
Commentary

To Predate or Depredate: What's the Word?

Ecologists love a good fight. Though we strive for objectivity in our research, we also form strong scientific opinions and defend them with territorial vigor. Debates crop up on a range of topics, from lofty ideas to minor nuances of theory. They play out continuously in the literature, at conferences, and in the constant parry and thrust of peer review. Even questions of diction can provoke a response, like the ongoing controversy over the proper way to describe predator–prey interactions. Though “predation” is the generally accepted noun, ecologists cannot agree on the best verb to describe the process, nor the adjective to characterize its result. To “predate” or to “depredate,” that is the question at hand.

Having studied seed predation and nest predation, I've encountered the adamant and often contrary opinions of various editors, reviewers, and co-authors. As a result, my artificial bird eggs in Tanzania were depredated, while Costa Rican rodents are currently predated my tree seeds (pending review). Those who favor the term depredate argue that predate is a malapropism in this context, interpreting its definition as to “pre-date,” or occur previously in time. Predate proponents, however, feel that their term is the intuitive extension of predation, and contend that depredate is needlessly abstruse. Others prefer the alternate and noncontroversial phrasing “to prey upon.”

In 2004, a posting to ESA's ECOLOG-L list-serve garnered more than 30 responses to the question of predation semantics. Though the moderator asked which noun was preferred, depredation and predation, many responders included their opinion on verbs and were sharply divided between the various forms.

The full text of these exchanges is available online in the ECOLOG-L archives <<https://listserv.umd.edu/archives/ecolog-l.html>>

To assess the actual usage of each term in current literature, I performed a search for predation-related articles in six popular ecological journals: *Ecology*, *Ecological Monographs*, *Ecological Applications*, *Conservation Biology*, *The Journal of Ecology* and *The Journal of Applied Ecology*. Using the archival search engine JSTOR <<http://www.jstor.org/>>, I identified articles containing the word “predation” in their title, abstract, or caption. Searches were limited to the year 2000, the most recent year for which all journal articles were available in Adobe Portable Document Format (PDF). Any relevant article was considered, including reviews, research articles and essays. Within each PDF file, I used Adobe Acrobat 7.0.3 software (1984–2004, Adobe Systems Inc.) to search for the words “predate” and “depredate” used as present or past tense verbs, or as adjectives (e.g., “depredated seeds”). I also searched for verb phrases using the word prey (e.g., “prey on,” “preyed upon”). Each article was scored for the presence or absence of these terms in any context excluding references, and the scores were grouped by root word. Predate and predated were scored together, for example, as were all variations of “prey upon.” A summary of the data, sorted by journal, is presented in Table 1. Because some articles used more than one of the terms in question, the total number of root-word scores exceeds the total number of articles.

Of the 76 articles identified in my search, the majority (43) did not employ any predation-based verbs

Table 1. Number of predation-related articles using variations of the terms “predate,” “depredate,” and “prey upon” in a survey of six ecological journals for the year 2000 (n = number of articles per journal).

| Journal | n | Predate/ predated | Depredate/ depredated | Prey upon/ prey on | None |
|-----------------------------------|-----|----------------------|--------------------------|-----------------------|------|
| <i>Ecology</i> | 38 | 0 | 6 | 8 | 24 |
| <i>Ecological Applications</i> | 5 | 0 | 2 | 1 | 2 |
| <i>Ecological Monographs</i> | 7 | 0 | 1 | 2 | 4 |
| <i>Journal of Ecology</i> | 6 | 3 | 1 | 1 | 2 |
| <i>Journal of Applied Ecology</i> | 8 | 4 | 0 | 3 | 2 |
| <i>Conservation Biology</i> | 12 | 0 | 0 | 3 | 9 |

or adjectives, avoiding controversy altogether. The remaining articles showed a preference for variations of “prey upon” (18), while comparably fewer authors used depredate (10) or predate (7). There is also evidence of editorial bias. While “prey upon” variants appeared in all publications, certain journals used depredate but not predate (*Ecology*, *Ecological Applications*, *Ecological Monographs*), while *The Journal of Applied Ecology* showed the opposite trend. Only *The Journal of Ecology* printed articles using both predate and depredate, where they appeared once together in the same piece. Articles in *Conservation Biology* used only “prey upon” variants.

These results suggest that all sides accept the validity of “prey upon,” but the predate/depredate controversy remains unresolved. With both terms in common usage, the essential question remains: “Who is correct?” For an answer I turned to the ultimate arbiter of diction in our language, the *Oxford English Diction-*

ary (OED). To the uninitiated, the OED is a trove of information whose 20 heavy volumes can do far more than press plant specimens (though they’re quite good for that as well). The format and ambitious scale of the OED set it apart from other dictionaries. Rather than relying solely upon its authors’ opinions for its definitions, the OED provides detailed usage data on each of its >600,000 entries. Hundreds of readers comb historical and current literature, documenting the earliest usage of nearly every word in the idiom. In this way the OED is a scientist’s dictionary: its definitions are supported by *data*. The result is an historical treatise, an ongoing record of the development of the language through time. Only two complete editions of the OED have ever been published, though updates and additions are now posted regularly to its online edition. All of the subsequent information in this essay is taken from the current online edition.

From the venerable pages of the OED we learn that

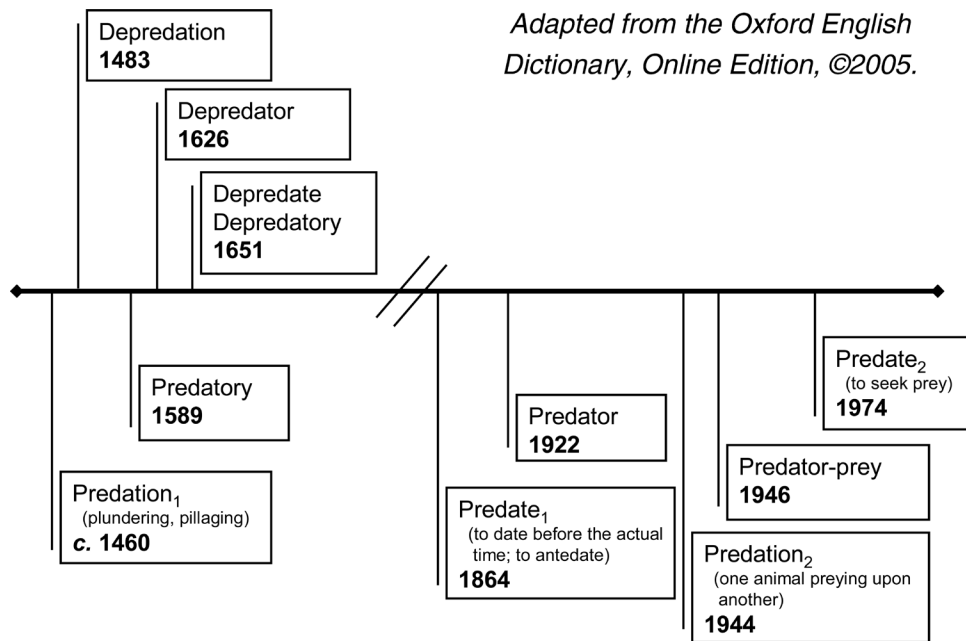


Fig. 1. A timeline of predation-related terms, indicating their first documented use in the English language. Citations are adapted from the *Oxford English Dictionary* (OED 2005).

both sides of our debate are correct. Predate and depredate are equally suitable terms to describe a predator/prey interaction, though their histories differ considerably. Both words share the Latin root *præd*, to plunder. The nouns predation and depredation first appeared in the 15th century (Fig. 1), used in relation to plundering, pillaging, and robbery. Derivative words appeared in the following decades, with depredate arriving in 1651. It is defined as “to prey upon, to make a prey of; to plunder, pillage” (OED 2005). Depredate appears to have remained the sole relevant verb until the 20th century, when the advent of modern zoological studies triggered a cascade of new terms, definitions, and phrases (Fig. 1).

Predator first appeared in a 1922 volume on insect behavior and is defined as “an animal that preys upon another” (OED 2005). The phrase predator–prey showed up in 1946, soon after a new, zoological-specific definition for predation: “the action of one ani-

mal preying upon another” (OED 2005). These terms appear to have laid the groundwork for predate, which came along in a 1974 article about trout farming, and is defined as “to seek prey” or “of a predator: to prey on, eat” (OED 2005). Predate is listed as a back-formation of predation, meaning that while it appears to be a root, it actually formed recently from the truncation of the earlier word. This is a fairly common way for new words to form in English (e.g., scavenge from scavenger; emote from emotion).

The confusion over predate lies in another word of the same spelling but wholly different origins. Deriving from the suffix “pre-” and the verb “date,” predate is defined as “to date before the actual time; to antedate,” or “to precede in date; to date before” (OED 2005). This word appeared in Noah Webster’s 1864 *American Dictionary*, more than a century before its predation-derived double would arrive to crowd the field. It remains the only definition for predate in many

abridged dictionaries, including *Merriam-Webster's Collegiate Dictionary* (Mish 2003) and *The American Heritage Dictionary* (Pickett 2000).

This foray into etymology shows that the controversy over predation semantics has been a nonissue all along (or at least since 1974). The words can be used interchangeably without violating any precepts of proper English diction. Those who favor depredate can take comfort in knowing that their word has been in use for more than three centuries, while proponents of predate can be satisfied that their term developed specifically to address predator-prey interactions. And for those who have used "prey upon," they can continue to wonder what in the world all the fuss was about.

Acknowledgments

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