

Revisiting Quine's argument on a priori knowledge & Going a step further than the relativized a priori

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Abstract. In this paper I revisited Quine's argument against Carnap's notion of analytic a priori knowledge and offers an explanation on why Carnap—holding his logical positivist ground—can not make a convincing reply against Quine. However, I argue that if Quine succeeds in the sense that we can make no convincing reply against his argument, then a priori knowledge will have to be abandoned, so that we will have to retreat to where Quine calls the “pragmatic grounds”. I then evaluate Friedman's notion of the relativised a priori knowledge as an argument to reply to Quine, and claim that Friedman's notion is a strong reply against Quine. That being said, Friedman's notion itself, along with Friedman's arguments that attempts to justify the notion, is limited, as it only concerns some aspects of natural science (naturwissenschaften) and not the human science (geistwissenschaften): Friedman is thus missing out important ideas from figures such as Hegel and Husserl. I claim that in order to give a priori knowledge its proper place, we should simultaneously consider arguments from both the natural sciences and from the human sciences.

Keywords: Analytic & Synthetic Knowledge, A Priori Knowledge, Logical Positivism, Philosophy of Science.

1. Introduction

In this essay, I shall revisit Quine's rejection of a priori knowledge argue for a type of relativized a priori knowledge, which is a theory that strongly pushes back Quine's rejection and by far the most successful argument, proposed by Michael Friedman. Therefore, I will first provide a brief account of Quine's reply to Carnap's analytic a priori knowledge and how that poses a problem for the existence of a priori knowledges. I will then provide an account of contemporary replies to Quine from Gary Ebbs and Marian David, and why are both replies not as successful. Following from this, I will provide an account of Friedman relativized a priori knowledge and why it is a strong case against Quine. Nonetheless, this concept needs some further explication in order to be positioned as a stronger case against Quine and be saved from other problems, such as admitting the Kantian notion of a priori knowledge. To do so, I will bring in Gadamer's notion of the history of effects and the fusion of horizon as explications to strengthen Friedman's arguments.

2. A brief analysis of the Quine-Carnap debate

One essential component of Quine's philosophical system—the epistemological holism—is the rejection of the a priori knowledge, that is to say, the component indicates that knowledge can only be gained from empirical grounds. To validify his rejection of the a priori, Quine in his *Two Dogmas of Empiricism* launched a famous attack on Carnap's notion of analyticity, which is by nature a priori, by arguing that analytic truths are unbased. Essentially, when analyzing the unmarried bachelor case, Quine argues that although one could say that bachelors are defined as unmarried men, the ground for this definition is nonetheless empirical, and therefore necessarily synthetic—acquired based on experience. That is to say, our notion of ‘unmarried’ and ‘bachelor’ are interchangeable only because we have initially defined—again, through empirical grounds—what the two words correspondingly mean. After all, as Quine indicates, ‘There is no assurance here that the extensional agreement of ‘bachelor’ and ‘unmarried man’ rests on meaning rather than merely on accidental matters of fact, as does extensional agreement of ‘creature with a heart’ and ‘creature with a kidney’” (Quine 22),

It does not seem that a bachelor and an unmarried man can be pre-empirically defined as strictly interchangeable, for there is also a Bachelor of Arts, which has no implication of one's marriage status. Even if there happens to be a pre-empirical assurance, Carnap, who denies the synthetic a priori, would have to first assume that analyticity exists, else he could not explain why and how the two words can be interchangeable.

The problem then rests on the fact that we do not know what analyticity is, therefore we are unable of assuming its existence. Quine ultimately consults to semantic rules that could distinguish analytic statements, yet even these rules that are supposed to pinpoint analytic statements would have to assume the validation of analyticity, which is not yet a verified concept. While we do understand, in the statement A statement S is analytic for language L₀ if and only if, the expressions that semantic rules have attributed to analyticity, we most importantly do not know what these rules attributed to these expressions. That is to say, when we investigate on the relationship of the words unmarried bachelor (Here, without their empirical meaning, we can simply treat them as P and Q), we know that "unmarried" & "bachelor" are attributed by semantic rules to analyticity, but we do not know the connotation between the relationship of "unmarried" and "bachelor", for we do not know specifically on what rule does their relationship operate! Therefore, before knowing what analyticity really is, we cannot know such connotations.

Quine then makes a second attempt by turning to a second semantic rule which only indicates statements that are included in the category of truths, which would obviously include analyticity, assuming that analyticity no longer requires explanation, and that truth is a broader term which needs no further clarification. This category only indicates what the semantic rules indicate as truth, thus a statement is analytic if it is (not merely true but) true according to the semantical rule. So that:

In a certain system SR (semantic rules)

If T>A (analyticity is a part of truth)

T (This term needs no further clarification in SR)

Therefore A.

However, doing so would make every such true statements a semantical rule, deriving secondary truths analytically. Even worse, we do not know what a semantical rule really means. While we could compare the semantic rules with a postulate: relative to the set of given postulates, it is easy to say that a postulate is a member of a set—the same goes for semantic rules. Yet, once that relativity which it relies on is gone, meaning that we are now faced with a different set of postulates, then asking for a definition of the semantic rules is simply baseless. Even the artificial language L would have to lay its analytic statements as secondary components—still inevitably derived from semantic rules, which is something we do not know. As Quine suggests, "Semantical rules determining the analytic statements of an artificial language are of interest only in so far as we already understand the notion of analyticity (which we do not fully understand); they are of no help in gaining this understanding." (Quine 34)

Based on these observations, Quine concludes that "it is obvious that truth in general depends on both language and extra-linguistic fact", in which the phrase extra-linguistic fact represents the content of truth (whereas language is merely the vessel that contains truthful contents).

3. Michael Friedman's convincing reply to Quine

In this case I propose that we should no longer deal with Quine on his attack on analyticity, until we could come up with a better argument to push him back. Instead, I propose that if we wish to retain the validity of the a priori and push back Quine's epistemological holism, we should consult arguments that support the synthetic a priori. One of such arguments is Michael Friedman's relativized a priori—by that he refers to a priori knowledges that are no longer apodeictic but are nonetheless constitutional knowledge of scientific systems. As we know, the traditional Kantian notion of a priori knowledges contains two branches: constitutional for the acquisition of empirical knowledge (necessary) and universally true in every condition (apodeictic), but Friedman abandons

the latter branch, because this entails that a priori knowledge is by nature unrevisable (true in all conditions = this cannot be wrong).

Friedman's explanation of his abandonment of the latter branch comes from his account of the developments in the natural sciences—physics and mathematics in particular—which indicates that a priori knowledges are revisable. As he says, “Kant's original conception of synthetic a priori knowledge was not clearly unacceptable from the point of view of the most recent scientific developments” (Friedman 124). To wit, we can see this through the Kantian notion of space and time: Kant indicates that space (Euclidean geometry) and time (Newtonian physics) can be easily connected to individual experiences. Once modern mathematical physics are developed, the connection between physical theory and sense experience is lost. They have become more and more abstract in relation to concrete sensory experience. Newton's law of motion for example is one that is abstract and not connected to experience: such is why it becomes Reichenbach's coordinating principles (axioms of coordination), in the sense that they law of motion becomes the presupposition of all of Newton's empirical laws (laws of gravity), for without the laws of motion no concrete empirical phenomena would make sense to us. According to Friedman, the function of these axioms is to mediate between abstract mathematical representations and concrete empirical phenomena which the representation attempts to describe. This is the “constitutive function” that Kant describes.

As sciences progress however, scientific theories become more and more distinguished from human experience: the fourth dimension (Riemann) and the relativity theory (Einstein) are all theories that are entirely non-intuitive representations. From here, we are left with a mathematics that are pure abstract relational structures. This means that they are, seen by Friedman, objects that are not (or cannot, rather) be mediated by intuition, and therefore subjectivity. Therefore, the need of constitutive/relative a priori becomes more and more apparent, in order to connect the representations to the physical phenomena. (Friedman provides an example of Einstein's theory with the travelling of light to illustrate the importance of the light theory as the relative a priori for Einstein's theories.)

Friedman thus concludes this process into three parts of a theory: mathematical, mechanical, and empirical. While the first and the third are self-explanatory, what he means by mechanical part is the constitutive a priori that sets up a general correspondence between the mathematics and the empirical. Only by doing so could we empirically verify the laws of nature of the physical part (Newton's description of the solar system for example can be justified with the help of the laws of motion). Friedman argues¹ here that Quinean holism is wrong to see this procedure as verifying the mathematics and the mechanical, for these theories are independent of empirical verification, which means that they cannot be tested by empirical verifications.

Now the first question we shall propose to Friedman's statement of the mechanical part is that, could the mechanical part be founded on experience? Friedman argues that since the mechanical is the foundation of the procedure of empirical edifications, one is therefore mistaken to verify it through empirical means, but is he correct to say so? For his statement—if a theory cannot be tested by empirical verification, then the theory is a priori and not founded on experience—may need further clarification. For example, Quine could pose a counterargument by saying that Einstein has been inspired by two empirical experiments: the aberration experiment and Fizeau's water flowing experiment. Einstein himself admitted that the two experiments were what cognitively inspired him to propose his theory of relativity. If these empirical experiments were not made, then it would be rather difficult for Einstein (or any other scientists) to propose the theory of relativity. Therefore, just because a theory is abstract or cannot be verified empirically does not mean it is not empirically founded. While modern theories become more and more distinguished from experience, the discovery, proposition, and cognition of these theories are not. Even more, it is precisely the cognition of previous theories that fosters the discovery and proposition of new theories. Therefore, Quine would argue that even the mechanical is integrated into the holistic system of human experience.

¹ See Michael Friedman, *Coordination, Constitution, and Convention: The Evolution of the A Priori in Logical Empiricism*, page 114.

The second problem of Friedman's relative a priori theory is that it he will have to admit that every scientific framework would eventually be replaced. Since Friedman indicates that by relativized a priori he is referring to a priori knowledges that are no longer always true but are nonetheless constitutional knowledge of scientific systems, he has also claimed that these systems, because they are constituted by knowledges that are not always true, will be replaced. If this is the case, then the constitutive knowledge is true only in relation to specific system which entails them, and false in other systems. This has been our knowledge with the replacement of Newtonian with the Einsteinian system, where the law of the former system no longer applies to the conditions of the latter system. Now, the problem with the mechanical part of a system P, assuming that the development of science is infinite², is bound to be incorrect when the next system P1 is developed, for the framework which the mechanical part relies on—P—has been deemed wrong by science and is replaced by P1. Conceivably, this would happen for an infinite number of times. Therefore, the value of the mechanical part of P seems rather pointless, for even if it is the constitutive part of a system, it would not have mattered if that system is destined to be replaced to begin with.

Now we should attempt to resolve the two potential pushbacks—the foundations of the mechanical part and the problem of infinite scientific frameworks—for Friedman, in order to keep his relative a priori theory intact. The first problem is not difficult to answer, for we can parallelize Friedman's system of the three parts of a theory with Kant's system of the three parts of epistemology. Kant's structure of epistemology is that our acquisition of knowledge essentially consists of the a priori representations (space and time), the a posteriori sensory perception, and our transcendental imagination that connects us between the representations and perceptions. While Kant would not deny that all our knowledge is empirically grounded, our vessel—the transcendental imagination—used to process these perceptions, is nothing empirical. Similarly, Friedman can argue against the notion of problem one by saying that even if Einstein's theory of general relativity was inspired by the two experiments, Einstein must first turn to the mathematical equations to find the justification of his empirical inspirations, and once that is completed, he would need to formulate a law that connects the equations with the experiences, else those justifications would be meaningless. This law is the theory of relativity, which formulates Einstein's system of modern physics.

The difficult question for Friedman to answer is question two, for I think he is posed in a dilemma here: either he accepts or denies that the development of science is limitless, he will always hurt the fruits of his theory of relativized a priori. If the development of science does have a limit, then obviously the end of that limit would be the a priori knowledge, for it is the standard answer, necessary and universal. Since Friedman would obviously disagree with this, he would have to agree with the notion that the development of science is limitless.

Yet to agree with this notion is to admit that every scientific system will be eventually replaced by a following one, and such replacement will happen for an infinite number of times. Since these replaced systems are no longer true, therefore the mechanical, constitutive part of that system, would also be wrong. The theory of relativity P1 will inevitably be defeated, just like how it once defeated Newton's laws of motion P, for their corresponding constitutive parts which holds their validity are also demolished. Friedman must recognize that even if these mechanical parts of systems are necessary, they are nonetheless necessary only in relation to a system that is bound to be replaced, which makes it difficult to call them a priori knowledges. In fact, I think Quine would be in favor of the second problem: if the scientific systems are replaceable, then their value is therefore solely reduced to pragmatic grounds, for if one overviews this replacement process transcendent of time, then every single one of them has no intrinsic value³ in themselves. The constitutive part of the system is also not necessary, but necessary only in relation of the system.

² If we however assume that scientific development is finite, then the final system would be a priori. Yet it seems that both Quine and Friedman would disagree with us, so we should keep away from that discussion right now.

³ Here I am implying that for something to have an intrinsic value, it will have to have value lying in its own existence. On the other hand, pragmatic values are simply values that the object brings for the benefit of human civilization. Since the systems will eventually be replaced (and by then have the meaning for their existence destroyed), they do not have

4. My response to both Quine and Friedman, in order to explicate Friedman's argument.

At this point, if we wish to agree with Quine's Epistemological holism, we can terminate our investigation on the a priori knowledge. However, I argue that Quine's holism should not be what we, as philosophers, wish to agree upon, and therefore we shall attempt to save Friedman's relativized a priori argument from peril. To do so, we must further investigate on the nature of scientific systems. Then, we must find out why these systems are infinite in numbers, and by doing so unravel the implications of an infinite number of systems.

So, why are scientific systems infinite in numbers, and most importantly, always replaceable by some new scientific systems? Quine and his fellow pragmatists seem to take the replacement (or adaptation) for granted, labelling them as unworthy questions⁴, but I think there is much to explore here. First of all, it is sensible to deduce from the replaceable nature of the scientific systems that every individual scientific system is equal in terms of ontological value, since if all systems are ought to be replaced, then no system is more privileged than other systems. Since the systems' ontological value remains equal, it is their pragmatic value that Quine and his followers uses as the basis of their judgment: doing so they examine how a scientific system can be more contributive to the prospering of humanity. Yet, one could immediately question that even the pragmatic values of scientific systems can be obscure, for how is Einstein's physical system more contributive than Newton's physical system? What is the standard of such judgment? Can there be a standard for such judgment? If these questions cannot be answered, then Quine will have to retreat and say that he shall examine how a scientific system can be more contributive to the prospering of humanity in the current era. However, even this claim can be questionable, for there can be no current era without the past, and the historical condiments and developments. Therefore, we could say that the ontological value of all scientific systems that have existed or are yet to exist are equal.

But again, why are the numbers of scientific systems infinite? The simple answer is to say that scientific systems cannot be finite, for if it is, then whatever we find as the final scientific system will be the a priori principle—truth. If that is the case, then there is no point for us, Quine, or Friedman, to argue upon the existence of a priori knowledges. our discussion therefore must be established on the basis that the number scientific systems are infinite. Yet, there are more we could unravel than just pertaining to this answer. One may wonder, after all these investigations, that why can these systems, following each other one by one, be replaced, and thus, why are they ontologically equal? For if they are ontologically equal, then there must be a generic meta-framework that holds and assembles them. In fact, Friedman has also realized the need of a meta-frameworks, which, in his own words, “lay an indispensable role in mediating the transmission of (communicative) rationality across revolutionary paradigm shifts, despite the fact that they are incapable, by their very nature, of the same degree of (communicatively) rational consensus as first-level or scientific paradigms” (Friedman 105). This meta-framework, which is really philosophic reflections (as Friedman says) is what then lays ground for the development of scientific paradigms—the relative a priori knowledges—through what he calls a natural continuation or earlier principles. He thus concludes that “reflection on the distinctively philosophical or meta-paradigmatic level helps us to define, during the revolutionary transition in question, what we now mean by a natural, reasonable, or responsible such continuation” (Friedman 105). While I think that this is the right call to make, Friedman does not tell us more about this meta-framework in the Dynamics of Reason: specifically, what is this meta-framework? What sort of properties does it have, so that it has the ability to hold

what qualifies as their own existence. For Quine, he and his pragmatic inclinations (epistemological holism) entail that nothing whatsoever as intrinsic values, therefore he is happy to see the systems reduced of having only pragmatic values.

⁴ Richard Rorty and John Dewey are two that I have in mind. Dewey, in particular, wrote the *Reconstruction in Philosophy* to illustrate why we should take this replacement, which he calls advancement or development, as granted. Yet, unlike Dewey, I think it is at least worth attempting on the investigation of why this is the case.

the continuation every scientific paradigm intact, which implies that it has the ability to mediate the becoming of a radically different paradigm? Does this mediation not give rise to the ontological equality between the previous and following system? Since Friedman spends the rest of the chapter accounting Einstein's engagement with spatio-temporal discussions in the nineteenth century starting from Kant, we might as well follow this discussion and work out the properties of this meta-framework.

To start with, since this indispensable meta-framework holds ground for every spatio-temporal paradigm (that are again, relatively a priori), we can reversely say that all spatio-temporal paradigm are facets of the meta-framework, because without it, they would lose their shared property ontological equivalence. What about this facet? To illustrate, think of the properties of a sphere: it has by nature an infinite number of facets. Reciprocally therefore, all the facets are a unique representation of the sphere. If the sphere is not there at the first place, then it is impossible to assemble all these unique representations. The scientific systems, therefore, are unique representations of this meta-framework. Under Friedman's context therefore, this meta-framework is what time and space are representing, i.e, every scientific framework regarding time and space serves the purpose of representing this framework from a different approach.

Now that we see how time and space are serving for the purpose of representing the meta-framework, we can extract the commonalities of all the representations to see what exactly is being represented. No matter what mathematical expression it is regarding time and space, it must be an illustration of the nature of time and space, that is, their corresponding functions and effects. Moreover, we can see that this nature—the functions and the effects and time and space—inevitably leads us to their corresponding properties. These properties—the entities being represented in this case—are temporality and spatiality. Thus, for the sake of our investigation, I propose that we should replace the terms time and space with temporality and spatiality. Indeed, Friedman was correct in saying that with the development in science, new theories have been proposed regarding Kant's notion on space and time, therefore Kant was wrong. However, while the notions of space and time remain adapting, the notions spatiality and temporality remain unchanged. This is because, while the former two mathematical, the latter two are intuitive to one's consciousness. No matter how time and space vary, spatiality and temporality are always being perceived by our inner sense in the same way. As Kant says,

“[Temporality] is nothing but the form of inner sense, that is, of our intuition of ourselves, and of our inner state. [Temporality] cannot be a determination of outer appearances. As opposed to belonging to shape or location, etc., [temporality] determines the relation of representations in our inner state. And exactly because this inner intuition supplies no shape, we try to make up for this deficiency by means of analogies...” (Kant, B50|A33,34)

One must be aware that inner sense, intuition, and inner state here should not be simply understood merely as sense experience or as consciousness: this I think is the misconception of some neo-Kantians on Kant and German Idealism. These neo-Kantians, basing off their argument from this misconception, argues that mathematics and logic are the most grounded source of knowledge. However, many post-Kantian phenomenologists and idealists such as Husserl⁵ thinks that there exists also the structure of consciousness, which they think is more grounded than mathematics and logic: this including self-consciousness is what they refer to as inner sense. The structure of one's self-consciousness is interior and transcendental, for, even though it is an interior part of the subject's consciousness, the subject cannot control the structure. This is because, even the scope of my experience could vary, it is true that I cannot resist against any one of that experience: it is interior yet uncontrollable—this structure is therefore transcendental, for my consciousness is, in a sense,

⁵ Here I am referring to his phenomenology of internal time consciousness, in which he argues that the existing time the subject experiences is not the objective but the immanent time of the flow of consciousness. Again, since the aim of this paper is to argue for neither the natural science nor the human science but to propose a solution beyond the tension of the two areas of study, I shall not dive into the details of Husserl's phenomenology. More regarding the structure of consciousness can be found in his *Ideas*—but that would be a totally different discussion from ours.

being initiated and controlled by it. Therefore, the structure is most intrinsic and unshakable: therefore, it is transcendental. Take temporality for example: the process in which the structure connects my consciousness with temporality is a process of synchronization, for, prior to the formation most intrinsic structure, all objects are temporally disparate, that is, all objects are decentralized, for they are not yet in appearance to the structure, and therefore they are not temporal. Think for example the world before the birth of the subject: could the subject, without its basic structure of consciousness in place (that is, knowing that it is in somewhere at a certain time), understand the events of this world? All courses in history would be meaningless to it, and, most importantly, it itself is the only source of knowledge of the world (at this point at least). In order to exist as a being, one must find a medium to posit oneself with all the happening events. Thus, a center is needed to align these objects on the same center if we ever want to talk about anything timely: this very center is my consciousness, and the process of alignment is the synchronizing process.

Let us now return to Friedman and his relativized a priori argument. If all the above were to be true, then Friedman's relativized a priori argument is saved at the cost of accepting something he has rejected in the very beginning of his lecture: the Kantian synthetic a priori. As these relativized a priori relies no longer on ought to be replaced paradigms but on an indispensable ground, this ground becomes the Kantian a priori. Looking back at the scientific frameworks, don't we find that the mathematical expressions of time are precisely the 'analogies' scientists make to represent and capture temporality? In this sense, the purpose of science is to understand the synthetic a priori—temporality and spatiality, for the properties of both concepts require many clarifications work with the help of the scientific paradigms—the relativized a priori. Yet, spatio-temporality remain a priori.

Nonetheless, the purpose of this paper is not to evaluate which side—the idealists or Friedman—is more agreeable, but to explicate on Friedman's contributions. In fact, I even think that Friedman is correct when he claims that German idealism could have pushed too hard into arguing for the importance of subjectivity (Friedman 20). In fact, on the 34th footnote in his *Dynamic of Reasons* he said: "Habermas... in failing to acknowledge the profound contribution of mathematical and scientific knowledge to rational consensus and intersubjective communication, Habermas here places himself within the tradition of post-Kantian idealism that aims to defend the rightful claims of the *Geisteswissenschaften* against the "positivistic" presumptions of the *Naturwissenschaften*" (Friedman 96). Moreover, I think that Friedman's defense of scientific rationality in light of Habermas' communicative rationality is not only correct, but important. The important aspect of his defense of scientific rationality lies in his realization that scientific rationality is perhaps made possible through the notion of intersubjectivity. Therefore, perhaps the key investigation we face in the future is not only the development of mathematical & scientific knowledge but also how the intersubjective communication—our meta-framework for scientific rationality—is possible. Making this move is important since the human sciences have also made profound contributions to "rational consensus and intersubjective communication": they should not be left out from our discussion.

Now, if one is to pertain the strict dogmas of post-Kantian idealism, one would instead argue that there is no intersubjectivity and that intersubjectivity is simply an illusion of subjectivity. Going onwards from that route, one essentially reduces every knowledge into their own firsthand experience; the problem of this I think lies in their own, for it causes mutual understandings of anything to be almost impossible. Here, the cost of abandoning mutual understanding may be too expensive, so we do not want to be dogmatic German idealists—just as how we do not want to be dogmatic positivists. Therefore, we must maintain this ground for mutual understanding and therefore intersubjectivity.

Therefore, I suggest that, to adopt the Carnapian reduction and reduce the consciousness of the subject into unreliable experience and, from doing so, segregate it from the fruits of modern scientific developments, is an approach worthy of many revisions. At least, the progress made in the developments of scientific theories is motivated by humanity's will to understand their existential conditions: it will be difficult, if not impossible, to separate the two, since one must admit that the former is deeply intertwined with the very consciousness of the human history. It is only when one wishes to understand the mechanism of one's structure of consciousness—spatiality and

temporality—would one wish to explore what that is through scientific methods, and this is the original motivation for scientific pursuits back in history. To wit, we can re-examine how scientists in generations pass down their works and explorations for the upcoming generation. Without Pythagoras there won't be Euclid, without Euclid there won't be Galileo, and Newton, and Riemann, and therefore Einstein and so on: the contribution of former scientists always becomes an effect to the latter scientists. Meanwhile, the latter learns from the effects (their experiments, explorations, and discussions) from former scientists as the basis of their own exploration. Scientific developments therefore should no longer be seen as incidents independent from the effects of human history, which is essentially the effects of human activity—physically and intellectually.

What is essential among the effects, moreover, is the conscientiousness of questioning one's living conditions: to ask what makes this world (time and space) what it is to me, how do the properties of this world affect me, and etc. In fact, Friedman himself in the chapter *Rationality and Revolution* describes this very process using Einstein's creation of a radically new system that "naturally and continuously evolved from the preceding conception" (Friedman 102) and that it belongs to the tradition on the question of absolute versus relative motion. Friedman also makes the claim that Einstein when creating this new system "was self-consciously effected against the background of the quite different constitutive framework of classical mathematical physics and it is entirely unintelligible without this background" (Friedman 101). From here, we can say Friedman is aware of Einstein's engagement with a part of human history, which becomes foundational to the intelligibility and success of Einstein's new framework. Without being aware of his existential conditions and the history of science before him, he would not be able to establish what we know and credit in physics today. The constant engagement of intellectuals with the course of human history is, for our purpose, the synthetic a priori knowledge.

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