THE ANALYTIC – SYNTHETIC DISTINCTION: REVISITED

Lynn E. Roberts III

Abstract

This paper gives a historic account of the Analytic-synthetic distinction, which is clear in many places. This paper will highlight the evolution of the conceptual problems caused in linguistics known as the Analytic-Synthetic Distinction, define and distinguish analytic statements from synthetic statements, highlight the most compelling arguments for and against such distinctions, from John Locke, Immanuel Kant, Gotlob Frege, W.V Quine, all the way to the most relevant and current arguments posed by H.P. Grice and Peter F. Strawson. Near the end of this paper, the author will draw some unique conclusions and make some points from the author's own understanding of the issues caused by the analytic-synthetic distinction.
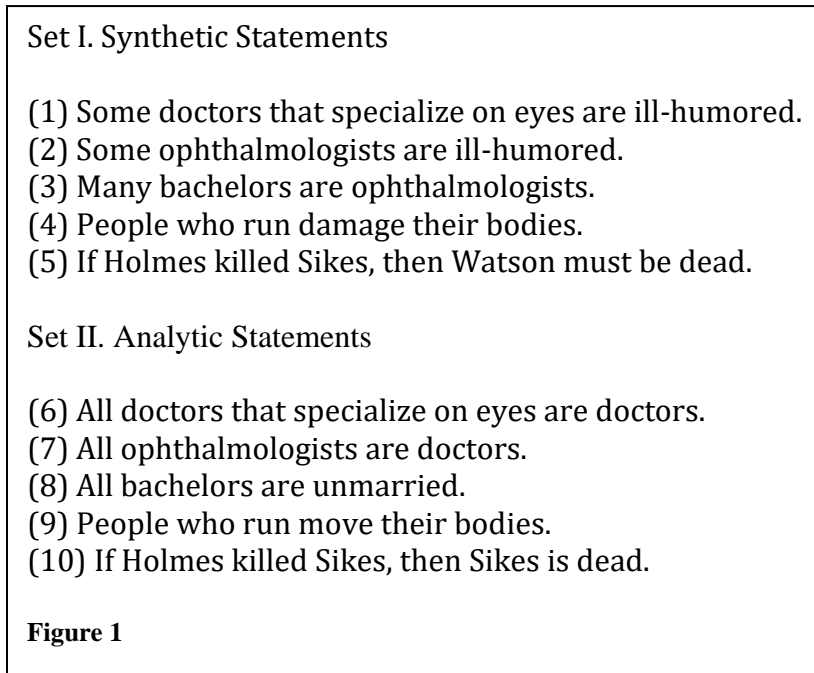
The Analytic-Synthetic Distinction: Revisited

The analytic synthetic distinction is a problem of linguistics and empiricism: Analytic statements are defined as those statements whose truth is evident in one's knowing the meaning and face value of the words in the sentence alone. Knowing the face value of the word in question allows one to know its theoretical meaning. For example, the over-used case, "All bachelors are unmarried males;" versus Synthetic statements, defined as those statements whose truth is knowable by knowing the way the world is, such as the statement, "doctors are jerks." The idea is that analytic statements are deemed to be true in "all possible worlds," and knowable independently of experience. Empiricism is defined as knowledge through experience, by means of observation and experimentation.

As the reader will see, there are anticipations of the notion of the analytic in Scottish philosopher David Hume's "relations of ideas", however, the specific terms "analytic" and "synthetic" were introduced by Kant at the beginning of his *Critique of Pure Reason,* with the use of his containment metaphor. The reader will then see that the German philosopher Gottlob Frege, along with numerous other philosophers, such as W.V. Quine, seek to expose the flaws of Kant's containment metaphor.

It should be noted that for Kant, the concept of the predicate is contained in the concept of the subject. This observation to ultimately leads to Frege and Quine's respective rejection of the notion of an analytic-synthetic distinction, as well as H.P. Grice and Peter F.

Strawson's defense of the distinction, along with the dogmas governing the distinction. The examples to be used in discussing the distinction are two separate sets of sentences in figure 1:

Set I. Synthetic Statements

(1) Some doctors that specialize on eyes are ill-humored.
(2) Some ophthalmologists are ill-humored.
(3) Many bachelors are ophthalmologists.
(4) People who run damage their bodies.
(5) If Holmes killed Sikes, then Watson must be dead.

Set II. Analytic Statements

(6) All doctors that specialize on eyes are doctors.
(7) All ophthalmologists are doctors.
(8) All bachelors are unmarried.
(9) People who run move their bodies.
(10) If Holmes killed Sikes, then Sikes is dead.

Figure 1

As author Georges Rey remarks:

"Most competent English speakers who know the meanings of all the constituent words would find an obvious difference between the two sets: whereas they might wonder about the truth or falsity of those of set I, they would find themselves pretty quickly incapable of doubting those of II. Unlike the former, these latter seem to be known automatically, "*just by virtue of knowing just what the words mean*," as many might spontaneously put it. Indeed, a denial of any of them would seem to be in some important way *unintelligible*, very like *a contradiction in terms*. Although there is, as we shall see, a great deal of dispute about these italicized ways of drawing the distinction, and even about whether it is real, philosophers by standard refer to sentences of the first class as "synthetic," those of the second as (at least apparently) "analytic."[1]

A brief and accurate history of the distinction must begin with a discussion of David Hume's theory of the "Relation of Ideas" in which Hume implies, and indirectly states, that an analytic judgment – what he characterizes as a tautology, is true by definition. He says

---

[1] Rey, Georges, "The Analytic/Synthetic Distinction." *The Stanford Encyclopedia of Philosophy*. Edward N. Zalta (ed.). (2009). Print.

that tautologies are statements in which the world has no effect on whether the statement is true or false and is known *a priori* – independently of experience.

He contrasts this notion of the analytic a priori with matters of fact – what we know as synthetic judgments, and Hume characterizes as *a posteriori judgments* – statements known to be true by sense experience, in which the contrary is always possible. Hume posits a sharp distinction between the two, and says we discern the difference by our reasoning by induction. Hume illustrates this by citing cause and effect, which he defines as any regular conjunction between objects. He says cause and effect are how human beings draw conclusions about what is there, and what is absent. Hume goes further, claiming that we go from a pattern of similarly occurring instances to claiming that all A's cause B's:

> When it is asked, *what is the nature of all our reasonings concerning matter of fact?* The proper answer seems to be that they are founded on the relation of cause and effect. When again it is asked, *what is the foundation of all our reasonings and conclusions concerning that relation?* It may be replied in one word, *experience*. But if we still carry on our sifting humor, and ask, *what is the foundation of all conclusions from experience?* This implies a new question, which may be of more difficult solution and explication.[2]

Many philosophers have hoped that the apparent necessity and *a priori* status of the claims of logic, mathematics and much of philosophy would prove to be due to these claims being analytic, i.e., explaining why such claims seemed to be true "in all possible worlds," and knowable to be so "independently of experience." This view has led them to regard philosophy as consisting in large part in the "analysis" of the meanings of the relevant claims, words and concepts (hence "analytic" philosophy, although the term has long ceased to have any such specific commitment and refers now more generally to philosophy done in the associated closely reasoned style). Philosopher W.V. Quine later disputes the distinction that Hume laid the foundation for with his "origin of ideas" theory.

---

[2] Locke, John; Berkeley, George; and Hume, David. *The Empiricists*. Toronto: Random House. p312. (1974). Print.

Immanuel Kant, as stated earlier, introduced the specific terms of "analytic" and "synthetic" in his Critique of Pure Reason, when he wrote:

> In all judgments in which the relation of a subject to the predicate is thought (if I only consider affirmative judgments, since the application to negative ones is easy) this relation is possible in two different ways. Either the predicate *B* belongs to the subject *A* as something that is (covertly) contained in this concept *A*; or *B* lies entirely outside the concept *A*, though to be sure it stands in connection with it. In the first case, I call the judgment analytic, in the second synthetic.[3]

He separates the category of the analytic chiefly in order to contrast it with what he regards as the more important category of the synthetic, which he thinks is not confined merely to the empirical. He argues that even so elementary an example in arithmetic as "7+5=12," is synthetic, since the concept of "12" is not contained in the concepts of "7," "5," or "+,": appreciating the truth of the proposition would seem to require some kind of active synthesis of the mind uniting the different constituent thoughts. Thus, his concept of "synthetic *a priori*" appears, whose very possibility became a major concern of his work. He tries to show that the activity of "synthesis" was the source of the important cases of *a priori* knowledge, not only in arithmetic, but also in geometry, the foundations of physics, ethics, and philosophy generally, a view that set the stage for much of the philosophical discussions of the following century.[4]

As an example of an analytic judgment, he provided "All bodies are extended": we can't help but also think of something extended in space; that would seem to be just part of what is meant by "body." He contrasted this with "All bodies are heavy," where the predicate ("is heavy") "is something entirely different from that which I think in the mere concept of body in general", and we must put together, or "synthesize," the different concepts, body and heavy.

---

[3] Kant, I. *The Critique of Pure Reason*, *trans.* by P. Guyer and A.W. Wood, Cambridge University Press. (1781/1998). Print.
[4] Coffa, J., *The Semantic Tradition from Kant to Carnap: to the Vienna Station*, Cambridge: Cambridge University Press. (1991) Print.

For this example, Kant attempted to explain his containment metaphor for the analytic in two ways. He theorized that to see that set II is true, we need to only analyze the concept, i.e., Become conscious of the manifold that I always think in it, in order to encounter the predicate therein."[5] He then went on to claim "I merely draw out the predicate in accordance with the principle of contradiction, and can thereby at the same time become conscious of the necessity of the judgment."[6]

Gottlob Frege exposed a number of problems with Kant's "containment" metaphor. Firstly, the criterion would need to be freed of psychologistic suggestions – claims about the merely coincidental thought processors of thinkers, contrary to claims concerning truth and justification that run afoul of the analytic:

"Mere associations are not always matters of meaning: someone might regularly associate bachelors with being harried, but this wouldn't therefore seriously be a part of the meaning of "bachelor" ("an unmarried bachelor" is not contradictory)."[7]

Secondly, Frege pointed out that although a denial of a genuinely analytic claim may well be a contradiction, there is no explicit contradiction in the thought of a married bachelor, in the way that there is in the thought of a bachelor who is not a bachelor. "Married bachelor" has at least the same explicit logical form as "harried bachelor." Rejecting "a married bachelor" as contradictory would seem to have no justification other than the claim that "All bachelors are married" is analytic, and so cannot serve to justify or explain that claim.

Frege attempted to remedy the situation by completely rethinking, and in the process of doing so, developing what we now know as modern symbolic logic – language characterized by the form and shape of its expressions, and he carefully set out an account of the semantics which are considered "logical constants" – that is, "or", "and", "not", "all", and "some", showing how to catch a wide range of valid inferences. The constants can be thought of as those parts of language that don't "point" or "function referentially", aiming to refer to something in the world, in the way that ordinary nouns, verbs and adjectives seem to do: "dogs" refers to dogs, "clever" to clever and/or

---

[5] Kant, I., *The Critique of Pure Reason*, trans. by P. Guyer and A.W. Wood, Cambridge University Press. (1781/1998). Print.
[6] Kant, I., *The Critique of Pure Reason*, trans. by P. Guyer and A.W. Wood, Cambridge University Press. (1781/1998). Print.
[7] Frege, G., *The Foundations of Arithmetic*. 2nd revised ed., London: Blackwell. (1884/1980). Print.

clever things, and even "Zeus" aims to refer to a Greek god; but words like "or" and "all" don't seem to function referentially at all: it doesn't seem to make sense to think of there being "or's" in the world, along with the dogs and their properties.[8]

The conclusion of Frege's work is that we are now able to define a logical truth as a sentence that is true no matter what referring expressions occur in it, and, in extension, synonymy as the non-logical analytic truths are those that can be converted to strict logical truths by substitution of definitions for defined terms, or synonyms for synonyms. The ensuing discussion set the stage for the currently unresolved debate between W.V. Quine and the team of H.P. Grice and Peter F. Strawson.

W. V. O. Quine's paper "Two Dogmas of Empiricism", published in 1951, is one of the most celebrated papers of twentieth century philosophy in the analytic tradition. In the article, Quine argues against the two fundamental theses of empiricism: 1) that there is a distinction between analytical and synthetic empiricism, and 2) the belief that individual observation states are the fundamental unit of meaning. In the first few sections of the essay, Quine seeks to undermine the distinction between analytic and synthetic statements. He argues against containment, which holds that the predicate is contained within the subject. Quine says containment is a vague metaphor – that is, the concept of analyticity rests on the concept of synonymy – having the same meaning.

To prove his point, Quine turns to the age-old routine of the bachelor, saying that if it is analytical to say that a "bachelor" is an unmarried male, this is because the terms "bachelor" and "unmarried male" are synonymous. Quine's point is to say that these terms are synonymous is to presuppose that they are analytic; hence, the argument is circular. Quine's argument against analyticity in the first four sections is focused on showing that different explanations of analyticity are circular. The main purpose is to show that no satisfactory explanation of analyticity has been given.

Quine says Kant's distinction between analytic and synthetic truths was foreshadowed in Hume's distinction between relations of ideas and matters of fact, and in Leibniz's distinction between truths of reason and truths of fact. Leibniz defines truths of reason as true in all possible worlds. These truths cannot possibly be false and define analytical statements as statements whose denials are self –

---

[8] Frege, G., "On Sense and Reference." in P. Geach and M. Black (eds.), *Translations from the Works of Gottlob Frege*. Oxford: Blackwell, pp56-78. (1892a/1966). Print.

contradictory. Quine further criticizes Kant's definition of analytic statements, saying that one attributes to his subject no more than is already contained in the subject. Quine says two shortcomings of this formulation are that it 1) limits itself to subjects of subject – predicate form, and 2) appeals to the notion of containment which is left at a metaphorical level. Quine says Kant's intent is "evident in his definition of analytical statement:" a statement is analytical when it is true by virtue of meaning and independent of fact, its meaning is not to be identified with naming.[9]

The example Quine uses is the number "9" and the "number of the planets" must be regarded as unlike in meaning, because astronomical observation was needed, and not reflections on meaning to determine the sameness of the entity in question[10]:

> Where a singular term purports to name an entity, abstract or concrete, a general term does not, but a general term is true of an entity, or of each of many, or of none. An extension of a term…a case in which the class of all entities of which a general term is true.[11]

Quine makes a distinction between two different classes of analytic statements. The first one is called logically true and has the form:

(1) No unmarried man is married

A sentence with that form is true independent of the interpretation of "man" and "married", so long as the logical particles "no", "un-", "is" and "and" have their ordinary English meaning.[12]

The statements in the second class have the form:

(2) No bachelor is married.

---

[9] Pojman, L. P., *The theory of knowledge: Classical and contemporary readings*. Australia: Wadsworth/Thomson Learning. pp. 394. (2003). Print.

[10] Quine, W.V.O. 1951, "Two Dogmas of Empiricism." *The Philosophical Review* 60: 20-43. Reprinted in his *From a Logical Point of View*. Cambridge, MA: Harvard University Press. 1953. Print.

[11] Quine, W.V.O. 1951, "Two Dogmas of Empiricism." Reprinted in Pojman, L. P. *The theory of knowledge: Classical and contemporary readings*. Australia: Wadsworth/Thomson Learning, third edition. pp. 391-94. (2003). Print.

[12] Pojman, L. P., *The theory of knowledge: Classical and contemporary readings*. Australia: Wadsworth/Thomson Learning, third edition. pp. 391-394. (2003). Print.

A statement with this form can be turned into a statement with form (1) by changing synonyms with synonyms, in this case "bachelor" with "unmarried man". It is the second class of statements that lack characterization according to Quine. The notion of the second form of analyticity leans on the notion of synonymy, which Quine believes is in as much need of clarification as analyticity. Most of Quine's following arguments are focused on showing how explanations of synonymy end up being dependent on the notions of analyticity, necessity, or even synonymy itself.

How do we reduce sentences from the second class to a sentence of class I? Some might propose *definitions*. "No bachelor is married" can be turned into "No unmarried man is married" because "bachelor" is defined as "unmarried man". But Quine asks: how do we find out that "bachelor" is defined as "unmarried man"? Clearly, a dictionary would not solve the problem, as a dictionary is a report of already known synonyms, and thus is dependent on the notion of synonymy, which Quine holds as unexplained.[13]

A second suggestion Quine considers is an explanation of synonymy in terms of interchangeability. Two linguistic forms are (according to this view) synonymous if they are interchangeable without changing the truth-value. That is, in all contexts without change of truth value. But consider the following example:

(3)"Bachelor" has fewer than ten letters.

Obviously "bachelor" and "unmarried man" are not interchangeable in that sentence. To exclude that example and some other obvious counterexamples, such as poetic quality, Quine introduces the notion of *cognitive synonymy*. But does interchangeability hold as an explanation of cognitive synonymy? Suppose we have a language without modal adverbs like "necessarily". Such a language would be extensional, in the way that two predicates which are true about the same objects are interchangeable again without altering the truth-value. Thus, there is no assurance that two terms that are interchangeable without the truth-value changing are interchangeable because of meaning, and not because of chance. For example, "creature with a heart" and "creature with kidneys" share extension.

In a language with the modal adverb "necessarily" the problem is solved, as salva veritate holds in the following case: (4) Necessarily all and only bachelors are unmarried men; while it does not hold for

[13]Pojman, L. P., *The theory of knowledge: Classical and contemporary readings*. Australia: Wadsworth/Thomson Learning. pp. 395. (2003). Print.

(5) Necessarily all and only creatures with a heart are creatures with kidneys.

We can see that the concepts of 'creature with a heart' and 'creature with kidneys' have the same extension (presumably), but they are not interchangeable *salva veritate*.[14] It seems that the only way to assert the synonymy is by supposing that the terms 'bachelor' and 'unmarried man' are synonymous and that the sentence "All and only all bachelors are unmarried men" is analytic. So, for *salva veritate* to hold as a definition of synonymy, we need a notion of necessity and thus of analyticity.[15]

So, from the above example, it can be seen that in order for us to distinguish between analytic and synthetic we must appeal to synonymy; at the same time, we should also understand synonymy with interchangeability *salva veritate*. However, such a condition to understand synonymy is not enough so we not only argue that the terms should be interchangeable, but necessarily so. And to explain this logical necessity we must appeal to analyticity once again.

Secondly, Quine attacks the notion of radical reductionism[16] tied to the verification theory of meaning and assumes that individual observation statements are the basic unit of meaning. Quine rejects this view, instead holding a view of "pragmatic coherentism", which states that all of our beliefs form a holistic web, so that individual statements are never confirmed or falsified in isolation but only with reference to the holistic web.[17] Analyticity would be acceptable if we allowed for the verification theory of meaning: an analytic statement would be one synonymous with a logical truth, which would be an extreme case of meaning where empirical verification is not needed. "So, if the verification theory can be accepted as an adequate account of statement synonymy, the notion of analyticity is saved after all."

The problem that naturally follows is how statements are to be verified. An empiricist would say that it can only be done using empirical evidence. So, some form of reductionism - "the belief that each meaningful statement is equivalent to some logical construct

---

[14] Pojman, L. P., *The theory of knowledge: Classical and contemporary readings*. Australia: Wadsworth/Thomson Learning. pp. 395. (2003). Print.

[15] Pojman, L. P., *The theory of knowledge: Classical and contemporary readings*. Australia: Wadsworth/Thomson Learning. pp. 396. (2003). Print.

[16] Reductionism is the belief that each meaningful statement is equivalent to some logical construct upon terms which refer to immediate experience. Pojman, L. P., *The theory of knowledge: Classical and contemporary readings*. Australia: Wadsworth/Thomson Learning. pp. 391. (2003). Print.

[17] Pojman, L. P., *The theory of knowledge: Classical and contemporary readings*. Australia: Wadsworth/Thomson Learning. (2003). Print.

upon terms which refer to immediate experience" - must be assumed in order for an empiricist to 'save' the notion of analyticity. Such reductionism, says Quine, presents just as intractable a problem as did analyticity.[18]

Quine first observes that Carnap's starting point was not the strictest possible, as his "sense-datum language" included not only sense-events but also "the notations of logic, up through higher set theory... Empiricists there are who would boggle at such prodigality." Nonetheless, says Quine, Carnap showed great ingenuity in defining sensory concepts "which, but for his constructions, one would not have dreamed were definable on so slender a basis." However, even such admirable efforts left Carnap, by his own admission, far short of completing the whole project.

Finally, Quine objects in principle to Carnap's proposed translation of statements like "quality q is at point-instant x; y; z; t" into his sense-datum language, because he does not define the connective "is at". Without statements of this kind, it is difficult to see, even in principle, how Carnap's project could have been completed.

The difficulty that Carnap encountered shows that reductionism is, at best, unproven and very difficult to prove. Until a reductionist can produce an acceptable proof, Quine maintains that reductionism is another "metaphysical article of faith".

In place of reductionism, Quine proposes that it is the whole field of science, not single statements, which are verified. All scientific statements are interconnected. Logical laws give the relation between different statements, while they also are statements of the system. This makes talk about the empirical content of a single statement misleading. It also becomes impossible to draw a line between synthetic statements, which depend on experience, and analytic statements, which hold come what may. Any statement can be held as necessarily true according to Quine, if the right changes are made somewhere else in the system. In the same way, no statements are immune to revision.

Quine holds that the most successful system of beliefs is that of science because it allows us to make coherent predictions, and that the workability of our belief system is the pragmatic aspect of epistemology. Quine believes that both dogmas are ill – founded.

---

[18]Godfrey-Smith, Peter, *Theory and Reality*. Chicago: University of Chicago. pp. 30-33 (section 2.4 "Problems and Changes"). (2003). Print.

I submit, the reader cannot let it go missed that Quine holds that there are two effects of abandoning the dogmas. Firstly, there will be a blurring of the boundary between speculative metaphysics and natural science. Secondly, ***there will be a shift toward pragmatism,*** holding that **the truth of an idea needs to be tested** to prove its validity.

One reservation many have had about Quine's argument is about how to explain the *appearance* of the analytic. Most people, for example, would distinguish our original two sets of sentences (§1), by saying that sentences of the second set, such as "All ophthalmologists are eye doctors," could be known to be true just by knowing the meanings of the constituent words. Moreover, they might agree about an indefinite number of further examples, e.g., that pediatricians are doctors for children, grandfathers are parents of parents, that sauntering is a kind of movement, pain a mental state, and food, stuff that people eat. As Grice and Strawson (1956) and Putnam (1962) stressed, it's implausible to suppose that there's *nothing* people are getting at in these judgments.[19]

Here, once again, Quine invoked his metaphor of the web of belief, claiming that sentences are more or less revisable, depending upon how "peripheral" or "central" their position is in the web. The appearance of sentences being "analytic" is simply due to their being, like the laws of logic and mathematics, comparatively central, and so are given up, if ever, only under extreme pressure from the peripheral forces of experience. But no sentence is absolutely immune from revision; all sentences are thereby empirical, and none is actually analytic.

There are a number of problems with this explanation. Firstly, centrality and the appearance of analyticity don't seem to be so closely related. There are plenty of central, unrevisable beliefs that don't seem analytic (e.g. *the earth has existed for more than five years*, *some people have eyes*, *and Mass-energy is conserved*), and many standard examples of what seems analytic aren't seriously central: "Bachelors are unmarried" and "Aunts are sisters" are notoriously trivial, and could easily be revised if someone really cared.

Secondly, it's not mere unrevisability that seems distinctive of the analytic, but rather a certain sort of *unintelligibility*: for all the unrevisability of "Some people have eyes," it's perfectly possible to *imagine* it to be false. What's peculiar about the analytic is that

---

[19] Grice, P. and Strawson, P., "In Defense of a Dogma." *Philosophical Review* LXV 2:141-58. (1956). Print.

denials of it often seem *unintelligible*: we can't seriously *imagine* a married bachelor. Indeed, far from unrevisability explaining analyticity, it would seem to be analyticity that explains unrevisability: the only reason one balks at denying bachelors are unmarried is that *that's just what "bachelor" means*.

Paul Grice and P. F. Strawson criticized "Two Dogmas" in their article "In Defense of a Dogma". Among other things, they argue that Quine's skepticism about synonyms leads to a skepticism about meaning. If statements can have meanings, then it would make sense to ask, "What does it mean?" If it makes sense to ask "What does it mean?", then synonymy can be defined as follows: Two sentences are synonymous if and only if the true answer of the question "What does it mean?" asked of one of them is the true answer to the same question asked of the other. They also draw the conclusion that discussion about correct or incorrect translations would be impossible given Quine's argument. They argue that if the idea of synonymy is meaningless, then so is the idea of having meaning at all. They argue that Quine has failed to make his case that the notion of analyticity is obscure.[20]

I agree with Grice and Strawson, because their main point that there is an open – class distinction is mainly correct. There is an indefinite number of cases every day in which we draw the distinction between what's in the definition, and what's not. Quine's argument would be entirely unpersuasive if he denied that there is an open – class distinction.

The distinction in ordinary language of the analytic and synthetic is something that we do use. If Quine's objective was to reject that distinction in ordinary language, he failed. We do not see Quine as trying to say that theoretical attempts to make such a distinction – theories of how to try to distinguish in ordinary language between analytic and synthetic – have failed. It truly depends on what Quine intended.

Quine says the entire argument for the distinction is circular in nature because we must continually appeal to the synonymy of words. In his web of relief, all statements are connected, so that with synonymy, a statement of analytic nature can be made into a statement of synthetic nature with the use of synonyms. This is his basis for claiming that there is no distinction. However, if you simply change synonym for synonym, the statement will reach a state where

---

[20] Pojman, L. P., *The theory of knowledge: Classical and contemporary readings*. Australia: Wadsworth/Thomson Learning. pp. 403. (2003). Print.

its truth value is lost. Does he intend to reject the ordinary language idea? Or did he attempt to reject theories about the distinction?

While I believe that Grice & Strawson have significantly discredited Quine's argument, I still believe that we are searching for the rule that solves this problem.