A

ABDUCTION

Abduction is a form of reasoning first explicated by the nineteenth-century philosopher C. S. Peirce. The central concept he wishes to introduce is that of generating new hypotheses to explain observed phenomena partly by guesswork or speculation. In his early work, Peirce tried to explain abductive reasoning, as distinct from deductive and inductive reasoning, by reference to syllogistic form. For instance, the following schema is an example of deductive reasoning:

All the beans in the bag are white
These beans came from this bag
Therefore, these beans are white

This is distinct from inductive reasoning which, Peirce argues, follows this pattern:

These beans came from this bag
These beans are white
Therefore, all the beans in this bag are white

And both these forms are distinct from abductive reasoning which, Peirce argues, follows this pattern:

These beans are white
All the beans in this bag are white
Therefore, the beans came from this bag

In later work, however, Peirce felt that trying to fit abductive reasoning into such a strict syllogistic form was restrictive, and instead he opted for the following schema to explain abduction:

The surprising fact C is observed
But if A were true, C would be a matter of course
Hence, there is a reason to suspect that A is true.
(Peirce 1935, 189)

For example, suppose I observe that my car will not start. One good explanation for this would be that it is out of fuel. Consequently, it seems that we have a good reason to think that my car's refusal to start is due to its being out of fuel. Of course, we may very quickly discover that my car has plenty of fuel, and a different hypothesis must be adopted, but Peirce always intended that abductive reasoning was fallible and conjectural, awaiting confirmation from other testing.

Peirce's account of abduction has been widely adopted in the philosophy of science, but it has also been of some interest to linguists. One particularly prominent use of abduction has been in **HISTORICAL LINGUISTICS** for explaining **LANGUAGE CHANGE** (see, for instance, Anderson 1973). The systematic features of a language that govern the use of one generation are opaque to the following generation as they acquire that language – the only access is through language output. It appears, then, that following generations must use abductive inferences to access the rules of language before applying those rules to new cases. And, of course, since abduction is fallible, the rules and system of language that following generations infer often differ from the system earlier generations are using. This often results in **SEMANTIC CHANGE, SYNTACTIC CHANGE**, and sound change.

– Albert Atkin

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ABSOLUTE AND STATISTICAL UNIVERSALS

Language universals are statements that are true of all languages; for example, "all languages have stop consonants." But beneath this simple definition lurks deep ambiguity, and this triggers misunderstanding in both interdisciplinary discourse and within linguistics itself. A core dimension of the ambiguity is captured by the opposition "absolute versus statistical universal," although the literature uses these terms in varied ways. Many textbooks draw the boundary between absolute and statistical according to whether a sample of languages contains exceptions to a universal. But the notion of an exception-free sample is not very revealing, even if the sample contained all known languages: There is always a chance that an as yet undescribed language, or an unknown language from the past or future, will provide an exception.

It is impossible, in principle, to survey all languages of our species. If we nevertheless want to make claims about all languages, only two routes are open: a priori deduction of necessarily true statements or statistical extrapolation from empirical samples to the entire set. Absolute universals can then be defined as those that are necessarily true, statistical universals as those that are extrapolated from samples.

Absolute Universals

For statements to be necessarily true, they must follow from a priori assumptions. The assumptions that linguists make are diverse and heavily debated. An example is the assumption that **WORDS** consist of **MORPHEMES**, that is, minimal form-meaning pairs. If one accepts this, then it is necessarily true that all languages have morphemes, and there cannot be exceptions. Why? Suppose someone claims to have discovered a language without morphemes. One can of course simply analyze the language without mentioning morphemes, but obviously that cannot challenge the universal just because one can always defend it by reanalyzing the language *with* morphemes. The only true challenge would be to show that analyzing some data in terms of morphemes leads to structures that are in conflict with other assumptions, for example, that form-meaning pairs combine exclusively by linear concatenation. The conflict can be illustrated by languages with **MORPHOLOGIES** like the English plural *geese*, where the meanings *plural* and *goose* do not correspond to linear