived nominalizations of clause-taking verbs do not allow event control either:

- (77) a. *The claim that there is a problem in order to scare everyone.
 b. Claiming that there is a problem in order to scare everyone.

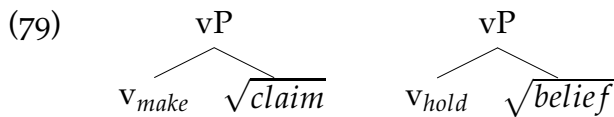
If there were any event (existentially quantified or otherwise) hanging about here, we would expect it to allow for implicit control.

Here then we may have genuine evidence that a root is highly underspecified. Suppose the roots of *claim* and *belief* have just common noun meanings: a *claim* is like a *idea*, it describes some **thing** with propositional content. Crucially, there is no event described by these roots. They're type $\langle e,t \rangle$.

- (78) a. $\llbracket \sqrt{\text{claim}} \rrbracket = \lambda x_p. \text{claim}(x_p): \langle e,t \rangle$
 b. $\llbracket \sqrt{\text{belief}} \rrbracket = \lambda x_p. \text{belief}(x_p): \langle e,t \rangle$
 c. $\llbracket \sqrt{\text{idea}} \rrbracket = \lambda x_p. \text{idea}(x_p): \langle e,t \rangle$

These combine with CPs by Predicate Modification.

This leads to the immediate consequence that the verbal *believe* and *claim* must involve the addition of verbalizing morphology, and these verbalizers introduce an event argument.¹⁰



These little *v*'s will have denotations, which I omit here (they will select for common noun meanings). What prevents these structures from forming complex event nominalizations? Here we must appeal to Myer's generalization, which blocks various kinds of derivational operations after zero derivation.

- (80) Myers's Generalization (Pesetsky 1995: 75(223))
 Zero-derived words do not permit the affixation of further derivational morphemes. (see Myers (1984))

Pesetsky argued for Myer's generalization from psych predicates. Object Experiencer Psych-Verbs have a causative semantics (Pesetsky 1995).

- (81) Object Experience Psych-verbs
 a. The exam agitated Bill.
 b. His looks embarrassed John.
 c. We annoyed Mary.

Pesetsky argued that these involved a null causative head:

(82) $v_{\text{CAUS}} + \sqrt{\text{ExpPredicate}}$

¹⁰A review asks whether there is historical evidence that the noun form is more basic. As far as I know, this is not the case.

But the nominalizations of these psych-predicates does not have this causative semantics:

- (83) a. *The exam's continual agitation of Bill.
b. *His look's constant embarrassment of John was unnecessary
c. *Our constant annoyance of Mary got on her nerves.
(Pesetsky 1995: 74(208))

Nominalizations of psych-verbs just describe a psych-state

- (84) a. Bill's continual agitation about the exam was silly.
b. John's constant embarrassment about his looks was unnecessary.
c. Mary's constant annoyance at/about/with us got on our nerves.
(Pesetsky 1995: 72(199))
- (85) Myers's Generalization applied to Causativization
a. [n [$\sqrt{ExpPredicate}$]]
b. *[n [v_{CAUS} + $\sqrt{ExpPredicate}$]]
(adapted from Pesetsky 1995: 74(207))

We can now apply the same reasoning to why *claim* and *belief* never form CENs. Myers's Generalization rules out forming an event nominal—complex or otherwise—from *claim/belief*. Because $v_{make/hold}$ is null it blocks further derivation by *n*.

If unergatives have a similar analysis (Hale and Keyser 2002), then the same reasoning would apply in ruling out CENs of such verbs. I think this is a correct prediction; nominalizations of unergative roots cannot take aktionsart modifiers.

- (86) a. *John's jump for three minutes.
b. *Sue's dance for hours.

What I have hoped to show in this section is that some clause-taking roots are deficient in lacking an event argument. But this just goes to show that roots have formal properties, and can be differentiated.

5 Conclusion

The first half of this paper identified a type of nominalization, SENs, which denote the same eventuality as their (counterpart) verbs and CENs, but nonetheless lacked two important things: argument structure and the ability to be modified by aktionsart PPs. Nonetheless, SENs can combine with event modifiers like *frequent/constant*. As such, derived SENs are clear counterexamples to theories like Grimshaw's where argument structure is tied to events.

I then offered a way of understanding the difference between CENs, SENs, and RNs. The main main implication was that SENs are root nominalizations. This

further entailed that root nominalizations have the ‘resources’ to denote events.

I then went on to examine clause-taking nominalizations. I showed that CPs don’t saturate nouns, but rather restrict them. We learned this because of the absence of clause-taking CENs. But CPs can restrict clause-taking SENs, and the only way to do this is to let them compose with the root. And that means that a root must have meanings of the sort compositional semantics trades in. Lastly, I argued that we need to differentiate among roots ($\sqrt{\textit{belief}}$ vs. $\sqrt{\textit{explain}}$), in a way that also calls upon giving roots meanings that feed directly into the compositional semantics.

Of course, it is purported that Blob Theory is good at explaining the kinds of idiosyncrasies we find with RNs, which refer to an unpredictable (so far as I know) grab bag of things. So for instance, *translation* can be an RN, but it describes neither the verb’s internal argument nor a result state, but rather a resulting *thing*. I don’t know how that meaning can be sourced from a root meaning by standard compositional mechanisms. Moreover, I can’t explain why *destruction* only forms an RN that denotes a result state, not an RN that denotes a thing destroyed:

- (87) a. The destruction was widespread.
b. *The destruction was a building over there.

Maybe $\sqrt{\textit{destroy}}$ doesn’t have an internal argument (perhaps some internal arguments *are* severed), but rather it describes a state of destruction (Harley 2009). But does Blob theory explain why the RN *destruction* means one thing and not the other, either? In fact, I worry that Blob Theory suggests we don’t even try to figure it out: who knows what’s in the blob? That may turn out to be true, but it’s not the best methodology. We may discover something if we attack the blob.

References

- Ackema, Peter, and Ad Neeleman. 2004. *Beyond Morphology: interface conditions on word formation*. Oxford University Press.
- Alexiadou, Artemis. 2001. *Functional Structure in Nominals*. John Benjamins.
- Alexiadou, Artemis. 2009. On the role of syntactic locality in morphological processes. In *Quantification, Definiteness, and Nominalization*, ed. Anastasia Giannakidou and Monika Rathert. Oxford University Press.
- Arsenijevic, Boban. 2009. Clausal complementation as relativization. *Lingua* 119:39–50.
- Bach, Emmon. 1986. The Algebra of Events. *Linguistics and Philosophy* 9:5–16.
- Borer, Hagit. 2003. The forming, formation and the form of nominals. Ms, USC.
- Borer, Hagit. 2005. *The normal course of events. structuring sense*, volume II. Oxford University Press.

- Caponigro, Ivano, and Maria Polinsky. 2011. Relative embeddings: a Circassian puzzle for the syntax/semantics interface. *Natural Language and Linguistic Theory* 29:71–122.
- Chomsky, Noam. 1995. *The minimalist program*. Cambridge, Massachusetts: MIT Press.
- Chung, Sandra, and William A. Ladusaw. 2004. *Restriction and saturation*. MIT Press.
- Dowty, David R. 1979. *Word meaning and Montague grammar*, volume 7. Dordrecht, The Netherlands: Kluwer Academic Publishers.
- Fu, Jingqi, Tom Roeper, and Hagit Borer. 2001. The VP within process nominals: evidence from adverbs and the VP anaphor *do so*. *Natural Language and Linguistic Theory* 19:549–582.
- Grimshaw, Jane. 1990. *Argument structure*. Cambridge, Massachusetts: MIT Press.
- Hale, Ken, and Samuel Jay Keyser. 2002. *Prolegomenon to a theory of argument structure*. Cambridge, Massachusetts: MIT Press.
- Harley, Heidi. 2009. The morphology of nominalizations and the syntax of vP. In *Quantification, Definiteness, and Nominalization*, ed. Anastasia Giannakidou and Monika Rathert. Oxford University Press.
- Heim, Irene, and Angelika Kratzer. 1998. *Semantics in generative grammar*. Malden, MA: Blackwell.
- Higgins, F. R. 1972. The pseudocleft construction in English. Doctoral Dissertation, Massachusetts Institute of Technology.
- Kayne, Richard S. 2009. Antisymmetry and the lexicon. *Linguistic Variation Yearbook* 8:1–31.
- Kratzer, Angelika. 1996. Severing the external argument from its verb. In *Phrase structure and the lexicon*, ed. Johan Rooryck and Laurie Zaring, 109–137. Dordrecht, The Netherlands: Kluwer Academic Publishers.
- Kratzer, Angelika. 2002. The Event Argument. Ms, UMass Amherst.
- Kratzer, Angelika. 2004. Telicity and the meaning of objective case. In *The syntax of tense*, ed. Jacqueline Gueron and Jacqueline Lecarme, 398–423. MIT Press.
- Kratzer, Angelika. 2006. Decomposing attitude verbs. Talk given at The Hebrew University of Jerusalem, July 2006.
- Lebeaux, David. 1986. The Interpretation of Derived Nominals. In *Proceedings of Chicago Linguistics Society*, ed. Anne M. Farley, Peter T. Farley, and Karl-Erik McCullough, volume 22, 231–247. Chicago Linguistics Society.
- Marantz, Alec. 1984. *On the nature of grammatical relations*. Cambridge, Massachusetts: MIT Press.

- Marantz, Alec. 1997. No escape from syntax: Don't try morphological analysis in the privacy of your own lexicon. In *University of Pennsylvania working papers in linguistics vol. 4.2*, ed. Alexis Dimitriadis, Laura Siegel, Clarissa Surek-Clark, and Alexander Williams, 201–225. University of Pennsylvania.
- Marantz, Alec. 2001. Words. WCCFL XX Handout, USC.
- Mathieu, Eric. to appear. Nominalizations in Ojibwe. In *Tba*, ed. Ileana Paul. John Benjamins.
- Moulton, Keir. 2009. Natural selection and the syntax of clausal complementation. Doctoral Dissertation, Doctoral Dissertation, University of Massachusetts, Amherst.
- Moulton, Keir. 2013a. Clausal Complement Connectivity. *Syntax* 16.
- Moulton, Keir. 2013b. CPs: copies and compositionality. Ms. SFU (under submission).
- Myers, Scott. 1984. Zero-derivation and inflection. In *MIT Working Papers in Linguistics*, volume 7.
- Ogawa, Yoshiki. 2001. *A unified theory of verbal and nominal projections*. Oxford University Press.
- Parsons, Terence. 1990. Events in the semantics of English: A study in subatomic semantics. In *Current studies in linguistics series no. 19*, 334. Cambridge, Massachusetts: MIT Press.
- Pesetsky, David. 1995. *Zero syntax*. Cambridge, Massachusetts: MIT Press.
- Pesetsky, David, and Esther Torrego. 2002. Tense, case, and the nature of syntactic categories. In *The syntax of time*, ed. J. Lecarme and J. Geuron. MIT Press.
- Potts, Christopher. 2002. The lexical semantics of parenthetical-*as* and appositive-*which*. *Syntax* 5:55–88.
- Ramchand, Gillian Catriona. 2008. *Verb meaning and the lexicon*. Cambridge Studies in Linguistics. Cambridge, United Kingdom: Cambridge University Press.
- Rothstein, Susan. 2004. *Structuring events*. Blackwell Publishing.
- Salanova, Andrés P. 2010. Action nominalizations do not embed verbal projections. Handout of talk presented at McGill, January 2010.
- Stowell, Timothy. 1981. Origins of phrase structure. Doctoral Dissertation, Massachusetts Institute of Technology.
- Travis, Lisa deMena. 2010. *Inner aspect*. New York: Springer.
- Travis, Lisa deMena, Ranaivoson Jeannot-Fils, and Jean Lewis Botouhely. 2013. Malagasy fact- and claim-type nominals: an exploration. In *Tba*, ed. Ileana Paul. John Benjamins.
- Vendler, Zeno. 1967. *Linguistics in philosophy*. Ithaca: Cornell University Press.

Zucchi, Alessandro. 1989. The language of propositions and events. Doctoral Dissertation, University of Massachusetts at Amherst, Amherst.