

A puzzler about sets

There are two kinds of adjectives:

- ▶ **autological**: autological adjectives describe themselves. Examples: “pentasyllabic” is autological, because pentasyllabic is pentasyllabic — it has five syllables. Also, “unhyphenated” is autological, and so is “pronounceable”
- ▶ **heterological**: heterological adjectives *don't* describe themselves. Examples: “monosyllabic” is heterological, because monosyllabic is monosyllabic — it has more than one syllable. Also, “hyphenated” is heterological, and so is “orange” (and most other adjectives).

Let S be the set of all heterological adjectives, so “orange” $\in S$ but “pronounceable” $\notin S$.

Question: Is “heterological” $\in S$?