7.1.5. Bounds and exceptions

In general, the class indicator and quantified predicate of the generalization will be our starting points for identifying the domain and attribute, and the quantifier word appearing in the quantifier phrase will be our chief guide in doing this. For example, the quantifier words *every* and *all* will lead us to presume that the domain and attribute can be determined in the simple way used above. However, this is only a presumption—as is shown by the following example:

Among members of the House, all Republicans except Midwesterners supported the bill.

Here the class indicator is *Republicans* but the domain is the class of non-Midwestern Republicans in the House. One way to see this is to ask yourself what sort of thing would be a counterexample; here it would be a non-Midwestern Republican House member who did not support the bill. (You can often sharpen your sense of the content of a generalization by asking what a counterexample would have to be like. This will tell you something about the domain and attribute of the generalization because a counterexample must be something in the domain that fails to have the attribute.)

The same generalization would be stated by sentence *Every non-Midwestern Republican who was a member of the House supported the bill*, which builds the full specification of the domain into its class indicator. On the other hand, in the displayed example, our path from the class indicator to the domain has been inflected by the phrases *among members of the House* and *except Midwesterners*, which function as modifiers of the quantifier phrase. We will call phrases like these **bounds indicators** and **exception indicators**, respectively. Each will consist of a common noun phrase, usually in the plural, together with a word showing that the class picked out by this common noun phrase is a class bounding the generalization, a **bounding class**, or that it is a **class of exceptions**. The words *among* and *of* are often used to marks bounds, and *except* and *but* can serve to mark exceptions. Although *other than* functions much like *except* and *but*, phrases formed with it have the grammatical status of adjectives and can be regarded as modifiers of the common noun that are part of the class indicator.

Our description of the domains of direct and complementary generalizations applies only in cases where the are no bounds or exceptions to the generalization. When there is a bounding class, the true domain is the region where the domain we described earlier

overlaps, or **intersects**, the bounding class; it is the **intersection** of the two classes. For example, the direct generalization

> *Among members of the House, all Republicans supported the bill*

has as its domain the class of members of the House who are Republicans, and this is the intersection of the class of Republicans with the class of House members. The complementary generalization

> *Of GM products, only trucks were advertised*

has as its domain the class of GM products that are non-trucks, the intersection of the class of non-trucks with the class of GM products.

The bounding class need not appear as explicitly as it does in these examples. It may be supplied by the context of use rather than by an explicit bounds indication. For example, someone who asserts *Everyone was affected by the drought* probably has in mind only the population of a particular region. And it is not unusual for the class indicator of a generalization to indicate both the bounding class and the complemented class through the use of emphasis. As examples, read the following with emphasis on the underlined expressions:

> *Only cans of mushrooms from that plant were recalled*
> *Only cans of mushrooms from that plant were recalled*

In each case, the attribute is the property of *not* having been recalled. In the first, the domain consists of cans of mushrooms that are not from the plant in question. In the second, it consists of cans from the plant that are not cans of mushrooms. (To confirm this for yourself, think what counterexamples to the claims would be like.)

We can get from the indicators to the domains of these examples by taking the bounding class as the class picked out by the unemphasized part of the class indicator (e.g., *cans of mushrooms* or *cans from that plant*, respectively). The emphasis serves to mark the further specifications that move us from the bounding class to the narrower class that is complemented relative to it. Thus the domain in the second case can be described as the class of all cans from the plant that are not cans of mushrooms from the plant. Notice that this can be described either as the intersection of the full complement of the indicated class (i.e., cans of mushrooms from the plant) and the bounding class (i.e., all cans from the plant) or as the complement of the indicated class relative to the bounding class (i.e., all cans from the plant). In general, the intersection of the complement of a set X with a set Y is the complement of X relative to Y. (You can use Figure 7.1.4-1 to help you think about this.)

The same device can appear with direct generalizations but its effect is primarily on implicatures. The sentence

All <u>Republicans</u> in the House supported the bill

ends up having the same domain as

All Republicans <u>in the House</u> supported the bill

but, while the first suggests (and it is only a suggestion) that some Democrats in the House did not support the bill, the second suggests that support faltered among Republicans in the Senate. In fact, what we are seeing here is again the effect of emphasis on complementary generalizations but its effect is on the complementary generalizations that are often implicated by direct generalizations.

The domain of a generalization is also modified when there is a class of exceptions—though this happens only with direct generalizations. If we set aside the effect of a bounding class, the domain of a generalization with exceptions is the indicated class with the class of exceptions subtracted; that is, the domain consists of the members of the indicated class that are not in the class of exceptions. For example, the domain of the generalization

All Republicans except Midwesterners supported the bill

is the class of Republicans with the class of Midwesterners subtracted; it is the class of non-Midwestern Republicans. In the presence of the bounds indicator *among members of the House*, as in the example beginning this subsection, the domain is restricted further, to the members of the House who are non-Midwestern Republicans. Both bounds and exceptions modify a direct generalization by narrowing the domain, and they do so from independent directions so their effects accumulate without interaction. In particular, there is no need for concern about the order in which these modifications are applied; bounding and then excepting comes to the same thing as excepting and then bounding.

Our only examples of complementary generalizations were negative because there seemed to be no quantifier word in English that indicates a complementary affirmative generalization. This gap is filled by a peculiar device: the class indicator can be dropped entirely when an exception indicator is present. For example, if there were no bounds provided by the context, the affirmative generalization *All but the hardiest plants suffered* would have as its domain the full referential range with the class of hardiest plants subtracted. This is the same thing

as the complement of the class of hardiest plants, so we have an affirmative generalization whose domain is a complement (though not the complement of the indicated class since there is no class indicated). We are rarely prepared to generalize affirmatively about everything outside a given class, so we can expect to find a bounding class in most cases. Here, it probably would be the class of all plants—though that would depend on the context and emphasis can play a role, too. The sentence *All but Midwestern Republicans supported the bill* leaves its bounding class to the context while *All but Midwestern Republicans supported the bill* marks its bounding class as the class of Republicans (though the context might bound it further).

When the class indicator is negative, the need for bounds applies somewhat differently. The sentence *All but non-smokers are at risk* needs no bounds but someone who asserts *All non-smokers were relieved* probably intends to limit its domain to people.

In general, a bounding class can be shown in a paraphrase by prefixing a phrase of the form *Among* B*s*. The effect of this phrase is to limit the domain to the bounding class by intersecting this class with the class obtained from the other specifications of the domain. A class of exceptions can be shown by putting the phrase of the form *except* E*s* after the quantifier phrase. Its effect is to limit the domain by subtracting the class of exceptions from the class obtained from other specifications. In order to use these modifications grammatically when paraphrasing direct generalizations, we must first put the quantifier phrase in the plural (e.g., *All* C*s* or *No* C*s*). Paraphrases like these will often be stilted but they will make it easy to represent the form of the generalization symbolically.

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