

English prepositional passive constructions

An empirical overview of the properties of English prepositional passives is presented, followed by a discussion of formal approaches to the analysis of the various types of prepositional passives in HPSG. While a lexical treatment is available, the significant number of technical and conceptual difficulties encountered point to an alternative approach relying on constructional constraints.

1 Syntactic and non-syntactic constraints

In addition to the ordinary passive alternation involving transitive verbs (1a), English allows “prepositional passives” (sometimes referred to as “pseudopassives”), where the subject in the passive structure corresponds to the object of a preposition in the related active structure (1b–c).

- (1) a. Kim planted the tree. \rightsquigarrow The tree was planted by Kim.
- b. Kim looked after the tree. \rightsquigarrow The tree was looked after by Kim.
- c. Kim sat under the tree. \rightsquigarrow The tree was sat under by Kim.

As noted by Huddleston and Pullum (2002, p. 1433), prepositional passives can be divided into two classes, depending on the syntactic function of the PP. In Type I prepositional passives, the PP is a complement whose prepositional head is idiomatically selected by the verb, as in (1b); in Type II prepositional passives as in (1c), the preposition is not part of a verbal idiom. Huddleston and Pullum, suggest that the availability of Type I prepositional passives is ultimately an idiosyncratic lexical property that must be indicated in the dictionary entries of verbal idioms (although this is rarely the case). Type II passives, on the other hand are subject to primarily pragmatic constraints.

The linguistic literature on prepositional passives confirms this basic description, while offering a more complex picture of the kinds of constraints involved. It is clear that the prepositional passive is much more restricted than the ordinary passive, which applies quite systematically to all transitive verbs, with a handful of lexical exceptions. Whether a given verb + PP combination will give rise to an acceptable prepositional passive depends on various, poorly understood syntactic, semantic, and pragmatic factors. Context, usage and frequency effects, and lexical idiosyncrasies also play a crucial role. Previous accounts of the phenomenon rely on notions like “affectedness” or “role prominence” of the passive subject (Riddle and Sheintuch, 1983; Bolinger, 1977, 1978). These proposals are intuitively appealing, but it remains unclear how they can be satisfactorily formalized.

Many authors argue that a high degree of “cohesion” between the verb and the “stranded” preposition is a necessary condition for the well-formedness of the prepositional passive. One version of this approach suggests that V and P are in fact reanalyzed as a complex predicate (e.g., Hornstein and Weinberg, 1981). The fact that V and P typically appear immediately adjacent to one another is taken as evidence for reanalysis. The well-known exception that certain idiomatic direct objects can intervene between V and P in the prepositional passive (2) is not necessarily problematic, nor are the examples of phrasal verbs in (3).

- (2) Kim made a fool of / kept tabs on Sandy. \rightsquigarrow Sandy was made a fool of / kept tabs on.
- (3) Kim put up with / looked down on / got rid of Sandy. \rightsquigarrow Sandy was put up with / looked down on / gotten rid of.

The possibility of other kinds of intervening elements, however, does call the reanalysis hypothesis into question. Some marginally acceptable examples of non-idiomatic direct objects can be found in the literature (4), and modifiers and specifiers can also appear between V and P with varying degrees of acceptability (5):¹

- (4) a. ?To be whispered such dirty innuendoes about was enough to break any girl’s heart.
- b. ?This fork has been eaten spaghetti with.

¹Example (4a) is from Bolinger (1977). Example (4b) is from Davison (1980), who treats it as ungrammatical, while acknowledging that “at least one” informant accepts it (p. 49).

- c. ?I have never been knit a sweater for in my life.
- (5) The bridge was sailed right under / walked completely across.

The contrasts illustrated in (6) also shed some light on the nature of the relevant constraint:

- (6) a. This bed was once napped in by Charlemagne. / ??This bed was once taken a nap in by Charlemagne.
- b. This sofa was once sat on by Hadrian. / *This sofa was once had a seat on by Hadrian.

The highly cohesive light verb constructions *take a nap* and *have a seat* might be expected to allow reanalysis in the same way as (2) above, but the passive is in fact very bad, compared to the versions with single verb synonyms.

Examples like (2) and (4) show that there is no strict constraint against the appearance of a direct object in the prepositional passive, and that V and P are not required to be adjacent. In fact, if a direct object is involved, then it *must* intervene between V and P. Any attempt to extract or extrapose this NP results in total ungrammaticality:

- (7) a. *How much of a fool was Sandy made of?
- b. *I have never been knit for such an amazing technicolor dream sweater.

2 Lexical approaches to passivization

Early generative analyses treated the ordinary passive formally as a transformation applying to the complete syntactic structure of an active sentence. In non-transformational approaches, with richer lexical representations, the passive can be analyzed as a lexical process involving only the verb, and no actual syntactic structure. A verb whose basic (active) subcategorization frame is transitive can systematically give rise to a passive verb with the appropriate “demotion” and “promotion” of the (as yet unrealized) subject and object. In HPSG, there are several ways of implementing this idea, the most familiar being the lexical rule approach.²

$$(8) \quad \left[\begin{array}{l} \text{HEAD} \quad \left[\text{VFORM} \quad \textit{base} \right] \\ \text{ARG-ST} \quad \langle \text{NP}_i, \text{NP}_j[\textit{acc}] \rangle \oplus \mathbb{1} \end{array} \right] \mapsto \left[\begin{array}{l} \text{PHON} \quad \langle \mathbb{2} \rangle \\ \text{MORPH} \quad \left[\text{PSP} \quad \mathbb{2} \right] \\ \text{HEAD} \quad \left[\text{VFORM} \quad \textit{passive} \right] \\ \text{ARG-ST} \quad \langle \text{NP}_j \rangle \oplus \mathbb{1} \oplus \langle (\text{PP}_i[\textit{by}]) \rangle \end{array} \right]$$

This (simplified) rule constructs a passive lexical entry, given a base verb that selects a direct object (accusative NP as second element of the ARGUMENT-STRUCTURE list). The output lexical entry has the appropriate morphophonological form (past participle), it is identified as *passive* (for external selection, e.g. by the passive auxiliaries *be*, *get*), and it has a new ARG-ST list with the original elements permuted just as required.

The rule in (8) does not mention the semantic content of the verb, which is therefore assumed to remain unchanged. The verbal relation in both *Kim likes Sandy* and *Sandy is liked by Kim* is $\text{like}(k, s)$. Only the syntactic configuration of the two arguments is different.

This kind of analysis has been standard in HPSG since Pollard and Sag (1987). It can be extended to Type I prepositional passives, in which the preposition is lexically selected by the verb (via PFORM selection).

²For an underspecification-based account of the passive alternation, see ?.

$$(9) \left[\begin{array}{l} \text{HEAD} \quad \left[\text{VFORM} \quad \textit{base} \right] \\ \text{ARG-ST} \quad \left\langle \text{NP}_i, \boxed{1} \left(\text{NP}[\textit{canon}] \right), \text{PP}_j[\boxed{2} \textit{pform}] \right\rangle \oplus \boxed{3} \end{array} \right]$$

$$\mapsto \left[\begin{array}{l} \text{PHON} \quad \langle \boxed{4} \rangle \\ \text{MORPH} \quad \left[\text{PSP} \quad \boxed{4} \right] \\ \text{HEAD} \quad \left[\text{VFORM} \quad \textit{passive} \right] \\ \text{ARG-ST} \quad \left\langle \text{NP}_j, \boxed{1}, \text{P} \left[\begin{array}{l} \text{PFORM} \quad \boxed{2} \\ \text{COMPS} \quad \langle \text{NP}_j \rangle \end{array} \right] \right\rangle \oplus \boxed{3} \oplus \langle (\text{PP}_i[\textit{by}]) \rangle \end{array} \right]$$

The construction of the passive ARG-ST list is more complicated in this case, because of the stranded preposition. Whereas the active verb selects a saturated PP argument, the passive verb selects a COMPS-unsaturated prepositional argument. The rule allows an intervening direct object, specified as *canonical* to account for the data in (2), (4), and (7).³

Like the original passive lexical rule (8), this rule assumes that the semantics of the verb remains unchanged. It should be noted that this analysis requires a further assumption that the preposition in Type I prepositional passives is semantically empty, cf. the treatment of “case-marking” prepositions in Pollard and Sag (1994). This makes the index of the prepositional object j visible on the verb’s ARG-ST list and available for semantic role assignment in the verbal relation. For example, *Kim looks after Sandy* (and its passive version *Sandy is looked after by Kim*) expresses a single semantic relation *look-after*(k, s), rather than some conjunction of a *look* relation and an *after* relation. This analysis seems correct for this example, but in general the possibility of a preposition being both syntactically selected via PFORM and contributing its own semantics cannot be excluded (Tseng, 2001), and such cases are potentially problematic for the rule in (9) (see below).

An undesirable consequence of adopting the case-marking analysis for syntactically selected prepositions is that the stranded preposition in the output of rule (9) still has nominal semantics, corresponding to the content of its unrealized complement. This means that it is subject to binding principles. Given the coindexation indicated in (9), we must conclude that the preposition is technically reflexive, by Principle A. Alternatively, the stranded preposition could be assigned an *expletive* index instead (no longer coreferent with the passive subject). Neither of these options appears to have any empirical motivation, since the preposition itself is not a nominal element.⁴

Turning now to Type II prepositional passives, where the preposition is not selected idiomatically by the verb, the lexical approach runs into problems. There are two cases to consider. If the PP is a complement (e.g., the directional complement of a verb of motion), then the prepositional passive involves a reconfiguration of the ARG-ST list along the same lines as (9), but complicated by the fact that the preposition is semantically contentful. In *Kim drove past the monument*, for example, there must be a *drive* relation and a *past* relation, and *the monument* does not receive a semantic role directly from the verb. Assuming the same semantics for the passive sentence *The monument was driven past by Kim*, we have a problem because the verb *driven* selects a referential subject, but assigns it no semantic role—a violation of the theta criterion, or in HPSG, the Raising Principle. A verb assigns no role to a referential argument if and only if this argument is inherited (raised) from another element on the verb’s ARG-ST list. To satisfy this principle, the lexical rule for Type II prepositional passives (involving complement PPs) must be formulated in terms of raising of the stranded preposition’s complement to passive subject position (that is, *synsem*-sharing rather than just coindexation, as in (9)).

A more unified analysis might be achieved by modifying (9) to analyze Type I prepositional passives as instances of raising as well, but this would technically violate the Raising Principle in a different way, because in Type I examples, the verb *does* assign a role to the passive subject. This NP does not receive

³The phrasal verb examples in (3) are not accommodated in this simplified formulation.

⁴A third possibility would be to treat the preposition as *intransitive*, like a phrasal verb particle, but this is problematic for forms like *of* and *for* that are never used intransitively elsewhere.

The other daughter of the construction is specified to be a COMPS-unsaturated prepositional projection (possibly including modifiers or a specifier) that modifies the verb. At the constructional level, the semantic indices of the verb's unrealized subject and of the preposition's unrealized complement are used to construct the valence requirements of the entire construction (note the value of VFORM). The resulting phrase is a passive VP that can appear in all passive contexts and be coordinated with other passive VPs (here, a Type I passive and an ordinary passive):

(11) The birthday cake was [sat on, set fire to, and thrown away] by Kim.

It is worth considering extending this constructional approach to the other types of prepositional passives, involving complement PPs, since the lexical treatment of those structures is not wholly unproblematic, and the common properties of all three types of prepositional passives studied in this paper can be captured with a small constructional hierarchy. The non-syntactic factors that determine the well-formedness of the prepositional passive (context, modality, pragmatic and stylistic effects) are also more appropriately accounted for at the constructional level than in the lexical entry of the verb. At the same time, of course, the constructional constraints can also be made sensitive to lexical properties.

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