# The Nefarious "Is"

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## Abstract

The simple word "is" has been noted since ancient times for its slipperiness. Three of its uses — the genus-species "is", the predicative "is", and the "is" of identity — are discussed in this paper. For each kind of "is", historical sketches are given to provide background and perspective, and examples are presented from the Person Concept.

*Keywords:* genus-species, predication, identity, Aristotle, Kant, Frege

Like "and", "or", "not", and "if", "is" is used in expressing logical form and structure. But since ancient times, scholars have recognized its slipperiness. Even those who know and respect the laws of logic may be led astray by it.

It is therefore valuable to have clarity about the ways it is used in the Person Concept, a system in which fundamental conceptual structures are formulated. Three of these ways — the genus-species "is", the predicative "is", and the "is" of identity — are discussed in this paper. In each case, before presenting examples from the Person Concept, historical sketches are given to provide background and perspective.

## Genus-Species Structures

In the fourth century BC, demonstrative (apodeictic) argument was an essential skill for educated persons in ancient Greece. To give students practice and experience in the social practice, teachers would lay down true premisses, and students would argue whether a conclusion based on the premisses was necessarily true. Teachers in different schools sought ways to make their students more competent at demonstrating the truth or falsity of conclusions.

Aristotle was one of these teachers. As is well known, he worked out a system of syllogisms for his students so that they could "thoroughly understand many arguments in the light of a few" (quoted in Kneale & Kneale, 1962/2008, p. 41). He created his system by dropping the subject-matter details of arguments, and looking for the patterns that remained.

He recognized fourteen forms, of which the most basic are:

- If every M is P and every S is M, then every S is P. ("If every dog is a mammal, and every collie is a dog, then every collie is a mammal.")
- If no M is P and every S is M, then no S is P.
- If every M is P and some S is M, then some S is P.
- If no M is P and some S is M, then some S is not P.

The use of letters as placeholders for specific content was his innovation (Kneale & Kneale, 1962/2008, p. 61).

Presented in this way, his forms might be mistaken for a mere list rather than a system. But in his lectures, Aristotle showed the systematic interrelationships among them (Kneale & Kneale, 1962/2008, p. 76). His system codified constraints on valid inference, and enabled students to recognize the validity of a conclusion based simply on its form. It also inspired system-builders for centuries, in both bottom-up and top-down approaches to understanding the world.

## A Bottom-up Approach

In a bottom-up approach to understanding the world, we start with particulars and move upwards, creating concepts as needed to organize the particulars into categories. By moving recursively from more specific categories (species) to more general categories (genera), we build hierarchical conceptual structures in which each higher level genus subsumes the lower level genera beneath it. We are limited only by our own ingenuity in the number of levels we create.

Most of us encountered this kind of structure in school when we studied botanical and biological taxonomies. The sunflower in the garden, for example, is an instance of the species H. annuus, the genus Helianthus, the family Asteraceae, the order Asterales, and the kingdom Plantae. The doggie in the window is an instance of the species C. lupus, the genus Canis, the family Canidae, the order Carnivora, the class Mammalia, and the kingdom Animalia. These structures were created in the 18th century by Carl Linnaeas, whose goal was to catalog all the particulars — animals, plants, and minerals — that God had created.

## A Top-down Approach

In a top-down approach to understanding the world, we start at the highest level, and proceed from the more general to the more specific, from possibilities to actualities, from the pre-empirical to the empirical. An example of a top-down formulation is Immanuel Kant's system for understanding the conditions and limits of human knowledge.

In his *Critique of Pure Reason*, Kant began by dividing the conditions for knowledge into sensible and intellectual conditions (see Figure 1). He then subdivided the conditions of sensibility into a priori and a posteriori conditions. (A priori concepts are in our minds prior to any experience and always carry with them necessity. In contrast, a posteriori concepts are derived from experience ). Kant (1781/1787/1996) presented the pure forms of space and time as conditions of sensibility that are "in us a priori, i.e., prior to any perception of an object" (B 41, p. 80).

On the intellectual side of the hierarchy, he divided the intellect into understanding and reason, and then subdivided the conditions of the understanding into a priori and a posteriori. He generated twelve categories — pure concepts of the understanding that are in us a priori — and placed them under the titles of "quantity", "quality", "relation", and "modality". According to Kant (1781/1787/1996), the categories, in conjunction with the forms of space and time, "make possible the formal unity of experience" (A 125, p. 171).

The categories correspond to basic functions of judgment that Kant found in traditional logic (the logic of Aristotle and the Stoics). For example, the category of "unity", under the heading "quantity", is used in making universal judgments ("All men are mortal."). The category of "negation", under "quality", is necessary for making negative judgments ("The soul is not mortal."). The category of "causality", under "relation", is involved in making hypothetical judgments ("If there is a perfect justice, then the persistently evil person is punished.").

## Category Mistakes

In creating systems, people sometimes make mistakes, treating facts or concepts that belong to one logical type or category as if they belong to another. Some of these mistakes are relatively easy to see and correct, e.g., when a species of plant is moved from one genus to another based on genetic studies. But some kinds of errors are harder to recognize. Especially if we have been using concepts in ways that are logically illegitimate for a long time, it may be difficult to see the nonsense built into a system. System critics therefore use the genus-species relation to elucidate errors, and facilitate the reallocation of facts and concepts to correct categories.

An example is Gilbert Ryle's classic work, *The Concept of Mind*, in which he offers a critique of the influential system created by René Descartes in the 17th century. Descartes had formulated "minds" and "bodies" as the fundamental subdivisions of a person, and talked about mental states and processes in the same ways as physical states and processes. Ryle treats this dualism as nonsense. He exposes "a family of radical category-mistakes" that led to Descartes's misrepresentation of a person as "a ghost mysteriously ensconced in a machine" (1949, p. 18).

The family of errors includes familiar ways of talking about volitions, emotions, dispositions, sensations, etc. In a discussion of the imagination, for example, Ryle (1949) observes that 'pictures' does not denote "a genus of which snapshots are one species and mental pictures are another, since 'mental pictures' no more denotes pictures than 'mock-murders' denotes murders" (p. 253). To speak of something as a mental picture is to disqualify it as a real picture, just as to speak of something as a mock-murder is to say that no murder was committed. For Ryle, the way out of this kind of confusion is to focus on behavior, not private sensations and imaginings.

## The Genus-Species "is"

In light of the preceding historical sketches, the following instances of the use of "is" can be recognized as expressing genus-species relationships:

- Miniature poodles are Carnivoras.

- Causality is an a priori concept of the understanding.
- A mock-murder is not a murder.

Now we are in a position to ask, "Where is the genus-species "is" used in the Person Concept?"

One example is the relationship between the jobs of Actor, Observer, and Critic. As Ossorio (2006) notes, in addition to being functionally related, the jobs are logically related. "The [logical] relation is that of genus-species. Specifically, the Observer-Describer task is a special case of the Actor task and the Critic task is a special case of the Observer-Describer task, hence also of the Actor task." (p. 248)

A second example is the division of Person Characteristics into the categories of "Dispositions", "Powers", and "Derivatives", with the subcategories of "Traits", "Attitudes", "Interests", and "Styles" under "Dispositions", the subcategories of "Abilities", "Knowledge", and "Values" under "Powers", and the subcategories of "States", "Capacities", and "Embodiment" under "Derivatives". Based on this division, we can say, for example, that a Trait is a (species of) Disposition, and an Ability is a (species of) Power.

On the whole, taxonomies are kept to a minimum in the Person Concept. Instead, the primary use of the genus-species "is" involves the identification of category mistakes. Reviewing selected works by Ossorio, we find the following reminders:

- "The Person Concept is essentially *sui generis* and cannot be meaningfully understood as a species under any substantive or methodological genus of 'psychological theory'..." (Ossorio, 1969/2010, p. 6)
- "Implicit theories are no more a species of theory than imaginary wolves are a species of wolf... Such vague characterizations do not pin the subject matter down well enough to talk sensibly about it." (Ossorio, 1982/1998, p. 4)
- "Behavior is no more a species of movement that the queen of hearts is a species of cardboard." (Ossorio, 1967, p. 21)
- "Behavior is not a species of movement because (a) what distinguishes one behavior from another is not what distinguishes one movement from another, and (b) what makes one behavior the same as another is not what makes one movement the same as another." (Ossorio, 1969/2010, p. 13)
- "Unmotivated behavior is not a kind of behavior any more than fictitious assets are a kind of asset." (Ossorio, 1982/1998, p. 5)
- "Neither human behavior nor human history is a species of process, though each has process aspects." (Ossorio, 1982/1998, p. 108)
- "It is not the case that behavior is a genus comprising several species, of which verbal behavior is one." (Ossorio, 1969/2010, p. 84)
- "There is not a genus-species relationship between behavior and verbal behavior. Verbal behavior is not a species of behavior in the way that the Stutz Bearcat is a species of automobile." (Ossorio, 2006, p. 134)
- "Persons are not a species of material object." (Ossorio, 1980/1982, p. 18)

Readers are encouraged to see Ossorio's explanations of each of the errors in the citations given.

## Function-Argument Structures

In spite of the usefulness of the genus-species form, scholars have recognized since Roman times that it is inadequate for dealing with the complexity of relationships in the real world. Consider the following examples, discussed by logicians over the centuries:

- X is bigger than Y; therefore, Y is smaller than X.
- X has twice as much as Y, and Y has twice as much as Z; therefore X has four times as much as Z.
- X is a grandparent of Z; therefore, there are two persons Y and Z such that X is a parent of Y, and Y is a parent of Z.
- "A circle is a figure; therefore anyone who draws a circle draws a figure." (Kneale & Kneale, 1962/2008, p. 313)
- "All dogs are animals; therefore, all heads of dogs are heads of animals." (Gensler, 2002/2010, p. 225)

None of these relationships fits the forms of traditional logic.

What forms would enable us to represent these relationships? What notations would make it possible to handle them logically? In 1879, answers to these questions were given by Gottlob Frege, in his pamphlet *Begriffsschrift* ('Conceptual Notation').

A German mathematician and philosopher, Frege had the utmost respect for Immanuel Kant and looked up to him "with grateful awe". Nonetheless, Frege disagreed with Kant about the status of arithmetic. Kant had treated our knowledge of arithmetic as dependent on the sensible forms of space and time, as well as the pure concepts of the understanding. But Frege believed that arithmetic was timelessly, objectively true. It was known to us independently of sensory intuition, and its truths could be derived based on logic alone — albeit not on the logic that Kant had accepted as given.

For arithmetic to have the status of logic, logic needed to have a formal structure at least as complex as arithmetic. Frege therefore created his own system of logic, in which it was possible to represent a range and complexity of relationships far greater than in any previous formalism. Rather than using the familiar subject-predicate form of ordinary language, he made the function-argument structure of mathematics a building block of his system.

In a mathematical equation such as $f(x_1 \ldots x_n) = y$, $f$ is a function. The arguments to $f$ are $x_1 \ldots x_n$, and the value of $f$ is $y$. A function is said to be a "mapping" from members of its domain (the set of possible values for $x_1 \ldots x_n$) to a member of its range (the set of possible values for $y$). For example, the square root function $f(x) = \sqrt{x}$ maps real numbers to real numbers. Its domain is $[0, \infty)$ and its range is $[0, \infty)$. Frege recognized the representational power of this notation for logic.

In his system, there are two fundamental categories: objects and concepts. An object is something that is complete and can be named, but is not necessarily

perceptible. Frege "expressly includes among his objects such things as numbers, places, instants, and periods of time" (Kneale & Kneale, 1962/2008, p. 496).

In contrast to objects, concepts are incomplete in the way that mathematical functions are incomplete. Concepts have an unlimited number of gaps or places that await completion by objects. For example, '( ) is gentle' has a place for one object; '( ) is the brother of ( )' has gaps for two; and '( ) donates ( ) to ( )' has places for three.

When the gaps are completed by objects, concepts yield truth-values. If it is a fact that the dog is gentle, the function yields 'the True'. If it is not a fact that the man donates money to the NSPCA, then the function yields 'the False'. The True and the False are themselves objects. "For according to Frege's usage objects include all things that are not functions, i.e. not only sticks and stones and men, but also numbers and truth-values. If we ask what a function is, he tells us that its essence is to be found in a certain connexion or co-ordination between the objects which are its arguments and those which are its corresponding values." (Kneale & Kneale, 1962/2008, p. 499)

## The Predicative "is"

Simple examples of the use of the "is" of predication include:

- The cat is on the mat.
- The cat and the dog are friends.
- The cat is sociable.

Using the functional notation $f(x_1 \ldots x_n)$, the content of these sentences is expressed as:

- on(cat, mat)
- friends(cat, dog)
- sociable(cat)

In each case, the cat is described as standing in some relationship ("on", "friends") or as having some property ("sociable").

Examples like these can be understood in light of the familiar semantic model, in which case the focus is on the naming and describing of objects, followed by verification ("Is it true that the cat and the dog are friends?"). But they can also be seen from a pragmatic perspective, in which case the focus is on behavioral significance ("What difference does it make if they are friends?"). When the predicative "is" is used in the Person Concept, the pragmatic approach is primary.

The Relationship Formula is a straightforward example. Discursively, the formula states: "If A has a given relationship, R, to P, then the behavior of A with respect to P will be an expression of R unless..." (Ossorio, 2006, p. 230). The formula highlights the difference it makes if R(A, P), and hence what the point of saying it is. If they are friends, they will treat each other differently than if they are enemies or indifferent to each other.

The emphasis on behavioral significance is also evident in the formulation of Person Characteristics. As noted earlier, Person Characteristics are organized

in a taxonomy in the Person Concept. But it is a taxonomy with a difference. The pigeonholes at the bottom do not contain the names of specific traits like "brave", "gentle", or "sociable", or the names of specific attitudes, abilities, states, etc. Instead of such content, they contain rules for generating Person Characteristics (originally called Individual Differences, or IDs). These rules are functions, as Ossorio (1967) states explicitly:

> Just as we classify together "square root", "sine", "logarithm", etc. as "mathematical functions", which take numbers as their arguments and have numbers as their values, the formal ID concepts are correctly described as a set of logically interrelated "person functions", which take intentional actions as their arguments and have intentional actions as their values. (p. 17, italics omitted).

We use "person functions" in our understanding of persons and in our behavior towards them. For example, if we assimilate a hostile action to a Trait function ("He's an angry person."), we treat that action differently than if we assimilate it to a State function ("He's in a bad mood.").

In short, in the Person Concept, the "is" of predication is *not* understood primarily in light of truth functions. It is understood in light of pragmatic functions that guide our behavior.

## Calculational Systems

Frege's system, known today as "predicate logic" or "predicate calculus", revolutionized logic. In addition to notation for functions, Frege also introduced symbols for connectives (words like "and", "or", and "if") and for quantifiers (words like "all" and "none"). He gave specific rules for operating with his symbols, so it was possible to calculate with them, just as we calculate with algebraic symbols.

Recall a simple rule of substitution from algebra: "Any number *c* may be added to both sides of an equality." In algebraic notation, that rule is expressed as "If $a = b$, then $a + c = b + c$", where "=" is the symbol for equality, "+" is the symbol for addition, and "a", "b", and "c" represent known quantities. The rule is useful in changing the form of a complicated algebraic equation so it is possible to reach a simpler form. Likewise with Frege's rules: they are designed for the creation and simplification of logical formulas.

Frege's calculus inspired generations of system-builders, just as Aristotle's system had done. Bertrand Russell and Alfred North Whitehead (1910), Rudolf Carnap (1937), and Noam Chomsky (1957) are examples. Chomsky's original model for Generative Grammar involved a calculational system in which a noun phrase and a verb phrase are substituted for a sentence (S = NP + VP), a determiner and a noun are substituted for the noun phrase (NP = D + N), and so forth, until a "surface structure" is reached in which English words are substituted for the symbols. Chomsky's calculus revolutionized the study of grammar just as Frege's had transformed logic. (One linguist, lamenting the passage of traditional grammars, wrote that modern linguistic papers "bristle like a page of symbolic logic" (quoted in Tomalin, 2002, p. 838)).

A side effect of Frege's achievement was the undermining of Kant's categories. When Kant (1781/1787/1996) published the second edition of his *Critique of Pure Reason*, he wrote of logic: "Since Aristotle...it has not been able to advance a single step, and hence is to all appearances closed and completed" (B *viii*, p. 15). He believed that he had given his categories an unassailable foundation by basing them on forms of judgment found in traditional logic. But after Frege's work became known, Kant's categories were criticized by many as pointless. "Regardless of how plausible Kant's project might appear within the context of classical Aristotelian logic, it is regarded as an obvious non-starter when viewed in the light of modern truth-functional and predicate logic." (Allison, 2004, p. 134)

## The "is" of Identity

To understand the use of the "is" of identity in the Person Concept, consider the following examples:

- To say "Hold the rope" is to give a warning.
- Pumping water to the people is poisoning them.
- John Barrymore is Hamlet tonight.
- '5 + 3' is '2 × 4'.
- A state of affairs is a totality of related objects and/or processes and/or events and/or states of affairs.
- A process is a sequential change from one state of affairs to another.

The first three are empirical identities that depend on context: "In *these* circumstances, to say "Hold the rope" is also to give a warning, even though in general (i.e., in most circumstances) it is not" (Ossorio, 2006, p. 60). In the Person Concept, empirical identities are involved in talking about the significance of behavior ("What is she doing by doing that?") as well as in understanding the relationship between statuses and the historical individuals who embody them (cf. Ossorio, 1982/1998, p. 124).

The second three examples are categorical identities that always and necessarily hold. "'5 + 3' is '2 × 4'" is a good model for understanding this kind of "is": '5 + 3' is (always and necessarily) the same as '2 × 4', even though the forms of representation are different. Categorical identities are used in the State of Affairs (SA) System, one of the four component concepts of the Person Concept.

The SA System is responsive to the idea — originally expressed by Kant in the *Critique of Pure Reason* — that there must be "logical relationships among the concepts in terms of which our observations are made and our world described". Without these logical relationships, "our observations would be as unrelated as the number 17, the color orange, and the Day of Judgment; and the very concept of "observation" would be lacking" (Ossorio, 1971/1978, p. 16).

But how can we formulate these relationships? Ossorio's solution reflects the logical complexity that Frege made possible. Rather than talking about a small set of a priori concepts in the mind, Ossorio treats four basic reality concepts — "object", "process", "event", and "state of affairs" — as elements in a calculational system, and presents rules for calculating with them. (Two of the rules are given

above.) The rules codify the systematic relationships among the reality concepts, and govern the transitions that people make in generating and connecting forms of representation of the real world. The single operation in the system is identity coordination, represented by the categorical "is".

Additional examples of the use of the categorical "is" in the Person Concept include:

- "P acts on concept C" is the same thing as "P acts on the distinction of C vs. some set of alternatives, C1, C2, C3..." (Ossorio, 2006, p. 18)
- "My having that status... is the same thing as my having the relationships I do with everything there is, singly and jointly." (Ossorio, 2006, p. 379)
- "My having that place and those relationships is the same thing as my having the behavioral possibilities (behavior potential) I do." (Ossorio, 2006, p. 379)
- "My self-concept is the same thing as my summary formulation of my status as a person." (Ossorio, 2006, p. 377)
- "Specifying the various Elements of the process is the same thing as specifying the various statuses involved in the process (e.g., Catcher, Pitcher, Ball, etc.), and in this sense Elements are statuses." (Ossorio, 1982/1998, p. 124)
- "The key fact is that the Cs are the same as the Rs. Remember, Cs were the relevant circumstances that give us reasons. That's a careless way of saying it. The correct way is to say that these circumstances are states of affairs that *are* reasons. There is an identity between the C and the R." (Ossorio, 1990, p. 32)
- "The error involved in trying to define psychopathology in concrete, observable terms is the same as the error involved in trying to define "trumps" by pointing to the queen of hearts." (Ossorio, 2006, p. 412)

## Conclusion

The genus-species "is", the predicative "is", and the "is" of identity have been discussed in this paper. For each kind of "is", historical sketches were given to provide background and perspective, and examples were presented from the Person Concept. My hope is that the paper evokes curiosity about the Person Concept, and makes it a little easier to understand its logic.

## Author Note

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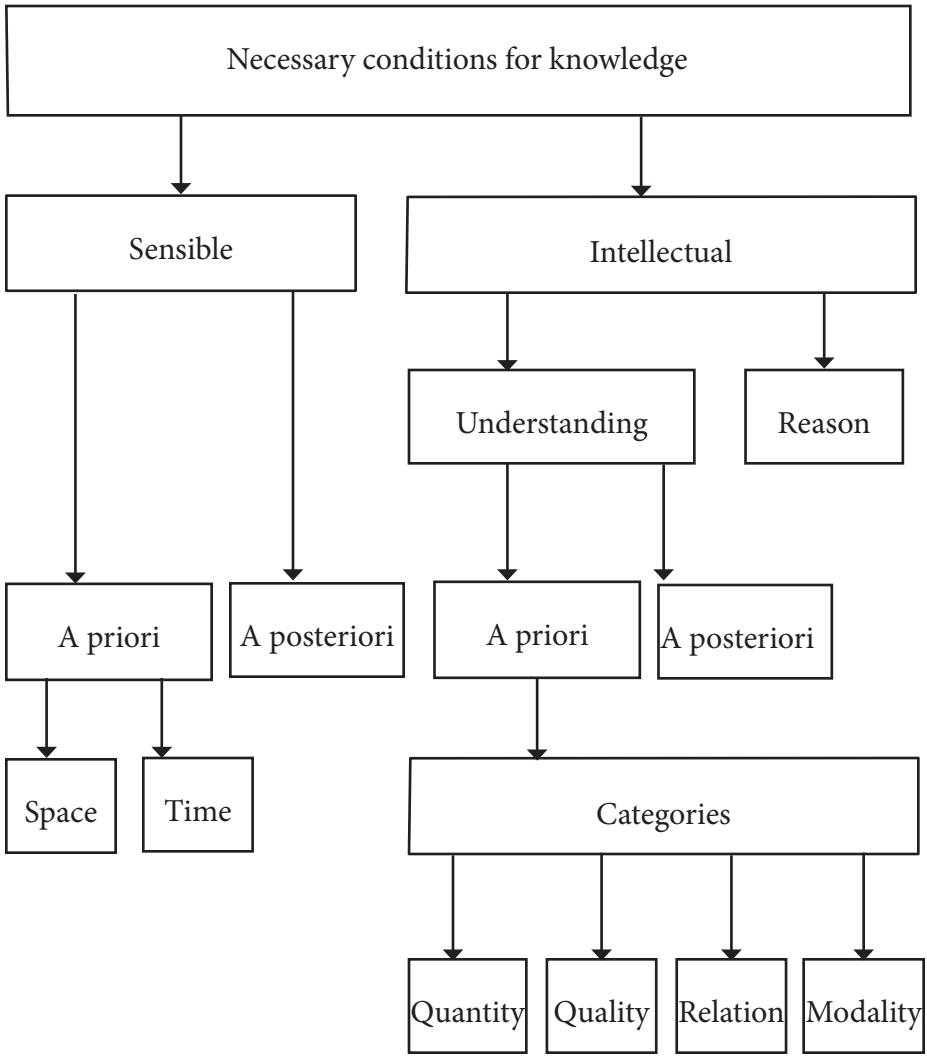


***Figure 1***. Kant's top-down analysis of the necessary conditions for knowledge.