

## A Compositional Variable-Free Passive

A comprehensive analysis of the passive construction must account for (i) the one-to-one correspondence of selectional restrictions between the active and the corresponding passive, (ii) the ability of predicate modifiers (i.e. VP adjuncts) to modify either the passive subject or the (covert) external argument (EA) (see 1), (iii) the free-ordering of the oblique EA with adjuncts (see 1) and (iv) the ability of the passive subject to bind an overt oblique EA, yet not a covert EA (see 2). Previous analyses of the passive voice have failed to account for all of these simultaneously.

I argue that the passive voice is best described using Variable Free Semantics (VFS), Jacobson (1999). With its Categorical Grammar syntax, VFS posits that predicates encode syntactically their pronominal arguments (i.e. verb+pronoun =  $VP^{NP} = (S/_L NP)^{NP}$ ). But semantically this verb+pronoun VP is still a two-place predicate,  $\lambda x_e[\lambda y_e[y \text{ verbs } x]]$ . I use a similar analysis for the passive voice to account for (i-iv) above. Additionally, my analysis is completely compositional, positing neither a separate LF representation nor A-bar reconstruction.

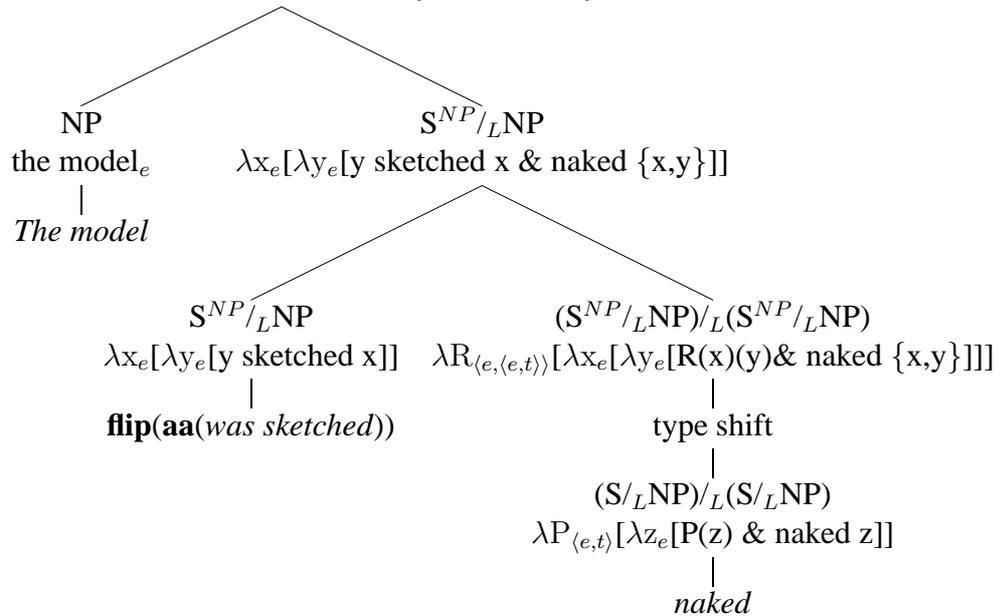
Passivization turns a category  $(S/_L NP)/_R NP$  into  $S^{NP}/_L NP$  through *argument absorption* (aa) and *flip*. AA absorbs the EA. I show that this rule is independently motivated for resumptive pronouns. *Flip* merely changes the function's directionality (from L to R). These rules have some welcome results. Syntactically, the EA is barred from directly combining with the predicate. It can only be realized as a VP adjunct (of an appropriate category). Semantically, the predicate is two-place. VP adjuncts can target either argument in passives. In actives, the object combines with the verb first and returns  $S/_L NP$ , a one-place predicate. Thus VP adjuncts can only modify the remaining (subject) argument in actives.

With this analysis of the passive, I posit a simple category for VP adjuncts,  $(VP/_L VP)$  (i.e.  $(S/_L NP)/_L (S/_L NP)$ ). These adjuncts must type shift to combine with passive verbs. Because the passive predicate is a two-place predicate, either argument can be modified. The sample derivation (see 3) encodes this ambiguity.

The lexical entry for passive *by* is provided (see 4). Passive *by* combines with its complement and returns a VP adjunct subcategorized for passive verbs (Grimshaw (1990) also analyzes *by* as an argument-adjunct). This adjunct specifies the EA of the passive verb. Unlike other VP adjuncts, passive *by* does not need to type shift in order to combine with a passive verb. Hence it is not ambiguous concerning which argument specifies. It is always the EA. The VP adjunct *by* “passes up” the EA, after combining with its complement and the passive verb. Thus the EA can be modified by another VP adjunct either to the left or right of the *by* phrase.

Returning to my first paragraph, my analysis derives the passive from the active, so the selectional restrictions are maintained (i). (ii-iii) were accounted for above. For (iv), Jacobson's binding rule *z* only targets categories  $(B/A)/A$ , where A and B are of any category. Thus the passive verb,  $S^{NP}/_L NP$ , is not of the right category for the binding rule (thus predicting half of (iv)). But adjuncts can be bound. After generalizing Jacobson's *z* rule to bind adjuncts, I illustrate how the adjunct *by* phrase is bound in the same manner as all adjuncts (thus predicting the other half of (iv)).

- (1) a. Kim kissed Sandy with enthusiasm.  
 b. Sandy was kissed (by Kim) with enthusiasm (by Kim)
- (2) a. \* Every boy<sub>i</sub> was kissed EA<sub>i</sub>.  
 b. Every boy<sub>i</sub> was kissed by himself<sub>i</sub>.
- (3) a. The model was sketched drunk.  
 b.  $S^{NP}$   
 $\lambda y_e[y \text{ sketched the model \& naked } \{ \text{the model, } y \}]$



- (4) Lexical entry for passive *by*  
 a.  $((S^{NP}/_L NP)/_L(S^{NP}/_L NP))/_R NP$   
 b.  $\lambda z_e[\lambda R_{(e,(e,t))}[\lambda x_e[\lambda y_e[R(x)(y) \& y=z]]]]$

## References

- Grimshaw, Jane. 1990. *Argument structure*. Cambridge, MA: MIT Press.
- Jacobson, Pauline. 1999. Towards a variable-free semantics. *Linguistics and Philosophy* 22:117–184.