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Pragmatic commitments to naturalized epistemology

Abstract  This essay explores numerous and complicated naturalized epistemology against the background of pragmatism. We distinguish three programmes of naturalized epistemology: strong, moderate, and weak. By considering commitments of pragmatism on which different programmes depend, we point out the close-knit relationship between pragmatism and naturalized epistemology. We also illustrate the essential origin of today’s controversy over naturalized epistemology and predict the uptrend of naturalized epistemology.

Keywords  epistemology, naturalism, pragmatism

There is immanent connection between naturalized epistemology and pragmatism. As the most widely known and influential school of philosophy in America, pragmatism settles on the theoretical keynote and background of naturalized epistemology. By analyzing the theoretical commitments afforded by different types of pragmatism to naturalized epistemology, we can better understand the different types of naturalized epistemology and clarify today’s controversy over naturalized epistemology, and accordingly better predict the uptrend of naturalized epistemology.

I  Three programmes of naturalized epistemology

We can hardly give a brief and clear definition to naturalized epistemology
because naturalism would be an attitude and approach rather than a system or doctrine: it's a philosophical methodology and project in nature. (Randall, pp. 121–140) Usually, naturalized epistemology appears as a methodology or an inquiry approach/programme, whose intension and extension are not as straightforward as traditional epistemology. Therefore, we will not badger with conceptual issues of naturalized epistemology in dispute, but we're going to present its methodology and essential viewpoint via clarifying different types of naturalized epistemology. We can see that although a good many scholars nowadays boost naturalized epistemology, there's still broad divergence on some fundamental issues. Now we list three such fundamental issues which can be used as measurements of classifying different types of naturalized epistemology. These issues centralize on the relationship between traditional epistemology and naturalized epistemology that all types of naturalized epistemology affront. Look at the Table 1 below first:

Table 1

<table>
<thead>
<tr>
<th>Types of naturalized epistemology</th>
<th>Parameter 1: epistemology is a discipline of science</th>
<th>Parameter 2: natural science is the only source of epistemology</th>
<th>Parameter 3: traditional epistemology can be superseded</th>
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<tbody>
<tr>
<td>Strong programme 1 (S₁)</td>
<td>+</td>
<td>+</td>
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<tr>
<td>Strong programme 2 (S₂)</td>
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<td>Moderate programme 1 (M₁)</td>
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<td>Moderate programme 2 (M₂)</td>
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We treat three fundamental issues as parameters. The basic viewpoint or standpoint of different types of naturalized epistemologists is affected by the value "+" and "-" of these parameters. According to the divergence shown in answering the three fundamental issues, we compartmentalize naturalized epistemology into three programmes. In each programme, there are two different forms according to intension. For instance, S₂ is weaker than S₁. Different programmes correspond to different types of naturalized epistemology.

II Strong programme and Quine's commitments

According to Table 1, naturalized epistemology is mainly considered as strong programme (S₁ or S₂) and the criticism to naturalized epistemology points at the strong programme. This is because Quine, as the symbol of naturalized epistemology, is the proponent of the strong programme. The criticism of naturalized epistemology is mainly associated with Quine's per-
In order to show the basic standpoint of his strong programme, let’s first analyze Quine’s perspective and then look at the close association between Quine’s strong programme and his own pragmatic thoughts to illustrate the main commitments or theoretical support to strong programme supplied by his scientific pragmatism.

Most of today’s naturalized epistemology originates from Quine’s “Epistemology Naturalized”. This seminal paper brings about “the naturalists return” and vigorous development of naturalized epistemology. In the paper, Quine said:

Epistemology, or something like it, simply falls into place as a chapter of psychology and hence of natural science. It studies natural phenomena, that is, a physical human subject. This human subject is accorded a certain experimentally controlled input—certain patterns of irradiation in assorted frequencies, for instance—and in the fullness of time the subject delivers as output a description of the three dimensional world and its history. The relation between the meager input and torrential output is a relation we are promoted to study for somewhat the same reasons that have always prompted epistemology. (Quine, pp. 82–83)

Here, Quine approves of P1 (value of “+”) in the first place. He treats the object of epistemology as a natural phenomenon, and calls for an experimental method in the study of epistemology to “provide an account of a certain natural phenomenon, namely, knowledge itself.” (Komnblith, p. 161) Accordingly, traditional epistemology can no longer stand as “first philosophy” and all epistemological issues can be settled in an experiential way, so traditional epistemology can be eliminated or replaced. Quine’s approval of P1 is destined to his approval of P2.

The response to P2 lies in how we interpret science. Quine appears to “take for granted that the product of naturalization has enough in common with traditional epistemology to its name,” (Houkes, p. 254) and he almost identifies epistemology with psychology. Furthermore, in Quine’s sense, psychology is almost natural science. So Quine’s response to P2 is also positive. However, some other proponents of strong programme think that science is not equal to natural science, and they validate the method of social science in the study of epistemology.

Although it seems that Quine hesitates at P2, his main idea is to identify knowledge with S1 as a kind of physical phenomena. This Quinean standpoint is called “physical school”, representatives of which include R. Giere, P. Thagard and so on. They all claim that traditionally epistemological issues
can be settled by use of the latest products of modern science, and then confine science to physical science. Therefore, most of them construct epistemological methodology on the basis of products and standard of physical science. However, proponents of S2, including M. W. Wartofsky, S. Fuller and S. M. Downes, advocate epistemological inquiry from social, historical and cultural dimensions. They consider knowledge as a cultural phenomena, thus gain the name “cultural school”, who disagree with the physical school on P2.

It is noted that there is no fundamental disagreements between the physical school and cultural school because they both belong to strong programme. Although the physical school claims that the epistemological account model should be constructed by normal form of physical science, they do not entirely exclude social and historical factors and vice versa. And the standpoint of the physical or cultural school can be changed under different background commitments. For instance, because of attention on factors of normativeness and value, L. Laudan seems to slide from S2 to the moderate programme, and H. Kornblith, due to his social account under scientistic background, finally slides from moderate programme to S2.

Strong programme has a close-knit relationship with Quinean pragmatism. Whether S1 or S2, it obviously presents scientistic inclination, which accords with Quinean pragmatism. Given the theoretical commitments by Quinean pragmatism, strong programme comes down with strong scientistic inclination. Quinean pragmatism not only supplies background for strong programme, but also represents common standpoints of the different schools of strong programme.

According to the character of Quinean pragmatism, we call it “Scientistic Pragmatism” (SP) for the moment. Commitments of Scientistic Pragmatism (CSP) to strong programme mainly include:

CSP1: Commitment of Reduction

Traditional reductionism is of foundationalism, but Quine’s reduction is a kind of “linguistic behaviorism”. Firstly, Quine “regards stimulus-response correlations as the only available evidence for the state of the subject and treat the subject itself as a black box.” (Houkes, p. 255) He uses the “stimulus–response” model to account meaning, and reduces the complicated process of cognition to the initial stage of meaning. Then, our language is partitioned into “occasional sentence”, “standing sentence” and “eternal sentence” according to the extent of their correlations to intense stimulus from close to distant. So logic and mathematic propositions, which are not confronted with common experience, can be reduced to occasional sentences, which bear the meaning of intense stimulus. Therefore, this commitment is a precondition for experimental science to replace traditional epistemology.
CSP$_2$: Commitment of Fallibilism

Fallibilism and the "stimulus-response" model are impartible. According to Quinean pragmatism, epistemic processes that develop reliable knowledge via several input-output courses cannot be finished at one time. Only by increasing input of experience can we avoid falsity and acquire truth. Along this way, Quine claimed the fallibility and revisability of experimental science and admitted the validity of historical factor and evolutionist account. This commitment justifies the credibility of the experimental method.

CSP$_3$: Commitment of Causationism

Different from logical empiricism, Quine's causationism is external, as he not only rejects making causal inference by logic function in analytic philosophy, but also denies the causal inference model of syllogism. Quine establishes causation on the relation between experiential input and epistemic output. He thinks that if we can insure enough experiential input, credible knowledge must be acquired. So what we should do is try hard to improve the condition of causal inference and avoid fallacy, but not to find a priori arguments. This commitment makes it possible for strong programme of naturalized epistemology to deny all the a priori deduction of traditional epistemology.

CSP$_4$: Confirmation Holism

After traditional positivism was attacked by critical rationalism, whether knowledge can be confirmed or not became a question. Quine recognizes the limitation of positivism and applies experiential holism to confirmation. According to confirmation holism, all the propositions can be understood within the conceptual system, so as to avoid the limitation of inductive or deductive inference. Within Quinean pragmatism, the credibility of knowledge rests on the validity of linguistic expressions and the relativity of physical sense systems, so if we understand or accept a language, we understand or accept its conceptual system. This commitment is necessary to answer the doubt that strong programme cannot be justified, although some vagueness still exists.

It's clear that Quine's commitments above lay a theoretical foundation for strong programme. Furthermore, current criticism of strong programme can finally attribute to these four pragmatic commitments. For example, W. Houkes considers that Quine's commitments of reduction deviate from the contents and goals of traditional epistemological inquiry, as the goal of Quine's naturalized epistemology is just "clarifying the relation between sensory input and verbal output, between evidence and theory". (Houkes, p. 257) D. Davidson thinks that although relationship between stimulus-observation sentences is causal, it cannot be justified in an experiential way. Jagwon Kim also criticizes CSP$_3$, he argues that knowledge is a norma-
tive concept itself, but Quine’s commitment of causationism is about eliminating normativity.

Currently, so much criticism of CSP endangers strong programme and even the whole naturalized epistemology. For example, B. Stroud and E. Sosa argue that Quine’s naturalism does not answer the central question of traditional epistemology, i.e., the doubt that if scientific theory can reach facticity and indicate external reality, so CSP is helpless in the face of skepticism. Accordingly, Houkes argues that the contents of (strong) naturalism are quite different from that of traditional epistemology so it cannot be the successor of traditional epistemology or at least it is not worth the name “epistemology”. Houkes’ suggestion is that, only when we change the name of naturalized epistemology can we settle its status. In this sense, S. Stich even blithely predicts that epistemology will end. (S. Stich, p. 89)

III Moderate programme and Dewey’s commitments

Strong programme of naturalized epistemology encounters more and more criticism, some of which comes from moderate programme. The biggest difference between the moderate programme and the strong one is that although the former acknowledges the validity and necessity of the experiential method in epistemic inquiry, it refuses to deny or discard concepts and methods of traditional epistemology at all. To be brief, moderate programme disagrees with strong programme about P3.

R. Feldman’s view is a representative of moderate programme’s attitudes and standpoints on P3. He calls traditional epistemology “armchair epistemology”, which begins at hypothetic propositions and puts forward some analyses and principles, and then revises them in the light of potential counterexamples. So the prominence of traditional epistemology is analyzing epistemological concepts and formulating epistemic principles. He calls modern epistemology “methodological naturalism”, which holds that all psychological results related to human cognition and reasoning are essential or helpful to the process of epistemic inquiry.

Feldman oppugs the status of the strong programme. In his opinion, we cannot take naturalized epistemology (strong programme) for granted. Firstly, he points out that what naturalism concerns and what traditional epistemology does are different, only if epistemology is as broad a discipline as “the study of human knowledge”, empirical study advocated by naturalism is relevant and legitimate. Second, the introduction of psychological concepts cannot justify naturalized epistemology, for in fact psychological concepts are always being used in epistemology. Feldman argues that, al-
though more and more psychological concepts enter epistemology, it does 
not follow that psychological results imply such theory or that epistemolo-
gists must use such results to support their theory; some epistemic theory can 
justify itself, which can make sense without using results from natural sci-
ence like psychology.

Accordingly, Feldman’s conclusion is that “some projects some would 
call epistemological, such as the study of human knowledge and reasoning 
or the effort to help people to reason better, undoubtedly do require empiri-
cal input. In spite of arguments to the contrary, there’s not much reason to 
think that psychological results will play any significant role in efforts to 
construct general abstract theories about or analyses of knowledge and justi-
fication.” (Feldman, p. 184) On the one hand, he considers empirical science 
helpful to epistemology; on the other hand, he tries to make room for con-
ceptual analyses and theoretical abstraction of traditional epistemology.
Feldman opposes Kornblith’s analogy of knowledge and natural phenomena, 
and emphasizes or highlights the particularity of knowledge. So his view-
point towards P3 is that some propositions of epistemology cannot rest on 
empirical information, and traditional epistemology cannot be replaced en-
tirely.

J. Capps holds a similar viewpoint. By comparing Quinean and Deweyan 
pragmatism, Capps suggests a return to Deweyan pragmatism, which not 
only contains the minimal commitments of a naturalized epistemology, but 
also provides a response to objections to such an approach. According to 
Capps, moderate programme can trace back to Deweyan pragmatism.

The character of Deweyan pragmatism is consistent with moderate pro-
gramme, so his pragmatism can give essential theoretic evidence or back-
ground commitments. Dewey uses the concept “situation” to set inquiry 
conditions and denies epistemic reduction and scientism of strong pro-
gramme. Thereby Deweyan pragmatism can justify naturalized epistemology 
in a minimalistic way.

Dewey’s central notion is “situation”, which at least contains psychologi-
ical and social factors: as a result of biological and cultural framework, prob-
lems for inquiry arise, are classified and solved. Although the situation de-
PENDS upon our own doing, it also carries certain factors that cannot be re-
duced entirely to subjective psychological and social factors.

It seems that Dewey anticipated the crux of Quine early. Dewey sets two 
conditions of inquiry theory: first, all kinds of inquiry differ only in degree, 
not in kind; second, logic forms originate from the process of solving certain 
or material indeterminacy. The former is the basic commitment of naturalism, 
while the latter prevent Deweyan naturalism from being a “chapter” of natu-
ral science or descriptive science.
We can see that Dewey considers results of certain activity as some common sense, which provides evidence for abstraction of scientific theories, accordingly his pragmatism is characteristic of commonsensical inclination. So Dewey's commitments to moderate programme can be called “Commitments of Commonsensical Pragmatism” (CCP):

CCP1: Commitment of Common Sense
According to Deweyan pragmatic, commonsensical realism, the use of effective language implies a basic “theory of the world”. Our common sense can insure that linguistic expression is likely to develop theories of the world. Under generic common sense, we all can express the relationship between reality and theory via language, and then translate things outside the human body into objects of knowledge.

CCP2: Commitment of Theorizing
After testing the relation of object and theory by common sense, Dewey provides commitment to the relation of theoretical activity and its results. He thinks that some “theory of the world” is necessarily prior to, and continuous with, more sophisticated forms of theorizing. It implies that theoretical forms are natural results of theoretical activity, which also embody self-development and self-completion of theory.

CCP3: Commitment of Continuity
Now that the “theory of the world” is continuous with more sophisticated forms of theorizing, epistemology is to be regarded as continuous with science or as a chapter of science. According to Deweyan pragmatism, certain results of activity provide endless motivation for abstraction of scientific theory, so we can find continuity between them. In this sense, Dewey's commitment of continuity can be applied to all aspects of human knowledge: There is continuity between philosophy and science, epistemology and science, traditional and naturalized epistemology, etc.

From the view of the moderate programme, other commitments are unnecessary, and basic commitments of the strong programme are unnecessary for a defense of naturalized epistemology. Under commitments of the moderate programme, naturalized epistemology is neither “the replacement thesis”, nor “the transformational thesis”, while it doesn't discriminate against various kinds of science. Naturalizing epistemology under this minimal manner clears the way for approaching questions of truth and justification from a fresh direction, without making an unwarranted detour through reductionism and foundationalism, as other programmes of naturalism do.

Of course, for the sake of epistemic justification, Deweyan pragmatism contains certain methodological presuppositions. Although this remedies the strong programme's ignorance of justification and normativeness, it opens a convenient door for the moderate programme to slide to the weak pro-
gramme. Another deficiency of Dewey's commitments is that Dewey circumvents skepticism from the view of commonsensical pragmatism, but his non-foundational approach makes it doubtful that naturalized epistemology is able to answer questions posed by traditional epistemology. Dewey tries to avoid reductive scientism of the strong programme on the one hand, and avoid foundationalism, coherentism and other more mainstream approaches, which hunt after certainty, on the other hand. This makes his commonsensical evidences not able to do as well as he wishes. In the face of this predicament, Dewey must confess that "we may base our expectations on what occurs in more scientific fields." (Capps, p. 657)

To sum up, although there are some difficulties of the moderate programme under CCP, it's still the case that moderate programme is more acceptable than strong programme. Recently, many scholars of epistemology shouted out the slogan of "return to Dewey", for they think that not only is it able to clarify the basic commitments of a naturalized epistemology, but also makes the point that nothing more is necessary in order to make sense of our epistemic and scientific practice.

IV Weak programme and Peirce's commitments

Within naturalized epistemology, the most drastic criticism to Quine's approach is from the weak programme. Whether W1 or W2, its disagreements with the strong programme about fundamental issues are prodigious. If we treat strong programme as an extreme, then weak programme can be read as another extreme. If it's the case that the radical attitude of strong programme renders it to be misunderstood as post-modernism, then the drastic degree to which the weak programme criticizes the strong programme displays a certain a priori flavor.

The proponents of weak programme do not deny the role of empirical science in epistemic studies, but they disagree drastically with the strong programme about P1. They refuse to treat naturalized epistemology as a common discipline of science, rather they try to defend epistemology as the guide of science. Therefore, they drastically reject elimination of logic, mathematic and metaphysic propositions. Not only do they confess the validity of some concepts and propositions out of experience, but they think these concepts and propositions constitute the so-called "a priori knowledge", which is beyond the study of empirical science.

G. Rey is a representative of weak programme. Firstly, he claims to be a naturalist himself, and confesses the necessity and validity of empirical methods in epistemic inquiry. However, Rey also finds some ambiguity in
Quine's pragmatic commitments, especially the commitment of fallibilism and confirmation holism. Accordingly, he argues that naturalized epistemology cannot get rid of a priori knowledge, for there are no fundamental differences between traditional logic, mathematics, or metaphysics and physics, biology or daily-life belief, they are revisable according to experience.

Rey's strategy is advocating a priori via experience. He claims that "whether or not there is a priori knowledge is an empirical issue", "it may well turn out to be a naturalistic fact that we humans possess a priori knowledge in a number of areas." (Rey, p. 25) As a matter of fact, the a priori in Rey's sense is a certain strategy of justification, just similar to Kuhn's "paradigm". So the a priori can be revised in light of experience, which can be considered as advancement rather than denial of the a priori, just like the change of the normal form posed by Einstein's space and quantum physics. According to this a priori justification, Rey can reasonably give negative response to P1 and P3.

It is clear that Rey's concept of a priori is different from that of traditional philosophy. Just in this sense, M. Devitt thinks that Rey is not a naturalist at all, because "using the empirical method from time to time does not make you a naturalist." (Devitt, p. 47) We can see that, according to our common understanding of naturalized epistemology (viz. S), a naturalist has no alternative but the empirical method.

H. Field argues that logic is a priori. His reason is clear: in order to reason anything by evidence, we have to use logic; logic licenses the inferences from evidence to conclusion and so must come first. (Devitt, p. 57) From his perspective of pragmatism, we do have reason to use logic knowledge, which is the a priori in this weak sense according to Field's definition.

While the moderate programme deliberately disinterests the response to P2, the weak programme seems to be partitioned into "physical school" (M1) and "cultural school" (M2) in the light of different responses to P2. The common point of M1 and M2 is advocating a priori knowledge through empirical study so as to resist strong programme or moderate programme. For instance, D. Cummins, who seems to belong to the "physical school", asserts that "we predict that prior knowledge concerning alternative possibilities to the causal scenarios described by causal conditionals would influence people's interpretations of the conditions." (Cummins et al., p. 276) In comparing naturalistic epistemology with Hermeneutic Epistemology, K. Lennon advocates replacing a priori with immanence while admitting that "reason has remained immanent or transcendent" (Lenon, p. 257). Accordingly we think Lenon belongs to the "cultural school".

Compared with Quine's and Dewey's commitments of pragmatism, the
weak programme can trace directly to Peirce’s pragmatism. The a priori flavor presented by Peirce’s pragmatism make it possible to give background commitments or theoretic support to the weak programme. By analyzing Peirce’ commitments, we can better understand fundamental characters and essential contents of the weak programme.

Peirce is honored as the initiator of pragmatism, who posed an important influence on Dewey and Quine. As to naturalized epistemology, owing to the discontentment and rebound of the strong programme of which Quine is the representative, many scholars nowadays turn to go under Peirce’s pragmatic commitments in the hope of constructing naturalistic epistemology of the weak programme.

Peirce rebuilds Kant’s transcendental logic through semiotics, and gives new justification of the validity of impersonal knowledge. His inquiry logic is different from that of Dewey’s: Dewey establishes natural connections between conditions and outcomes of inquiry, while Peirce establishes logical necessity between how to indicate and what to indicate. Although Peirce abandons traditional dogmatism, he still lays a credible foundation for knowledge through linguistic “community of intercourse”.

It is clear that Peirce tries to balance traditional metaphysics and modern science. His pragmatism presents an obvious a priori flavor that we call “A Priori Pragmatism” for the moment. Commitments of A Priori Pragmatism (CAP) to naturalized epistemology are mainly as follows:

**CAP1: Commitment of Foundation**

In Peirce’s opinion, although it’s hopeless for traditional epistemology to develop credible foundation within individuals (no matter whether this foundation is self-awareness or logic laws), it’s possible to find such foundation within linguistic “community of intercourse”. Actually, such foundation is a certain strategy of justification, which replaces transcendental deduction or induction with a priori justification, accordingly traditional epistemology is justified once again in the development of modern science.

**CAP2: Commitment of Consistency**

Another important commitment to defend a priori justification is the commitment of consistency. According to Peirce’s semiotics, such consistency is not only embodied in consistency between thing and thing or between symbol and symbol, but also embodied in consistency between object and symbol. Of course, as a pragmatist, Peirce does not admit any correlation between concept and object. His true intention lies in the linguistic consistency expressed by interpersonal indication of object rather than the objective community of concept in self-awareness. (Apel, p. 96) Such consistency is a priori or preexistent.

Within the domain of epistemology, if we treat Quine’s commitments as
that of "revolutionist", then Peirce's commitments seem to be that of "royalist". By using the strategy of justification of CAP, Peirce makes it possible to retain the priority of epistemology compared to science, which provides an impelling theoretic support for the weak programme's denying P₁ and then P₃. However, Peirce's a priori justification is open: his pragmatism does not deny empirical results of natural science, and indeed tries to find valid account of science out of the empirical domain.

Under Peirce's pragmatic commitments, some proponents of the moderate programme often slide to the weak programme or even some new forms of metaphysics. Compared to Quinean and Deweyan pragmatism, Peirce's pragmatism keeps closer contact with traditional philosophy. Therefore, the boundary between the weak programme of naturalized epistemology and traditional epistemology is rather ambiguous. In this sense, weak programme is subject to be reproached, even pushed out of the domain of naturalistic epistemology. To be brief, we do not have much reason to be optimistic about the perspective of the weak programme.

V The uptrend of naturalized epistemology

Outside the domain of naturalized epistemology, many scholars criticize or attack the project of naturalized epistemology drastically. We need to point out again that the criticism mainly targets the strong programme. Of course, such criticism endangers the common status of the different types of naturalized epistemology at the same time. For instance, it is pointed out that Quine's attitude of reduction or transformation towards traditional epistemology premised his thorough suspicion or denial of traditional epistemology. So, Quine did not refer to any empirical science that could support the claim that consequences of Hume's thesis can be avoided if epistemology is naturalized, and his argument is simply "the argument from despair" (Shatz, p. 117). Accordingly, A. Kertész argues that there is no clear distinction between Quine's arguments and skepticism: "his conclusion that traditional epistemology should be discarded is valid exactly as long as traditional epistemology exists" (Kertész, p. 274). Kertész calls such fundamental problem "the paradox of naturalized epistemology".

In fact, why not such paradox is also the paradox of traditional epistemology? The crucial matter here is how we understand the notions of "traditional" and "natural". Here we also see the intense rebound of the strong programme of naturalized epistemology. As we can see in previous sections, going with pragmatic commitments, different types of naturalized epistemology can convert to each other, and such a conversion is an embodiment
of the rebound of the strong programme. We sum up the conversion of different types of naturalized epistemology as follows:

\[
\begin{array}{ccc}
\text{Strong Programme} & \text{Moderate Programme} & \text{Weak Programme} \\
\text{CCP} & \text{CAP} & \text{CAP} \\
S_1 & \overset{\text{CCP}}{\rightarrow} & M_1 \\
S_2 & \overset{\text{CAP}}{\rightarrow} & W_1 \\
\end{array}
\]

\[\text{Fig. 1}\]

According to Fig. 1, the strong programme and moderate programme can convert to one another under conditions of CCP and CSP; similarly, weak programme and moderate programme can be converted to one another under conditions of CCP and CAP; however, owing to their extremeness, strong programme and weak programme cannot convert to one another directly. It is reasonable to infer that, as the pressure within and outside the domain of naturalized epistemology increases, both strong programme and weak programme will convert to moderate programme under conditions of CCP, i.e., naturalized epistemology should converge on moderate programme. If this is right, the notion of naturalized epistemology in common sense will be changed, and the pragmatic background of naturalized epistemology as mainstream will also be shifted. As a result of that, the basic standpoint is going to shift from radical to moderate.

It is still notable that the radical standpoint of early programme seems to be necessary or inevitable to the development of naturalized epistemology. In order to be clearly distinguished from traditional epistemology, the mark of the decisive turning away from traditional epistemology seems doomed to be the initiation of the strong programme. Therefore, naturalized epistemology gives us an extremely destructive impression. Especially, the revolutionary character presented by strong programme causes much criticism or attack. With the strong programme transferring to the moderate programme under the changed background of pragmatism, the constructive significance of naturalized epistemology on rebuilding epistemology should emerge, and it is hoped that the controversy over naturalized epistemology will be settled in the future.

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