

7.1.2. Pronouns and quantifier phrases

When a logically complex predicate is applied to an individual term, the result can be restated as a compound of simple predications. We have used this as basis for analyses like that of *That car is cheap and reliable* into *That car is cheap* and *That car is reliable*. However, when a sentence is formed from a complex predicate by applying a quantifier phrase to this predicate, no such simplification need be possible. The sentence *Some company is such that it does business in Tokyo and Terre Haute* cannot be restated as the conjunction of *Some company does business in Tokyo* and *Some company does business in Terre Haute*.

The difference between the latter case and the case of individual terms lies in the different relation between the logical form of the complex predicate and the logical form of the sentence as a whole depending on whether the predicate is applied to an individual term or has a quantifier phrase applied to it. The logical form of a complex predicate—as it would be displayed were we to analyze the body of a predicate abstract—reflects the form of any sentence that results from predicating it of a term. So every predication of this predicate has the same sort of structure. For example, if we apply the predicate λx (*x does business in Tokyo and Terre Haute*) to a term—*IBM* say—we will be asserting a conjunction because the predicate is a conjunction with blanks.

On the other hand, the claim made when a complex predicate has a quantifier applied to it is a claim made about the population of the predicate's extension, and there is no reason to think that the form of this claim will reflect the logical form of the predicate's claims about individual objects. In the example at hand, *Some company is such that it does business in Tokyo and Terre Haute* says that the extension of λx (*x does business in Tokyo and Terre Haute*) contains at least one company. To say this is to say something about the way in which the extensions of λx (*x does business in Tokyo*) and λx (*x does business in Terre Haute*) overlap and this sort of relation between their extensions cannot be expressed by a truth functional compound of claims made about the two extensions individually. This is one instance of a general point: few interesting relations between things can be restated as truth-functional compounds of claims made about the things individually. For example, try restating the claim *John Stuart Mill was the son of James Mill* as a truth-functional compound of claims made about J. S. Mill and his father, each in isolation.

This difference between individual terms and quantifier phrases has an

impact on the significance of pronouns whose antecedents are quantifier phrases. A pronoun that has an individual term as an antecedent is a device for avoiding repetition and can be eliminated if we are willing to tolerate the repetition. That is why nothing like pronouns was introduced into our symbolic notation for truth-functional logic. We are able to restate *Jack built the house and sold it* so that the pronoun *it* is replaced by a second occurrence of *the house*, giving us a compound of two independent components. But no such restatement is possible with *Jack built a house and sold it* (since *Jack built a house and sold a house* does not say he sold a house he built) so we cannot eliminate the pronoun.

Something similar can happen with compounded predicates and other compounded phrases. We can restate the sentence *The Titanic ran into an iceberg and sank* so that *and* joins clauses rather than predicates if we repeat the phrase *the Titanic*. But *A ship ran into an iceberg and sank* cannot be restated as a conjunction of clauses by repeating the phrase *a ship*. Since we regard conjunction only as an operation on sentences, a restatement as a conjunction of clauses is necessary if we are to subject the predicate $\lambda x (x \text{ ran into an iceberg and sank})$ to further analysis. And, because we cannot repeat *a ship* without changing the meaning, we must introduce a pronoun with *a ship* as its antecedent. So not only are we often prevented from eliminating pronouns with quantifier phrase antecedents, we are often forced to introduce such pronouns in order to analyze sentences.