Does the English relative pronoun *whose* in inanimate contexts violate the Subset Principle?

Wh-operators functioning as relative pronouns are restricted based on the animacy of their antecedent.

(1) Human
   the woman *who* left
   *the woman *which* left

(2) Animate
   the dog *who* ran away
   the dog *which* ran away

(3) Inanimate
   *the book *who* fell
   the book *which* fell

However, the only possessive relative pronoun is *whose*, which does not show animacy distinctions (Johansson 1991:97 for references).

(4) the woman *whose* daughter left
    the woman {*which '*which’s} daughter left

(5) the book *whose* cover tore
    the book {*which '*which’s} cover tore

In other contexts, *whose* only refers to human referents, e.g. matrix/embedded questions and free relatives.

(6) **Whose** cover is this?
    He knows *whose* cover tore.
    **Whoever’s~whose ever** car that is got towed!

(7) **Main question**: Do the data in (5) violate the Subset Principle of Distributed Morphology by virtue of the fact that animate *whose* is used in an inanimate context?

For our purposes here, let us assume the Vocabulary Item (VI) is /huz/, rather than /hu/+clitic ‘s.

We can compare two main types of analyses of the inanimate use of *whose*. One is the homophonic *whose* analysis. Here, *whose* has the feature [HUMAN] and is used in the contexts in (6). In contrast, *whose* is unmarked for animacy but is marked for [REL], and is used only in (headed) relative clauses (note Bianchi 1999:186-192 adopts this feature while Wiltschko 1998:146 explicitly rejects it).

(8) **Homophonic whose analysis**
   (a) *whose* \(\leftrightarrow\) [WH] [POSS] [HUMAN] \(\emptyset\)
   (b) *whose* \(\leftrightarrow\) [WH] [POSS] \(\emptyset\) [REL]

Under this analysis, the existence of *whose* blocks competitors, e.g. ungrammatical *which/which’s* in (5). In general, wh-words used as relative pronouns do not show the same exact properties as when questions (*the book what fell*).

I advocate for a second position in which there is a single VI *whose* which is inserted as a repair.

(9) **Whose-as-repair analysis**: *whose* \(\leftrightarrow\) [WH] [POSS] [HUMAN]

Under this analysis, *whose* is inserted in (5) because there is a morphological gap in the relative pronoun ‘paradigm’, i.e. *which* \(\leftrightarrow\) [WH][POSS]. In (5), because the antecedent n°queen does not bear a [HUMAN] feature (animacy hierarchy - Comrie 1989:185), it follows that the wh-word does not as well. Therefore, the insertion of the VI *whose* in these contexts introduces the feature [HUMAN] rather than expones it. This is a violation of the Subset Principle (Halle & Marantz 1993:122, Lahne 2008):

(10) **Subset Principle** - A Vocabulary Item /V/ is inserted into a morpheme {M} iff:
   a. The morphosyntactic features [F] of /V/ are a subset of the morphosyntactic features [F] in {M}
   b. /V/ is the most specific Vocabulary Item that satisfies a.
I call the introduction of \textsc{human} by \textit{whose} ‘\textbf{Feature Smuggling}’ in Vocabulary Insertion (refer also to Lahne 2008:109). Under constraint-based approaches to DM (e.g. Trommer 2001, \textbf{AUTHOR submitted}), violations of morphological ‘operations’ such as VI are expected.

In support of this position, consider that English shows a \textbf{morphological conspiracy} to avoid combining [\textsc{poss}] with inanimates:

\begin{enumerate}[(a)]
  \item *\textit{which's} is a gap both in questions and as a relative pronoun (they are distinct paradigms)
  \item no independent possessive pronouns for inanimates (\textit{they're hers/*they're its} - O’Brien 2009)
  \item animacy is greatest predictor for using [X’s Y] vs. [Y of X] (Leech et al. 1994)
\end{enumerate}

Due to the gap *\textit{which’s} in the inanimate contexts in (6), one can use a pro-NP e.g. \textit{which one’s cover tore}? Because this strategy is not available for relative pronouns (*\textit{the book which one’s cover tore}), the gap is repaired by importing a related morphological form \textit{whose}.

Further, across English dialects there are several additional ‘repairs’/paraphrases to fill the *\textit{which’s} gap: \textit{of which} (Johansson 1991), \textit{that’s} (Seppänen & Kjellmer 1995), \textit{which its} (Kjellmer 2008), a.o. Under the homophonalous \textit{whose} analysis, why would these emerge given that \textit{whose2} is used in contexts where animacy is encoded on the relativized noun, effectively eliminating any ambiguity.

\textbf{References:}

\textbf{AUTHOR.} submitted.


Seppänen, Aimo & Göran Kjellmer. 1995. The dog that's leg was run over: On the genitive of the relative pronoun. \textit{English Studies}, 76(4):389-400.
