

## Can we put event nominals to rest? (Semantics)

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The verb **put** has a use that can be characterized roughly as a causative light verb, illustrated in (1).

- (1) a. Your gift is urgently needed and will be *put* to immediate use.
- b. The concept of a landing at Inchon was certainly strategically appealing, and was the germ of the operation which in September would *put* the enemy to ignominious flight.
- c. A gentle tap on the windowpane *put* them to sudden flight.
- d. The old classic Hanna-Barbera cartoons *put* me right to sleep.

The basic syntactic frame of **put** is X put Y to Z, and a simple paraphrase is ‘X acts on Y such that Y becomes a participant in the event Z.’ I will call Y the **pivot** and Z the **secondary predicate** (SP). Possible SPs include *motion, order, power, practice, print, use, work, sleep, death, judgement, rebuke, shame*. These are just the possibilities for a bare noun SP. Full NPs include (a) *vote*, (a) *choice*, and (a/an) *end/halt/stop*. Observation of the sorts of semantic interpretations of this construction yields two generalizations:

- (2) The subject of **put** is construed as the Agent of the SP, or at least as closely related to the Agent of the SP—but only for the transitive nouns (i.e., those denoting events with an Agent and a Patient/Theme).
- (3) With the exception of *choice*, transitive SPs appear with Patient/Theme pivots, not Agent pivots. The intransitive nouns (those with only Agent or only Patient) appear with their single argument as pivot. There is no co-construal with **put**’s Agent.

Further consideration of the data should convince us that the SP is in fact a noun. The adjectives *immediate, ignominious, and sudden*, as well as the preposition-modifying *right* guarantee that the SP is a noun. There is always the possibility that it is at base a verb, which is later nominalized (as the gerunds analyzed in Kratzer 1996), but there is no syntactic evidence I am aware of that bears on the distinction, so I simplify and assume that the SP is an N at base.

Given that the SP is an N, the next question to consider is whether or not it has argument structure or not. Grimshaw (1990) argues that English nouns that denote complex events have a full argument structure, just like verbs. The argument structure, a linking between some rich semantic representation and syntactic projection or c-selection, roughly corresponds to the denotation of the verb in some direct interpretation models (e.g., Heim & Kratzer 1998): the argument structure of the verb in conceptions like Grimshaw’s is accounted for by the denotation of the verb. I will generally be assuming that the denotation of predicates (and possibly some deeper semantic/conceptual representation) is sufficient to account for their combinatorial possibilities.

Grimshaw (1990) gives several tests for determining whether some nominal denotes a complex event, such as whether it can appear (in some readings) without complements, whether it is compatible with Agent-oriented modifiers, and whether it can participate in event control. Generally her tests show that at least *some* of SPs are indeed complex. Certainly *flight*, *rebuke*, and *use* are (4–5). However, *sleep*, *bed*, and *print* are not (6).

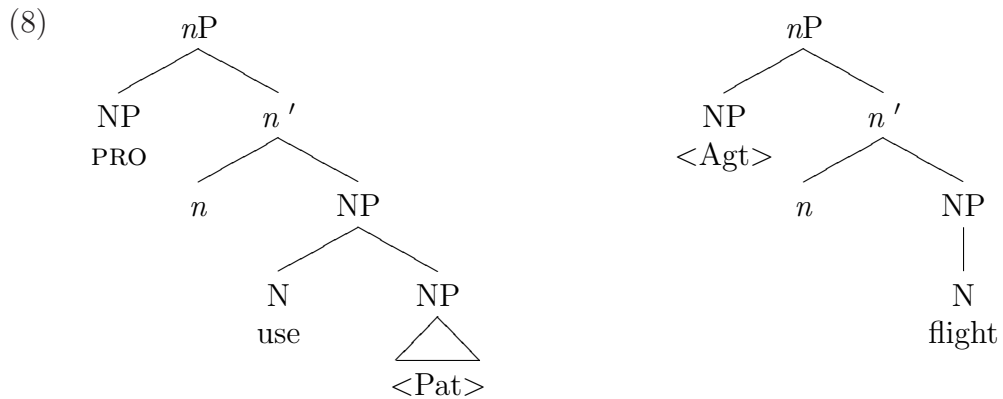
- (4) a. His skillful use \*(of the complex machinery) was amazing.
- b. I was astounded by his flight ?(from the enemy) so soon.
- (5) a. {The / Her} {constant / intentional} use \*(of ICT implants) in order to obtain remote control over the will of people should be strictly prohibited.
- b. Taking into account Scott’s intentional flight \*?(from the crime scene), the face to face informant, [...].
- (6) a. \*The president’s sleep/bed in order to refresh himself was interrupted.
- b. \*The drone of the construction put him to deep/long sleep/bed.

Further tests developed by Davies & Dubinsky (2003), however, would seem to show that some of these seemingly-complex SPs are in fact not complex nominals, but simply result nominals. I will not replicate the tests here, but suffice it to say that it is not clear if any of the SPs under consideration *must* be complex event-denoting, and certainly some clearly are not. It thus seems safe to assume that what we are dealing with are non-complex event-denoting nouns (though, contra Grimshaw, these are not result nominals, nor would I consider them to denote “cases” or “instances” of events (55), in particularity because they do not appear with the indefinite article). Positing another category of nominal allows us to escape the problem of the limited complementation of the SP (i.e., no material can come after it, except for phrasal/sentential adjuncts).

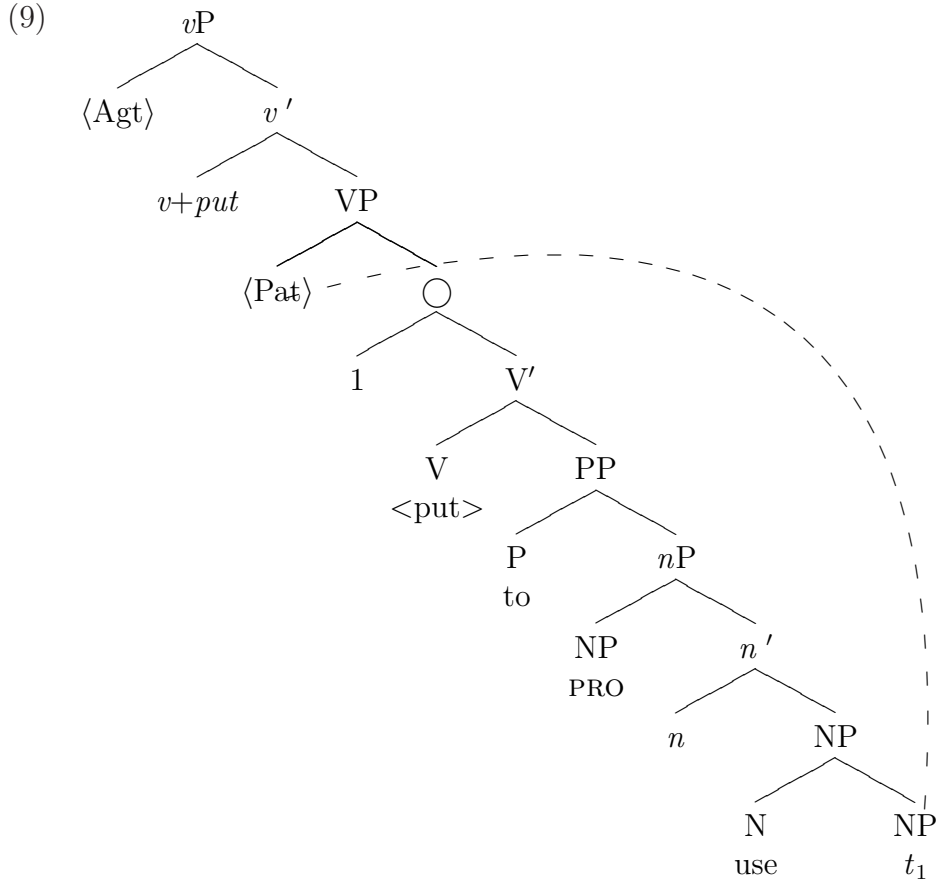
This limits the possibilities for representation. Following Kratzer’s (1996) argumentation, we may wish to distinguish between the external/Agent argument and internal/Patient argument by appealing to a deep structural difference; namely, limiting the denotation of the

SP to only make reference to its internal argument(s), and introduce the external argument with a separate (silent) lexical head. Given a denotation of SPs like those in (7), a simple choice for argument combination is to have the Patient argument Merge directly with the SP, which projects an NP. The basic difference between Agent-taking and Patient-taking SPs would then be captured in structures in (8).

- (7) a.  $\llbracket \text{use} \rrbracket = \lambda x \lambda e [\mathbf{use}(x)(e)]$   
 b.  $\llbracket \text{flight} \rrbracket = \lambda e [\mathbf{flight}(e)]$



The  $PRO$  is present in the transitive case because the Agent must be co-construed with the Agent of *put*. The rest of the derivation (for a transitive-noun type) is shown in (9) (the  $\langle \rangle$  brackets indicate place-holders for actual lexical material inserted in the derivation):



Some perhaps undesirable stipulations must be made in the syntax to get this derivation: the mechanism for Agent co-construal is a possibly unmotivated PRO, which actually is c-commanded by multiple R-expressions, but gets its reference from the further one. Second, there is some arbitrary-seeming movement, from two different structural positions depending on the type of SP (for *flight*, the NP in [Spec,*nP*] would have moved instead of the sister to the SP). However, there are some advantages: for one, this looks similar to the structure of literal *put*, which is ideal if we consider this use a metaphoric extension; for another, all arguments are present in the derivation, and straightforwardly Merged with their functors.

A semantic derivation proceeds as in (11), given the additional denotations in (10).

- (10)
- a.  $\llbracket n \rrbracket = \llbracket v \rrbracket = \lambda x \lambda e [\mathbf{Agent}(x)(e)]$
  - b.  $\llbracket \text{put} \rrbracket = \lambda P_{\langle st \rangle} \lambda e_i \exists e_k [\mathbf{action}(e_i) \ \& \ \mathbf{action}(e_k) \ \& \ P(s) \ \& \ \mathbf{cause}(e_i)(e_k)]$  (cf. “cause” in Kratzer to appear)
  - c.  $\llbracket \text{to} \rrbracket = \lambda f[f]$  (i.e., semantically vacuous)
- (11)
- a.  $\llbracket \text{use} \rrbracket(t_1) = (\text{FA})$
  - b.  $\lambda e [\text{use}(t_1)(e)] = (\text{Event Identification with } n)$
  - c.  $\lambda x \lambda e [\mathbf{Agent}(x)(e) \ \& \ \mathbf{use}(t_1)(e)] = (\text{FA with PRO as argument})$

- d.  $\lambda e[\mathbf{Agent}(\text{PRO})(e) \ \& \ \mathbf{use}(t_1)(e)] =$ (by FA with semantically vacuous *to*, and FA with *put* as functor)
- e.  $\lambda e_i \exists e_k[\mathbf{action}(e_i) \ \& \ \mathbf{action}(e_k) \ \& \ \mathbf{Agent}(\text{PRO})(e_k) \ \& \ \mathbf{use}(t_1)(e_k) \ \& \ \mathbf{cause}(e_i)(e_k)] =$   
(Predicate Abstraction, simplify by removing **action** statements)
- f.  $\lambda y. \llbracket \lambda e_i \exists e_k[\mathbf{Agent}(\text{PRO})(e_k) \ \& \ \mathbf{use}(t_1)(e_k) \ \& \ \mathbf{cause}(e_i)(e_k)] \rrbracket^{[t \rightarrow y]} =$ (traces rule)
- g.  $\lambda y. \lambda e_i \exists e_k[\mathbf{Agent}(\text{PRO})(e_k) \ \& \ \mathbf{use}(y)(e_k) \ \& \ \mathbf{cause}(e_i)(e_k)] =$ (FA with  $\langle \text{Pat} \rangle$  as argument)
- h.  $\lambda e_i \exists e_k[\mathbf{Agent}(\text{PRO})(e_k) \ \& \ \mathbf{use}(\langle \text{Pat} \rangle)(e_k) \ \& \ \mathbf{cause}(e_i)(e_k)] =$ (EI with *v*)
- i.  $\lambda z \lambda e_i \exists e_k[\mathbf{Agent}(z)(e_i) \ \& \ \mathbf{Agent}(\text{PRO})(e_k) \ \& \ \mathbf{use}(\langle \text{Pat} \rangle)(e_k) \ \& \ \mathbf{cause}(e_i)(e_k)] =$ (FA with  $\langle \text{Agt} \rangle$  as argument)
- j.  $\lambda e_i \exists e_k[\mathbf{Agent}(\langle \text{Agt} \rangle)(e_i) \ \& \ \mathbf{Agent}(\text{PRO})(e_k) \ \& \ \mathbf{use}(\langle \text{Pat} \rangle)(e_k) \ \& \ \mathbf{cause}(e_i)(e_k)]$

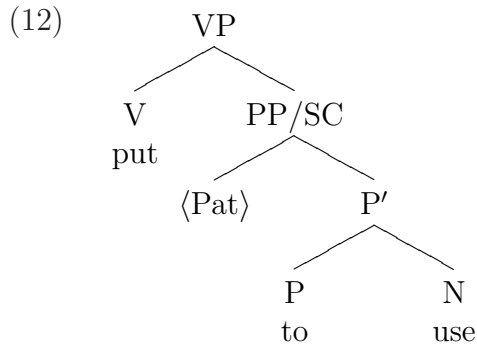
The resulting function takes an event  $e_i$  and returns truth if there is some event  $e_k$  such that *Agt* is the agent of  $e_i$ , *PRO* is the agent of  $e_k$ , *Pat* is the patient argument of a using event ( $e_k$ ), and  $e_i$  causes the using event. The derivation with an unergative SP is basically the same, except there will be no Patient argument, and no movement (and thus no trace). For an unaccusative SP there will be an internal argument, and movement, but *n* will not be present. Of course, for the transitive cases there needs to be some mechanism to identify *PRO* with *Agt*, and the exact nature of **cause** needs to be fully worked out.

The situation is made more complicated by the lexical semantics of the SPs. For instance, consider *put X to rebuke*. This is basically another way of saying *rebuke X*. Most intransitive SPs and some transitive SPs have this basic paraphrase relationship. Compare this with *put X to use*, which is not a simple paraphrase of *use X*. It means something more like ‘somehow get someone to use X, this usage yielding positive results.’ The question is whether the difference is to be arrived at by having a different predicate **cause** (and thus a different lexical item **put**), or with the lexical semantics of **use**. The latter seems more likely, given other uses of **use**, like *We got no good use out of it*. There is thus no direct parallel between the verb **use** and the SP **use**, but the latter can be shown to have an independent existence.

Thus **cause** can be roughly characterized as a relationship between two events, such that (the occurrence of) the first event causes (the occurrence of) the second. This may be a misguided view of causation, given that *I put him to rebuke/sleep/bed* may not generally be considered to have two separate events. Then again, it may be that even the semantics of literal *put* has multiple events—an action of the putter and the motion of the theme, rather than just an action and a resultant state. Further research must be done to resolve this question for the current construction.

In fact, there is another analysis for the “light” use of **put**: namely, that it takes a single argument, a small clause with a preposition head. This somewhat reflects an intuition that

*put* truly is light verb-like in its *structure*, taking a single argument that denotes some eventuality. The structure would be as follows:



The exact same denotations given earlier are compatible with this structure, except for the SP. Indeed the SP poses a particular problem because there seems to be no way to introduce the external argument for unergative and transitive SPs. The correct semantic interpretation can be accomplished by appealing to the process that creates these nominals. First, we must make two assumptions: in the background of all denoted events in an utterance, there is a rich semantic representation of the event, complete with information about Agents, Patients, and so on. Second, these semantic roles are arranged in a hierarchy, with Agents above Patients above Locations, and so on. Given these two representations, we can (again) assume that the denotations of SPs are generated in the lexicon by mapping the single lowest-ranked argument to the single argument of the SP. The denotation of the SP *rebuke* and *work* would then be:

- (13) a.  $\llbracket \text{rebuke} \rrbracket = \lambda x \lambda e [\text{rebuke}_{\text{patient}}(x)(e)]$   
 b.  $\llbracket \text{work} \rrbracket = \lambda x \lambda e [\text{work}_{\text{agent}}(x)(e)]$

The denotation of *rebuke* is basically the same as it would be for the first analysis, but the denotation of *work* is quite different: it takes an argument interpreted as the Agent of the working event, rather than just an event variable.

The major issue is the derivation of the co-construal of the Agent of *put* and the Agent of the lower SP, where it exists. This can be done by means of inference: in the deep semantic representation there is an unmapped, unrealized Agent of the SP. It can be fulfilled by searching for an appropriate element in the sentence: the Agent of *put* is a likely choice. However, this can be overridden if some extra material is provided. For those people for whom adjectival modification of the SP is possible, as in *put X to student use*, if the semantics contributed by *student* is compatible with the Agent role, then it will be construed as such. A possible denotation of such a modifier is given in (14).

- (14)  $\lambda x \lambda e [\text{rel}(\text{Student})(x)]$

This would combine with an SP by predicate modification, essentially adding the restriction that the predicate be somehow related to France (metonymy will derive possible interpretations of entities or organizations that could be associated with France, including those that could be construed as Agents).

Given that the analyses presented up to now correctly account for the semantics of this construction, not much seems to distinguish the two as far as their ability to account for its form and meaning. However, if we look at more instances of “causative *put*,” we see that some arguments can be made for the non-small clause analysis. Consider the following sentences:

- (15) a. The commander put me in control of the brigade.  
b. Smoking at home puts your children’s health at risk.  
c. His advisor likes putting him under heavy pressure.

Here *put* has essentially the same semantics as it did in the other sentences with preposition *to*. However, note that the pivot and SP can combine with the copula in a way that they cannot with the original construction:

- (16) a. I am in control of the brigade.  
b. Your children are at risk.  
c. He is under heavy pressure.  
d. \*The computer is to use.  
e. \*My children are to sleep.

A small clause analysis for *these* SPs in the *put* construction seems to be very appropriate, given that the pivot and SC can combine as a small clause independently of the construction (assuming that the copular sentences involve *be* taking an SC). Where the preposition is *to*, which is presumably selected for by the SC, no small clause is possible.

There may be several reasons for this, most likely of which is the anti-stativity of *to*. For instance, other directional prepositions like *over* and *towards* permit a use where they denote a relationship between an entity and a location, rather than an entity and a direction: *I walked/live over the hill, I moved/live towards the center of the city*. *To* has no such use: *\*I live to the center of the city*. It seems odd to allow such a small clause when it is an argument to *put* but not in other cases.

Of course, the concept of *put* taking a single argument is itself an odd situation. There is no way to combine *put* with a predicate that denotes the result of something that has been caused: *\*I put (a/the) happiness/enjoyment/sleep/work/use*. If each of these nominals denotes a set of events, as I am assuming the SC does, then there is no reason to expect them (i.e., *happiness*, etc.) to be incompatible with event-denoting single-lexeme predicates.

I thus tentatively propose that the string *put X to Y* has a structure like that in (9), while a string *put X [prep≠‘to’] Y* has the structure in (12). The semantics works out either way, but independently-existing small clauses are preserved (despite the oddity of single-argument *put*) and independently non-existent small clauses are, expectedly, non-existent.

Both proposals put forward have some obvious deficiencies. This is likely due to the oddity of the construction itself, which seems to have the semantics of a causative light verb, but the syntax of a typical ditransitive verb. However, examining the various possibilities of representation open up questions like the proper denotations of event-denoting nominals, and their similarity to related verbs. If the small clause analysis is correct, and there is a deep semantic representation that ignores the internal/external argument distinction, this may argue against such a separation in the denotations of event-denoting nouns. Before more conclusive statements can be made further data must be considered in more detail, including the semantics of other causative predicates and light verbs in English, and the relationship between metaphoric extensions and syntactic form.

## References

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