One approach used in my research writing course for graduate students in the sciences is to alert the class to word miscues that result in rhetorical flaws, such as ambiguity, distraction, and unprofessional tone.

Students in a wide variety of disciplines—including biologic sciences, health sciences, computer science, and engineering—have been receptive to a systematic approach involving identification of writing problems that miscue intent. After also learning a taxonomic system for labeling the consequences of the miscues, students can construct a personal flaws profile with which to identify (and avoid) problems in writing. Thus, students can be as deliberate about improving their writing skills as about improving their science skills.

Included in the flaws profile is a revision of the sentence containing the miscue. To help determine the correctness of such revision, students are encouraged to consult sources of expert opinion (for example, textbooks and style guides) and to observe conventional usage (for example, in recent articles from leading journals in their disciplines). In addition, students are encouraged to test the original and revised versions of the sentence by surveying colleagues (as a consensus panel) as to which option best conveys the author’s stated intent.

When I have used this consensus-panel approach in workshops for the American Medical Writers Association and the European Medical Writers Association, professional writers have been startled that their votes matched those of engineering students from mainland China who have been in the United States for less than a year. Clear writing is clear writing.

Exercise 1
Choose the sentence most clearly indicating that membrane-bound granules of a given origin have a distinctive composition.

1. Membrane-bound granules, which result from peroxidation, are composed of lipofuscin.

2. Only those membrane-bound granules that result from peroxidation are composed of lipofuscin.

3. Membrane-bound granules that result from peroxidation are composed of lipofuscin.

Notes: (1) Less traditional options are excluded, for example, comma + that and no comma + which. (2) Another set of options is the use of the participial phrase (comma + resulting from peroxidation or no comma + resulting from peroxidation). This set is analogous to that involving which or that except resulting from peroxidation without the comma seems even more restrictive than does that result from peroxidation.

Comment
Sentence 1 means that all membrane-bound granules result from peroxidation. This intent is indicated by the comma + which cue, indicative of a nonrestrictive adjective clause. Sentence 2 (only those . . . that) states unmistakably that only a specific category does so. Sentence 3 also should indicate the stated intent, but it might be too subtle for many readers. Ask author’s editors how many times they have explained the difference between these cues of nonrestrictiveness (comma + which) and restrictiveness (no comma + that). The taxonomic classification of such a problem is word usage ambiguity: modificational—restrictiveness inexplicitly.

Word Miscue: Which or That Without a Qualifier
Especially if readers tend to confuse restrictive and nonrestrictive clauses, they may misinterpret adjective clauses that begin with which and that. In particular, they may infer wrongly whether the adjectival information defines a subset of the category denoted by the noun or pertains to all members of the category. Use of such qualifiers as only those and some cases of can avoid such ambiguity.
Exercise 2
Consider the following sentence:

Thousands of people in the United States have severe maxillo-mandibular discrepancy, which requires surgical intervention to correct.

Does the author intend to convey that (1) a subset of people with severe maxillo-mandibular discrepancy require surgical intervention or (2) all people with severe maxillo-mandibular discrepancy require surgical intervention? Would you bet your house on the intended meaning? As written, option 2 is the intent. If option 1 is meant, “some cases of which require” is less likely to be misinterpreted than “that requires”.

Related Comment
The difficulty in distinguishing between adjective clauses that are restrictive (beginning with that) and nonrestrictive (beginning with a comma + which) is analogous to the difficulty in distinguishing between some other syntactic units, such as restrictive and nonrestrictive appositive noun phrases. In the sentence “My brother, Harvey, is at home”, how many brothers do I have? The answer is one because Harvey is written nonrestrictively. If the commas were absent, I would have at least two brothers because Harvey is necessary to indicate which of my brothers is at home. However, why rest the distinction between these two meanings on just a pair of commas? The following are explicit: “My only brother, Harvey, is at home” and “Harvey, one of my two brothers, is at home.”

Summary
The relative pronouns (which, that) beginning an adjective clause can insufficiently cue an author’s intent. Placement of a comma or not seems a subtle resolution on which to bet your house. The use of qualifiers (for example, only those) ensures that a sentence is not misread. You decide.

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