The Misguided Debate Over Existential Import: Ambiguity and Aristotle's Categorical Forms

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Introduction

The history of logic is broadly divided into the study of classical, Aristotelian logic, and the study of contemporary, Fregean logic. The dissonance between these two general approaches has led to many debates. One such debate concerns the nature of Aristotle's traditional categorical forms (i.e. A, E, I, O), specifically with respect to existential import. In this essay, I critically examine the debate between the two primary approaches to existential import, the first being that affirmative sentences have existential import while negative sentences do not (the Classical View) and the second being that particular sentences have existential import while universal sentences do not (the Contemporary View). I ultimately argue that neither of these approaches is preferable, as both make the mistaken assumption that there can be a uniquely accurate, general method for assigning a propositional form to ordinary language expressions of the categorical form **A**. Furthermore, I argue that we ought not discard the surrounding ideas and conclusions derived from either approach, as both can be preserved as useful logical tools.

§1. Terminology and Logical Framework

I begin by outlining some relevant terminology:[1]

- **Fact:** A way that objects in the world are, and are related to one another; a true proposition.
- **Proposition:** A possible fact; that is, the *meaning* of a propositional sign, which throughout this essay will be written in Quantificational Logic (QL, henceforth).
  - **Propositional Sign:** An expression which represents a proposition. A propositional sign *means* the proposition that it represents.
  - **Nonsense:** An expression that is *not* a propositional sign. E.g., 'Purple is equal'.[2]
- **Expression:** A collection of terms in ordinary language (OL, henceforth)—spoken, written, or otherwise manifest—that is either a propositional sign, or is nonsense.
- **Existential Import:** An expression has existential import iff it corresponds to a proposition that states the existence of the expression's subject (S), i.e., a proposition expressible in QL containing (a non-negated instance of) $\exists x[Sx]$.

Logic is primarily concerned with propositions. OL expressions that are non-propositional (e.g., "Hello", "Open the door", etc.) instead fall under the purview of the philosophy of language. That is, logic cannot *directly* deal with nonsense, as these expressions have no corresponding propositions. For the purposes of this essay, all relevant propositions can be written in QL; expressions that cannot be

[1] These (perhaps somewhat unorthodox) definitions are required in order to clarify the distinction between ordinary language statements (i.e. expressions) and their meaning (i.e. propositions).

[2] One may further divide this category further into 'ill-formed' expressions and 'ambiguous' expressions (which may represent some proposition *in context*). However, as discussed later in this essay, both sides of the existential import debate are making general—that is, *contextless*—claims. Both the views suppose a superior, general method for interpreting all expressions of the form **A**, **E**, **I** or **O**; albeit for different reasons. Thus, for the purposes of this essay, the ill-formed/ambiguous distinction is not applicable. There is no context with which one may disambiguate ambiguous expressions whilst considering *general* expression forms.

represented in QL will be considered to be nonsense.[3] Throughout this essay, OL broadly refers to all conversational language. 'Tá duine ard amháin ar a laghad `ann` and 'There is at least one tall person' both represent,in OL, the same proposition: $\exists x[Tx \& Px]$. Nevertheless, English will be the primary example of OL throughout this essay.

§2. Framing the Existential Import Debate

Aristotle's traditional 'Square of Opposition' is a collection of four general expression forms, and their relations to one another. These general expression forms are traditionally labelled as follows, where S and P are general placeholders for the subject and predicate terms:

A Every S is P

E No S is P

I Some S is P

O Some S is not P (equivalently, Not every S is P)

The relations between **A**, **E**, **I**, and **O** are typically represented in a diagram (as shown below). Although these expression forms are often referred to as 'propositional forms', this is misleading as they rather act as schematics for expressions. As such, I will instead refer to these forms as 'expression forms' throughout this essay.

The present debate concerns the existential import of these expression forms. This essay focuses on the two primary approaches to this debate. These approaches can be characterised as follows:

- **The Classical View:** The affirmative traditional expression forms (**A**, **I**) have existential import and the negative forms (**E**, **O**) do not. This view is typically associated with Aristotle and nominalists after Ockham.[4]
- **The Contemporary View:** The particular traditional expression forms (**I**, **O**) have existential import and the universal forms (**A**, **E**) do not. This is the standard contemporary view.[5]

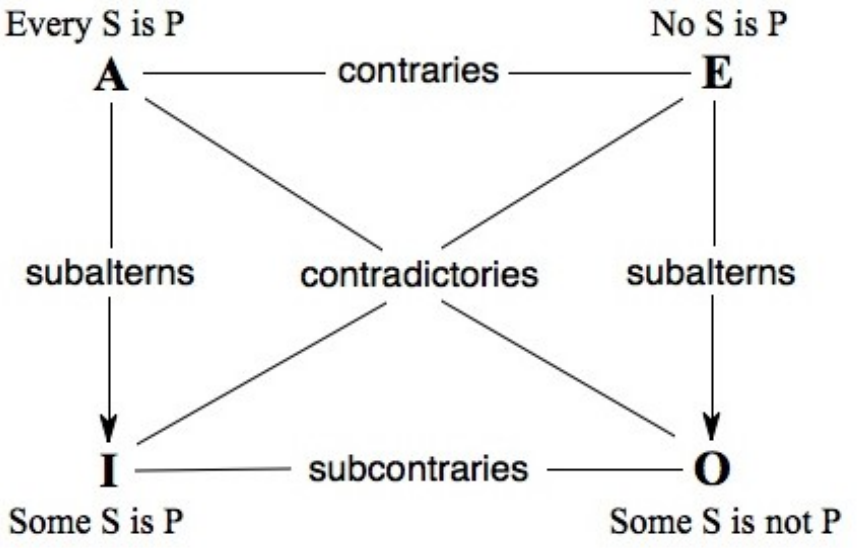
These are two different interpretations of the four traditional expression forms (**A**, **E**, **I**, **O**), depicted in the traditional square of opposition below:[6]

[3] Of course, not all meaningful expressions must be expressible in QL. Rather, I claim only that the expressions relevant to the present discussion can be classified either as 'nonsense' or 'parsable in QL'. Meaningful expressions that are not parsable in QL—such as modal expressions, self-referential expressions, &c.—elude the scope of this essay.

[4] Klima 2008, p.144; Aristotle, 1981, 1011^b25; 1989, 13^b12

[5] Russell 2009, p.62; Frege, 1879, §12; 1972, pp.134–135. See also (Quine 1948).

[6] Diagram: (Parsons 2021, §1)



When examining the practical differences between the two approaches toward existential import, it is pertinent to note that both approaches reach the same conclusion about the form **E** (that it has no existential import) and the form **I** (that it has existential import), and differing conclusions about **A** and **O**.[7] As such, the latter two forms are of particular interest for this essay.[8] I favour Ackrill's translation of the expression form **O**: 'Not every S is P,' rather than the commonly used 'Some S is not P'.[9] In the context of Aristotle's work, Ackrill's translation seems most appropriate because it highlights that **O** is the contradictory of **A**: $Axy = {\sim}Oxy$ for all x and all y.[10] When understanding **O** simply as **~A**, we see that the extent of the disagreement between the Classical and Contemporary approaches can be characterised as a disagreement regarding expressions of the form **A**.[11] The conclusion one reaches regarding the existential import of A immediately informs her conclusion regarding the existential import of **~A** (**O**). Moreover, the differences only have practical implications in the event that S does not refer; since if S does refer, then $\exists$`x[Sx] &` $\forall$`x[Sx→Px] and` $\forall$`x[Sx→Px] have the same truth value.` Every differing truth value between the two approaches stems from their different approaches to this particular form. Thus, when we critically compare the two approaches for this specific case (of the form **A** when S does not refer), we effectively compare the approaches as a whole.

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[7] They agree on the existential import of **I** because **I** is both positive and particular. **I** meets the criteria of both approaches for existential import. The reverse is true of **E**.

[8] When considering logical structure, the only significant difference between *propositions* is their truth values (though this is not true of expressions). E.g., '(~A) & B' is equivalent to 'A → B' because they share the same truth values.

[9] Aristotle 2020; Parsons 2021, §2.2

[10] (Keynes 2019, p.145). The contradictory relations remain valid on either approach to existential import (see pp.5–6). As such, this translation choice does not favour one approach over another.

[11] Alternatively, the disagreement could be characterised as concerning only **O**.

Considering the especially relevant case—wherein S does not refer to an expression of the form **A**—both approaches assign particular proposition forms to the same expression form, namely, **A**. On the Contemporary View (particular-universal approach), one assigns to this expression form the propositional form $\forall x[Sx \rightarrow Px]$, and on the Classical View (affirmative-negative approach), one assigns to this expression form the proposition form $\exists x[Sx]\ \&\ \forall x[Sx \rightarrow Px]$. It is my position that assigning any such proposition to an expression of this general form in OL is done so arbitrarily and ought to be avoided. It is in assigning any general propositional form to an expression of the form 'Every S is P' that both approaches are mistaken.

§3. Ambiguity and Nonsense

The existence of the very debate with which this essay is concerned indicates the ambiguity of expressions of the form **A**. 'Every S is P' is ambiguous insofar as two fluent speakers may read it and come to different understandings as to whether or not it implies that there exist things that are S. If we are to properly interpret an ambiguous expression in OL, then we must understand what is meant by the speaker.[12] Consider the following example: Seán owns a pet chicken who has recently eaten her portion of seeds and will not eat again for some time. Simultaneously, Seán is cooking a chicken breast for lunch that has just reached the point where it is safe to eat. We cannot assign a truth value to the expression 'Seán's chicken is ready to eat', without first clarifying what it means; that is, what proposition it corresponds to: Edible(Chicken-Poultry) *or* Hungry(Chicken-Pet). Without disambiguating the meaning of the expression through external context, we cannot decide how we should generally interpret it. In OL, finding out what is meant by an expression is done intuitively, based on the surrounding context. However, in isolated, particular expressions or abstract cases—such as the categorical forms with which we are dealing—there is no such context. Thus, we have no basis for rearticulating expressions of form **A** such that they are propositional signs. In propositional logic, expressions are useful only insofar as they represent propositions; as such, if an expression is not the sign of some proposition then it is outside of logic's purview. We can of course draw conclusions about the two propositional forms that the two approaches assign to the expression form **A**, but we can only do so if these propositional forms are independent starting points. We simply cannot say anything in logic about the ambiguous expression in and of itself as it corresponds to no particular proposition. That is to say, under our definitions, such ambiguous expressions are nonsense. Thus, any expression of form **A** is nonsense. This highlights the shared mistaken assumption of both approaches to existential import, namely: 'There *can be* a standard method of determining the existential import (directly or indirectly) of expressions of the form **A** that is accurate and superior to other potential methods'.[13] Just as with 'Seán's chicken is ready to eat', 'Every S is P' is ambiguous, and thus

[12] Here, 'properly interpret in OL' means rearticulating for ourselves the expression such that it is a propositional sign inline with intentions of the expression's originator, rather than nonsense.

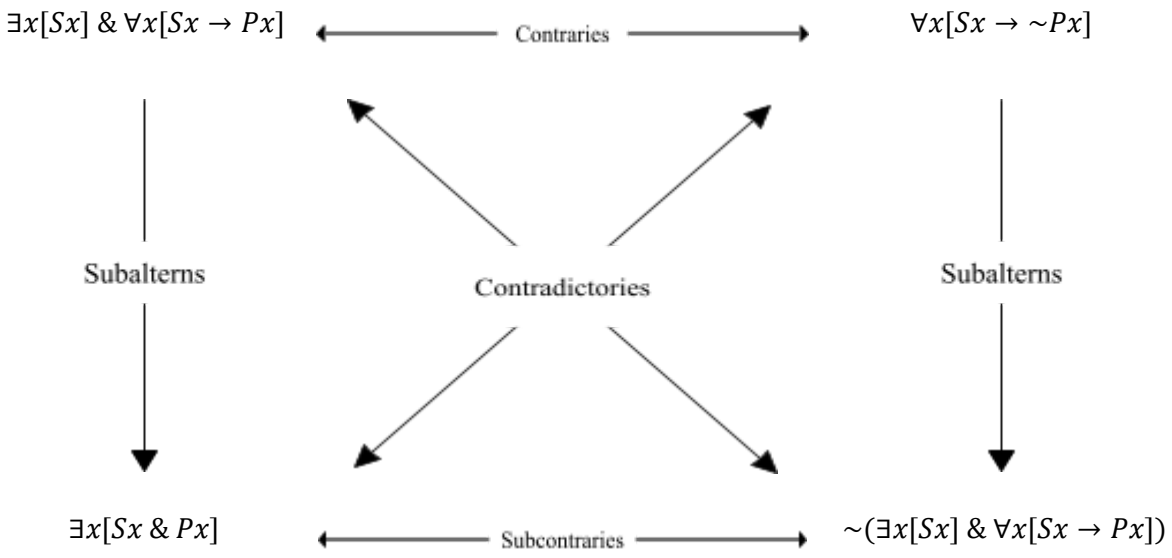
[13] Note that the Contemporary View and the Classical View—whilst they both advocate for a superior general method—differ in their reasons for preferring their respective methods. The Contemporary View prioritises

nonsense; we cannot make use of such expressions in logic without first finding their intended *meaning*.

§4. Preserving the Usefulness of a Misguided Debate

Within logic, we may instead draw conclusions about the propositional forms A^{P1}: $\exists x[Sx] \,\&\, \forall x[Sx \rightarrow Px]$, and A^{P2}: $\forall x[Sx \rightarrow Px]$. These are distinct propositional forms that are associated with **A**: A^{P1} on the Classical View and A^{P2} on the Contemporary View. Neither A^{P1} or A^{P2} *necessarily* correspond to **A**, and they can be restated in OL as S^1: '*There is some S and if something is S then it is P*' and S^2: '*If something is S then it is P*' respectively. Expressions are 'assigned truth values' only insofar as they correspond to a proposition with a truth value; e.g., 'Purple is equal' has no truth value, and 'Some men are hungry' has a truth value insofar as it represents the truth-apt proposition $\exists x[Mx \,\&\, Hx]$. As such, recognising that expressions of the form **A** are nonsense prohibits asking 'Is 'Every S is P' True?' (for any given 'S' and 'P'). Rather, we should seek a clarified propositional sign as a starting point.[14] This leaves us with two coexisting (and indeed useful) 'squares of opposition', as follows:

- **The Square of Opposition Regarding A^{P1}**



In this case we are using the propositional form A^{P1}: $\exists x[Sx] \,\&\, \forall x[Sx \rightarrow Px]$ rather than **A**.

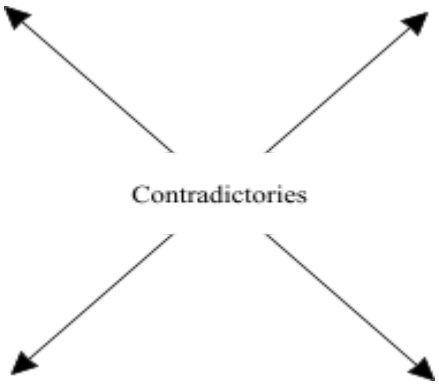
convenience and simplicity, whereas the Classical View prioritises the truth conditions of the expression forms. Nonetheless, their shared assumption remains despite their different motivation, and it is this assumption that ultimately fails.

[14] An expression of form **A** is ambiguous even when S refers. However, in this case, A^{P1} and A^{P2} would reach the same truth value. Thus, one can clarify **A** in this case, but this would not be particularly impactful. Analogously, 'Michael Collins is dead' could refer to the former astronaut, or the former Irish minister for finance, but it is true either way.

All that Aristotle attributed to the form **A**—its logical relations, laws of inference, and conclusions—in fact applies instead to A^{P1} (insofar as they were well reasoned conclusions to begin with) as this was the *meaning* with which he was concerned.[15] Unfortunately, these conclusions were tainted by starting from the false assumption that **A** necessarily means A^{P1}. Therefore, the logical system that lends itself to the Classical View is still useful; we just require the starting point A^{P1}, rather than **A**.

❖ **The Square of Opposition Regarding A^{P2}**

$\forall x[Sx \rightarrow Px]$ $\forall x[Sx \rightarrow \sim Px]$



$\exists x[Sx \,\&\, Px]$ $\exists x[Sx \,\&\, \sim Px]$

As in the previous diagram, all the conclusions Russell and contemporary logicians draw about **A** (insofar as they are well reasoned to begin with) remain valid, but instead of pertaining to **A**, they pertain to A^{P2}, and say nothing about expressions of form **A** directly. In the case of A^{P2}, only the contradictory relations hold true.

Conclusion

In conclusion, the debate between which interpretation of **A** is 'correct' or even 'preferable' is misguided; an expression of form **A** is ambiguous. We ought to focus on what conclusions we can draw from propositional signs and their corresponding propositions, and typically try to avoid expressions of form **A**, replacing them with expressions of form S^1 or S^2 according to our intended meaning. Neither way of interpreting **A** is generally favourable. Thus, neither interpretation of **O**—the contradictory of **A**—is favourable. Thus, neither approach to existential import is favourable. Despite this, conclusions that have followed from a given understanding of **A** are still useful for drawing conclusions about propositions of the form that they (mistakenly) assign to **A** in general. Going

[15] For example, A^{P1} can be validly obverted to read $\forall x[Sx \rightarrow \sim(\sim P)x]$. (Keynes 2019, p.101)

forward, we should not approach the existential import of the traditional forms in either of the popularly proposed ways, but we should neither discard their teachings, as both are correct, albeit concerned with different propositional forms or meanings (which they unfortunately both express with ‘A’).

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