

Once a Future Logic: Peirce, Royce, and the Formal Norms of Thinking

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Abstract: Royce and Peirce discussed logic during and following Peirce's 1892 lectures at Harvard. One cannot help wondering how the conversation progressed. Only a few pieces now survive in their correspondence, before or after. Royce defended tetradic logic and achieved results that no Peircean or pragmatist can afford to ignore. What role each played in the other's logical development is worth exploring. I will attempt to reconstruct the exchange of 1892, based on the existing evidence, and to extrapolate toward an answer to the question of where each was tending in his logical explorations.

Background

A number of scholars have documented the relationship between Royce and Peirce. Peirce scholars have tended to think of the influence between the two as flowing only from Peirce to Royce, and it is fair to say that between 1877 and 1891, the influence went mainly from Peirce to Royce.¹ After 1891, the story became more interesting. David E. Pfeifer has argued convincingly in a recent paper for a constellation of ideas that flowed the other direction, especially noting that the idea of “purpose” came to play an increasingly prominent role in Peirce’s thought after 1900, as a result of the way Royce articulated it in *The World and the Individual*.² But the mutual influence and their real relationship is documentable a decade earlier, and the argument about purpose that Royce offers in 1900 is not different from the one he gave in his 1880 paper “On Purpose in Thought,” which was read (by a proxy, presumably, since Royce was in California) at the Johns Hopkins Metaphysical Club, the same day that Peirce was elected president.³

I do not believe it is possible to sort out all the details of mutual influence between Peirce and Royce, but the habit of thinking that influence goes only one direction is demonstrably, empirically false, and the influence of Royce on Peirce was important, early, and lasting. This can be shown. Frank Oppenheim has made a fine start on that effort.⁴ I have written about it before and I intend to add to it substantially in this and at least three more papers.⁵ So much of the correspondence has been lost that the full extent of their relationship will never be known, but it is valuable to reconstruct, to the best of our ability, some of the more important parts of it, and the relationship between logic and the theory of knowledge is probably the most important among these.

I intend to depict intellectual equals, even though there is no question that Royce was willing sometimes to take the subordinate position in the relationship –that of student, or apprentice, even—when it came to logic. This does not mean, however, that Royce’s own original thinking in logic, or indeed, and most importantly for my purposes, in the *philosophy* of logic was derivative from Peirce’s. Peirce and Royce

agreed that logic was the study of norms for thinking, and the study of which formalizations and habits tend to improve thinking and which tend to misdirect or stunt thinking. But they had fundamentally different ideas about the relationship between norms of thinking and norms of action (an area in which Royce far exceeded Peirce as a philosopher, and indeed, exceeded every other American philosopher). They had important divergences on how logic is related to inquiry, knowledge, possibility, and necessity. These differences both resulted from and confirmed their differences in favored logical structures and strategies –Royce defending a traditional and tetradic framework for thinking about relatives, while Peirce believed, by 1902, that the older framework was obsolete.⁶

Since the devotees of Peirce are fond of very particular dating, I place the crucial moment in the mutual exchange as beginning during the week of May 17, 1892, when Peirce traveled to Cambridge for a week.⁷ During that time he gave a version of his paper “The Law of Mind” at the Philosophical Club and he and Royce had a long conversation in Royce’s parlor. Two graduate students were allowed to listen in and one of them, Dickinson Miller, described the meeting to Max Fisch in 1960.⁸ It appears that Royce did most of the talking at this meeting. Nathan Houser says:

From the notes typed up by Max H. Fisch after an interview with Dickinson Miller on 6 May 1960, Miller could not remember anything about the conversation except that Royce was making “continuous utterances,” suggesting that he had the lion’s share of the conversation, and that Peirce would interrupt from time to time beginning with a polite “Pardon me.” Still the thrill of the experience may have made Miller speak about it in high terms to James, his favorite professor.⁹

It makes sense that Royce would have done most of the talking at this meeting. Royce had been digesting and working through Peirce’s views since 1877, indeed, he had been working them out in ways Peirce had not imagined. So Royce knew Peirce’s views, but Peirce knew far less about Royce’s. Peirce read, with some apparent astonishment, Royce’s 1885 *Religious Aspect of Philosophy*, which I will discuss in what follows, but Royce may not have been aware that Peirce read it. The only meaningful contact they had in the time leading up to the parlor meeting was associated with Peirce’s public support of Frank Abbott, and his criticism of Royce, in the notorious “Abbott affair.”¹⁰ Neither Peirce nor Royce was the sort to let a disagreement, even a public disagreement, get in the way of serious philosophical business. Royce had very thick skin.¹¹ If Peirce expected Royce to hold against him taking Abbott’s side in the controversy, he was disappointed in that expectation. What happened instead was the beginning of an extra-ordinary decade of exchange.

Apparently Peirce may also have given another talk at Royce’s house or at his seminar during the same trip in May. Houser reports that Royce had devoted several sessions of his seminar to a reading and critique of Peirce’s “The Doctrine of Necessity Examined.”¹² The context then, of what I would call the real argument between Peirce and Royce over logic and its relation to knowledge, especially

scientific knowledge, began, I believe, as a discussion about the character and role of necessity in the development of mind, and the continuity between mind and nature. I will not be about to trace out this part of the debate in this paper, but I will end with a brief discussion of how each saw the nature of “doubt” that will suggest a direction for the third paper in this series. Peirce was aware that Royce disagreed with him about necessity and indicated in a letter to Paul Carus that Royce was preparing an “attack” on his view for the *Philosophical Review*.¹³ I think it is fair to assume that the long conversation in Royce’s parlor probably included the arguments Peirce expected to see. But Royce never wrote that piece, or if he did, it does not survive among his papers. [CHECK AGAIN TO BE SURE ☺]

I want to reconstruct that conversation and “attack” as I can. I believe that the story is best told first as a discussion about the nature of hypothesis, as Royce took it from Peirce and developed it early in his career. This is followed by a disagreement over the role of postulates in philosophy, exemplified in Royce’s use of postulates in *The Religious Aspect of Philosophy* and how it differs from Peirce’s explicit statements about postulates in “The Doctrine of Necessity Examined.” And finally I want to offer a diagnosis of the difference between them, as it boils down to the nature of doubt and its role in formalizing an inquiry according to the norms of logic. For Royce, doubt is a pre-requisite of inquiry as a generalized feeling of negation, or of the limits of the whole, within which we can establish what we would now call a “universe of discourse.” The universe of discourse is, for Royce, postulated as a whole and only within its limits, and these are the limits of reflection itself, is any formalization, i.e., any logic, genuinely normative for thinking. To grasp the relation between thinking and the rest of the world of action, one needs more than logic. Peirce would agree with this, certainly, but his idea of the relation of thinking to the unfolding of time is different from Royce’s view. Royce believes that all thinking obverts temporal passage and genuine action. Peirce does not have this added complexity, and very much to the detriment of his metaphysics and, as I will argue some other day, his logic.

Hypothesis (Abduction)

It is clear that for Royce the years 1877-78 were crucial to the formation of his ideas about knowledge and its relation to inquiry on the one hand and about logic on the other. Royce may have met Peirce in 1877 when he spent the summer in Boston and James introduced him to a number of the Cambridge notables.¹⁴ Peirce was in New York for at least part of that summer, but whether he traveled to Cambridge I do not know. I know that Royce traveled through New York on his way back to his second year at Johns Hopkins, but perhaps by that time Peirce had departed for Europe. Royce kept three notebooks that summer all dedicated to logic and the theory of knowledge. There is no question about what sorts of issues he was working through (the interdependence of the principles of knowledge, his dissertation topic) and at just this moment he was introduced to the thought of Peirce. Royce read Peirce’s articles of 1867-68 from the *Journal of Speculative Philosophy*, which he listed at the end of his life as being among the most enduring influences on his thinking, and he

also followed the *Popular Science Monthly* articles as they appeared in 1877-78, including most importantly for our present purposes, "Deduction, Induction, and Hypothesis," which was the last of that series and published in August of 1878. Perhaps Royce read this article on the train back to California to accept his first teaching position at Berkeley.¹⁵

Of particular interest in the *Popular Science Monthly* series was Peirce's emphasis on the syllogism. Peirce later decided he had been too much occupied with the syllogism and that when he freed himself from thinking about inference solely on that basis, he was able to break new ground in logic.¹⁶ Yet, this emphasis on the syllogism proved formative for Royce, who never abandoned the syllogism or the tetrads he worked out in relation to it.¹⁷ I doubt that Royce would agree that every argument can, with sufficient effort, be expressed in Barbara,¹⁸ which Peirce insists is "capable of strict proof," and I will show below some instances that Royce doesn't think can be expressed in Barbara without loss of meaning. But even if it is proved that all arguments are capable of such expression, it does not follow that all inferences from the syllogism fall cleanly under the headings Peirce defined in this essay –as even Peirce admits. Many hypothetical inferences can become inductions, when circumstances change. There is evident overlap and we can only show that not all hypotheticals can become inductions. And, importantly, there was a problem, in Royce's view, with the way "hypothesis" was handled in Peirce's essay. I believe Peirce later admitted the problem Royce identified, saying that "probability had nothing to do with the validity of Abduction [i.e., hypothesis], unless in a doubly indirect manner."¹⁹

This is pretty cryptic –something Peirce scholars quietly relish, in my experience. The operative words are, of course, "doubly indirect." By "indirect," Peirce means that such logical moods "need some transformation to appear as the application of a rule to a particular case."²⁰ By "doubly indirect" Peirce means, at least, that the propositions involved need more than one transformation to appear as the application of a rule to a particular case. Whether those transformations are of the same kind, whether they might involve transforming two or all three of the propositions in a syllogism, or whether it might mean only transforming one proposition twice or several times is not clear from what Peirce says. All he has done is allow that *if* the validity of a hypothetical inference is affected by probability, it is "doubly indirect." He had implied as much in the essay itself, when he said: "Never mind how improbable these [previously suggested] suppositions are; everything which happens is infinitely improbable. I am not saying that these things are likely to occur, but that some effect . . . which now seems impossible is certain nevertheless to be brought about."²¹ This statement alone establishes the independence of hypothesis and probability (hence, of induction), but it does not say wherein the validity of a hypothetical inference consists. Let me repeat, we are only speaking of probability or of induction as *deductively* expressed in the syllogism. No one here is talking about the *inductive* forms of inductive inferences or of the hypotheses that may be entered upon likely confirmation of the conclusion of an inductive argument when inductively expressed. But hypothetical inferences,

when expressed in a syllogism, are more complicated than they may at first appear, as I will show, shortly.

It would be too much to claim that I can untangle the whole nest, but I intend to try to get to the nub of it. I think Royce is the person who convinced Peirce that he had failed to grasp the relationship between hypothesis and syllogistic inference, and the complexity is worse than the suggestion of a “doubly indirect” influence of probability upon the validity of a hypothetical inference. There is a problem with the relation of the whole of a syllogism to its parts and with the various ways in which hypotheses can be entered as logically relevant to our best thinking. Royce took this article and all the *Illustrations* to heart and he began working with the syllogism in earnest.²² In his first book, the *Primer of Logical Analysis*, Royce began the long process of working through the kinds of ideas that Peirce had put forward, and Royce was already conscious at this point that he opposed nominalism (very likely Peirce’s influence on Royce) and that inference was “a higher form of the interpretation of speech,” even if he was there obliged to leave aside the “philosophic problem of the theory of reasoning.”²³

In that book, Royce sets sentences that have logical significance into four major classes, expressing each class as a disjunction.²⁴ These are:

1. Either logically simple or logically composite.
2. Either conditional or unconditional.
3. Either affirmative or negative.
4. Either merely declarative or modal.²⁵

Royce subdivides these classes further. A “hypothetical” sentence is an “expressly conditional” sentence, as contrasted with *implicitly* conditional sentences that can be either disjunctions or take other, more complex forms. As Royce notes, the four classes are not “wholly independent,”²⁶ and he promises to sort them out, at least as far as is necessary for the students (this is a textbook, after all). But what the students needed and Royce’s own thinking on the subject are not to be conflated. Still, he means everything he says about hypotheses in the *Primer*.

Especially complex is the relationship between statements that are hypothetical, on one side, and also “modal” at the same time. When one mixes the hypothetical type of conditional sentence with the “Idea of Necessity, or of Probability, or of some like quality,”²⁷ which is what Royce means by “modal,” one gets quite a mixture. When one *denies* the truth of such a sentence (a negative sentence –this mixes three classes), one gets something more complex still. When one does all this with a logically composite sentence, well, it should be sufficient to say that analyzing such sentences are a challenge.²⁸

In working through Peirce’s ideas in the *Illustrations*, Royce realized that Peirce had overlooked something fundamental about hypotheses: not all hypotheses are “constructive,” which is the word I would choose for the treatment of hypothesis in

Peirce's essay, "Deduction, Induction, and Hypothesis." By constructive, I mean that Peirce cuts through the very real differences among the classifications of sentences Royce set out here, and he ignored altogether what Royce calls the "implicit conditional sentences" and went only for the affirmative class of logically simple, expressly hypothetical sentences. Peirce's confidence that all arguments can be expressed in Barbara (at that time, i.e., 1878) is responsible for his setting aside the very real differences Royce discovered and articulated in the *Primer*. Having asserted that the other types of sentences could be suitably reduced to Barbara, Peirce then set about arguing about the relations of these types of sentences to probability and hypothesis in their deductive forms (involving logical necessity but not metaphysical or causal necessity). That covers only a small part of what was at stake, logically, from Royce's point of view.²⁹

It is possible that both Peirce and Royce are correct, but they have different standards of logical success. Royce demands that the norms of logic include the preservation of both meaning and reference, intension and extension, in successful inferences.³⁰ It is not clear whether Peirce is equally devoted to the preservation of meaning, since the kind of inquiry he is concentrating on in the *Illustrations* is only the scientific kind, and extension, i.e., describing the furniture of the natural world, is the target of inference. Royce was crazy for science as a youth, but he came to be disappointed by it by the end of his undergraduate career.³¹ After a period of skepticism, he settled into the view that science, like all other human activities, was an ethical activity, in the first place, and explanatory only to the extent that explanations, and the having of such, was already a valued part of the ethical, social world. The norms of thinking were not guided by good science; rather, good science was guided by good thinking, as was every other human activity. Thus, Royce was never inclined to make successful or excellent natural science the model of good thinking or the source of the norms of good thinking. Nor was Royce inclined to find these norms in seeking the mere clarity of language. The ground of the norms for good thinking would be elusive for Royce for the early years of his philosophical career. In the *Primer*, he was setting in order the pieces of that puzzle he was confident about. The case here, then, turns upon whether we are content with the idea that preserving reference is adequate as a source for norms in scientific or natural inquiry, or whether equal or even greater weight must be given to the preservation of *meaning*, as Royce insists.

I will illustrate Royce's view by looking further at hypothesis. Royce goes on to clarify the relations between hypothetical sentences in Section 9 of his *Primer*. Logically simple, expressly conditional sentences easily reduce to universally quantified statements, assuming one recognizes that the truth of the conditional statement is a claim about the *whole* statement, and not just the antecedent or the consequent –this is another way of saying that the statement is interpreted as assertoric rather than problematic or apodeictic.³² Some simple relation is *affirmed*, and that is what is asserted, even if it contains a negation. Royce gives the example: If a man gambles, then he is not to be trusted; but this reduces to the categorical proposition "A gambler is not to be trusted."³³ The conditional character has been

eliminated without loss of either meaning or extension. That is what Royce includes under “hypothesis,” and I believe he intends this use of the term both to follow and to capture fully what Peirce says about hypothesis in 1877-78. This is what I was calling the “constructive” sense of that word, and it is important that Royce is granting to Peirce the whole reach, as he understands it, of what Peirce claimed for hypotheses.

But Peirce overlooked some very important matters, both for inquiry and for logic. The introduction of logical conditionality *by disjunction* complicates things in the first place. Royce gives the example: “The visible heavenly bodies either are self-luminous, or are comparatively near to self-luminous bodies, or both at once.” Royce then points out:

This statement . . . is indirectly conditional. At all events, this statement is not of the form *A is B*, and seems to resist reduction to that form. But let us look closer. If a heavenly body is not self-luminous, what do we know of it? We know from the above statement that such a body is comparatively near to some self-luminous body. The above statement, then, might be restated thus, reducing the expressly conditional [i.e., hypothetical] statement now reached to the typical form: *Visible and not self-luminous heavenly bodies are comparatively near some self-luminous body*. But this new statement is not a perfect expression of the whole meaning of the previous statement.³⁴

Royce concludes that the reason for the irreducibility of such sentences is that implicitly conditional disjunctions are logically composite; where *meaning* cannot be preserved, the reduction to logically simple statements is forbidden. In short, it isn't good thinking to sacrifice meaning just to obtain a clean logical form. Thus, one problem with reducing all arguments to those expressible in Barbara, as Peirce claims, is that the “intension,” i.e., meaning, cannot be preserved. It is not an accident that the example is one from natural science. The preservation of meaning is just as important to scientific inquiry as to any other kind of inquiry, and please recall that good science is an *example* of good thinking, not the authoritative model of good thinking, for Royce. Royce would never accept a strictly extensional logic, then, that was willing to sacrifice the preservation of meaning in order to allow for a simplified truth-functional evaluation of conditional sentences. Preserving meaning is normative for Royce, as is preserving extension (for the sake of reference).

When we add to the complexity the modal character, the task of preserving meaning through logical transformations becomes still more difficult. Royce says:

When I say: *This is the right road*, my statement is a simple or unmodified statement of my belief. When I say: *This must be the right road*. *This is probably the right road*. *This may be the right road*. *This cannot possibly be the right road*: in all such cases I give my statement, what is technically called Modality: that is, I add to the copula of the statement some adverb indicating the fixity of my belief. Such statements offer special difficulties.³⁵

I suppose it is obvious, in the present context, that Royce's decision to express the definition of modality in terms of the degree of the fixation of belief, and to associate what is logically simple with a simple belief is an explicit modification of Peirce. The importance of this and many other clear allusions to Peirce's *Illustrations* in Royce's *Primer* have been, I think, entirely overlooked in previous literature on both Royce and Peirce.

So what "special difficulties" does the addition of such a special adverb bring on? Royce continues:

To reduce to the form *A is B*, by leaving out the modal adverb *probably*, *possibly*, *necessarily*, etc., is to alter the meaning of the actually made statement. Yet the adverbs, *probably*, etc., do not belong as modifiers to the predicate. What kind of road would be a *probably right road*? Evidently a road is either right or wrong, and *probably* [etc.] modifies not the rightness of the road, but my expression of belief. Hence, to escape the dilemma, the best way would seem to be to regard the modal adverb as a predicate by itself: the subject being a clause giving the statement in its non-modal, merely declarative form: *That this road is the right one, is probable*. In like manner the statement: *This road must be the right one*, would be reduced to: *That this road is the right one, is necessary*.³⁶

Although Royce in his preface to the *Primer* explicitly says that he makes no claim to originality in the book, I think the passage above entitles him to be recognized as the founder and inventor (or discoverer) of modal logic. All Royce scholars know that C.I. Lewis developed modal logic from Royce's System Sigma, but no one (until now) taken the time to learn that Royce got the basic idea for modal logic from assessing a weakness in Peirce's argument in the *Illustrations*. It is also possible that one reason Peirce's book was never finished (until this year) is because Royce shot it full of holes and Peirce learned that in 1891, in Royce's parlor. But let us finish the thought before we move to the next episode. Following what Royce says here, the proper logical form for a statement of possibility, or the negation of such a statement goes as follows: That A is B, is possible. Or That A is not B, is possible. Or that A is B, is impossible. Or (and here is the crucial one): That A is not B, is impossible. The last of these can be expressed as "I enter as false the hypothesis that A is not B." If this hypothesis is quantified as a particular: "I enter as false the hypothesis that some A is not B, is impossible" we have the makings of what Royce will later call the O-relation, which is the basis of his epistemic logic.³⁷ All of the pieces of this discovery are in the *Primer*, and the context of the discovery is Royce's dissatisfaction with Peirce's understanding of the relation between the fixation of belief and hypotheses.

Postulates

[Introduce section with reference back to parlor discussion and how Peirce uses the term "postulate" in "Doctrine of Necessity"; remind reader that Royce has developed already in 1892 a sophisticated theory of the logical and

epistemic function of postulates in relation to doubt (the two chapters on doubt and postulates in RAP) that grew from his consideration of the Illustrations essays.]

Recall that Peirce distinguishes the syllogism into a class logic of Rule, Case, and Result. In the case of hypothesis expressed in Barbara, the Rule is the major premise, the Result is the minor premise, and the Case is the conclusion. For example:

Rule –All the beans from this bag are white.

Result –These beans are white.

∴ Case –These beans are from this bag.³⁸

Only deductive expressions of hypothesis or induction are under consideration in this article by Peirce, and whether hypothesis or induction could better or best be expressed in other forms is not the point at present. What is relevant is that during Royce's formative period, Peirce was trying to get the syllogism to cover all the possible forms of logical inference. Peirce elaborates on the third and fourth figure versions of hypothesis, allowing into his argument the types of negation that characterize the kind of inference that is a hypothesis in the second figure Baroco. That version of hypothesis goes like this:

Denial of Result –Enoch and Elijah were not mortal.

Rule –All men are mortal.

∴ Denial of Case –Enoch and Elijah were not men.

[Discussion of Peirce's examples of hypotheses and exercise from "Canadian Barstool."]

Peirce says:

For it is manifest that no universal principle can in its universality be comprised in a special case or can be requisite for the validity of an ordinary inference. (Buchler p. 326)

This assertion has two parts. The first is whether special cases can "comprise" universals in their universality, and the second is that universals in their universality must not be held to be "requisite" for the validity of an inference. The two logical relations are comprising and requisiteness –not the clearest language we could have hoped for. Royce's agreement or disagreement would consist, in both cases, in what one means by these two terms. In the context, Peirce is arguing against the idea of postulates playing any important role in resolving the conflict between the mechanistic view of the universe and the causal efficacy of free will. In this context he says that postulating something comes to no more than hoping it is

true. And then in the sentence immediately preceding the one quoted above he says that “all such propositions [i.e., postulates] I take to be hypotheses of individual facts.” (ibid.) Then comes the objectionable statement.

Royce’s entire philosophical method is one of postulates of just the sort Peirce is here dismissing. It is crucial for Royce’s method, epistemology, and metaphysics that there should exist a path from particular fact to universals in their universality. I have argued for this in great detail elsewhere and I have demonstrated in formal terms how Royce’s path of reasoning, associating negation and necessity have provided a path in his tetradic logic from particular fact to universality –indeed, to the Absolute understood in a certain sense. Here is Peirce simply asserting it is “manifest” that we cannot use postulates to get to universals in their universality.

Peirceans will recognize that one thing on Peirce’s mind is that the process of generalizing from particular fact to universality is the one used by nominalists, who do indeed make universals dependent upon particular fact for the being. Whether there might be another path from postulate to universals in their universality is, I think, very likely the topic of the parlor conversation reported by Dickinson Miller, and also the likely topic of the paper Royce never wrote for the *Philosophical Review*. There is some wiggle room here, given that Peirce is thinking about how no natural science could ever, by the method of hypothesis, claim to have anything more than approximations to the truth about the universe from its method of hypothesis. This is a point with which Royce agrees. And so he must ask Peirce, “do you take your statements about postulates to be logical principles, or are they applicable only in the domain of natural science and its knowledge claims?” To this we may imagine that Peirce might answer in either direction, depending on when in his development the question were asked, how he was viewing the architectonic, and in so identifying his views about scientific knowledge, in relation to metaphysics and logic, we may open up a general area of historical inquiry in which Royce may well have influenced Peirce. I cannot exhaust here all that this ingression into their relationship may disclose, but I think an outline of the candidates for their exchange and mutual influence can be suggested.

Let us first reclaim a bit more of the context for their parlor discussion because Peirce answers the question Royce would ask explicitly, continuing his attack on postulates. He says that “the whole notion of a postulate being involved in reasoning appertains to a bygone and false notion of logic. Non-deductive or ampliative inference is of three kinds: induction, hypothesis, and analogy.” (ibid.) All of these “conclude something not implied in the premises, depend upon one principle and involve the same procedure. All are essentially inferences from sampling.” (ibid.) The bygone logic is, of course, that developed from Aristotle, but whether Kant’s adjustments to that logic are here included as “bygone” is not yet clear. We certainly know that Peirce knew Kant’s logic prior to this time (see W5 258-259). The trouble just here is that Peirce allows, at this point, only the assertoric role to the postulate, not yet addressing the problematic and apodeictic roles. Hence, so far as the criticism of postulates has proceeded, we cannot be confident that the operations of

“comprising” and “requisiteness” are intended to include possibility and necessity. As Peirce says: “For what is a postulate? It is the formulation of a material fact which we are not entitled to assume as a premiss, but the truth of which is requisite to the validity of an inference.” (Buchler 327) This is definitely assertoric. But Peirce goes on to argue as follows:

Any fact, then, which might be supposed postulated, must either be such that it would ultimately present itself in experience, or not. If it will present itself, we need not postulate it now in our provisional inference, since we shall ultimately be entitled to use it as a premiss. But if it never would present itself in experience, our conclusion is valid but for the possibility of this fact being otherwise than assumed, that is, it is valid as far as possible experience goes, and that is all we claim. (Buchler 327-328)

One thing that Peirce scholars may not catch here is that this argument might very well be aimed directly at Royce. In the background of this assertion is an argument Peirce made six years earlier, in the review that was never published of Royce’s *Religious Aspect of Philosophy*. Whether Royce knew of this manuscript is not clear, but it looks unlikely. I will take up a more thorough discussion of that review in the next section of the paper, but for now the point is that Peirce had read a long discourse on the use and function of postulates in Royce’s philosophy. We can be confident that he took note of this feature of Royce’s book from the review.

[Discussion of Doctrine of Necessity and Law of Mind, emphasis on ideas as little persons.]

Doubt

In his thinking on the topic of doubt, Royce most fully expressed his ideas in *The Religious Aspect of Philosophy*, which we will come to in a few moments. But it is important to document, to the extent we can, what his views were as they developed in relation to hypotheses (including their logically composite, modal forms), postulates, and the ground of necessity in finite experience. As we shall see, for Royce the way that a boundary is formed around an inquiry by a border of doubt, the arresting of action that Peirce so well described, is the starting place. Taking to heart the idea that genuine doubt arrests action and the fixation of belief releases action, Royce began to wonder about thinking itself as a *kind* of action, which of course, it is. If doubt has the power of arresting physical action and yet we are able to think, then there must be something in the character of thinking that resists doubt. Clearly, any kind of doubt that is powerful enough to arrest both thinking and action is too powerful for finite inquirers to overcome. Still there must be something in the character of thought that pushes it ahead especially in instances when doubt has arrested physical action.

It is in response to this way of approaching the problem that leads Royce to frame his ideas about the relation of time to thinking in his concept of “purpose.” This is

the very thesis of the 1880 essay read at Johns Hopkins on May 20, 1880. I have spent some effort explaining the relation of Royce's concept of purpose to his ideas about time in a previous work, so I will not revisit the details here.³⁹ It is sufficient to point out that the implicit teleology in our thinking is a sort of "desire," for Royce, that places before itself the principles it requires to have for itself objects in the future, objects not now within its power to cognize. One of the most important principles demanded by thought is the uniformity of those future objects as capable of being sequenced within a greater order, regardless of whether that greater order be the laws of nature or the mind of some superior being. Either way, the demand for uniformity is a normative principle (Royce calls these norms "axioms, using the old sense of the term) of all human thinking. Royce says:

If this effort [i.e., any particular effort] to explain the aim of our thought in conceiving experience as uniform fails, another [axiom] speedily suggests itself. If the former effort could not tell us why future experience *must definitely* [i.e., "necessarily" is the modal operator here] resemble past experience, in so far as concerns the sequence of events, may we not hope for better results if we regard the principle itself as demanding only an *hypothetical* uniformity of sequences, at once exact and formal, the uniformity of the sequence of fixed results upon the placing of certain given things in certain determinate conditions? (*Fugitive Essays*, 235)

What is important here is the way thinking deals with its failure to temporalize things according to one principle (uniformity) and immediately conjures another principle, or if that one fails, still another. Our thinking *creates* these principles, as needed, for the sake of having objects in the future that are not now cognizable. Royce allows that there is no problem, in reflection, with allowing a "moderate irregularity such as would imply no fixed connection of any one cause with any one effect."⁴⁰ Thus, when Royce later rejects Peirce's tychism, as we shall discuss, it is not because he rejects the idea that thinking cannot accept something less than a completely determinate order or Nature or Experience. Rather, we hold the axiom (norm) of uniformity for the same reason we adopt any other norm for thinking, that is for "the purpose of [axioms] . . . is the desire of thought to employ itself upon the future as a subject matter, and the impossibility of conceiving a future at all without conceiving it as made up of uniform sequences."⁴¹

Don't move past this statement too quickly. It asserts two things. First it asserts that thinking "desires" more than external objects and their uniformity, it also *desires* to think about *itself* in the future, that present thought will become a subject matter for future thoughts. For the sake of reflection, then, what Royce calls "self-consciousness," we adopt norms of thinking, including the entire study of logic and its associated principles. Second, Royce uses a powerful, logically composite, implicitly condition (disjunctive), modal sentence, which can be parsed as follows, in his logic: "I postulate the assertion that 'There is some thinking that is not conceived as made up of uniform sequences is thinking that has a future,' is impossible." Now, if we treat this postulate as false, we get a Roycean *reductio*.⁴² Royce uses this kind

of argument a lot, but it isn't easy to follow unless one is alerted to the way Royce understands hypotheses, postulates, and modal operators (as full predicates), and that he takes the preservation of intension (meaning) to be normative in logic. Here we see that Royce is actually willing to be lax about preserving extension, so long as the irregularities beyond thinking do not undermine the power of thinking to create principles that insure its future, and especially in the case of its desire to have its own past and present thoughts as a subject matter for its future thinking.

This raises the question, then, is there any sort of doubt that arrests thinking without destroying the order required for its temporalization? Granting that thinking can create and invoke principles in any number of ways (resemblance, similitude, analogy, association, contiguity, congruity, transitivity, uniformity) to rework the temporal requirements of thinking, the question is "what sort of operation is doubt, when we set aside its effect upon bodily action and consider its relation exclusively to the desire of thought to have future objects, and especially the desire of thought to take its own present and past acts of thinking as the subject matter of future thinking. One of the first things to note is that Royce says "subject matter," and not "objects" of future thought. I do not know whether we could ever have exactly the same thought twice (James's plasticity arguments would seem to suggest otherwise), but even if we did, this would be treating present thinking extensionally, and even if it were possible to preserve such a strange referent through a series of logical transformations, that wouldn't answer the desire and the purposive demand. What we demand is that the intension, the meaning of the present and the past thought, be preserved adequately for our thinking to have a future in which it can consider its own genetic history, that sequence of thoughts beginning in the past, leading up to the present, and anticipated in the future.

Therefore, one reason that Royce insists upon the preservation of intension or meaning as a supreme logical norm is that without such a norm, thinking is not responsive to or responsible for its own history. How could we make inferences of any kind unless the premises –the cases, the rules and results—are held in some sort of intelligible temporal order long enough for us to infer. Inference is a temporal process, involving first one thought, then another, and then a third thought. We think the thoughts in sequence. One of those thoughts is the inference. The inferences come in different ways, and Royce is willing to entertain any logical principle that will secure the temporal integrity of thinking well enough to make inferences. The norm, even though it can draw upon many different principles, is more important than the extensional norm because finding the extension of a class term can be carried out mechanically, if need be, so that finding again in the future what one has lost from the past is a sequence of actions we can repeat satisfactorily (if not perfectly). But without a stern norm for preserving meaning, we can get lost in problems that the 20th century became unduly preoccupied with –e.g., the logic of rule following, shot down by Wittgenstein; the possibility of private language, shot down by Dewey and Wittgenstein; the logic of reference based on content or forms of mental representation, shot down by Quine and Davidson; the iron law of

classical behaviorists associating stimulus and act, shot down by practically everyone.

It is crucial, then, to consider seriously whether we can have a viable logic for giving norms to our thinking that does not take the preservation of intension as a strict norm. Unfortunately, that demand makes it very difficult to do much logic unless one simplifies in advance what sort of inferences one is seeking to make. That is why Peirce regarded it as crucial in the Illustrations to specify what sorts of inferences were being made by which forms of reasoning and how those forms of inference could be logically related to each other. But he had only begun to think about these problems when Royce took off from the Illustrations and also the JSP articles into territory Peirce had not yet explored. Between 1880 and 1892, Peirce and Royce followed their own paths in logic. Royce worked out the Primer and then pressed into a number of empirical ventures, especially historical research. Peirce got fired from JHU and surveyed. The main exception to this time apart was Peirce's reading of *The Religious Aspect of Philosophy*. To that episode let us now turn.

We need first to note Royce's basic position on doubt, and especially the kind of doubt that spurs thinking and the kind that arrests thinking. Royce calls self-satisfied skeptical doubt "mental death," and it is interesting to note that such skepticism in thinking does not, evidently, arrest bodily action.⁴³ But "self-critical skepticism, observant of itself as of everything, moves the very life-blood of philosophy."⁴⁴ Note that such skepticism must obey the norm of intension, the logical preservation of meaning, in order to be "observant of itself as of everything." Skepticism of a sort that obeys logical norms is also normative for strictly reflective thought. This is why Royce introduces the role of skepticism in philosophic thinking with the question "what does our skepticism *mean*?" not with "what are we skeptical *about*?" The issue is not whether the extension of our terms can be verified, but about whether in the genetic course of our thinking the meanings shall be preserved, or at least conserved, in the logical transformations to which it shall be subordinated in our formalizations of those thoughts (and their relations). Relative to the question of the meaning of our skepticism, Royce says:

What is the sense of this theoretical skepticism of our present attitude? *On our reply all else turns*. And our reply is: This skepticism expresses an *indifference* that we feel when we contemplate two opposing aims in such a way as momentarily to share them both.⁴⁵

What gets arrested is our feeling about the alternatives. What is happening is that the hypothesis, the express conditional embedded in a disjunctive (or otherwise complex) conditional statement is emerging. In this moment of its emergence, the kind of theoretical skepticism that is the very life blood of philosophy allows us to be of two minds simultaneously. We are not required to feel that either one side or the other *must* prevail. We are free to apply the norms of thinking, that is, to reduce the alternatives to statements that are available for further consideration as to both their extension and intension, and to transform them disinterestedly, while

preserving meaning, to see what the consequences may be of believing one of the other. Clearly Royce is borrowing a trick from Kant's third Critique about the relationship between feeling and disinterestedness, but in this case the insight is not that we have certain aesthetic ideas without needing concepts by which to judge; here the insight is that intellectual doubt of the right sort arrests feeling and frees thinking for a certain kind of thinking Royce calls "philosophical," and that thinking, like any other, finds its norms in logic. The difference between philosophic thinking and other sorts of thinking is that philosophic thinking is peculiarly reflective, which is to say, its chief concern is not for objects in the world of action, or their incipient unity in our synthetic acts of cognizing them; philosophy care for maintaining access to present thoughts and past thoughts as logical subjects to be qualified by predicates in the future. Our thoughts are little persons, as Peirce aptly said in "The Law of Mind," and Royce repeated after 1912, that we desire to maintain as modifiable receivers of further qualification in the future. In short, when we think philosophically, our categorical imperative is to treat our thoughts as living ideas, as beings that can learn, grow, complexify, and in other ways be blessed by the spirit of interpretation. The right kind of doubt is a condition for this activity, the kind of doubt that arrests feeling. Royce continues:

For that moment we realize equally these warring aims. They are ours. The conflict is in us. The two wills here represented are our will. And for this reason, and for this only can we feel skeptical indecision. . . . Our doubt arises from the fact that momentarily and provisionally we are in the attitude of assuming both. Our indifference is not the indifference of ignorance, but of knowledge; not of failure to understand either end but of readiness to realize both ends.⁴⁶

Read in the context of Peirce's analysis in *How to Make Our Ideas Clear and The Fixation of Belief*, it is clear that Royce is offering a modification of and deepening of Peirce's account of doubt and its implications in particular for the relation between philosophical knowledge and thought and the way that doubt arrests action.

Unhappily, Peirce evidently did not see himself in this story, a mistake repeated by all Peirce's followers and almost all of Royce's followers. These are people of good will who simply did not think through what Royce read, when he read it, and how his responses to that reading, especially of Peirce, were the motive force, arguably the most important motive force, behind Royce's theory of knowledge. As he says:

Doubt rationally about moral doctrines, and your doubt itself, if real, thorough-going, all-embracing, merciless, will involve this very principle of ours. We find the principle by means of universal doubt, and it is this method of procedure that distinguishes the foregoing discussion of the basis of morals from many of those [Mill, Spencer, Bentham] that have been previously concerned with the problem.

By learning to hold simultaneously within ourselves a fundamental conflict, we learn the meaning of the other experience than ours that sometimes opposes us in

action. Viewed as the external action upon us by others, it is just meaningless mechanical resistance, but viewed disinterestedly through the arresting of our goal-directed feeling, a space is created for the logical possibility of following either of two conflicting courses of action. Educated by this experience, we learn sympathy for the experience of others, experience that is not mine. Royce importantly notes that just as I learn to have sympathy for my future self, which seeks to have experience, both reflective and physical, which I am not presently having, the experience that is not mine partakes of a similar temporality. Whether the experience I am not now having is *mine* in the future or *someone else's* is the basis of an implicit disjunction. This implicit disjunction becomes a postulate when I make it explicit. Royce says:

Here, as elsewhere in philosophy, the truth is to be reached, neither by dreading nor by discountenancing the doubt, but *by accepting, experiencing, and absorbing the doubt*, until, as an element in our thought it becomes also an element in an higher truth.⁴⁷

I treat my other experiencers as I treat my future self, saying, in my achieved skeptical indifference, to either one: "Thou art now just a present state, with its experiences, thoughts, and desires. But what is thy future Self? Simply future states, future experiences, future thoughts and desires, that although not now existing for thee, are *postulated* by thee as certain to come, and as in some real relation to thy present self."⁴⁸

Thus, as we learned in the previous section, we meet doubt with postulates, and postulates make express hypotheses operative by expressing them with the addition of a modal operator that is treated as a predicate. We use these modal operators, in the relevant cases involving reflective thought, as modifiers of the present thought taken as future subject matter for thinking. The modal operators express norms of thinking that keep thinking open to the accrual of future predicates, which, for thought, is the kind of experience it *gets*.

[Discussion of the doubt-postulate theory in RAP chs. 9 and 10; discussion of Peirce's review manuscript.]

So, Royce's issue with Peirce's take on the "doctrine of necessity" is complicated by at least the following considerations. First, Royce parses hypotheses differently from Peirce, especially when a hypothesis is logically composite (and made so by the addition of a modal operator, whether implicit or explicit) and entered as a postulate about experience other than my own. So, when Royce says things like: "[P]ossibilities need realities to give them meaning. There must then be other experience than mine, not merely as possible experience, but as actual experience." ("Self-consciousness, Social Consciousness and Nature," in *Studies of Good and Evil* (New York: Appleton, 1898), 218) The assertion, logically means the following: I enter the hypothesis (i.e., the explicit conditional) affirming "Some experience is not mine,' is necessary." Now, if we begin to our reasoning by postulating that this

hypothesis is false, we have all the pieces in place for the bit of logical magic I have argued for in my essay by that title. We also find, therein, reason to believe that Peirce's doctrine of tychism comes at the cost of the logical norm of preserving meaning. Royce says:

That nature's observable Laws might even be interpreted, from an evolutionary point of view, as nature's gradually acquired Habits, originating in a primal condition of a relatively capricious irregularity, is a conception to which several recent writers, notably Mr. Cope and, with great philosophical ingenuity, Mr. Charles Peirce, have given considerable elaboration. I do not myself accept this notion that the laws of phenomenal nature, where they are genuinely objective laws, and not relatively superficial human generalizations, are the evolutionary product of any such cosmical process of acquiring habits, as Mr. Peirce has so ingeniously supposed in his hypothesis of "Tychism."

He goes on to affirm, however, the *analogy* between nature's behavior and the way habits are acquired by living organisms with nervous systems. Royce never says why he disagrees with tychism, only that he disagrees.

As a working definition of "Necessity" in "On Purpose in Thought," Royce approves Schuppe's definition in *Erkenntnistheoretische Logik* (ch. 10, "Notwendigkeit und Moeglichkeit," pp. 195 ff.) "The fundamental necessity of *thought* is this, 'that we can abstract neither from the existence of the world nor from our own existence.'" (my emphasis, my trans., *Fugitive Essays*, 233.) Thus, Royce expresses the ground of necessity as a sort of total limitation on what thinking can accomplish. He elaborates on Schuppe:

We can neither think ourselves away without thinking the world away, nor can we think of ourselves as other than beings in a world of conscious experience. But *if* this is the case, *if* we can imagine any succession of facts only under the condition of thinking ourselves as spectators thereof, it follows that absolute irregularity in the succession of facts is impossible. "Then even this belongs to the existence of a consciousness the content of which has such a rigid order." (*Fugitive Essays*, 233; my emphasis)

We see here, in 1880, the seeds of Royce's disagreement with Peirce over what will be called "tychism," later, and we know that Peirce was aware of Royce's view. For Royce, tychism, irreducible chance in the natural world, fails to credit the logical demand for the preservation of *meaning*. Perhaps . . .

[NOTES for end of this section]

In "On Purpose in Thought," Royce makes an allusion to Peirce's argument in "How to Make Our Ideas Clear" and "The Fixation of Belief," see p, 232, especially the bottom. Remember, this was written before the *Primer*.

See W. Fergus Kernan, "The Peirce Manuscripts and Josiah Royce –A Memoir, Harvard, 1915-1916," *Transactions of the C.S Peirce Society*, 1:2 (Fall 1965), 90-95. Kernan discusses Royce's remarks at the 1915 APA meeting (in Philadelphia –the same one with the papers on Royce) on C.S. Peirce. There is the 1916 essay by Royce "Charles Sanders Peirce" that presumably contains this material. Kernan edited this for *Journal of Philosophy* 13:26 (21 December 1916), 701-709.

See Campbell's APA book, p. 92.

Conclusion

Letters 422 is where Royce says the 1898 Cambridge Conferences were epoch-making for him.

Pratt says first version of Royce's system is in sup. Essay to WI1 (RR 139) and emphasizes a self-representative function

¹ The 1880 paper by Royce "On Purpose in Thought" and Royce's 1885 book *The Religious Aspect of Philosophy* were both read by Peirce, and Royce's work was known to Peirce during the years preceding 1891, but whether these could be said to have exercised any considerable influence on Peirce's thought is not clear. What is clear is that Peirce was much exercised over the 1885 book, enough so that he wrote a long review of it that was never published. But Peirce read many books and papers and wrote many reviews and was easily "exercised" at all times during his life. There is nothing here that stands out as special. Peirce took in Royce's work with due notice, probably at the urging of James, early on, but evidently not much more than due notice was given Royce prior to 1891. See Royce, "On Purpose in Thought," in *Fugitive Essays*, ed. Jacob Loewenberg (Cambridge, MA: Harvard University Press, 1920), 219ff.

² David E. Pfeifer, "Josiah Royce's Influence on Charles Peirce," was presented at Royce, California, and the World: A Conference, in Grass Valley, CA, August 13-16, 2013. The papers from this conference are being gathered for a volume.

³ See Frank M. Oppenheim, *Reverence for the Relations of Life: Re-imagining Pragmatism via Josiah Royce's Interactions with Peirce, James, and Dewey* (Notre Dame, IN: University of Notre Dame Press, 2005), 14.

⁴ Oppenheim has discussed this in a number of essays and parts of essays, but the main results of these studies can be found in *Reverence for the Relations of Life*, 7-60.

⁵ My present essay here is the first of those four, but the second has already been published in an independent form as "Complex Negation, Necessity and Logical

Magic," *The Relevance of Royce*, ed. Kelly Parker and Jason M. Bell (New York: Fordham University Press, 2014), 89-131. The present essay includes the background research that supports the characterization of Royce's work with necessity, complex negation, and generalization toward the universal that I describe and formalize in that essay. Following that essay I project a major study of the development of Peirce's and Royce's exchanges on logic from 1892, through Peirce's Cambridge Conferences of 1898, and up to Peirce's reception of Royce's arguments in the Supplementary Essay to *The World and the Individual*, First series, reaching to 1902. The final study will cover the development of System Sigma. It may also be necessary to write a final study explaining Royce's so-called "Peircean insight" of 1912, which has been greatly exaggerated by those who did not understand that Royce was working with a Peircean framework for his entire career, and that he explored certain aspects of the programme Peirce began in ways that Peirce had not foreseen, and with results that might be, arguably, more important than anything Peirce managed. I have explained in some detail the nature of these misinterpretations of the Peirce-Royce relationship in my book *Time, Will, and Purpose* (Chicago: Open Court, 2013), esp. 13-28.

⁶ I will argue in a future paper that Royce had more to do with Peirce's move away from the claim that all true propositions were reducible to BARBARA and Peirce's decision to reconfigure his approach to logic after 1902 (which coincides with the end of Royce's "apprenticeship" to Peirce in logic, and also the completion of Royce's *The World and the Individual*, which convinced Peirce that Royce was a contemporary version of Plato. My paper in the Parker collection (cited above) shows how Royce's understanding of the functions of negation precludes the possibility of reducing true propositions to BARBARA. Pfeifer's article about Royce's later influence on Peirce can be added to in significant ways through a study of their time working on logic together and the effect of Royce's *WI*. There is also an important psychological and historical point to consider: after *WI*, Royce had surpassed Peirce, and anything Peirce could hope to accomplish, in the eyes of the world. It would have been difficult for the friends not to have sensed that Royce was in a different territory of fame and influence after the Gifford Lectures. He now had his "system" before the public –something past due for Peirce and looking unlikely to happen.

⁷ Scott Pratt, among others, dates Royce's serious engagement with logic in the late 1890s. See Pratt, "Race, Culture, and Pluralism," in *The Relevance of Royce*, 139. I think it started well before that time, with Royce's ideas about necessity, and I have documented what I take to be the crucial interpretations of formal necessity to the period leading up to *The Religious Aspect of Philosophy* (1882-1884). See my "Complex Negation, Necessity and Logical Magic," in *The Relevance of Royce*, esp. pp. 91 ff. See also my *Time, Will, and Purpose: iving Ideas from the Philosophy of Josiah Royce* (Chicago: Open Court, 2013), chs. 2 and 6.

⁸ See Nathan Houser's "Introduction" to *Writings of Charles S. Peirce: A Chronological Edition*, vol. 8 (Bloomington, IN: Indiana University Press, 2010), lxxx-lxxxii. Hereafter I will cite this edition as "W" followed by volume number and page range.

⁹ Peirce, W8:lxxxii.

¹⁰ This has been written on widely and it does not warrant further analysis here. See Clendenning, *Life*, 162-168. The only point that might be worth noting here is that Abbott wrote a book after the controversy called *The Syllogistic Philosophy*, published posthumously, dealing with the same subjects as this essay and the series here projected. That he was Peirce's friend and a sort of follower is important to consider.

¹¹ See Rollo Walter Brown's stories about Royce in *Harvard Yard in the Golden Age* (New York: Current Books, 1948), esp. 58, where Brown emphasizes Royce's sense of humor.

¹² Peirce, W8:lxxxii.

¹³ Houser believes that the paper intended for the *Philosophical Review* may be the same one that was presented on 23 May 1895 at Brown University and included in later in *Studies of Good and Evil* (New York: Appleton, 1898). (See W8:lxxxii.) Houser is careful not to claim that this definitely is the same paper, contenting himself to point out that Royce criticized Peirce's tychism in that paper, and that Royce rejects the "hypothesis" of tychism (*Studies of Good and Evil*, 237). I want to step back to see what it mean to reject a hypothesis before examining the consequences for tychism, but clearly one of the implications of the present study is that Royce could not accept tychism at least partly because he believed Peirce had necessity wrong. The full investigation will have to await the third paper in my proposed series, after a thorough investigation of Royce's view of necessity has been digested (see my "Complex Negation, Necessity and Logical Magic," the great bulk of which is dedicated to Royce's understanding of necessity). In any case, I am quite certain that the 1895 paper, which became one of Royce's most famous essays, entitled "Self-consciousness, Social Consciousness, and Nature," is not the "attack" paper. In the famous paper, Royce only registers his disagreement with tychism (237), not offering an argument or explaining why, and finishes that essay by stating that he has deliberately ignore Peirce's "hypothesis" about tychism in the essay, while explicitly noting his intellectual debt to the Monist articles (248). It is clear that Royce has digested not only *The Doctrine of Necessity Examined*, but also has had time to consider "The Law of Mind" and Peirce's writings on tychism.

¹⁴ See John Clendenning, *The Life and Thought of Josiah Royce*, revised ed. (Nashville: Vanderbilt University Press, 1999), 68-69.

¹⁵ The article was in the August number of *Popular Science Monthly*, and Royce left Baltimore August 12, 1878, traveling through New York, Buffalo, Chicago and St. Louis. (See Clendenning, 72-73.) We shall have cause to examine Royce's interpretations of "How to Make Our Ideas Clear" and "The Fixation of Belief" in future studies.

¹⁶ See Peirce, *Collected Papers of Charles Sanders Peirce*, 8 vols., eds. Charles Hartshorne, Paul Weiss, and Arthur E. Burks (Cambridge, MA: Harvard University Press, 1931-1958), vol. 2, paragraph 102. Hereafter I will follow the convention of citing this collection as "CP" followed by volume number and paragraph number, for example, CP 2.102, in this case. My attention was drawn to this passage because it was cited by de Waal in his notes to Peirce, *Illustrations of the Logic of Science*, ed. Cornelis de Waal (Chicago: Open Court, 2014), 182n.5.

¹⁷ See my essay "Complex Negation, Necessity and Logical Magic," 89-131, for a full discussion of the syllogism in Royce's thinking.

¹⁸ See Peirce, *Illustrations*, 168.

¹⁹ Peirce, CP 2.102, again, cited by de Waal in *Illustrations*, 182n.5.

²⁰ Peirce, *Illustrations*, 172.

²¹ Peirce, *Illustrations*, 180. We shall have occasion to take up the difference between Royce's and Peirce's understanding of "infinity" in a future study.

²² As Oppenheim notes, Royce entitled his opening address at Berkeley in 1914 "Illustrations of the Philosophy of Loyalty" in Peirce's honor. See Oppenheim, *Reverence for the Relations of Life*, 14.

²³ Royce, *A Primer of Logical Analysis* (San Francisco: Bancroft, 1881), 4. It is important to note here that Royce is already making a thorough-going distinction between interpretation, as an extra-logical function, and the theory of reasoning. This will tend to count against the idea that he had a sudden breakthrough in understanding interpretation, itself, in 1912. His "Peircean insight" of 1912 has been misunderstood and greatly exaggerated in the secondary literature. Most of what people have said he "realized" at that time is clearly present already in his earliest publications. Royce does not mention Peirce by name in the *Primer*, but there is no question he is hard at work on the kinds of questions Peirce raised. A person who is attuned to the issues and has read both the JSP and the PSM series of Peirce's essays can doubt the presence of Peirce's thought in the *Primer*, and it is demonstrable that Royce read the JSP and PSM articles and that he was responding to them critically and constructively from the moment James directed him to them.

²⁴ Royce, *Primer*, 27 ff.

²⁵ Royce, *Primer*, 29.

²⁶ Royce, *Primer*, 29.

²⁷ Royce, *Primer*, 29.

²⁸ I have attempted this sort of analysis in my “Complex Negation” essay, specifically drawing on the relation between negation and various modalities of necessity to carry the analysis through. I show there (if I was successful) that such an analysis not only can be carried out, but that it is exactly this kind of analysis one needs to understand that status of Royce’s claims about the Absolute as a universal (in the logical sense) thought.

²⁹ Clearly Peirce expanded and refined his view in the essay he contributed to the *Studies in Logic* that was published in 1883. I leave it aside here because I currently have no evidence that Royce read it or took it into consideration in his own development of the idea of hypothesis. I will, however, note that Peirce covered what Royce was calling “conditional statements” in a different way when he says “the difference between necessary and probable reasoning is that in the one case we conceive that such facts as are expressed by the premises are never, in the whole range of possibility, true, without another fact, related to them as our conclusion is to our premises, being true likewise; while in the other case we merely conceive that, in reasoning as we do, we are following a general maxim that will usually lead us to the truth.” Peirce, et al. *Studies in Logic* (Boston: Little, Brown and Co., 1883), 131. Here Peirce combines conditionality in Royce’s sense, with the modal distinction, privileging necessity. It is more subtle than his argument in the *Illustrations*, but it still conflates logically important differences considered from a Roycean logic. Conditionality and modality are quite distinct. Something similar may be said for the account of “hypothesis” in the 1883 *Studies*. There Peirce makes a gesture toward the preservation of meaning, defining hypothesis as an “induction of characters,” where characters must be weighed rather than counted (*Studies*, 141), but he is terribly vague about what “weighed” means apart from saying that characters must be “otherwise estimated” than quantitatively (143). Still these refinements would be too crude for Royce. Perhaps some of Peirce’s insertions after his polite “pardon me” in the parlor exchange were to offer these refinements. At least Peirce is explicit in the studies that logic must be temporal (see 143-144), and here surely Peirce and Royce agree.

³⁰ He defines these terms quite straightforwardly: “[T]he collection of objects that are named by a term is called the *Extension* of this term. The group of properties possessed by the objects the term names is the *Intension* of the term. The Intension is the measure of *how much the term means*; the Extension is the measure of *how many things the term names*.” *Primer*, 40.

³¹ Royce reported this succession of events in an (as yet) unpublished autobiographical writing from 1886 (Oppenheim estimates, and I concur) that is held at the Harvard Archive in the Royce Papers. The story is interesting because Royce says he dove into science once he had tried to philosophize and discovered he had no idea what he was thinking about or how to do it. Royce's college notebooks from Berkeley show a significant engagement with both physical and life sciences, with the LeConte brothers, and a very careful and detail-oriented power of observation, along with significant quantitative ability. But in the end, moral problems attracted Royce more than scientific problems.

³² It is also important to remember that Royce would not allow compositionality in analyzing a conditional statement. The truth of the antecedent or consequent taken independent of their connection by a horseshoe would not determine the truth value of the horseshoe, for Royce. The entire "if . . . then" is just true or false, which is why he sees the assertion as logically simple. If the antecedent and consequent are treated as statements themselves, the truth or falsity of which determines the truth or falsity of their logical linkage, one has treated the condition itself as logically composite. Thus, the explicit conditional asserts *one* thing, for Royce, not three.

³³ Royce, *Primer*, 32.

³⁴ Royce, *Primer*, 32-33. Royce gives other examples of disjunctions as implicit conditionals on p. 28.

³⁵ Royce, *Primer*, 33.

³⁶ Royce, *Primer*, 33.

³⁷ I have worked out in a good deal of detail the implications of rendering the logical form: "I enter the hypothesis as false that some A is not B, is impossible," where the subject term is "experience" and the predicate term is "mine" in my essay "Complex Negation, Necessity, and Logical Magic," cited above.

³⁸ Peirce, *Illustrations*, 170.

³⁹ See my *Time, Will, and Purpose*, chapters 5-8.

⁴⁰ *Fugitive Essays*, 234.

⁴¹ *Fugitive Essays*, 234. Royce rejects, in the same paragraph, the concept of the Absolute that so many people charge him with holding, which is the way Professor Schuppe's account . . ." treating "the axiom of uniformity" a sufficient norm for "human thought in general," except that in Royce's case, his critics tend even to misread him as asserting that such uniformity is a necessary norm for human thought in general. This is the sort of criticism James and his less than informed

followers often made. They simply misunderstood and misunderstand what Royce is and is not asserting.

⁴² See my "Complex Negation, Necessity, and Logical Magic," esp. 114-131.

⁴³ Royce, *The Religious Aspect of Philosophy*, 133.

⁴⁴ Royce, *The Religious Aspect of Philosophy*, 133.

⁴⁵ Royce, *Religious Aspect of Philosophy*, 133, my emphasis.

⁴⁶ Royce, *Religious Aspect of Philosophy*, 133-134.

⁴⁷ Royce, *Religious Aspect of Philosophy*, 171.

⁴⁸ Royce, *Religious Aspect of Philosophy*, 156-157, my emphasis.