# First Distinctions and Definitions in Logic

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Since logic is chiefly about three speeches (definition, statement and syllogism) and every speech is composed of names, we should first distinguish speech and name *as these are understood in logic* and define them (as well as "sign", which is in their definition).

The first four parts of the definitions of speech and name are the same, but the fifth parts distinguish them.

**Speech** is *vocal sound signifying by agreement, having parts that signify by themselves.*

**A name** is *vocal sound signifying by agreement, no part of which signifies by itself.*

**A sign** is *that which strikes the senses and brings to mind something other than itself.*

Speech and name are vocal sounds that signify by human agreement rather than by nature (as does, for example, the cry of a baby). The logician assumes from the natural philosopher what is vocal sound.

## The Distinction of the Chief Speeches Considered in Logic

Definition, statement and syllogism are the speeches chiefly considered in logic. Their distinction can be seen from their definitions.

**Definition** is *speech signifying what a thing is.* Or it is *speech making known what a thing is*. Or it is *speech bringing out the nature of a thing.* For nature (in all its meanings) loves to hide, as Heraclitus said; and the last and most general meaning of *nature* is what a thing is.

**Statement** is *speech signifying the true or the false.*

**Syllogism** is *speech, in which some statements laid down, another follows necessarily, because of those laid down.*

These speeches are necessary for three ordered acts of looking reason. Definition is often necessary for understanding what a thing is, or for understanding clearly and distinctly what a thing is. Statement is necessary for understanding the true or the false. For the true or false is found in

statements. Syllogism is necessary for reasoning with necessity for only in the syllogism does one statement follow necessarily from other statements.[1]

## The Distinction of Names in Logic

The logician must also consider the names from which the speeches are composed or put together.

The logician is chiefly interested in *name said of many things*. For the name of the thing to be defined is said of many things for no singular can be defined. And the names in the definition are said of even more things (and the genus of more than the differences). And unless we limit ourselves to statements in which we say that *a dog is a dog*, we must have a name said of more than the subject. And the syllogism is based on the *said of all* or *the said of none*.

Albert the Great says that the first thing to be considered in logic is the universal. For, as Avicenna teaches us, logic is about things as they are in reason. And as Boethius says, a thing is singular when sensed and universal when understood. However, we can be more sensible saying that the first thing to be considered in logic is *name said of many things*.

## The Distinction of Names Said of Many Things

The first distinction of names said of many things is between those said of many things with the same thought in mind when said of each and those said of many with other thoughts in mind when said of each. *Animal* is said of dog, cat and horse with the same thought in mind when said of each. But *bat* is said of the flying mouse and the piece of wood used in baseball with a different thought or definition in mind when said of each.

When a name is said of many things with the same thought or meaning in mind when said of each, it is said of them *univocally*. When a name is said of many things with other thoughts or meanings in mind when said of each, it is said of them *equivocally*.

## The Distinction of Names Said *Univocally* of Many Things

Porphyry, in his *Isagoge*, has given us a distinction of names said univocally of many things that is necessary for understanding Aristotle's book the *Categories* and for understanding definition, division of a universal whole, and demonstration. This is the distinction of genus, difference, species, property and accident.

These names are necessary for understanding the *Categories* of Aristotle in which are distinguished the genera of things that are not species and in which we see how to order genera and species through differences.

[1]Besides definition, the logician also considers the divisions which are not definitions and the distinctions which are not divisions.

Besides statement, the logician also considers compound statements which are put together from two or more statements. The most important of these are the if-then compound statement and the either-or compound statement.

Besides syllogism, the logician also considers induction which is speech going forward from many particular statements to one general statement. And in rhetoric, which is an offspring of dialectic and political philosophy, the logician considers the enthymeme which is an imperfect syllogism and example which is an imperfect induction.

In the *Isagoge* of Porphyry, we learn the name of the defined (which is called *species* or *form*) and the name which begins a definition (which is called *genus*) and the kind of name which completes a perfect definition (which is called *difference* or the *species making difference*) and the name which completes an imperfect definition or encircling and which is useful for investigating the species making difference (which is called *property*) and the name which is useless in naming the defined or in defining it (which is called *accident*).

These same names are necessary for understanding the most important division of a universal whole into its parts which is the division of a genus into species by species-making differences. They are also helpful for the three forms of accidental division (the division of a subject by its accidents or an accident by its subjects or an accident by other accidents that happen to the same subject).

These names are also necessary for understanding demonstration in which we see why a property belongs to a species through the latter's definition by its genus and differences.

Ignorance then of Porphyry's teaching in the *Isagoge* is ignorance of much, if not most, of logic.

## The Distinction of Names Said Equivocally of Many Things

A name can be said equivocally *by chance* of many things or *by reason*. It happens that *bat* is said of both the flying rodent and the piece of wood used in baseball. But there is a reason why the word *seeing* is carried over from the act of the eye to imagining.

The logician is much more interested in the name equivocal by reason than in the name equivocal by chance.

In the third part of Aristotle's *Categories* which is called the post-predicaments, there are distinguished the senses of some words which are equivocal by reason. And even key words in the *Categories* like *substance* are equivocal by reason.

Further, when the name of the defined is said equivocally by reason of many things, some name in the definition is also equivocal by reason. Thus when *statement* said of the (categorical or simple) statement and the compound statement is defined as speech signifying the true or the false, both *statement* and *true* and *false* are equivocal by reason.

Again all reasoned out knowledge (and indeed all knowledge of statements) is based on a knowledge of the statements known through themselves by all, which are common beginnings of all reasoned out knowledge. But the names in these statements (called *axioms* in one sense of that word) are equivocal by reason.

Moreover, since the middle term in demonstration is sometimes signified by a name equivocal by reason, it is also necessary for the logician to consider name equivocal by reason.

Moreover, since reasoned out understanding or knowledge is an effect of demonstration, the main syllogism studied in logic; and many forms of reasoned out knowledge are about a subject equivocal by reason (such as wisdom and political philosophy); it is most necessary to consider name equivocal by reason in logic.

Since logic is to help us avoid mistakes; and the most common kind of mistake is from mixing up the senses of an equivocal word; and reason (especially in universals) is much more apt to be deceived by a word equivocal by reason than by one equivocal by chance; it is altogether necessary for the logician to distinguish the ways in which a word or name becomes equivocal by reason.

## The Necessity of a Consideration of Name Equivocal by Reason

We have said that the distinction of five names, or five kinds of name, in the *Isagoge* of Porphyry can be considered as a distinction of *name said of many things univocally* or with the same meaning in mind. If we take genus, difference, species, property and accident strictly, they are a complete division of name said with one meaning of many things. They are divided in comparison to what those many things are. For genus, difference and species signify something inside what those many things are of which they are said; and property and accident, something outside what those many are of which they are said.

Perhaps there is need of another book about name said equivocally of many things and, especially, about name said equivocally of many things by reason. The *Isagoge* was originally written as an *Isagoge,* or introduction, to the *Categories* of Aristotle in which are ordered names said univocally of many things (especially genera and species). But there are also words in that book, in the post predicaments especially, which are equivocal by reason.

Although Porphyry gathered his definitions of genus, difference, etc. from Aristotle's works, he performed a service to all of us by bringing them together so that we could all see a universal distinction of *name said of many things univocally* which is necessary for understanding definition, division and demonstration, as Porphyry points out in the Proemium to his *Isagoge*.

Likewise, someone should bring together from the books of Aristotle (and Thomas Aquinas) a distinction of *name said of many things equivocally by reason* or of *name equivocal by reason* for the many reasons given above.

## Some Other Considerations of Names in Logic

There are other considerations of names in logic besides the above, which are found in the logic of the second and third acts of reason.

In the study of statement, we learn the names noun and verb, which differ in that the noun signifies *without time* and the verb, *with time*. The verb is also a sign of something said of another (or denied of it).

The syllogism is composed immediately from statements, but these are put together from names. The terms or limits of the syllogism, when we divide it, may be names which are called the major and the minor and the middle terms (although these may also be speeches, such as the middle term is often a definition).