1 Claim

- most previous analyses claim that by-phrases in passives get θ-roles they cannot elsewhere
- it is claimed that by-phrases are not special in passives
- they are blocked outside passives and in nominals for the same reason: the absence of an external argument

2 Empirical background

Contrasts of the type seen in (1) and (2) have been analyzed as indicating that the by-phrase in passives is able to receive certain θ-roles (e.g. receiver or experiencer) it cannot in nominals:

(1) a. The present was received by my mother-in-law
   b. The receipt of the present (*by my mother-in-law)

(2) a. Harry was feared by John
   b. *Harry’s fear by John

In the sentential domains, only passives can have a by-phrase, unaccusatives or “sporadic advancement” cannot:

(3) a. The ship sank (*by a saboteur)
   b. $5000 buys a lot of heroin (*by junkies)

Thus researchers are tempted to conclude that by-phrases have a special status in passives, i.e. that of getting any θ-role, whereas they are unable to assign one independently in e.g. unaccusatives and in nominals.

3 More facts

By-phrases pattern exactly the same as two other kinds of adjuncts, instrumentals and external-argument–oriented comitatives (unaccusative examples):

(4) a. *The ship sank with a torpedo
b. *The ship sank with a henchman

By-phrases with nominals like *receipt in fact do exist, whereas by-phrases
with nominals like *sight are universally banned:

(5) a. ... after the date of the receipt of the letter by the GDS (Google)

b. the sight of the damage (*by the investigators)

But synonyms of sight like perception do allow them:

(6) The perception of light by the patient

By hypothesis (following Grimshaw (1990)), sight is a result nominal (no
external argument), whereas perception is a complex event nominal (it has
an external argument), which allows for a by-phrase. Now, the threeway
pattern of by-phrase–instrumental–comitative can be tested with both kinds
of nominals:

(7) a. The perception of light with a photosensor

b. *The sight of blood with a microscope

(8) a. The bat’s perception of the sound with its hunting mates

b. *The sight of the crime scene with one’s assistant

Thus the hypothesis that what bans by-phrases in non-passive sentential
environments and in many nominals is the absence of an external argument
seems warranted.

4 The analysis

4.1 Active voice

To start with, external arguments need a Voice layer above VP; labels of
the form “[S:N]” are selectional features. (9) represents an active sentence:

(9) Voicelp
    ▼
   /   
   ▼   ▼
   NP   Voice’[S:N]
     /   /    
    /   /     
   /   /      
  the lobbyist Voice[S:V,S:N] VP
       /   /    
      /   /     
     /   /      
    v   NP     
     /   
    /     
   /      
   V      
     /   
    /     
   /      
  bribe[S:N] the senator
Semantic interpretation:

(10) a. \([\text{bribe}] = \lambda x. \lambda e. \text{bribing}(e, x)\)
b. \([\text{VP}] = \lambda e. \text{bribing}(e, \text{the senator})\)
c. \([\text{Voice}] = \lambda f_{<s,t>} \lambda x. \lambda e. f(e) \& \text{Initiator}(e, x)\)
d. \([\text{Voice}'] = \lambda x. \lambda e. \text{bribing}(e, \text{the senator}) \& \text{Initiator}(e, x)\)
e. \([\text{VoiceP}] = \lambda e. \text{bribing}(e, \text{the senator}) \& \text{Initiator}(e, \text{the lobbyist})\)

4.2 Passives

The passive involves a head Pass which disrupts the saturation of the \([S:N]\) feature of a Voice projection, i.e. Voice won’t have an external argument.

\[
\text{Pass} \quad \text{Pass}[S:\text{Voice}(S:N)] \quad \text{Voice}[S:N] \\
\text{Voice}[S:V,S:N] \quad V \\
V[S:N] \quad \text{N} \\
\text{bribe} \quad \text{the senator}
\]

Instead, Pass ensures that the external argument will be existentially bound (12), yielding (13):

(12) \([\text{Pass}] = \lambda f_{<e,s,t>} \lambda e. \exists x : f(x, e)\)
(13) \([\text{Pass}] (\text{highest projection}) = \lambda e. \exists x : \text{bribing}(e, \text{the senator}) \& \text{Initiator}(e, x)\)

Further important points:

- Movement of the object to the surface subject position is ignored here on crosslinguistic grounds
- Morphology is the result of Pass, Voice and V being spelled out as the past participle
- The semantics of the passive is seen as entirely independent of the auxiliary be, which can be dropped in reduced passives (Everyone bitten by a dog...)

\[3\]
4.3 Passives with by-phrases

A by-phrase is a PP adjunct with selectional feature \([S:\text{Voice}(S:N)]\), just like passive. It adjoins to an unsaturated Voice projection. But, as an adjunct, it doesn’t project, which means that after merger, the upper node is still a Voice projection and its \([S:N]\) feature is not checked. This allows Pass to merge as well, yielding a passive with by-phrase:

\[
\begin{array}{c}
\text{Voice}[S:N] \\
\text{Pass}[S:\text{Voice}(S:N)] \\
\text{Voice}[S:N] \\
\text{Voice}[S:V,S:N] \\
V \\
\text{by} \\
N \\
\text{bribe} \\
\text{the senator} \\
\text{the lobbyist}
\end{array}
\]

The semantics of \(\text{by}\) is as in (15): \(\text{by}\) first combines with its argument, and the result merges with Voice, yielding a structure truth-conditionally equivalent to an active sentence:

\[
\begin{array}{c}
\text{Pass}[S:\text{Voice}(S:N)] \\
\text{Voice}[S:N] \\
\text{Voice}[S:V,S:N] \\
V \\
\text{by} \\
N \\
\text{bribe} \\
\text{the senator} \\
\text{the lobbyist}
\end{array}
\]

As the external argument is already saturated by the by-phrase, Pass applies semantically vacuously (but still has a morphological reflex):

\[
\begin{array}{c}
\text{Pass} \\
\text{Voice}[S:V,S:N] \\
\text{by} \\
N \\
\text{bribe} \\
\text{the senator} \\
\text{the lobbyist}
\end{array}
\]

Crucially, Pass cannot apply to an active Voice projection, since such an active Voice projection has its selectional features already checked. The other two adjuncts, instrumental phrases and external-argument–oriented comitatives are also equipped with a selectional feature \([S:\text{Voice}(S:N)]\), which fits well to the claim that they are just like by-phrases and are banned when there is no external argument.
4.4 VPs without external arguments (unaccusatives, “sporadic advancement”)

Such structures don’t contain a Voice projection; instead, they have a projection of their own (labeled $v$):

$$
(17) \quad v
\quad v[S:V] \quad V
\quad V[S:N] \quad N
\quad \text{sink} \quad \text{the ship}
$$

Since by-phrases and other adjuncts select Voice, they simply cannot be merged here.

4.5 Nominals

The nominal destruction has a complex structure resembling that of the passive. It contains a V layer and a Voice layer and allows by-phrases:

$$
(18) \quad N
\quad N[S:Voice(S:N)] \quad \text{Voice}[S:N]
\quad \text{-tion}
\quad \text{Voice}[S:N]
\quad \text{by the barbarians}
\quad \text{Voice}[S:V,S:N] \quad V
\quad \text{P}
\quad \text{by the barbarians}
\quad \text{destruc-}
\quad \text{V[S:P]}
\quad \text{P}
\quad \text{of the city}
$$

This extends to synonyms of sight like perception.

In contrast, nominals like sight or fear never allow by-phrases, nor any other adjunct of this kind. They are not deverbal and don’t contain any nominalizer like -tion, nor any V or Voice layer; they are root nominals.
(19) N
   \_ N fear(root)
      \_ fear(root) P
          \_ of cats