

## Re: syllogism

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**From:** patty (*pattyNO\_at\_SPAMicyberspace.net*)

**Date:** 10/11/04

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patty wrote:

> *David Longley wrote:*

>

>> *The law of extensionality is what's missing in this discussion, and I*

>> *suspect Patty of a little obfuscation or at least a little foggy writing*

>> *here as I suspect she does know the intensional nature of properties.*

>>

>

> *Well one thing i know for sure is that if i use the word "property" i*

> *will get a lecture from Longley. Thing is that if an investigator takes*

> *some measurements on individuals and records them in a database, the*

> *records in the database will be the same whether she thinks of them as*

> *properties or classes. The triple "X memberOf ClassP" codes the same*

> *information as the triple "X hasProperty P". I think this is a tempest*

> *in a tea pot.*

>

> *patty*

>

I would like to register my objection above to Quine's avoidance of properties below. However there is another objection that should also be noted. When an engineer designs a mechanism to classify objects, she does not design from an exemplar of the extension of the class; no she will design the mechanism from the \*intension\* of the class. She will of course test the mechanism against a subclass by extension – but that is beside the point. What is the logical distinction between a property and the intension of a class? None, right? There is no mistake in recognizing properties of objects and defining classes by intension – in fact it is unavoidable. Perhaps someone can put me out of my misery and explain the point of the Longley\Quine tirade against "property" below.

patty

> ----- *Quine's lecture included below* -----

>

>> *The notion of a property is one of various notions,*

>> *called INTENSIONAL, that depend thus on the nebulous*

>> *notion of meaning. Other examples are necessity,  
>> possibility, and idioms of propositional attitude such  
>> as belief, hope, regret.'*  
>>  
>> *Quine (1985)*  
>> *The Time of My Life*  
>> *Quine does a nice comparison of properties vs classes in Quiddities:*  
>>  
>> *'If it makes sense to speak of properties, it should  
>> make clear sense to speak of sameness and differences of  
>> properties; but it does not. If a thing has this  
>> property and not that, then certainly this property and  
>> that are different properties. But what if everything  
>> that has this property has that one as well, and vice  
>> versa? Should we say that they are the same property? If  
>> so, well and good; no problem. But people do not take  
>> that line. I am told that every creature with a heart  
>> has kidneys, and vice versa; but who will say that the  
>> property of having a heart is the same as that of having  
>> kidneys?*  
>>  
>> *In short, coextensiveness of properties is not seen as  
>> sufficient for their identity. What then is? If an  
>> answer is given, it is apt to be that they are identical  
>> if they do not just happen to be coextensive, but are  
>> necessarily coextensive. But NECESSITY, q.v., is too  
>> hazy a notion to rest with.*  
>>  
>> *We have been able to go on blithely all these years  
>> without making sense of identity between properties,  
>> simply because the utility of the notion of property  
>> does not hinge on identifying or distinguishing them.  
>> That being the case, why not clean up our act by just  
>> declaring coextensive properties identical? Only because  
>> it would be a disturbing breach of usage, as seen in the  
>> case of the heart and kidneys. To ease that shock, we  
>> change the word; we speak no longer of properties, but  
>> of CLASSES.....*  
>>  
>> *We must acquiesce in ordinary language for ordinary  
>> purposes, and the word 'property' is of a piece with it.  
>> But also the notion of property or its reasonable  
>> facsimile that takes over, since these contexts never  
>> hinge on distinguishing coextensive properties. One  
>> instance among many of the use of classes in mathematics  
>> is seen under DEFINITION, in the definition of number.*  
>>  
>> *For science it is classes SI, properties NO.'*  
>>  
>> *W. V. O. Quine (1987)*  
>> *Classes versus Properties*

>> *QUIDDITIES:*

>>

>> *See "Fragments..." for more details, but the following should give the*

>> *basic idea:*

>>

>> *The new logic is distinguished from the old not only by the*

>> *form in which it is presented but chiefly also by the*

>> *increase of its range....The only form of statements*

>> *(sentences) in the old logic was the predicative form:*

>> *"Socrates is a man," "All (or some) Greeks are men." A*

>> *predicate–concept or property is attributed to a subject–*

>> *concept. Leibniz had already put forward the demand that*

>> *logic should consider sentences of relational form. In a*

>> *relational sentence such as, for example, "a is greater than*

>> *b," a relation is attributed to two or more objects, (or, as*

>> *it might be put, to several subject–concepts). Leibniz's idea*

>> *of a theory of relations has been worked out in the new*

>> *logic. The old logic conceived relational sentences as*

>> *sentences of predicative form. However, many inferences*

>> *involving relational sentences thereby become impossible. To*

>> *be sure, one can interpret the sentence "a is greater than b"*

>> *in such a way that the predicate "greater than b" is*

>> *attributed to the subject a. But the predicate then becomes a*

>> *unity; one cannot extract b by any rule of inference.*

>> *Consequently, the sentence "b is smaller than a" cannot be*

>> *inferred from this sentence. In the new logic, this inference*

>> *takes place in the following way: The relation "smaller than"*

>> *is defined as the "converse" of the relation "greater than."*

>> *The inference in question then rests on the universal*

>> *proposition: If a relation holds between x and y, its*

>> *converse holds between y and x. A further example of a*

>> *statement that cannot be proved in the old logic: "Wherever*

>> *there is a victor someone is vanquished." In the new logic,*

>> *this follows from the logical proposition: If a relation has*

>> *a referent, it also has a relatum. Relational statements are*

>> *especially indispensable for the mathematical sciences. Let*

>> *us consider as an example the geometrical concept of the*

>> *three–place relation "between" (on an open straight line).*

>> *The geometrical axioms "If a lies between b and c, b does not*

>> *lie between c and a" can be expressed only in the new logic.*

>> *According to the predicative view, in the first case we would*

>> *have the predicates "lying between b and c" and "lying*

>> *between c and a". If these are left unanalyzed, there is no*

>> *way of showing how the first is transformed into the second.*

>> *If one takes the objects b and c out of the predicate, the*

>> *statement "a lies between b and c" no longer serves to*

>> *characterise only one object, but three. It is therefore a*

>> *three–place relational statement....*

>>

>> *Restriction to predicate–sentences has had disastrous effects*

>> *on subjects outside logic. Perhaps Russell is right when he*

>> *made this logical failing responsible for certain*  
>> *metaphysical errors.....Above all, we may well assume that*  
>> *this logical error is responsible for the concept of absolute*  
>> *space. Because the fundamental form of a proposition had to*  
>> *be predicative, it could only consist in the specification of*  
>> *the position of a body. Since Leibniz had recognized the*  
>> *possibility of relational sentences, he was able to arrive at*  
>> *a correct conception of space: the elementary fact is not*  
>> *position of a body but its positional relations relative to*  
>> *other bodies. He upheld the view on epistemological grounds:*  
>> *there is no way of determining the absolute position of a*  
>> *body, but only its positional relations. His campaign in*  
>> *favor of the relativistic view of space, as against the*  
>> *absolutistic views of the followers of Newton, had as little*  
>> *success as his program for logic.*  
>>  
>> *Only after two hundred years were his ideas on both subjects*  
>> *taken up and carried through: in logic with the theory of*  
>> *relations (De Morgan 1858; Pierce 1870), in physics with the*  
>> *theory of relativity (anticipatory ideas in Mach 1883;*  
>> *Einstein 1905).'*  
>>  
>> *R. Carnap*  
>> *The Old and the New Logic (1930)*  
>> *In A.J. Ayer (ed) Logical Positivism (1959)*  
>>  
>> *'.. consists in characterizing the predicates by their*  
>> *extension instead of according to their content. To each*  
>> *predicate corresponds a certain "class" of objects,*  
>> *consisting of all objects for which the predicate holds. The*  
>> *case of a class containing no object is of course not*  
>> *excluded here. Classes are now to be taken as the entities*  
>> *dealt with by the calculus, which in this interpretation will*  
>> *be called the calculus of classes.*  
>>  
>> *D. Hilbert & W. Ackermann (1950)*  
>> *The Principles of Mathematical Logic p.46*  
>>  
>>  
>> *'We think of a science as comprising those truths which are*  
>> *expressible in terms of 'and', 'not', quantifiers, variables,*  
>> *and certain predicates appropriate to the science in*  
>> *question....To specify a science, within the described mold,*  
>> *we still have to say what the predicates are to be, and what*  
>> *the domain of objects is to be over which the variables of*  
>> *quantification range.'*  
>>  
>> *W.V.O. Quine (1954)*  
>> *The Scope and Language of Science*  
>> *The Ways of Paradox and other essays p.242*  
>>

>>

>> *Thus we have arrived at something fundamental: our  
>> conventions regarding the use of the words "not" and "or" is  
>> such that in asserting the two propositions "object A is  
>> either red or blue" and "object A is not red," I have  
>> implicitly already asserted "object A is blue." This is the  
>> essence of so-called \*logical deduction\*. It is not then, in  
>> any way based on real connections between states of affairs,  
>> which we apprehend in thought. On the contrary, it has  
>> nothing at all to do with the nature of things, but drives  
>> from our manner of speaking about things. A person who  
>> refused to recognize logical deduction would not thereby  
>> manifest a different belief from mine about the behaviour of  
>> things, but he would refuse to speak about things according  
>> to the same rules as I do. I could not convince him, but I  
>> could refuse to speak with him any longer, just as I should  
>> refuse to play chess with a partner who insisted on moving  
>> the bishop orthogonally.*

>>

>> *What logical deduction accomplishes, then, is this: it makes  
>> us aware of all that we have implicitly asserted – on the  
>> basis of conventions regarding the use of language – in  
>> asserting a system of propositions, just as, in the above  
>> example, "object A is blue" is implicitly asserted by the  
>> assertion of the two propositions "object A is red or blue"  
>> and "object A is not red."*

>>

>> *In saying this we have already suggested the answer to the  
>> question, which naturally must have forced itself on the mind  
>> of every reader who has followed our argument: if it is  
>> really the case that the propositions of logic are  
>> tautologies, that they say nothing about objects, what  
>> purpose does logic serve?*

>>

>> *..logical propositions, though being purely tautologous, and  
>> logical deductions, though being nothing but tautological  
>> transformations, have significance for us because we are not  
>> omniscient. Our language is so constituted that in asserting  
>> such and such propositions we implicitly assert such and such  
>> other propositions – but we do not see immediately all that  
>> we have implicitly asserted in this manner. It is only  
>> logical deduction which makes us conscious of it.*

>>

>> *If I have succeeded in clarifying somewhat the role of logic,  
>> I may now be brief about the role of mathematics. The  
>> propositions of mathematics are of exactly the same kind as  
>> the propositions of logic: they are tautologous, they say  
>> nothing at all about the objects we want to speak about, but  
>> concern only the manner in which we want to speak of  
>> them....We become aware of meaning the same by "2+3" and by  
>> "5", by going back to the meanings of "2," "3," "5," "+," and*

>> *making tautological transformations until we just see that*  
>> *"2+3" means the same as "5". It is such successive*  
>> *tautological transformation that is meant by "calculating";*  
>> *the operations of addition and multiplication which are*  
>> *learned in school are directives for such tautological*  
>> *transformation; every mathematical proof is a succession of*  
>> *such tautological transformations. Their utility, again, is*  
>> *due to the fact that, for example, we do not by any means see*  
>> *immediately that we mean by "24 x 31" the same as by "744";*  
>> *but if we calculate the product "24 x 31", then we transform*  
>> *it step by step, in such a way that in each individual*  
>> *transformation we recognize that on the basis of the*  
>> *conventions regarding the use of the signs involved (in this*  
>> *case numerals and the signs "+" and "x") what we mean after*  
>> *the transformation is still the same as what we meant before*  
>> *it, until finally we became consciously aware of meaning the*  
>> *same by "744" and by "24 x 31."*

>>

>> *..at first glance it is difficult to believe that the whole*  
>> *of mathematics, with its theorems that it cost such labour to*  
>> *establish, with its results that so often surprise us, should*  
>> *admit of being resolved into tautologies. But there is just*  
>> *one little point which this argument overlooks: it overlooks*  
>> *the fact that we are not omniscient. An omniscient being,*  
>> *indeed, would at once know everything that is implicitly*  
>> *contained in the assertion of a few propositions. IT would*  
>> *know immediately that on the basis of the conventions*  
>> *concerning the use of the numerals and the multiplication*  
>> *sign, "24 x 31" is synonymous with "744". An omniscient being*  
>> *has no need for logic and mathematics. We ourselves, however,*  
>> *first have to make ourselves conscious of this by successive*  
>> *tautological transformations, and hence it may prove quite*  
>> *surprising to us that in asserting a few propositions we have*  
>> *implicitly also asserted a proposition which seemingly is*  
>> *entirely different from them, or that we do mean the same by*  
>> *two complexes of symbols which are externally altogether*  
>> *different.'*

>>

>> *H Hahn (1933)*

>> *Logic, Mathematics and Knowledge of Nature*

>> *In Ayer (Ed) Logical Positivism (1959)*

>>

>>

>>

>> *'At first the problem of mind was ontological and linguistic.*  
>> *With the passing of mind as substance, there remained a*  
>> *twofold problem of mentalistic language: syntactic and*  
>> *semantic. The distinctive syntactic trait of mentalistic*  
>> *discourse was the content clause 'that p'. This obstructed*  
>> *extensionality: that is, the substitutivity of identity and*  
>> *more generally the interchangeability of all coextensive*

>> *terms and clauses salva veritate. It obstructed classical*  
>> *predicate logic as a universal theoretical framework. Now*  
>> *this quarter of the mind problem is in a fair way to*  
>> *dissolution. Quotational treatment of propositional attitudes*  
>> *de dicto delivers them to the extensional domain of predicate*  
>> *logic, thanks to the reduction of quotation to spelling.*  
>> *Propositional attitudes de re, on the other hand, we*  
>> *downgraded.*  
>>  
>> *So we see the attitudes de dicto reconciled syntactically*  
>> *with extensional logic. A single language, regimented in*  
>> *predicate logic, can take them in stride along with natural*  
>> *science. The residual oddity of these mentalistic predicates*  
>> *de dicto is purely semantic: they do not interlock*  
>> *productively with the self-sufficient concepts and causal*  
>> *laws of natural science.*  
>>  
>> *Still the mentalistic predicates, for all their vagueness,*  
>> *have long interacted with one another, engendering age-old*  
>> *strategies for predicting and explaining human action. They*  
>> *complement natural science in their incommensurable way, and*  
>> *are indispensable both to the social sciences and our*  
>> *everyday dealings. Read Dennett and Davidson.'*  
>>  
>> *W. V. O. Quine (1992)*  
>> *Intension*  
>> *The Pursuit of Truth p.72-73*  
>>  
>> *Note – "incommensurable way" – this is the part of "the double standard"*  
>> *of anomalous monism (and research) that few really grasp the*  
>> *significance of – hence my frequent references to "Two Dogmas of*  
>> *Empiricism".*  
>>  
>> *I thought the following worth repeating too:*  
>>  
>> *The first-order predicate calculus is an extensional logic*  
>> *in which Leibniz's Law is taken as an axiomatic principle.*  
>> *Such a logic cannot admit 'intensional' or 'referentially*  
>> *opaque' predicates whose defining characteristic is that they*  
>> *flout that principle.'*  
>>  
>> *U. T. Place (1987)*  
>> *Skinner Re-Skinned P. 244*  
>> *In B.F. Skinner Consensus and Controversy*  
>> *Eds. S. Modgil & C. Modgil*  
>>  
>> *But I bet none of this will make any difference to what is posted by*  
>> *most folk here. It has all been posted in the past, as has much else*  
>> *besides but they insist on having it rehashed. Here's just one example:*  
>>  
>> <<http://groups.google.com/groups?selm=spr961206123219-4437@kauri.vuw.ac.n>

sci.logic: Re: syllogism

>> z>

>>

>> *What does this tell one other than that people have very short memories*

>> *and aren't really here for much more than post to post verbal jousting?*

>> <g>

>>

>> *Kind regards,*