In this essay I present the distinction between observable and theoretical terms in the context of Logical Positivism in reference to the principle of verificationism. I then go on to provide how this distinction provides grounds for an empirically based methodology of science, all while referring to the relationship of this methodology with deductive and inductive forms of logic. From there I assert that because all forms of empirical knowledge are inductively derived, there are no synthetically verifiable claims. Furthermore I assert that Logical Positivism is wrong and argue this through addressing what is fundamentally incorrect about Carnap’s Notion of Analyticity, which may be understood as the foundation for Logical Positivism.

The distinction between observational and theoretical terms depends on the concept of verificationism, which necessitates meaning to have some sort of confirmation in synthetic context. Statements which are not empirically confirmable are known as theoretical terms.. Because these statements are not directly observable, being too abstract to test directly; according to verificationism, they are meaningless. So what does it mean for a statement to be synthetically verifiable? Any notion which is observable, or at least understood through its relationship to observable things is verifiable. We might refer to any of these notions as observational terms. In general, a verificationist argues that in order for a claim to be relevant, it has to have empirical foundations derived from observability. Any theoretical claim proposed in science had to be built on a subset of these observational claims to some sort of deductive extent in order to be relevant. In other words, any notion which is purely hypothetical is simply not applicable.

On the surface the idea of verificationism presents some reasonable claims. Without apparent existence how could something be relevant? How could you prove the validity of anything without it being observationally true? This method of logic refers to deductivism, which draws conclusions of inference based on existentially known variables. The system of developing knowledge through deductivism might be understood here, stating x→y ∧ z→x ∴ z→y. Deductivism is agreed upon to be necessarily true, as long as the premise of an argument is correct, the conclusion using this format will always be true. So to a philosopher, incorporating this use of deductivism to necessitate existence might be understandable, and to a group known as the Vienna Circle, it was. The members of the Vienna Circle advocated for an idea called Logical Positivism, an idea built off of verificationism which stated that in order for a concept to be meaningful it has to be deductible by logical analysis. Furthermore, if there exists an idea in philosophy which is not verifiable according to Logical Positivism, it does not have meaning.

In order to develop any further understanding we must envelop on the term empiricism, and how it relates to Logical Positivism. Empiricism states that knowledge is based on observation, and that all understanding is the result of derived experience. Logical Positivism then, because it states that in order for something to be relevant it must be deductible through observable claims, is an advocate for empirical knowledge. But what relevance does this have in deductive inference? The main problem with Logical Positivism is that forming hypotheses based on empirical knowledge is based on inductive inference, a form of logic which does not directly imply but rather assumes certain propositions based on observable consistencies. In other terms a thesis drawn from empiricism is usually not based on deductive reasoning. Furthermore, because Logical Positivism relies on deductive logic to validate statements which are built on empirical (inductive) hypotheses, it is contradictory.

In defense of Logical Positivism one might assert that through confirmation of consistency in observation there might be grounds to assert that because of probability, an observational claim might persist to be true. This is a theory called the Theory of Confirmation, which states that hypotheses may be confirmed or disconfirmed by evidence. However the objection regarding the Theory of Confirmation is one based on repetition of experience, or empirical induction. As it is based on observation which may not be affirmed by anything but induction, which is irrational, it is not a viable science. Any method of reasoning built on observation, because the logic affirming that observation is inductive, exposes such a theory to be a circular logic and thus incorrect.

So how then could Logical Positivists rationalize their theory without creating some sort of circularity? The main system thought up by the Vienna Circle was to identify the validity of theoretical claims by using deductive logic to examine their empirical truth. Formulations presented by A.J. Ayer and other members of the Vienna Circle followed this sort of principle, ultimately defining theoretical concepts through generating subsets of variables which represented empirical understandings. For example Carnap’s “Methodological Character of Theoretical Concepts” more simply states that we might take observational material M which is an element of theoretical terms K. So that if M ⊆ K then we would be able to verify K. This is opposed to if M ⊄ K, which would make K unverifiable and ultimately irrelevant, therefore proving verificationism. But this theory still doesn’t address the problem of drawing deductive inferences from empirical material. In extension of this method then is Carnap’s Notion of Analyticity, which states that a variable T is a totality of theoretical postulates and C is a totality of mixed sentences which are both antecedent and theoretical. The problem is that these two variables independently do not quantify their own validity without a regulator. Carnap then presents a formula which confronts the theoretical nature of a conjunction TC through replacing all non-observational terms TC with predicate variables and then closing these statements with existential quantifiers. This method is written as R(TC) ⊃ TC and according to Carnap may be used as an entirely analytic sentence of a theory.

Where Carnaps’s method may be logically correct there remains the question of its validity given applications to ontological truths. Systematically Carnap relies on the proposition that all theoretical statements T are addressed through the nature of antecedent observational truths C. And that the verification of TC through quantifier R(TC) proves its validity so that for all R(TC) ⊃ TC, T is relevant. If there exists that R(TC) ⊃ TC ⊢ ⊥ then, the theoretical proposition is false (irrelevant) and the Logical Positivist’s notion is unharmed. This however is my rebuttal to Carnap’s theory; you cannot confirm the validity of something based on the content of itself. In order to confirm the nature of an observational variable deductively, your variable would have to be axiomatically consistent, which you cannot confirm by simply identifying it within its own nature. In order for a variable to be axiomatic it would have to exist independently of all other variables, and that includes itself. In this case however Carnap relies on verification based on if a theory fits deductively within its own empirical values. It once again is validation through observability, which elementally is reliant on inductively organized knowledge.

We come back to the notion that in order to make a deductive inference, your variables must not be conditional. In the case of empirically derived knowledge where all inferences are based on inductive logic, it cannot be stated for certain that any proposition is unconditionally true. It is said by Hume in a more clear description; “It implies no contradiction that the course of nature may change, and that an object seemingly like those which we have experienced, may be attended with different or contrary effects.” (E. 4.2.18). If consistency may not be implied from empirically derived knowledge, then it must be so that to make an assertion which uses inductively based variables, even organized in a deductive argument, cannot be indefinitely true. Therefore we can discredit the argument for Logical Positivism on the account that there is not a distinction between irrelevant and relevant claims in science, only because all arguments must be based on an observational, and thus non definitive basis. Any attempt to eliminate this truth through identifying the validity of a claim based on empirical inductivism is circular and thus does not relegate the existence of a purely hypothetical claim.

In conclusion, through examining the philosophy behind observational and theoretical terms in incorporation with the main issue of inductivism, we create the proposition that all empirically derived claims are ultimately undefined. We then can claim that a distinction between such terms, because they are both ontologically non definitive, are unsuccessful in creating empiricist foundations for science. Logical Positivism, because it relies on the concept that empirical claims are definitive, is therefore incorrect and has no grounds to assert that any claims are defined just because they are derived from observational terms.

Bibliography

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