The Misguided Debate Over Existential Import: Ambiguity and the Categorical Forms

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Abstract:

This paper concisely dissolves a long-standing debate between classical and contemporary approaches to the existential import of the Aristotelian categorical forms (**A**, **E**, **I**, **O**), particularly focusing on utterances of the form **A**: "Every S is P". The classical (Aristotelian) view holds that such utterances imply the existence of their subject whereas the contemporary (Fregean) view rejects this implication. For example, "All unicorns have horns" is true on the contemporary account and false on the classical account. I argue that this debate is misguided: utterances of the form **A** are semantically ambiguous and non-propositional. That is, there can be no generally applicable, abstract, accurate method of interpretation of utterances of the form **A**—rendering both the classical and contemporary accounts untenable. However, the propositional forms that each side of the debate associates with **A**—"$\forall x[Sx \rightarrow Px]$" and "$\exists x[Sx] \,\&\, \forall x[Sx \rightarrow Px]$"—remain logically coherent and useful, provided these conclusions are drawn about one of the propositional forms, rather than about the utterance form itself. This paper demonstrates that, although the utterance form **A** is ambiguous, the propositional forms it is taken to represent are fully comprehensible. In clarifying this distinction, the paper preserves the functional insights of both the classical and contemporary approaches whilst dissolving their disagreement. I further show that my conclusions regarding the ambiguity of A generalise to the remaining categorical forms, and thus undermine both approaches to the existential import of categorical forms as a whole. Ultimately, I conclude that logic must proceed from clearly defined propositions, or propositional signs, rather than ambiguous utterance forms.

Abstract Word Count: 259

Introduction

The history of logic is broadly divided into the study of classical, aristotelian logic, and the study of contemporary, fregean logic. This shift in the study of logic (post-Frege) has led to many debates that arise in the dissonance of these two general approaches to logic. One such central debate concerns the nature and existential import of Aristotle's traditional categorical forms. In this essay I will critically examine the debate between two primary approaches to existential import, those being: affirmative sentences have existential import while negative sentences do not (the Classical View); particular sentences have existential import while universal sentences do not (the Contemporary View). I will ultimately argue that neither approach is preferable, as both make the mistaken assumption that there can be an uniquely accurate, general method for assigning a propositional form to ordinary language utterances of the categorical form **A**. However, I will also argue that we ought not discard the surrounding ideas and conclusions derived from either approach, as both can prove useful in logic.

Terminology and Logical Framework

I will begin by outlining some relevant terminology:[1]

- **A**: The utterance form "Every S is P"
- **E**: The utterance form "No S is P"
- **I**: The utterance form "Some S is P"
- **O**: The utterance form "Not every S is P"
- **Fact:** A way that objects in the world are, and are related to one another.
- **Proposition:** A representation (written in Quantificational Logic (QL, henceforth) throughout this essay) of a possible fact. E.g. $\forall x[Fx \rightarrow Gx]$.
- **Utterance:** A collection of terms in ordinary language (OL, henceforth) spoken or written, that either acts as a propositional sign, or is nonsense.[2]

[1] These (perhaps somewhat unorthodox) definitions are required in order to clarify the distinction between ordinary language statements (utterances) and their underlying logical structure (propositions).
With these definitions in mind, referring to **A**, **E**, **I**, **O** as 'propositional forms' is misleading; I will instead refer to them as 'utterance forms' henceforth.

[2] That is, an utterance (if it is a propositional sign) represents a proposition which itself represents a potential fact.

    - **Propositional Sign:** That which represents a proposition. E.g. Words on a page, sound waves, &c.; A propositional sign corresponds to the proposition that it represents.
    - **Nonsense:** An utterance that is not a propositional sign. E.g. 'Purple is equal'.[3]
- **Existential Import:** An utterance has existential import iff (if and only if) it corresponds to a proposition that states the existence of the utterance's subject; that is, if it can be written in QL such that it contains $\exists x[Sx]$.

Logic allows us to determine the validity of arguments, determine the truth or falsity of certain propositions, &c. However, logic does not deal with nonsense, as these utterances have no corresponding propositions. Thus, OL utterances that are non-propositional ("Hello", "Open the door", &c.) fall under the purview of the philosophy of language, rather than logic proper.[4] For the purposes of this essay, all relevant propositions can be written in QL; utterances that cannot be represented in QL will be considered to be nonsense.[5] Throughout this essay, OL broadly refers to conversational language, but is mainly considering English.[6]

Framing the Existential Import Debate

With our clarified terminology in mind, the two approaches to existential import that I will focus on in this essay can be characterised as follows:

- **The Classical View:** The affirmative traditional utterance forms (**A**, **I**) have existential import and the negative forms (**E**, **O**) do not. This view is associated with Aristotle and nominalists after Ockham.[7]

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[3] One may divide this category further into 'ill-formed, entirely useless' utterances and 'ambiguous utterances' (which may still be useful *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 Classical View and the Contemporary View argue for a supposedly superior, general method for all utterances of the form **A**, **E**, **I** or **O**; albeit for different reasons. Thus, for the purposes of this essay, the ill-formed/ambiguous distinction collapses. In the abstract context of 'utterance forms' and their supposed existential import, there is no context with which one may disambiguate ambiguous utterances.

[4] Of course, such utterances are still useful, important, and ought to be studied; but ought to be studied separately to propositional logic.

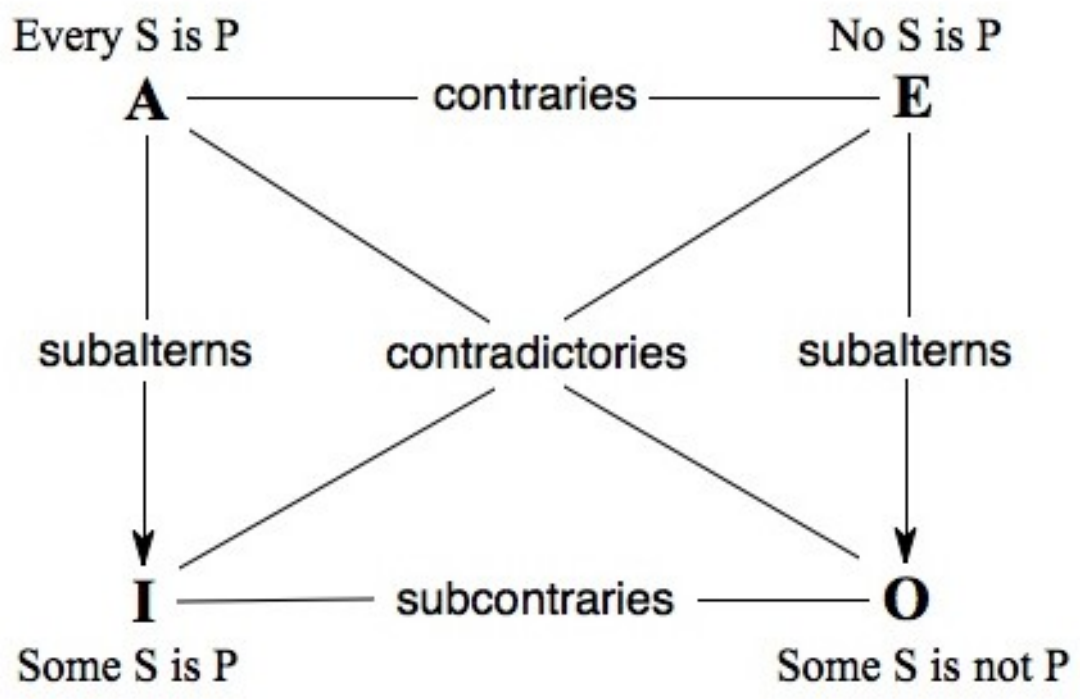
[5] I do not claim that all meaningful utterances can actually be expressed in QL; rather, I maintain only that the utterances relevant to the present discussion can be classified either as 'nonsense' or 'parsable in QL'.
That is, meaningful utterances that are not parsable in QL —such as utterances that are modal, self-referential, &c.—elude the scope of this essay.

[6] "Tá duine ard amháin ar a laghad ann" and "There is at least one tall person" both represent (in OL) the same proposition: '∃x[Tx & Px]'.

[7] (Klima, Buridan, 144), (Aristotle, Metaphysics $1011^{b}25$), (Aristotle, Categories, $13^{b}12$)

- **The Contemporary View:** The particular traditional utterance forms (**I**, **O**) have existential import and the universal forms (**A**, **E**) do not. This is the standard contemporary view, espoused by Russell, and many others (notably Gottlob Frege and his successors).[8]

These are two different approaches of interpreting the four traditional utterance forms (**A**, **E**, **I**, **O**), depicted in the traditional square of opposition below:[9]



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**.[10] So the latter two forms will be a particular focus in this essay.[11] In Parsons's article, he draws attention to Ackrill's translation of the form **O**: 'Not every S is P' rather than the commonly used 'Some S is not P'.[12] In the context of Aristotle's work Ackrill's translation seems most appropriate

[8] (Russell, Atomism, 62)
[9] (Parsons, 1)
[10] They agree on the existential import of **I** because **I** is both positive and particular; It meets the criteria of both approaches for existential import. The reverse is true of **E**.
[11] The only significant difference between propositions is their truth values. E.g. '(~A) & B' is equivalent to 'A → B' because they share the same truth values.
[12] (Parsons, 2.2)

because **O** is the contradictory of **A**, expressed by the law: '$Axy = \sim Oxy$' for all x and all y.[13] [14] Writing **O** as 'Not every S is P' reflects the structure of said law. When understanding **O** simply as **~A**, we see that the extent of the disagreement between the two approaches to existential import can be characterised as a disagreement regarding utterances of the form **A**.[15] Moreover, the differences only have practical implications in the event that S does not refer.[16] Thus, by critically comparing the two approaches for this specific case (of the form **A** when S does not refer), we are effectively comparing the approaches as a whole, as every differing truth value between the two approaches stems from their different approaches to this particular form.

I will now consider the case wherein S does not refer in an utterance of the form **A**: 'Every S is P'. Both approaches assign propositions of a particular form to utterances of form **A**. On the Contemporary View (particular-universal approach), one assigns to this utterance form the propositional form '$\forall x[Sx \rightarrow Px]$', and on the Classical View (affirmative-negative approach), one assigns to this utterance form the proposition form '$\exists x[Sx]$ & $\forall x[Sx \rightarrow Px]$'. It is my position that assigning any proposition to an utterance of this form in OL is done so arbitrarily and ought to be avoided—at least, it ought to be avoided in logic. It is by assigning any general propositional form to an utterance of the form 'Every S is P' that both approaches are mistaken.

Ambiguity and Nonsense

In OL, utterances are often ambiguous. It is apparent that utterances of form **A** exemplify this, given the existence of the very debate which this essay intends to dissolve. '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 utterance in OL

[13] Contradictories being the only relation between the traditional forms preserved by both approaches to existential import, as seen in the diagrams later in this essay.
[14] (Keynes, 145)
[15] Alternatively, the disagreement could be characterised as concerning just **O**. If we understand the existential import of one of these forms, we subsequently understand the existential import of the negation of the form; understanding the totality of cases wherein the approaches diverge is to understand the entirety of their differences.
[16] When S is non-empty the two propositions '$\exists$x[Sx] & $\forall$x[Sx→Px]' and '$\forall$x[Sx→Px]' have the same truth value.

we must understand what is meant by the speaker.[17] This is best explained through an example: Sean owns a pet chicken who has recently eaten her seeds and will not eat again for some time; simultaneously, Sean is cooking a chicken breast for lunch that has just reached the point when it is safe to eat; we cannot assign a truth value to the utterance 'Sean's chicken is ready to eat', without first clarifying what proposition it represents—potentially resembling either 'Edible(Chicken-Poultry)' or 'Hungry(Chicken-Pet)'. Without disambiguating the meaning of the utterance through external context, we cannot decide how we should generally interpret it. In OL, finding out what is meant by an utterance is done so intuitively and based on the surrounding context, but in isolated, particular utterances 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 utterances of form **A** such that they are propositional signs. In propositional logic we work with propositions, and utterances are useful only insofar as they represent propositions, so if an utterance is not the sign of some proposition then it is outside of logic's purview. We can draw conclusions about the two propositional forms that the two approaches assign to the utterance form **A**, but we can do so only with these propositional forms being independent starting points. We simply cannot say anything in logic about the ambiguous utterance in and of itself as it corresponds to no particular proposition. That is to say, under our definitions, such ambiguous utterances are nonsense. Thus, any utterance of form **A**, is nonsense. This highlights that the shared mistaken assumption of both approaches to existential import is the following: 'There *can be* a standard method of determining the existential import (directly or indirectly) of utterances of the form **A** that is accurate and superior to other potential methods'.[18] Just as with 'Sean's chicken is ready to eat', 'Every S is P' is ambiguous and thus nonsense; therefore, such utterances are outside of the purview of logic.

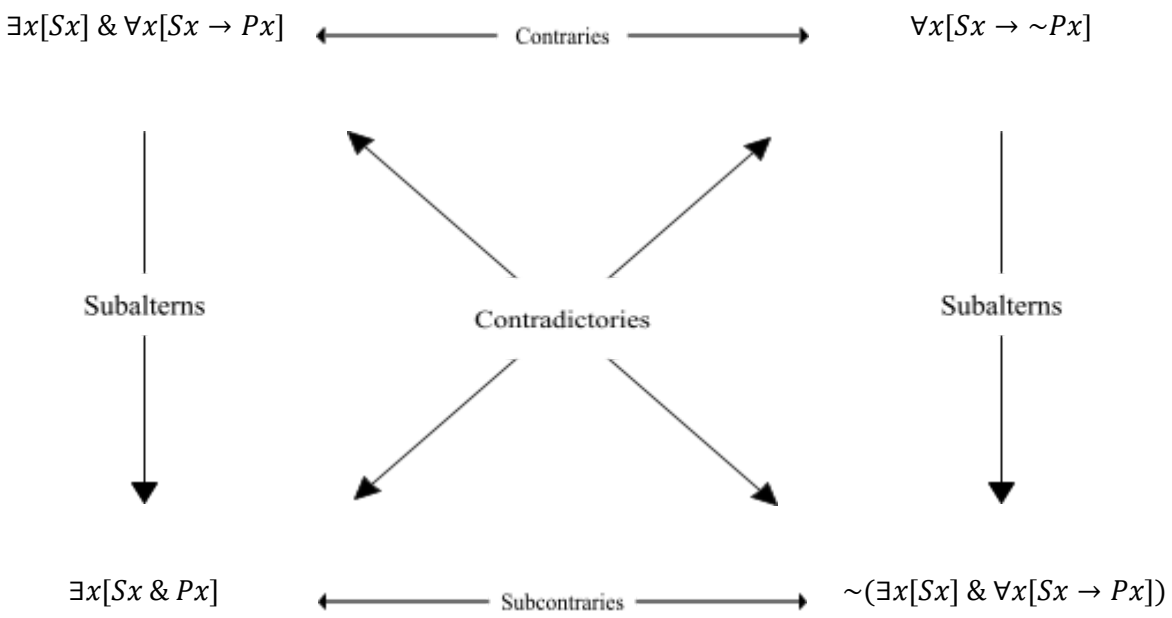
[17] Here, 'properly interpret in OL' means rearticulating for ourselves the utterance such that it is a propositional sign rather than nonsense.

[18] Note that the Contemporary View and the Classical View—though both advocating for a superior general method—differ in their reasons for preferring their respective methods. The Contemporary View prioritises convenience and simplicity, whereas the Classical View prioritises the truth conditions of the utterance forms. Nonetheless, their shared assumption remains despite their different motivation, and it is this assumption that ultimately fails.

Preserving the Usefulness of the 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**, but to their respective utterances in OL: 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"*. Only propositions can be directly assigned truth values. Utterances 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 proposition '$\exists x[Mx\ \&\ Hx]$' which has a truth value. Recognising that utterances of the form **A** are nonsense means that we ought not ask 'Is "Every S is P" True or False?' for any given 'S' and 'P', but rather we require a clear proposition as a starting point from which we can draw conclusions.[19] This leaves us with two coexisting (and indeed useful) 'squares of opposition', as follows:

- The square of opposition regarding A^{P1}



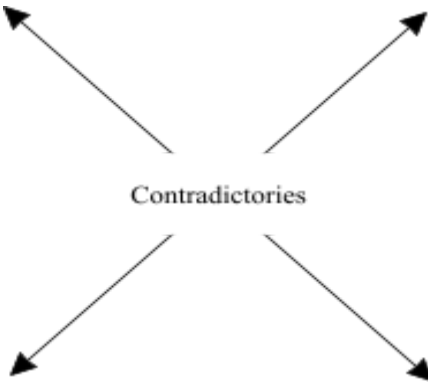
[19] The utterance of form **A** is ambiguous even when S refers. However, whether we interpret **A** to represent A^{P1} or A^{P2} we reach the same truth value. Thus, one might argue that, for a non-empty S, an utterance of form **A**—though nonsense—could still be useful in logic.

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

All that Aristotle attributed to the form **A**—its logical relations, laws of inference, and conclusions—in fact applies instead to A^{P1}.[20] All of Aristotle's claims about the utterance form **A** is instead true of propositional form A^{P1} (insofar as they were well reasoned conclusions to begin with, just starting from the false assumption that **A** corresponds to A^{P1}).[21] 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 utterances of form **A** directly.

<u>Conclusion</u>

In conclusion, the debate between which interpretation of **A** is correct or preferable is misguided, as an utterance of form **A** is ambiguous. We ought to focus on what conclusions we can draw from propositional signs and their corresponding propositions, and try to avoid utterances of form **A**,

[20] For example, Aristotle's conclusions regarding syllogism can be maintained when considering A^{P1} rather than the utterance form **A**.

[21] E.g. A^{P1} can be validly obverted to read $\forall$x[Sx → ~(~P)x]. (Keynes, 101)

replacing them with utterances of form S^1 or S^2 according to our intended meanings. Neither way of interpreting **A** is generally favourable; consequently, neither interpretation of **O** 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) generally assign to **A**. Going forward, we should not approach the existential import of the traditional forms in either of the traditionally proposed ways, but we should neither discard their teachings.

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