6. All worldly goods are changeable things, for no worldly goods are things immaterial, and no material things are unchangeable things.

7. All those who are neither members nor guests of members are those who are excluded; therefore no nonconformists are either members or guests of members, for all those who are included are conformists.

8. All mortals are imperfect beings, and no humans are immortals, whence it follows that all perfect beings are nonhumans.

9. All things present are nonirritants; therefore no irritants are invisible objects, because all visible objects are absent things.

*10. All useful things are objects no more than six feet long, because all difficult things to store are useless things, and no objects over six feet long are easy things to store.

7.3 Translating Categorical Propositions into Standard Form

We noted in Section 7.1 that syllogistic arguments in ordinary language may deviate from standard-form categorical syllogisms not only because they may appear to contain more than three terms (as discussed in Section 7.2), but also because the component propositions of the syllogism in ordinary language may not all be standard-form propositions. A, E, I, and O propositions are clearly somewhat stilted, and many syllogistic arguments in everyday life contain non-standard-form propositions. To reduce these arguments to standard form requires that their constituent propositions be translated into standard form.

It would be very convenient if there were some neat list of rules that we could use to effect such translations. Unfortunately, ordinary language is too rich and too multiform to permit the compilation of such a set of rules. Different sorts of transformation are called for in different settings, and to know what is called for we must, in every case, understand fully the given non-standard-form proposition that needs to be reformulated. If we understand the proposition, we can reformulate it without losing or changing its meaning.

Although no complete set of rules can be given, we can describe a number of well-tested methods for translating nonstandard propositions of different sorts. These methods—we will present nine of them in this section—must be regarded as guides rather than rules; they are techniques with which nonstandard-form propositions of certain describable kinds can be reformulated into standard-form propositions that may serve as constituents of syllogistic arguments.
I. Singular Propositions. Some propositions affirm or deny that a specific individual or object belongs to a given class—for example, “Socrates is a philosopher,” and “This table is not an antique.” These are called singular propositions. Such propositions do not affirm or deny the inclusion of one class in another (as standard-form propositions do), but we can nevertheless interpret a singular proposition as a proposition dealing with classes and their interrelations. We do this in the following way.

To every individual object there corresponds a unique unit class (one-membered class) whose only member is that object itself. Then, to assert that an object \( s \) belongs to a class \( P \) is logically equivalent to asserting that the unit class \( S \) containing just that object \( s \) is wholly included in the class \( P \). And to assert that an object \( s \) does not belong to a class \( P \) is logically equivalent to asserting that the unit class \( S \) containing just that object \( s \) is wholly excluded from the class \( P \).

It is customary to make this interpretation automatically, without any notational adjustment. Thus it is customary to take any affirmative singular proposition of the form “\( s \) is \( P \)” as if it were already expressed as the logically equivalent A proposition, “All \( S \) is \( P \)”; and we similarly understand any negative singular proposition “\( s \) is not \( P \)” as an alternative formulation of the logically equivalent E proposition, “No \( S \) is \( P \)” — in each case understanding \( S \) to designate the unit class whose only member is the object \( s \). Thus no explicit translations are provided for singular propositions; traditionally they have been classified as A and E propositions as they stand. As Kant remarked, “Logicians are justified in saying that, in the employment of judgments in syllogisms, singular judgments can be treated like those that are universal.”

The situation, however, is not quite so simple. Bear in mind that particular propositions have existential import, but universal propositions do not. Using this Boolean interpretation (for reasons explained in Section 5.7), we find that if singular propositions are treated mechanically as A and E propositions in syllogistic arguments, and we check the validity of those arguments using Venn diagrams or the rules set forth in Chapter 6, serious difficulties arise.

In some cases, obviously valid two-premise arguments containing singular propositions translate into valid categorical syllogisms, such as when

\[
\text{All } H \text{ is } M. \quad \text{AAA--1 categorical syllogism in Barbara} \quad \text{All } S \text{ is } H. \\
\therefore s \text{ is an } M. \quad \therefore \text{All } S \text{ is } M.
\]
In other cases, however, obviously valid two-premise arguments containing singular propositions translate into categorical syllogisms that are invalid, such as when

\[
\begin{align*}
&\text{s is } M. \quad \text{goes into the invalid} \\
&\text{s is } H. \quad \text{AAI–3 categorical syllogism} \\
&\therefore \text{ Some } H \text{ is } M. \\
&\text{All } S \text{ is } M. \\
&\text{All } S \text{ is } H. \\
&\therefore \text{All } H \text{ is } M.
\end{align*}
\]

which commits the existential fallacy, violating Rule 6.

On the other hand, if we translate singular propositions into particular propositions, there is the same kind of difficulty. In some cases, obviously valid two-premise arguments containing singular propositions translate into valid categorical syllogisms, such as when

\[
\begin{align*}
&\text{All } H \text{ is } M. \quad \text{goes into the obviously valid} \\
&\text{s is an } H. \quad \text{All–1 categorical syllogism in } Darii \\
&\therefore \text{ s is an } M. \\
&\text{All } H \text{ is } M. \\
&\text{Some } S \text{ is } H. \\
&\therefore \text{ Some } S \text{ is } M.
\end{align*}
\]

In other cases, however, obviously valid two-premise arguments containing singular propositions translate into categorical syllogisms that are invalid, such as when

\[
\begin{align*}
&\text{s is } M. \quad \text{goes into the invalid} \\
&\text{s is } H. \quad \text{III–3 categorical syllogism} \\
&\therefore \text{ Some } H \text{ is } M. \\
&\text{Some } S \text{ is } M. \\
&\text{Some } S \text{ is } H. \\
&\therefore \text{ Some } H \text{ is } M.
\end{align*}
\]

which commits the fallacy of the undistributed middle, violating Rule 2.

The difficulty arises from the fact that a singular proposition contains more information than is contained in any single one of the four standard-form categorical propositions. If “s is P” is construed as “All S is P,” then what is lost is the existential import of the singular proposition, the fact that S is not empty. But if “s is P” is construed as “Some S is P,” then what is lost is the universal aspect of the singular proposition, which distributes its subject term, the fact that all S is P.

The solution to the difficulty is to construe singular propositions as conjunctions of standard-form categorical propositions. An affirmative singular proposition is equivalent to the conjunction of the related A and I categorical propositions. Thus “s is P” is equivalent to “All S is P” and “Some S is P.” A negative singular proposition is equivalent to the conjunction of the related E and O categorical propositions. Thus “s is not P” is equivalent to “No S is P” and “Some S is not P.” Venn dia-
grams for affirmative and negative singular propositions are shown in Figure 7-1.

In applying the syllogistic rules to evaluate a syllogistic argument containing singular propositions, we must take account of all the information contained in those singular propositions, both distribution and existential import.

If we keep in mind the existential import of singular propositions when we invoke the syllogistic rules or apply Venn diagrams to test the validity of syllogistic arguments, it is acceptable practice to regard singular propositions as universal (A or E) propositions.

II. Categorical Propositions That Have Adjectives or Adjectival Phrases as Predicates, Rather than Substantives or Class Terms. For example, “Some flowers are beautiful” and “No warships are available for active duty” are categorical propositions, and yet they must be translated into standard-form categorical propositions; they deviate from standard form only in that their predicates, “beautiful” and “available for active duty,” designate attributes rather than classes. However, every attribute determines a class, the class of things having that attribute, so every such proposition corresponds to a logically equivalent proposition that is in standard form. The two examples cited correspond to the I and E propositions “Some flowers are beauties” and “No warships are things available for active duty.” When a categorical proposition is in standard form except that it has an adjectival predicate instead of a predicate term, the translation into standard form is made by replacing the adjectival predicate with a term designating the class of all objects of which the adjective may truly be predicated.

III. Categorical Propositions Whose Main Verbs Are Other than the Standard-Form Copula “To Be.” Examples of this very common type are “All people seek recognition” and “Some people drink Greek wine.” The usual method of translating such a statement into standard form is to regard all of it, except the subject term and the quantifier, as naming a
class-defining characteristic. Those words can then be replaced by a term designating the class determined by that class-defining characteristic and may be linked to the subject with a standard copula. Thus the two examples given translate into the standard-form categorical propositions, “All people are seekers of recognition” and “Some people are Greek-wine drinkers.”

IV. Statements in Which the Standard-Form Ingredients Are All Present But Not Arranged in Standard-Form Order. Two examples are “Racehorses are all thoroughbreds” and “All is well that ends well.” In such cases, we first decide which is the subject term and then rearrange the words to express a standard-form categorical proposition. Such translations are usually quite straightforward. It is clear that the two preceding statements translate into the A propositions “All racehorses are thoroughbreds” and “All things that end well are things that are well.”

V. Categorical Propositions Whose Quantities Are Indicated by Words Other than the Standard-Form Quantifiers “All,” “No,” and “Some.” Statements beginning with the words “every” and “any” are easily translated. The propositions “Every dog has its day” and “Any contribution will be appreciated” reduce to “All dogs are creatures that have their days” and “All contributions are things that are appreciated.” Similar to “every” and “any” are “everything” and “anything.” Paralleling these, but clearly restricted to classes of persons, are “everyone,” “anyone,” “whoever,” “whosoever,” “who,” “one who,” and the like. These should present no difficulty.

The grammatical particles “a” and “an” may also serve to indicate quantity, but whether they are being used to mean “all” or “some” depends largely on the context. Thus “A bat is a mammal” and “An elephant is a pachyderm” are reasonably interpreted as meaning “All bats are mammals” and “All elephants are pachyderms.” But “A bat flew in the window” and “An elephant escaped” quite clearly do not refer to all bats or all elephants; they are properly reduced to “Some bats are creatures that flew in the window” and “Some elephants are creatures that escaped.”

The particle “the” may be used to refer either to a particular individual or to all the members of a class. There is little danger of ambiguity here, for such a statement as “The whale is a mammal” translates in almost any context into the A proposition “All whales are mammals,” whereas the singular proposition “The first president was a military hero” is already in standard form as an A proposition (a singular proposition having existential import) as discussed in the first subparagraph of this section.
Although affirmative statements beginning with “every” and “any” are translated into “All S is P,” negative statements beginning with “not every” and “not any” are quite different. Their translations are much less obvious and require great care. Thus, for example, “Not every S is P” means that some S is not P, whereas “Not any S is P” means that no S is P.

VI. Exclusive Propositions. Categorical propositions involving the words “only” or “none but” are often called exclusive propositions, because in general they assert that the predicate applies exclusively to the subject named. Examples of such usages are “Only citizens can vote” and “None but the brave deserve the fair.” The first translates into the standard-form categorical proposition, “All those who can vote are citizens,” and the second into the standard-form categorical proposition, “All those who deserve the fair are those who are brave.” Propositions beginning with “only” or “none but” usually translate into A propositions using this general rule: Reverse the subject and the predicate, and replace the “only” with “all.” Thus “Only S is P” and “None but S’s are P’s” are usually understood to express “All P is S.”

There are some contexts in which “only” and “none but” are used to convey some further meaning. “Only S is P” or “None but S’s are P’s” may suggest either that “All S is P” or that “Some S is P.” This is not always the case, however. Where context helps to determine meaning, attention must be paid to it, of course. But in the absence of such additional information, the translations first suggested are adequate.

VII. Categorical Propositions That Contain No Words to Indicate Quantity. Two examples are “Dogs are carnivorous” and “Children are present.” Where there is no quantifier, what the sentence is intended to express may be doubtful. We may be able to determine its meaning only by examining the context in which it occurs, and that examination usually will clear up our doubts. In the first example it is very probable that “Dogs are carnivorous” refers to all dogs, and is to be translated as “All dogs are carnivores.” In the second example, on the other hand, it is plain that only some children are referred to, and thus the standard-form translation of “Children are present” is “Some children are beings who are present.”

VIII. Propositions That Do Not Resemble Standard-Form Categorical Propositions But Can Be Translated Into Standard Form. Some examples are “Not all children believe in Santa Claus,” “There are white elephants,” “There are no pink elephants,” and “Nothing is both round and square.” On reflection, these propositions will be seen to be logically equivalent to, and therefore to translate into, the following standard-form propositions: “Some children are not believers in Santa Claus,”
“Some elephants are white things,” “No elephants are pink things,” and “No round objects are square objects.”

IX. Exceptional Propositions. Some examples of exceptional propositions are “All except employees are eligible,” “All but employees are eligible,” and “Employees alone are not eligible.” Translating exceptional propositions into standard form is somewhat complicated, because propositions of this kind (much like singular propositions) make two assertions rather than one. Each of the logically equivalent examples just given asserts not merely that all nonemployees are eligible but also (in the usual context) that no employees are eligible. Where “employees” is abbreviated to S and “eligible persons” to P, these two propositions can be written as “All non-S is P” and “No S is P.” These are clearly independent and together assert that S and P are complementary classes.

Each of these exceptional propositions is compound and therefore cannot be translated into a single standard-form categorical proposition. Rather, each must be translated into an explicit conjunction of two standard-form categoricals. Thus the three illustrative propositions about eligibility translate identically into “All nonemployees are eligible persons, and no employees are eligible persons.”

It should be noted that some arguments depend for their validity on numerical or quasi-numerical information that cannot be put into standard form. Such arguments may have constituent propositions that mention quantity more specifically than standard-form propositions do, usually by the use of quantifiers such as “one,” “two,” “three,” “many,” “a few,” “most,” and so on. When such specific quantitative information is critical to the validity of the argument in which it is mentioned, the argument itself is asylogistic and therefore requires a more complicated analysis than that provided by the simple theory of the categorical syllogism. Yet some quasi-numerical quantifiers occur in arguments that do lend themselves to syllogistic analysis. These include “almost all,” “not quite all,” “all but a few,” and “almost everyone.” Propositions in which these phrases appear as quantifiers may be treated like the explicitly exceptional propositions just described. Thus the following exceptional propositions with quasi-numerical quantifiers are also compound: “Almost all students were at the dance,” “Not quite all students were at the dance,” “All but a few students were at the dance,” and “Only some students were at the dance.” Each of these affirms that some students were at the dance and denies that all students were at the dance. The quasi-numerical information they present is irrelevant from the point of view of syllogistic
7.3 Translating Categorical Propositions into Standard Form

inference, and all are translated as “Some students are persons who were at the dance, and some students are not persons who were at the dance.”

Because exceptive propositions are not categorical propositions but conjunctions, arguments containing them are not syllogistic arguments as we are using that term. But they may nevertheless be susceptible to syllogistic analysis and appraisal. How an argument containing an exceptive proposition should be tested depends on the exceptive proposition’s position in the argument. If it is a premise, then the argument may have to be given two separate tests. For example, consider the argument:

Everyone who saw the game was at the dance.
Not quite all the students were at the dance.
So some students didn’t see the game.

Its first premise and its conclusion are categorical propositions, which are easily translated into standard form. Its second premise, however, is an exceptive proposition, not simple but compound. To discover whether its premises imply its conclusion, first test the syllogism composed of the first premise of the given argument, the first half of its second premise, and its conclusion. In standard form, we have

All persons who saw the game are persons who were at the dance.
Some students are persons who were at the dance.
Therefore some students are not persons who saw the game.

The standard-form categorical syllogism is of form AI0–2 and commits the fallacy of the undistributed middle, violating Rule 2. However, the original argument is not yet proved to be invalid, because the syllogism just tested contains only part of the premises of the original argument. We now have to test the categorical syllogism composed of the first premise and the conclusion of the original argument together with the second half of the second premise. In standard form we then get a very different argument:

All persons who saw the game are persons who were at the dance.
Some students are not persons who were at the dance.
Therefore some students are not persons who saw the game.

This is a standard-form categorical syllogism in Baroko, A00–2, and it is easily shown to be valid. Hence the original argument is valid, because the conclusion is the same, and the premises of the original argument include the premises of this valid standard-form syllogism. Thus, to test the validity of an argument, one of whose premises is an exceptive proposition, may require testing two different standard-form categorical syllogisms.
If the premises of an argument are both categorical propositions, and its conclusion is exceptive, then we know it to be invalid, for although the two categorical premises may imply one or the other half of the compound conclusion, they cannot imply them both. Finally, if an argument contains exceptive propositions as both premises and conclusion, all possible syllogisms constructable out of the original argument may have to be tested to determine its validity. Enough has been explained to enable the student to cope with such situations.

It is important to acquire facility in translating the many varieties of non-standard-form propositions into standard form, because the tests of validity that we have developed—Venn diagrams and the syllogistic rules—can be applied directly only to standard-form categorical syllogisms.

EXERCISES

Translate the following into standard-form categorical propositions.

EXAMPLE

1. Roses are fragrant.

SOLUTION

Standard-form translation: All roses are fragrant things.

2. Orchids are not fragrant.

3. Many a person has lived to regret a misspent youth.

4. Not everyone worth meeting is worth having as a friend.

*5. If it’s a Junko, it’s the best that money can buy.

6. If it isn’t a real beer, it isn’t a Bud.

7. Nothing is both safe and exciting.

8. Only brave people have ever won the Congressional Medal of Honor.

9. Good counselors are not universally appreciated.

*10. He sees not his shadow who faces the sun.

11. To hear her sing is an inspiration.

12. He who takes the sword shall perish by the sword.

13. Only members can use the front door.


*15. The Young Turks support no candidate of the Old Guard.
16. All styles are good, except the tiresome.
17. They also serve who only stand and wait.
18. Happy indeed is she who knows her own limitations.
19. A thing of beauty is a joy forever.
*20. He prayeth well who loveth well.
21. All that glitters is not gold.
22. None think the great unhappy but the great.
23. He jests at scars that never felt a wound.
24. Whosoever a man soweth, that shall he also reap.
*25. A soft answer turneth away wrath.

7.4 Uniform Translation

For a syllogistic argument to be testable, it must be expressed in propositions that together contain exactly three terms. Sometimes this aim is difficult to accomplish and requires a more subtle approach than those suggested in the preceding sections. Consider the proposition, “The poor always you have with you.” It clearly does not assert that all the poor are with you, or even that some (particular) poor are always with you. There are alternative methods of reducing this proposition to standard form, but one perfectly natural route is by way of the key word “always.” This word means “at all times” and suggests the standard-form categorical proposition, “All times are times when you have the poor with you.” The word “times,” which appears in both the subject and the predicate terms, may be regarded as a parameter, an auxiliary symbol that is helpful in expressing the original assertion in standard form.

Care should be taken not to introduce and use parameters in a mechanical, unthinking fashion. One must be guided always by an understanding of the proposition to be translated. Thus the proposition, “Smith always wins at billiards,” pretty clearly does not assert that Smith is incessantly, at all times, winning at billiards! It is more reasonable to interpret it as meaning that Smith wins at billiards whenever he plays. And so understood, it translates directly into “All times when Smith plays billiards are times when Smith wins at billiards.”

Not all parameters need be temporal. To translate some propositions into standard form, the words “places” and “cases” can be introduced as parameters. Thus “Where there is no vision the people perish” and “Jones loses a sale whenever he is late” translate into “All places where there is no vision are places where the people perish” and “All cases in which Jones is late are cases in which Jones loses a sale.”