

## RICHARD SEMON AND RUSSELL'S *ANALYSIS OF MIND*

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Russell's study of the biologist and psychologist Richard Semon is traced to contact with the experimental psychologist Adolf Wohlgemuth and dated to the summer of 1919. This allows a new interpretation of when Russell embraced neutral monism and presents a case-study in Russell's use of scientific results for philosophical purposes. Semon's distinctive notion of mnemonic causation was used by Russell to clarify both how images referred to things and how the existence of images could be reconciled with a neutral monist metaphysics.

### I

Of the many shifts in Russell's philosophy, one of the most dramatic concerns the metaphysics of neutral monism in the 1913–27 period. According to neutral monism all particulars fall into a single metaphysical category. The position is neutral, though, because, unlike materialism or idealism, this one metaphysical category is made up of entities that are intrinsically neither physical nor mental. Mental or physical entities arise, on this view, only when the neutral elements are related in appropriate ways. In 1913, in the *Theory of Knowledge* manuscript, Russell ascribes neutral monism to Mach and William James, and criticizes it at length. By 1927's *Analysis of Matter* Russell identifies his own metaphysics of events with neutral monism.

Sitting nearly in the middle of this period is the vexing book *The Analysis of Mind* (1921), and one of its most troubling features is Russell's indecisiveness about neutral monism and the compatibility of neutral

monism with mental images. In the first lecture Russell says, “I should say that images belong only to the mental world” (*AMi*, p. 25),<sup>1</sup> harkening back to the verdict of “On Propositions” (1919):

... it would seem that there are some particulars which obey only physical laws (namely, unperceived material things), some which obey only psychological laws (namely, images, at least), and some which obey both (namely, sensations). Thus sensations will be both physical and mental, while images will be purely mental. (*Papers* 8: 289)

Thus, if images exist, then neutral monism is false. Based on a variety of considerations, including the inadequacies of behaviourism, Russell decided by 1919 that images do in fact exist, and so continued to reject neutral monism. But in the *Analysis of Mind* we also find passages in which Russell adopts neutral monism. Crucially, these more positive passages rely on the views and terminology of the German biologist and psychologist Richard Semon (1859–1918). Using Semon’s term “mnemonic” to pick out causal phenomena that are distinctive of learned behaviour and images, Russell lists as one of the conclusions of the book that “It is probable, though not certain, that mnemonic causation is derivative from ordinary physical causation in nervous (and other) tissue” (p. 307). Indeed, Russell claims in the preface from January of 1921 that he has “endeavoured in this work to develop this view [i.e. neutral monism] in some detail as regards the phenomena with which psychology is concerned” (pp. xvii–xviii). On this conception of images, even if images exist, one can still be a neutral monist if there is reason to believe that the laws that govern images are ultimately based on laws governing physical things like brains.

<sup>1</sup> Noted at *Papers* 8: xxii. A more pro-neutral monist passage is at p. 36, although when Russell says “Our world is to be constructed out of what the American realists call ‘neutral’ entities” it is not clear if he is restricting his claim to the external world of physics.

Unless otherwise indicated, page references are to *AMi*; they work for all the many impressions of the first edition, except for the preface because of the addition of Thomas Baldwin’s introduction in 1995. I have used the last impression, dated 1997. Russell made corrections in 1922 for the second impression, as listed in RA2 210.147502a; in correspondence with Allen and Unwin, he refers also to separate corrections of the references for that impression. Routledge reset the book in fewer pages in 2002.

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These passages suggest the following series of historical conjectures: (1) Russell read Semon after writing "On Propositions" (March 1919) (*Papers* 8: 276), but before completing the *Analysis of Mind* (January 1921),<sup>2</sup> (2) Semon's theory of mnemonic causation allowed a new understanding of images and (3) this new understanding of images allowed images to be compatible with neutral monism. In this paper I will argue that all three of these conjectures are correct. In fact, using manuscripts and two crucial pieces of correspondence, I will date Russell's study of Semon to the summer of 1919.

While it is hard to ignore the importance of Semon for Russell in this period, only Slater has noted the "profound effect" (*Papers* 9: xx) Semon had on Russell. It appears that neither he nor anyone else has tried to understand this effect, with the one exception of one paper by Bernecker, which I will discuss in section v.<sup>3</sup> Semon is not mentioned in Baldwin's introduction to the Routledge edition of the *Analysis of Mind*, Tully's discussion of neutral monism or the *Cambridge Companion to Bertrand Russell*.<sup>4</sup> He is noted by Shanker, but Shanker is not interested in the historical questions I focus on here, preferring to focus on Wittgenstein's alternative approach to the philosophy of mind.<sup>5</sup> This is unfortunate, as getting clear on the Russell–Semon relationship is not only of intrinsic historical interest, but also leads directly to deeper questions about Russell's attitude towards science and the significance of scientific results for philosophy. I will conclude with a brief discussion of these broader issues.

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<sup>2</sup> Russell gave the typescript of the book to Allen and Unwin in August 1920, before he left for China. He expected to make further revisions there but does not seem to have done so beyond sending proof-corrections of the first 160 pages in January 1921.

<sup>3</sup> Sven Bernecker, "Russell on Mnemonic Causation", *Principia*, 5 (2001): 149–85.

<sup>4</sup> R. E. Tully, "Three Studies of Russell's Neutral Monism", *Russell*, n.s. 13 (1993): 5–35, 185–202. N. Griffin, ed., *The Cambridge Companion to Bertrand Russell* (Cambridge: Cambridge U. P., 2003). The otherwise excellent discussion by Pears of Russell's changing views on memory also neglects to discuss Semon; see David Pears, "Russell's Theories of Memory", *Questions in the Philosophy of Mind* (London: Duckworth, 1975), pp. 224–50.

<sup>5</sup> S. Shanker, "Wittgenstein versus Russell on the Analysis of Mind", in A. D. Irvine and G. A. Wedeking, eds., *Russell and Analytic Philosophy* (Toronto: U. of Toronto P., 1993), pp. 210–42.

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## II

Richard Semon's triumphs and failures are admirably recounted by the psychologist Daniel Schacter in his *Forgotten Ideas, Neglected Pioneers: Richard Semon and the Story of Memory*.<sup>6</sup> As the title of Schacter's book suggests, Semon's work on memory was almost universally rejected at the time of its publication. Drawing on the history and sociology of science, Schacter tries to determine the source of this neglect, despite what Schacter and other contemporary researchers on memory see as important innovations. To appreciate these innovations, we must outline the trajectory of Semon's intellectual career.

Born in Berlin in 1859, Semon studied in Jena under Ernst Haeckel, receiving his doctorate in zoology in 1883 and his medical degree in 1886. Haeckel was an acknowledged international authority on Darwinian evolution, but he combined this interest with the peculiar philosophy of nature known as Monism. Haeckel's Monism, though similar in some respects to the neutral monism that eventually attracted Russell, was importantly different. Haeckel's Monism combined elements of German romanticism with Darwinian natural selection and had as its most famous feature Haeckel's biogenetic law: ontogeny recapitulates phylogeny.<sup>7</sup> That is, the biological development of me, one organism, must repeat the evolutionary stages that led up to the development of my species, humanity. When tracing back the evolutionary origins of humanity, we find a species with gills. This fact explains why at one point in my biological growth, I briefly had gills. As we will see, Haeckel's world-view had an enormous influence on Semon and his

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<sup>6</sup> D. Schacter, *Forgotten Ideas, Neglected Pioneers: Richard Semon and the Story of Memory* (Philadelphia: Psychology P., 2001). This is a republication of D. Schacter, *Stranger behind the Engram: Theories of Memory and the Psychology of Science* (Hillsdale, NJ: Erlbaum Associates, 1982), along with D. Schacter, J. Eich and E. Tulving, "Richard Semon's Theory of Memory", *Journal of Verbal Learning and Verbal Behavior*, 17 (1978): 721-43. See also D. Schacter, "Semon, Richard", in John H. Byrne, ed., *Learning and Memory*, 2nd edn. (New York: Macmillan, 2003).

<sup>7</sup> See D. Degroot, *Haeckel's Theory of the Unity of Nature: a Monograph in the History of Philosophy* (Boston: Christopher Publishing, 1965), for a helpful discussion of Haeckel's philosophy. Degroot offers a discussion of Ralph Barton Perry's attack on Haeckel in R. B. Perry, *Present Philosophical Tendencies* (London: Longmans, Green, 1912). Russell cites this book when he labels Perry a neutral monist (*Papers* 7: 16).

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account of the mind.

In the 1890s, Semon led a zoological expedition to Australia and, upon his return, sought to analyze the data and specimens that had been collected. In 1897, Semon's career at Jena ended prematurely when he left the university in the wake of a scandalous affair with the wife of a colleague. Resettling in Munich, Semon continued to work as a private scholar until his tragic suicide in 1918. His two main works were published while Semon was in Munich: 1904's *The Mneme as Conserving Principle in the Change of Organic Events*, with a second edition in 1908 and a third edition in 1911, and *Mnemic Sensations in their Relation to Original Sensations* of 1909.<sup>8</sup> His focus in both works was memory, but in a much broader sense than we would now countenance. For, inspired by Haeckel, Semon thought that evolutionary processes set up a sort of store of biological memories for the members of a species, and that these memories guided the development of an individual's biological growth. Semon also embraced the natural extension of this picture, according to which an individual's experiences could lead to memories that were passed on to her descendants, i.e. he believed in the inheritance of acquired characteristics. For example, if an enterprising bird learned how to build a nest, and repeated this activity enough times, a memory of how to build a nest might be passed onto the bird's descendants. With this memory, these birds could then come to dominate their species via ordinary processes of natural selection. By marrying memory to heredity, then, Semon sought to make two additions to the Darwinian framework: that variations occur among the members of a species that are acquired during the lifetimes of the individuals and that such variations are passed on across generations as mnemic inheritance.

While this position seems quite fantastic from our perspective, with our account of genes and DNA ready to hand, it is important to note that at the beginning of the twentieth century the inheritance of acquired characteristics was still a live option for scientists. Even as late as 1912, James Ward, then a professor of philosophy at Cambridge (and one of Russell's former teachers), could defend a version of Semon's analysis of heredity in terms of a kind of memory.<sup>9</sup> In the 1904 *Mneme*

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<sup>8</sup> Richard Semon, *Die Mneme als erhaltendes Prinzip im Weschel des organischen Geschehens*, 2nd edn. (Leipzig: Engelmann, 1908). Semon, *Die mnemischen Empfindungen in ihren Beziehung zu den Originalempfindungen* (Leipzig: Engelmann, 1909).

<sup>9</sup> James Ward, *Heredity and Memory*, The 1912 Sidgwick Memorial Lecture (Cam-

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Semon offered a wide variety of evidence that he thought pointed in this direction, and there first employed his distinctive array of technical terms, including mneme, engram, akoluthic, ephorize, and homophony. Perhaps humbled by the negative reaction to the sweeping claims of the 1904 book, in the 1909 book *Mnemic Sensations*, Semon restricted himself to the case of one individual and the memory store or engrams that had been acquired via that individual's experiences. It is this work on the individual memory store that Russell mainly cites in the *Analysis of Mind*, and so I will focus my discussion on what Semon has to say about this least controversial kind of memory. (See the Appendix for a summary of these citations.)

In *Mnemic Sensations* Semon explicitly follows Mach in not distinguishing between an excitation or stimulus and the sensation that the individual experiences. Again, in line with the Machian tradition, Semon draws attention to the large number and different kinds of sensations that are experienced at any given time: sensations of touch, sight, hearing, kinaesthetic sensations of motion, etc. Semon argues that it is the entire complex of such sensations that leaves a memory trace or engram, and not the components separately. For example, suppose that while hearing my alarm clock buzz, I experience the smell of coffee and the sight of blackness. This entire group of sensations is stored together. Semon's account of memory retrieval is fairly simple: when any one of these sensations reappears in my experience, the entire engram complex tends to be recalled or ephorized. Upon re-experiencing the buzzer, for example, I recall the entire complex of buzzer—coffee smell—blackness. This recall involves having the same sensations again, although generally in a less vivid way than with the original sensations. Hence, memories literally involve a distinct kind of sensation, over and above those caused by current excitations. These are what Semon calls mnemic sensations and mnemic phenomena are all those mental phenomena where these

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bridge: Cambridge U. P., 1913). Ward notes Semon on p. 27 (cited at Schacter, *Forgotten Ideas*, p. 105). Also, see John B. Watson, *Behavior: an Introduction to Comparative Psychology* (New York: Holt, 1914), p. 174, cited by Gary Hatfield, "Behaviourism and Psychology", in T. Baldwin, ed., *The Cambridge History of Philosophy: 1870–1945* (Cambridge: Cambridge U. P., 2003), p. 642. Watson refers to Semon on p. 180. Russell notes Semon's commitment to the inheritance of acquired characteristics without comment at p. 84. This suggests that Russell thinks of this part of Semon's theory as optional, but I do not know of a text where Russell takes a stand on this question.

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sensations play a role.

A crucial innovation offered by Semon is that each sensation complex, even those with a mixture of new and mnemonic sensations, creates a new engram. Repeated buzzer—coffee smell—blackness experiences will create a series of distinct engrams in my memory store. This proposal is used by Semon to explain, among other things, why repetition leads to a more vivid memory recall. For if I have had my buzzer—coffee smell—blackness experience 100 times, there will be 100 distinct engrams, and all 100 engrams will be echorized when I hear the buzzer or smell coffee. This combination, referred to by Semon as homophony, gives Semon's entire account of memory greater flexibility than the theories of the then dominant associationist approach to memory. Schacter convincingly argues that, unlike the associationists, Semon can distinguish between processes of memory creation or encoding and memory activation or retrieval.<sup>10</sup> For associationists, stretching from Hume through the experimental work of Ebbinghaus and Ziehen, the essential problem is to determine which conditions instill strong associations between ideas or sensations. By focusing on these laws of association, and debating among other things whether similarity or continuity was more significant, associationists were left with a trivial account of how retrieval occurred: an idea *A* was remembered when the subject became aware of another idea *B* with strong associations with *A*. Semon, by contrast, provides scope for multiple memory traces or engrams to be created, and offers some account of how these engrams interact in response to new experiences. This leads to a clear separation of different questions for the psychologist. On the one hand, how are engrams created in the memory store? On the other hand, when are these engrams retrieved in memory or other psychological processes?

An aspect of Semon's theory to which we will return in the next section concerns a debate within the associationist paradigm between those who maintained that associations required simultaneous awareness of ideas and the opposing camp who argued that associations can only be set up between successive ideas. Semon deployed his account of engrams to accommodate, in a way, the successive association data into the simultaneous association position. For Semon, each sensation enters an akolu-

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<sup>10</sup> Schacter, *Forgotten Ideas*, Chap. 8, esp. p. 155.

thic phase shortly after it is experienced, during which it persists in the mind, although increasingly faintly and subconsciously. This allows associations to be simultaneous when one sensation in its original phase is tied with another sensation in its akoluthic phase. Thus, in the diagram below, at time 3 sensation *C* and *D* are in their akoluthic phases and are simultaneously present with *E*'s original phase. For Semon, an engram  $c^{a2}-d^{a1}-E$  would be created in the subject's memory store and the increasing vividness from left to right is a feature of the engram that can be relevant to future ephorizations.

Time:	1	2	3	4
	<i>C</i>	$c^{a1}$	$c^{a2}$	$c^{a3}$
		<i>D</i>	$d^{a1}$	$d^{a2}$
			<i>E</i>	$e^{a1}$

While this is not the place for an extended criticism of behaviourism, given Russell's study of Watson in this period, it is worth noting how Semon's work also goes beyond what a simple behaviourist could say about memory. For, despite the radical differences between associationism and behaviourism, the behaviourists tended to think of learning in associationist terms. For them, the question was how strong connections were forged between external stimuli and behavioural responses. As with the associationists, we can see how this risks overlooking the questions peculiar to memory retrieval. Behaviourists struggled to distinguish the process of setting up a stimuli–response connection in learning and the activation of such a response in the context of memory retrieval. By contrast, Semon's psychology builds these two different processes in from the beginning.<sup>11</sup>

<sup>11</sup> An anonymous referee has asked about the connection between Semon's "mneme" and Richard Dawkins' "meme", as defended, e.g., in R. Dawkins, *The Selfish Gene*, new edn. (Oxford: Oxford U. P., 1989). Dawkins does not refer to Semon, and the use of similar terms appears to be due merely to a common Greek origin. However, there has been some speculation that Dawkins was influenced by Semon indirectly. See John Laurent, "A Note on the Origin of 'Memes'/'Mnemes'", *Journal of Memetics*, 3 (1999), available online at [http://jom-emit.cfpm.org/1999/vol3/laurent\\_j.html](http://jom-emit.cfpm.org/1999/vol3/laurent_j.html).

III

With this background in place, I want to now review the evidence for Russell's relatively late study of Semon's work. I believe that Russell came to study Semon on the recommendation of the experimental psychologist Adolf Wohlgemuth (1868–1942), and that Wohlgemuth brought Semon to Russell's attention after attending, on 20 May 1919, Russell's third lecture on memory as part of his first series of "Analysis of Mind" lectures. Wohlgemuth's first letter to Russell, dated 22 May 1919, makes the nature of his initial contact clear:

Dear Sir,

I attended your lecture on Memory on Tuesday last and followed it with great interest.

I do not think that Bergson's "Mémoire" and "Habitude" is a division quite on the right lines and I should be glad if you would kindly peruse a paper of mine published in 1913 of which I beg to enclose a copy.

Yours faithfully,  
A. Wohlgemuth<sup>12</sup>

This paper, "On Memory and the Direction of Associations", will be discussed shortly, but for now it suffices to say that it begins with a long quotation from Semon's *Mneme* and reports a series of experimental results tied to Semon's account of memory. Semon is mentioned explicitly in Wohlgemuth's second letter, dated 22 October 1919:

Dear Sir,

I am sorry I did not answer your note of the 16th earlier.<sup>13</sup>

I thought you would like Semon. In spite of its short-comings it is a most inspiring book. Pray keep the 2 vols until you have finished with them. I shall not want them for some time to come, until I have done some more work on "Memory", which I hope to resume in the new year.

I suppose it is not on "Memory" in general that you ask for further literature, but upon my suggestion of "Physiological or Psychological Memories"? There has hardly been time (considering the war) to check or repeat my experiments. I am, however, informed that *one* of my memory papers has been criticised, or discussed, in one of the American Journals. I will find out and let you know.

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<sup>12</sup> RAI 710.052096.

<sup>13</sup> Presumably 16 September or October 1919. This letter has not been located.

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I should be very pleased to meet you any evening,<sup>14</sup> but I am afraid you will be disappointed about the “help”. I am sure it will be I who reaps the advantage.

Yours faithfully,  
A. Wohlgemuth<sup>15</sup>

The second sentence of the letter is clear evidence that Wohlgemuth suggested Semon to Russell. Without Russell’s original letter, it is impossible to know which of Semon’s two books the “it” of the third sentence refers to. Clearly, though, the “2 vols” of the fourth sentence of the letter refers to both *Mneme* and *Mnemonic Sensations*. In the *Analysis of Mind* Russell refers to the second, 1908 edition of *Mneme* and the first, 1909 edition of *Mnemonic Sensations*, and Wohlgemuth cites these same editions in his own work, so it is reasonable to infer that these were the volumes that Wohlgemuth lent Russell.

Wohlgemuth, based at University College London, was an experimental psychologist whose work appears to have been well regarded at the time but whose biographical details are difficult to ascertain. One of the only extended discussions of his life describes him as a “brilliant research student” of William McDougall, director of the psychological laboratory of University College London from 1900 to 1907:

... at least one brilliant research student began work under McDougall’s supervision, A. Wohlgemuth, the first of a long and distinguished line who have taken higher degrees in psychology from the College. Wohlgemuth’s doctoral research on *The After-effect of Seen Movement* (still, I believe, the most thorough of all investigations on this subject) eventually appeared as the first of the *Monographs* published in connection with the *British Journal of Psychology*. He continued to work at the College for many years, carrying out research on memory and feeling, and though he was never a member of the staff he was a prominent and influential figure in the Department until his activities were curtailed by an accident during the First World War. He had considerable ability in the construction and use of apparatus and was always willing to “lend a hand”—a favourite phrase of his—in this sphere of the Department’s activities. In his philosophical outlook he was what we now tend to regard as a typical nineteenth-century materialist and was highly critical of such developments as psy-

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<sup>14</sup> Russell’s pocket diary for 1919–20 shows an appointment with Wohlgemuth at 4:30 p.m. on 2 November 1919. It is the only mention of him in the diary.

<sup>15</sup> RA2 710 Addenda.

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cho-analysis. Nevertheless, paradoxical as it might perhaps seem, he was a great believer in the value of introspection, so that he was instrumental in giving all those who served as subjects in his experiments a thorough grounding.<sup>16</sup>

Wohlgemuth's doctoral research was followed by two papers, "On Memory and the Direction of Associations" and "Simultaneous and Successive Association".<sup>17</sup> Some later publications are the extended article "On the Feelings and Their Neural Correlate, with an Examination of the Nature of Pain" and two books: *Pleasure-Unpleasure, an Experimental Investigation on the Feeling-Elements* and *A Critical Examination of Psycho-Analysis*.<sup>18</sup>

Of greatest significance for us is the fact that, according to Schacter, Wohlgemuth was the only psychologist who had taken Semon's work seriously enough to experimentally test it.<sup>19</sup> His first memory paper, sent to Russell in May 1919, "On Memory and the Direction of Associations", begins with an extensive quotation from Semon's *Mneme* summarizing the account of association between sensations in their original and akoluthic phases that we have seen in the last section. Wohlgemuth notes Semon's prediction on the basis of this model that when sensations *a* and *b* are associated simultaneously in their original phase, then a presentation of either will tend to recall the other with equal strength, but if "*a* and *b* are successively associated, then without exception the

<sup>16</sup> J. C. Flugel, "A Hundred Years or So of Psychology at University College London", *Bulletin of the British Psychological Society*, 23 (1954): 21–31 (at 25).

<sup>17</sup> Wohlgemuth's dissertation was published as *On the After-Effect of Seen Movement*, British Journal of Psychology Monographs, Vol. 1 (Cambridge: Cambridge U. P., 1911). In the preface he reports that his research was conducted from 1905 through 1909 and that his thesis was accepted in 1910. Wohlgemuth, "On Memory and the Direction of Associations", *British Journal of Psychology*, 5 (1913): 447–65. Wohlgemuth, "Simultaneous and Successive Association", *ibid.*, 7 (1915): 434–52.

<sup>18</sup> Wohlgemuth, "On the Feelings and Their Neural Correlate, with an Examination of the Nature of Pain", *British Journal of Psychology*, 8 (1916): 423–76. Wohlgemuth, *Pleasure—Unpleasure, an Experimental Investigation on the Feeling-Elements*, British Journal of Psychology Monographs, Vol. 9 (Cambridge: Cambridge U. P., 1919). Wohlgemuth, *A Critical Examination of Psycho-Analysis* (London: Allen & Unwin, 1923). Russell praised the 1923 book in a letter to Wohlgemuth. Wohlgemuth quoted the letter when he and Russell had a falling-out over psychoanalysis in 1929. See Wohlgemuth, "The Freudian Psychology", *The Literary Guide and Rationalist Review*, no. 393 (March 1929): 60.

<sup>19</sup> Schacter, *Forgotten Ideas*, p. 186.

ecphory of *a* 'ecphores' *b* with incomparably greater strength than vice versa."<sup>20</sup> This follows for the successive case because the engrams created have the earlier sensation in its akoluthic phase, thus creating the asymmetry.

Wohlgemuth is sceptical of the forward directedness of successive association and in the paper recounts an experiment that forces a revision in Semon's proposal. In summary, the experiment found that Semon's model works for presentations of successive pairs of nonsense syllables, but failed for successive pairs of diagrams or colour/diagram pairs. In the diagram and colour/diagram cases, subjects were just as good at remembering the first of a pair, given the second, as they were remembering the second of a pair when given the first. From this Wohlgemuth concludes not only that "the prevailing method of studying memory merely by means of syllables is inadequate"<sup>21</sup> as it introduces some confounding factor, but that this factor is due to the pronunciation of the syllables and the coincident appeal to hearing and motor functions. Wohlgemuth ends the paper with a distinction between physiological memory, which involves motor functions, and psychological memory, which rests entirely on visual or even imageless capacities.

It is this distinction that Russell appears to have asked Wohlgemuth about in his letter from the fall of 1919 and the same distinction that Russell invokes at the end of the *Analysis of Mind* as his "illustration" of "rough generalizations in psychology" (p. 303).<sup>22</sup> Unfortunately, the details of Wohlgemuth's proposal seem to be beside the point:

It is suggested that motor memory is physiological, while visual and auditory memory are more truly psychological. But that is not the point which concerns us in the illustration. The point which concerns us is that a law of association, established by purely psychological observation, is a purely psychological law, and may serve as a sample of what is possible in the way of discovering such laws. It is, however, still no more than a rough generalization, a statistical average. (P. 304)

What is striking about Wohlgemuth's work here is that his experi-

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<sup>20</sup> Quoted in Wohlgemuth, "Memory", p. 449.

<sup>21</sup> Wohlgemuth, *ibid.*, p. 463.

<sup>22</sup> See also *AMi*, p. 205 n.2.

ment is by no means a confirmation of Semon's elaborate account of memory as it uncovers a distinction that Semon did not anticipate or address. Wohlgeomuth does not comment on this discrepancy, and presents the results of his other paper on memory, "Simultaneous and Successive Association", as confirming Semon's account. There he notes that Semon's model would have weaker associations between successive sensations as in such cases the original phase of one sensation would form an engram with the other sensation in its akoluthic phase. Again, subjects were tested with diagram/colour pairs where the relevant difference between the two test groups was that one group was exposed to a diagram/colour pair simultaneously, while the other was exposed to the pair successively. Methodological problems make a direct comparison difficult, however, as it is not clear if showing a pair simultaneously for half a second is relevantly similar to either showing the members of the pair successively for half a second each or for a quarter of a second each. While Wohlgeomuth attempts to compensate for this complication, Schacter complains that "inspection of the data leaves the contemporary student of memory sceptical."<sup>23</sup> Indeed, the criticism in "one of the American Journals" that Wohlgeomuth notes in his second letter to Russell is most likely Sven Froeberg's "Simultaneous versus Successive Association".<sup>24</sup> Froeberg tries to overcome the methodological problems that Wohlgeomuth encounters by redesigning the experiment, and concludes that successive associations are by no means weaker than simultaneous associations. In both cases, then, we see that Wohlgeomuth's experimental work casts an unclear light on Semon's psychology.

Returning to more historical questions, it is worth asking when Wohlgeomuth lent Russell his Semon books and whether or not they might have had any occasions for meeting in the May–October 1919 period. Without appealing to the manuscript evidence to be reviewed in the next section it is difficult to be precise. One likely scenario for Wohlgeomuth's meeting Russell, and perhaps again directing him to Semon, is

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<sup>23</sup> Schacter, *Forgotten Ideas*, p. 186.

<sup>24</sup> Sven Froeberg, "Simultaneous versus Successive Association", *Psychological Review*, 25 (1918): 156–63. This paper is noted by Schacter, *Forgotten Ideas*, p. 259. Wohlgeomuth, "Simultaneous", is also cited in the review article by J. W. Baird, "Memory, Imagination, Learning, and the Higher Intellectual Processes (Experimental)", *Psychological Bulletin*, 13 (1916): 333–54.

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Russell's presentation of "On Propositions: What They Are and How They Mean" on 11 July 1919 at the joint session, held in London, of the Aristotelian Society, the Mind Association and the British Psychological Society (*Papers* 9: 276). I cannot offer any definitive proof that Wohlgemuth attended Russell's talk, but he was an active member of the British Psychological Society, publishing work in their journal, the *British Journal of Psychology*. Furthermore, he had presented a paper at the March 1918 meeting of the society and, of course, he worked in London. The Psychological Society part of the 1919 joint meeting was a symposium on "Instinct and the Unconscious", with papers by Rivers, Jung, Myers, Driver, Wallas and McDougall. Given Wohlgemuth's 1923 book on psychoanalysis it is hard to see how he could voluntarily miss such a session.<sup>25</sup>

A final piece of circumstantial evidence that Wohlgemuth is the source of Russell's interest in Semon is Russell's preface to the *Analysis of Mind*, where Wohlgemuth is thanked "for much very useful information as regards important literature" (p. xviii; p. [6] before 1995). As we have seen, one of Wohlgemuth's papers discussing Semon is mentioned (pp. 205, 304), but the connection between Semon and Wohlgemuth is not explicitly made. The other major topic connected with Wohlgemuth's research is the nature of feelings, especially the feelings of pleasure and unpleasure, which Wohlgemuth goes to great lengths to distinguish from the sensation of pain. Another letter from Wohlgemuth to Russell that survives discusses these issues. It is dated 27 December 1922<sup>26</sup> and was found in Russell's copy of the *Analysis of Mind*. There Wohlgemuth responds to Russell's dismissal of Wohlgemuth's proposal as "largely a *reductio ad absurdum* of other theories, among which that which I am advocating is not included" (p. 70).<sup>27</sup>

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<sup>25</sup> See *British Journal of Psychology*, 10 (1919–20): 132. It is perhaps worth noting that Wohlgemuth does not refer to this session in his 1923 book. See the same journal, vol. 9 (1917–19): 260, for the announcement of Wohlgemuth's 1918 presentation "An Attempt at a Natural History of the Feeling Elements".

<sup>26</sup> RA2 710.112514a.

<sup>27</sup> Briefly, Wohlgemuth views feelings as distinct from sensations, while Russell insists that they are either "actual qualities of such occurrences, or are merely differences as to causal properties" (*AMi*, p. 71).

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## IV

In the end it is impossible to prove that Russell did not study Semon prior to contact with Wohlgemuth. Indeed we have already seen another possible source: Ward's *Heredity and Memory*. We also find Semon's work referred to in such places as Watson's *Behavior* and the thorough literature reviews published in *Mind*.<sup>28</sup> Perhaps the most intriguing alternative source, though, is the author of a long introduction to one of the English translations of Semon's works, Vernon Lee, a.k.a. Violet Paget (1856–1935). Schacter offers the “unsubstantiated conjecture” that Lee was introduced to Semon and his work by Semon's brother Felix, a prominent doctor who lived much of his life in London.<sup>29</sup> There is no need to speculate about Russell's relationship with Lee, however. Russell knew Lee from 1894, but had a low opinion of her personally: Russell said to one of her biographers “I disliked almost everything about her” and “that to me she was not very interesting.”<sup>30</sup> Lee's 42-page introduction to the English translation of Semon's *Mnemonic Sensations*, dated New Year's 1923, is largely concerned with clarifying Semon's concept of mnemonic phenomena and is at pains to downplay the significance of his controversial views on the inheritance of acquired characteristics.<sup>31</sup> While Lee credits Russell with having “introduced to the English reader as much of Semon's ideas and terminology as answered the purposes of his *Analysis of Mind*,”<sup>32</sup> she is strangely critical of Russell's remark that mnemonic phenomena “embrace all that is characteristic in the subject-matter of psychology” (p. 82). Her concern appears to be that this is too

<sup>28</sup> E.g., *Mind*, 16 (1907): 306, summarizes an article by E. Rignano in *Revue philosophique de la France et de l'étranger* as “A short analysis of Richard Semon's theory”.

<sup>29</sup> Schacter, *Forgotten Ideas*, p. 180 n.6.

<sup>30</sup> Burdett Gardner, *The Lesbian Imagination, Victorian Style* (New York: Garland, 1987), p. 60. This remark is cited by Vineta Colby, *Vernon Lee: a Literary Biography* (Charlottesville: U. of Virginia P., 2003), p. 60. Sadly, Russell juxtaposes his lack of interest in Lee with her being “incredibly ugly” (Gardner, *Lesbian Imagination*, p. 59). I am indebted to a posting by K. Blackwell on Russell-1 (19 Aug. 2004) for drawing my attention to these two biographies of Lee as well as the personal connection to Russell.

<sup>31</sup> Richard Semon, *Mnemonic Psychology*, trans. B. Duffy, introduction by Vernon Lee (London: Allen & Unwin, 1923); I have adhered to *Mnemonic Sensations* as a literal translation of the German title. The English translation of the third edition of Semon's *Mneme* appeared in 1921: Semon, *The Mneme*, trans. L. Simon (London: Allen & Unwin).

<sup>32</sup> Semon, *Mnemonic Psychology*, p. 15.

narrow a role for mnemonic phenomena as such phenomena also play a role in physiology. Thus, later in the introduction after finding a passage where Russell concedes this broader scope for mnemonic phenomena, she rejoices in the power of “mneme” to direct our mental life by physiological means:

Where did those items (thoughts, facts, intentions), or rather the processes connected with them, reside in the meanwhile, i.e. while we were fast asleep. Surely in the Body. And mneme, that beneficent guardian of our existence, going to and fro between what we call our body and what we call our soul, may be supposed to have taken charge of, or at least subsequently restored, whatever valuables that intermittent, and oh, so superficial, Mind of ours had, for the time being, lost sight of. (Semon, *Mnemonic Psychology*, p. 48)

What is peculiar here is not only the attribution of agency to the mneme, but also Lee taking Russell to task for too narrow a conception of mnemonic phenomena when Russell frequently ties mnemonic causation to organic material outside of human psychology. This misunderstanding of Russell’s position, their personal animus and Lee’s literary approach to Semon all suggest that she did not bring Semon to Russell’s attention.<sup>33</sup>

Instead of trying further to rule out all these alternative sources, I turn to Russell’s extant writings on psychology around this time. In addition to the letters cited in the previous section, the most important piece of the puzzle is that we see no trace of Semon’s influence on Russell’s work on psychology in prison or in any manuscripts prior to August 1919. Semon does not appear on the list of readings that Russell kept while in prison from May through September 1918, nor in the manuscripts which have survived from prison. Again, neither Semon nor his doctrines appear in “On Propositions” or in the syllabus for the first course of lectures on “The Analysis of Mind” that Russell gave in May and June 1919.

Semon’s influence is first apparent in a two-page manuscript dated by

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<sup>33</sup> A more satisfying display of Lee’s literary talents is Vernon Lee, “Back to Butler (Back to Lilith): a Metabiological Commentary on G. B. S. [George Bernard Shaw]”, *The New Statesman*, 17 (24 Sept. 1921): 674–6. Here she mocks George Bernard Shaw’s “purposive evolution” and contrasts it with Semon’s more “intelligible and prosaic explanation.”

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Russell to August 1919, "Points of Memory" (*Papers* 9: 22–3). Here Russell, without referring explicitly to Semon, uses two of his distinctive phrases: "mnemic phenomena" and "akoluthic sensations". As we have seen, the akoluthic phase of sensation comes between the original sensation and the creation of the engram when the sensation persists briefly and often quite faintly in consciousness. In addition to its importance in structuring engrams that Wohlgemuth focused on, this phase is crucial for Semon's account of time which seems to have impressed Russell greatly. Unfortunately, I must defer this aspect of Semon for future work as it is not directly related to questions about neutral monism.

Note that if Russell had met Wohlgemuth again on or shortly after 11 July 1919, as suggested in the last section, this would explain why it is only in August that we begin to see signs of Russell's interest in Semon. Further signs of a study of Semon appear in the syllabus for Russell's second series of "Analysis of Mind" lectures, which ran (with a holiday break) from 13 October 1919 through 20 March 1920. The titles of these lectures track quite closely the titles of the lectures printed in the 1921 book, and we find a reference to Semon in Lecture IV, as in the book, under the heading "Influence of past history on present occurrences in living organisms" (*Papers* 9: 481). Semon is also referred to in "x. General Ideas and Thought" (*Papers* 9: 482). These lectures differ from the final lectures in the book in two main respects: (1) A lecture VII is added on "The Definition of Perception", increasing the number of subsequent lectures by one, and (2) Lecture XIV in the syllabus on "Consciousness" is removed. This material may have been incorporated in the final version of Lecture XV (see pp. 288–93).

Russell's first published reference to Semon appears to be in an article written as part of a symposium with Schiller and Joachim on "The Meaning of 'Meaning'" which appeared in *Mind* in October 1920.<sup>34</sup> There, without warning the reader that he might be introducing something beyond what he had discussed in "On Propositions" a year earlier, Russell notes

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<sup>34</sup> See *Mind*, 29 (1920): 383–4, where this symposium is dated to 27 September 1920, as part of the Congress of Philosophy. Russell did not actually attend this session, though—the *Collected Papers* chronology has Russell sailing from Marseilles for China on 6 September (*Papers* 9: xxxii). Jean Nicod stood in for Russell, according to the brief account in *Proceedings of the Aristotelian Society*.

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We may give more precision to the definition of meaning by introducing the notion of “mnemic causation”. By this I mean that sort of causation in which the past history of the animal in question is an essential factor—the sort studied by Semon in his two books *Die Mneme* and *Die mnemischen Empfindungen*. This is the sort exemplified in the fact that a burnt child fears the fire.... We find sometimes that, *in mnemic causation*, an image or word, as stimulus, has the same effect (or very nearly the same effect) as would belong to some object, say a certain dog.... In that case, we say that the image or word “means” that object. (*Papers* 9: 93)

I want to argue now that this first public invocation of Semon points us squarely at those features of Semon’s work that most appealed to Russell: they allowed Russell to fill out his new account of meaning and propositions. And this, in turn, made it clearer how images could be consistent with neutral monism.

v

In this section I bring together all of the elements so far assembled to support the third historical conjecture presented in section 1: the new understanding of images provided by Semon’s theory allowed images to be compatible with neutral monism. In many of his early discussions of neutral monism Russell focuses on the status of a mental subject or ego. Neutral monism requires the rejection an intrinsically mental subject and so is incompatible with an act–object account of sensation, where sensation involves a mental relation of acquaintance between the subject and sense-data. This is of course the conception of sensation that Russell is known for, having defended it in 1912 in the all too popular *Problems of Philosophy* and in Part 1 of the 1913 *Theory of Knowledge* manuscript. But already in the 1918 lectures, “The Philosophy of Logical Atomism”, Russell had taken his first step towards neutral monism by constructing the subject out of sensations that also formed parts of physical objects (*Papers* 8: 240). In a letter to Herbert Wildon Carr on 17 April 1918, written as he was about to enter prison, Russell grants that neutral monism “works admirably so far as sense is concerned.”<sup>35</sup>

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<sup>35</sup> Michael Thompson, “Some Letters of Bertrand Russell to Herbert Wildon Carr”, *Coranto*, 10 (1975): 7–19 (at 18). *Papers* 8: 314: “The ‘subject’ as anything but a construction must be avoided”. See also “On Propositions”, *Papers* 8: 295.

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The claim that sensations are neutral and so occur in both mental and physical objects leaves open the status of all the other objects we encounter, though. Going back to the 1913 *Theory of Knowledge* manuscript, Russell had argued that a neutral monist could not account for our cognitive or epistemic mental states like belief, and he also raises this worry in the letter to Carr quoted above: neutral monism “raises great difficulties as regards Belief... I do not see clearly whether a Theory of Belief on such lines is possible or not, but I wish to find out.”<sup>36</sup> A strict attitude towards neutral monism would require that we know that each particular is a part of both a mental and a physical object. At least initially, Russell assumed that the burden of proof rested with the neutral monist to explain how to identify the parts of every cognitive mental state, like a belief, with parts of objects that were clearly physical. Because we cannot do this for beliefs or even for images, Russell feels that he cannot be a neutral monist.

We see this way of thinking reflected in “The Philosophy of Logical Atomism”, where Russell moves immediately from an explanation of neutral monism to the point that neutral monists “will set to work to explain away such things as belief, and reduce them to bodily behaviour; and your belief in a certain proposition will consist in the behaviour of your body” (*Papers* 8: 195).<sup>37</sup> Here we see how Russell sets a demanding and unfair test for the neutral monist to pass: in order to be a neutral monist, you must demonstrate how each purportedly mental entity also forms a part of a physical object. This ignores the possibility that even though images are needed to account for beliefs, they are not really exclusively mental entities.

It is just here that I think Semon's work proved most appealing to Russell. For by “On Propositions” Russell has decided that images exist, that they are the primary bearers of meaning and, finally, that facts composed of images standing in relations are a central feature of beliefs. But exactly how images behave, and in virtue of *what* an image is an image of *this* object rather than *that* object, is left completely unclear in the 1919 paper. Russell can offer only this:

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<sup>36</sup> Thompson, p. 18. There is also the problem with emphatic particulars which Russell again mentions here. But I must reserve a discussion of Russell's statements on this complex argument for future work.

<sup>37</sup> This point is repeated later in the lectures at *Papers* 8: 242.

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The way in which an image resembles its prototype is peculiar... The nearest approach I can make to a definition of the relation of image and prototype is this: If an object *O* is the prototype (or a prototype, in the case of vagueness) of an image, then, in the presence of *O*, we can recognize it as what we had an image "of". We may then say that *O* is the "meaning" (or a meaning, in the case of vagueness) of the image. But, as we saw, the meaning is to some extent subject to the will: a "generic" image, for example, is simply one intended to be generic. (*Papers* 8: 293)

By identifying Semon's mnemonic sensations with his images, Russell is able to appeal to Semon to explain what an image is an image of and why it might have effects similar to the thing itself. When I come to believe that Desdemona loves Cassio, for example, Russell claims that I have a certain feeling of assent related to a fact composed of images. One of these images will be an image of Desdemona. And, it is an image of Desdemona, and not her identical twin whom I have never met, because this image is the ecpchorization of a series of engrams that are in turn related to either past memories of Desdemona or actual sensations of Desdemona herself. This account of what thing an image refers to need not appeal to resemblance or to the will and is consistent with the case where my image of Desdemona is quite faint or distorted. The causal origins of the image, spelled out along Semon's lines, are sufficient to fix its reference.

A far-reaching consequence of this seems to be that once images are "tamed" in this way, Russell finally sees that the existence of images can be made consistent with neutral monism. This coincides with a shift to a more relaxed conception of where the burden of proof lies for a neutral monist and also a more critical attitude towards physical objects. For even though we do not yet know which parts of our brain are responsible for the engrams, or how they are stored, we can have good indirect evidence that they are stored somehow and somewhere in our brain: "It is the causation of images that is the vital problem. We have seen that they are subject to mnemonic causation, and that mnemonic causation may be reducible to ordinary causation in nervous tissue" (p. 303). Here Russell appears to follow Semon, who argues vigorously that it is premature to try to identify exactly which feature of the brain or the "sensitive

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substance” is responsible.<sup>38</sup> But Semon has no worries that mnemonic sensations will prove to be exclusively mental or otherwise outside the natural order of things.

At the same time, there is textual evidence that Russell was reluctant to endorse all the parts of Semon's theory of mnemonic causation. For Semon, mnemonic causation involves (i) past sensations being causally responsible for current sensations over and above those due to current stimulation and (ii) a materialist explanation of such connections in terms of an engram or trace that is posited as a kind of brain state. In Lecture IV, “Influence of Past History on Present Occurrences in Living Organisms”, Russell resists “The theory of the engram, or any similar theory, [which] has to maintain that, given a body and brain in a suitable state, a man will have a certain memory, without the need of any other further conditions” (p. 91). Russell grants, in the end, that even though he is “inclined, as a working hypothesis, to adopt the belief in question, and to hold that past experience only affects present behaviour through modifications in physiological structure”, mnemonic causation could be “ultimate” (p. 92). On an ultimate mnemonic causation theory, one would accept clause (i), but reject clause (ii). That is, past sensations would be directly responsible for present memory images.

In what appears to be the only paper relating Semon's theories to Russell's views in the *Analysis of Mind*, Sven Bernecker attributes this ultimate mnemonic causation theory to Russell and so opposes Russell's theory to Semon's material engram:

After having realized that the empirical evidence for the existence of memory traces is “not quite conclusive,” Russell went ahead and proposed an account of memory causation which manages without the stipulation of memory traces. “Mnemonic causation” is the name of this account of memory causation.<sup>39</sup>

I want to deny that Russell adopted this view. The discussion in Lecture IV may suggest this interpretation, but Russell's remark in the final

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<sup>38</sup> Semon, *Mnemonic Psychology*, p. 328.

<sup>39</sup> Bernecker (cited in n. 3 above), p. 164. He notes that C. D. Broad endorsed a similar interpretation of Russell, but I cannot enter into this aspect of the debate here. Interestingly, Bernecker goes on to criticize Russell by emphasizing the very issues with storage vs. retrieval that Schacter highlighted in his praise for Semon's theory. See p. 107 above.

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lecture should be taken as his considered opinion on the matter: "It is probable, though not certain, that mnemonic causation is derivative from ordinary physical causation in nervous (and other) tissue" (p. 307). We must look elsewhere to find why Russell hesitates in Lecture IV to completely endorse both clauses of Semon's theory.

Our interpretative problem arises from assuming that the only two options that Russell has are to endorse Semon's theory or else posit mnemonic causation as ultimate. There is good reason to think that Russell adopted a third alternative, however. This option depends on the logical constructions of physical objects that are a central part of Russell's external world program. And, in fact, we find Russell summarizing his logical constructions of physical objects from *Our Knowledge of the External World*<sup>40</sup> in Lectures V and VII of the *Analysis of Mind*. These constructions imply, among other things, that we cannot reduce psychology to ordinary physics because the objects of ordinary physics like brains are logical constructions. Instead of opting for the materialism or psychophysical parallelism that Semon presumed, Russell offers something more revolutionary:

I think that, if our scientific knowledge were adequate to the task, which it neither is nor is likely to become, it would exhibit the laws of correlation of the particulars constituting a momentary condition of the material unit, and would state the causal laws of the world in terms of these particulars, not in terms of matter. (P. 306)

So, Russell does not hope for a reduction of mnemonic causation to brain states, as Semon did, but for a much more ambitious reduction of mnemonic causation to the particulars that underlie his logical constructions of brain states. What results in the end would be a "fundamental unifying science in which the causal laws of particulars are sought" (p. 307). This is, of course, a neutral monism which refuses to assign intrinsic mental or physical status to any particulars. By rejecting fundamental psychological and physical entities, Russell hopes to be able to accommodate the latest findings of both psychology and physics by uncovering laws for particulars that are neither physical nor mental. So, rather than endorse Semon's material engram as the final word or invoke brute mnemonic

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<sup>40</sup> *OKEW*, Lectures III and IV.

causation across time, Russell envisages a logical construction of both physical and mental entities from neutral particulars. While he was not sure how to accomplish this prior to reading Semon, the *Analysis of Mind* reflects a new confidence that such a project could succeed.

One remaining issue concerns Russell's conflicting statements on neutral monism in the *Analysis of Mind* which we saw back in section 1. In the Preface and in the final chapter, Russell believes that images could find a place in the world of the neutral monist, a possibility which I claim he only recognized after studying Semon. Semon's work presented laws relating images to past experiences and these laws seemed likely to be reducible to physiological regularities. Still, matter itself was also under attack by Russell at this time, so he resisted the materialistic aspects of Semon's theory. In the "Philosophy of Logical Atomism", "On Propositions" and even in the first chapter of the *Analysis of Mind* itself, images and neutral monism are presented as incompatible. We have a clear explanation for all of these passages except the first chapter of *Analysis of Mind* if we grant that Russell read Semon only in the summer of 1919. We can explain even the first chapter's remarks if it was written before the contact with Wohlgemuth on 22 May 1919 and not sufficiently revised.<sup>41</sup> And, in fact, we find that the title of this chapter and its contents closely track the syllabus summary of the first lecture of Russell's first series of "Analysis of Mind" lectures, given on 6 May 1919 (*Papers* 9: 477), and that this summary is unchanged in the second series' syllabus (*Papers* 9: 480). Two pieces of additional evidence which suggest that this lecture was not revised are that it contains no references to literature after 1918 and that at pages 27–8 Russell refers to Lloyd Morgan to support an example of birds and their nesting that is also used at page 66. But the later example is referred to Semon.<sup>42</sup> While this final historical point is somewhat circumstantial, the balance of the evidence suggests that the misgivings Russell expresses about neutral monism in Lecture 1 were written prior to forming the views contained in the Preface and last lecture of the book.

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<sup>41</sup> If this is right, then even if the "world" of p. 36 (see note 1 of this paper) refers to all particulars, we can view this passage as a late addition to the end of Lecture 1.

<sup>42</sup> Interestingly, Semon cites earlier work by Morgan in *Mnemonic Psychology*, Chap. 2.

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## VI

With this historical interpretation in place, I think we can notice both negative and positive features of Russell's engagement with Semon's account of memory. On the negative side, it is problematic that Russell adjusts his philosophy of mind and metaphysics using the proposals of an obscure German scientist. Most troubling, of course, is that Semon's theories had been largely untested, and even Schacter doubts that the data that Wohlgemuth collected supported Semon to any significant degree. Even if these experiments did support Semon, they only tested one small part of his overarching conception of the mind. It does not seem appropriate for Russell to rely on such controversial and untested proposals. Indeed, it almost looks like Russell is here adopting whichever scientific proposals fit his philosophical priorities, regardless of their scientific credentials. Russell adopts Semon's mnemonic psychology, but ultimately rejects the materialistic aspects of the engram which are at its foundation.

However, there are positive aspects as well. We should praise Russell, I think, for latching onto and helping to publicize the work of, in Schacter's words, a "neglected pioneer" in the history of memory research. Despite the stark choices presented by the then dominant schools of psychology, with experimental psychology becoming increasingly behaviouristic and introspectionist psychology's resistance to experiments, Russell opted for the right middle way in the work of Semon and Wohlgemuth. On this reading, an acute outside observer like Russell can contribute to scientific progress precisely by trying to resolve basic conceptual confusions and fruitless debates.

Whichever aspects we choose to emphasize, it remains that the Russell–Semon case makes it problematic to think that a philosopher can engage with science by simply interpreting ready-made scientific results. In psychology, but also in the natural sciences like physics, there is generally a wide variety of options for the philosopher to choose from when adjusting his philosophical theories. While Russell presents his *Analysis of Mind* and later *The Analysis of Matter* as building on and interpreting the best science of the day, both books reflect debatable choices about which scientists to draw on. Perhaps one final lesson we can learn, then, from studying Russell in this period is that Russellian scientific philosophy rests on both philosophy and science. The scientists

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present a variety of theories, but philosophical reflection is needed to determine which theory fits best with the metaphysical and epistemological constraints that guide the philosophical project.<sup>43</sup>

## APPENDIX

## RUSSELL'S REFERENCES TO SEMON IN "ANALYSIS OF MIND"

Abbreviations: *M*: *Mneme*; *ME*: *Die mnemischen Empfindungen*; *MT*: 1921 English translation of *Mneme*; \*: not in index to book.<sup>44</sup>

- \*56: *M*, pp. 207–9: "a good illustration of an instinct growing wiser through experience"
- 66n.: *M*, pp. 209, 210: "birds' nests" made with no "prevision of end".
- 78: *M*, first and second editions, *MT*, *ME*
- 83: "The best writer on mnemonic phenomena known to me"
- 90: *M*, p. 28n.: mnemonic phenomena "in plants"
- \*128: *M*, p. 118, *ME*, pp. 33ff.: "Nebeneinander"
- \*145n.: *ME*, pp. 19, 20: "On the distinction between images and sensations"
- \*167: "Semon's two books ... do not touch knowledge-memory at all closely."
- 175n.: *ME*, Chap. 6: "'akoluthic' sensations"
- 207n.: *ME*, Chap. 16, esp. pp. 301–8: "there is not one definite prototype [of an image], but a number, none of which is copied exactly."
- 219–20: *M*, pp. 217ff.: "written well" on general ideas. Quotation of two passages. *ME*, Chap. 16 "adds nothing vital"
- \*229: "or, in Semon's phrase, homophony"
- \*296: "Semon's engram"

<sup>43</sup> An earlier version of this paper was presented at the 2004 meeting of the International Society for the History of Philosophy of Science. I would like to thank the audience at this session, Sven Bernecker and two anonymous referees for their helpful suggestions on how to improve this paper. The Editor added to the historical references in notes 1, 2, 14, 18 and 34.

<sup>44</sup> The index incorrectly includes p. 165.