

Mental Chemistry and Russell's Analysis of Mind

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1. Neutral Monism and Mental Chemistry

Bertrand Russell's 1921 *The Analysis of Mind* (AM) constitutes his earliest systematic attempt to give a "neutral monist" account of mental phenomena, in part as an attempt to harmonize psychology and physics. In his view, experimental psychologists exhibit an increasing dependence "on physiology and external observation, and tend to think of matter as something much more solid and indubitable than mind" (5). At the same time, Einstein's relativity theory and quantum mechanics suggest that physical reality consists ultimately of 'events' rather than matter (5).

Russell proposes that these conflicting tendencies are best reconciled by "the view of William James and the American new realists, according to which the 'stuff' of the world is neither mental nor material, but a 'neutral stuff,' out of which both are constructed" (AM 6). As he sees it: "Both mind and matter seem to be composite, and the stuff of which they are compounded lies in a sense between the two, in a sense above them both, like a common ancestor" (10-11).

Russell credits James with paving the way for a new analysis of mind in his 1905 "Does 'Consciousness' Exist?" In this paper, James boldly pronounces that consciousness "is the name of a nonentity, and has no right to a place among first principles. Those who still cling to it are clinging to a mere echo, the faint rumour left behind by the disappearing 'soul' upon the air of philosophy" (McDermott 22). James clarifies that he means "only to deny that the word stands for an entity, but to insist most emphatically that it does stand for a function", specifically that of knowing (23). He proposes that "if we start with the supposition that there is only one primal stuff or material in the world, a stuff of which everything is composed, and if we call that stuff 'pure experience,' then knowing can easily be explained as a particular sort of relation towards one another into which portions of pure experience may enter. The relation itself is a part of pure experience; one of its 'terms' becomes the subject or bearer of the knowledge, the knower, the other becomes the object known" (23).

But while Russell agrees with James' rejection of consciousness as an entity and treatment of it in terms of certain relations within a single kind of stuff, he suggests that the term "pure experience" "points to a lingering influence of idealism" (AM 24). In his view, "Experience", like 'consciousness,' must be a product, not part of the primary stuff of the world. It must be possible, if James is right in his main contentions, that roughly the same stuff, differently arranged, would not give rise to anything that could be called 'experience'" (24-25). For this reason, Russell prefers to follow the New American Realists Perry and Holt in calling the primal stuff of reality "neutral stuff" (25).

On the surface, Russell's disagreement with James merely concerns the aptness of the label "pure experience" for the neutral stuff. Yet his subsequent remarks reveal a much deeper divergence between the two thinkers. Specifically, they hold conflicting positions

regarding "mental chemistry"—whether and how our mental episodes are composed of more basic elements.

The British pragmatist F.C.S. Schiller homes in on this key issue in his 1922 review of AM. Specifically, he criticizes two key features of Russell's psychological analysis: (1) that its data are highly pluralistic and (2) its method is an "abstract analysis in search of the 'simple' and elemental" (Papers 9, 489). Like James, Schiller insists (1) that what we in fact experience is a unified continuum rather than a complex of discrete elements and (2) that analysis of its various "aspects" or "parts" is a matter of singling out different portions of the continuum for certain practical purposes.

Today, I will take a closer look at the important role that such "mental chemistry" plays both (1) in Russell's changing attitudes about neutral monism and (2) in shaping the specific analyses offered by James and Russell. Yet I will begin by considering Mach's theory of elements, which plays a central role in each of these topics.

2. Mach's Theory of Elements

Russell first became familiar with Mach as a student at Cambridge in the 1890s. Some of these encounters consisted of brief footnotes in other works. But Mach is discussed at various points in William James' *The Principles of Psychology* (which Russell read in 1894 and 1895) and in James Ward's 1899 Gifford Lectures, wherein Ward offers a sustained critique of "neutral monism" and other forms of naturalism. Most importantly, Russell read Mach's *The Science of Mechanics* in 1895, the last two chapters of which sketch Mach's neutral monist "theory of elements".

Mach's theory of elements has three key features: (1) it is "anti-metaphysical" in seeking to dispense with entities or forces that are unobservable in principle, (2) it calls for science to simply describe systematic functional relationships between observable phenomena, and (3) it holds that both "minds" and "material bodies" are simply convenient, biologically-grounded groupings of more basic observable sensory qualities or "elements", including "colors, tones, pressures, spaces, [and] times" (1919, 483). Such elements are "sensible features" of material objects when grouped in terms of the spatiotemporal and causal-functional relations described by physics, chemistry, and biology, and "sensations" in our mind when grouped in terms of the causal-functional relations described by psychology, psychophysics, and sense-physiology.

For Mach, our notions of "things" and "material bodies" are merely useful thought-symbols for complexes of sensory qualities of relative fixedness (483). Similarly, the "self" or "ego" is simply an instinctive and economical way of grouping such sensory qualities, one which is useful for pain-avoidance, pleasure-seeking, and preserving our biological organization and functioning (1910, 18-20). These mental groupings include as constituents "sensations", "feelings", and "percepts"—such as volitions, memories, moods, and mental-images—which are themselves in some way resolvable into feelings and sensations (18).

But it is important to note that the basic elements of mental phenomena are “sensations” only due to their relations to other such elements. Mach emphasizes that such sensory qualities are real features of the world that remain, differently arranged, when not constituents of any mind (18-20). He labels them “sensations” largely because that’s our most familiar way of talking about them.

3. Mental Chemistry and the Continuum of Experience

Mach’s writings clearly left an impression on Russell even during his early idealist phase. Indeed, Russell critiques Mach’s anti-metaphysical stance, Gedankensexperiments, and theories of mechanics and motion in reviews of Heymans (1895), Love (1898), and Schultz (1900). But there is also strong evidence that Russell disagreed with Mach on the issue of mental chemistry during this period. In an 1883 graduate paper on epistemology, for instance, Russell contends that “Sense-particulars are not individuals: they are not completely differentiated one from another: in sensation there is nothing discrete, but one sensation merges into another” (*Papers* 1, 122). And in another from 1884, Russell insists that “experience is originally given as one whole” (196).

Undoubtedly, Russell’s remarks here reflect the well-known early influence of Absolute Idealism on him. But it is also important to recognize that his early psychological views were greatly shaped by several fierce opponents of mental chemistry, including Mill, Ward, and James. Among their various critiques of mental chemistry are that: (a) experience does not appear particulate and its “esse is sentiri”, (b) mental composition from unconscious or insentient elements is unintelligible, and (c) the notions of experiences being composed of “unfelt feelings”, of a series being aware of itself as a series, of subjects summing together, and of wholes being identical with their parts are all paradoxical. So, partly for reasons such as these, Russell holds, contra Mach, that experience consists of a continuum rather than a complex of discrete elements.

4. James’ Radical Empiricism

Russell’s second major encounter with neutral monism is more widely known. It began when he encountered James’ “radical empiricism” while preparing a 1912 review of *Essays in Radical Empiricism*. Russell was a dualist during this period and had a number of concerns about its viability. Even so, he was so struck by James’ theory that he devoted a chapter to critiquing it (along with those of Mach and Perry) in his 1913 *Theory of Knowledge* manuscript.

The core thesis of James’ “radical empiricism” is that the primal stuff of the world is “pure experience” rather than mental or material stuff. Like Mach, James holds that such “pure experience” includes sensory qualities such as colors, sounds, intensity, flatness, and so on (McDermott 179). It also includes various “conjunctive” and “disjunctive” relations such as those of likeness and difference, time and space, purpose and activity, and continuity and disunity (197-9). In fact, James insists, “reality is made of as many stuffs as there are natures of the things experienced” (197).

James also follows Mach in holding that one and the same undivided portion of reality becomes “mental” and/or “material” depending on context and its functional relations to other portions of reality (McDermott 172). In the case of “matter”, these relations are the “energetic” relations studied by the natural sciences. In the case of “mind”, they include those studied by psychology (172-4).

James argues that this conception of reality opens the possibility for a wholly empirical account of our mental lives. Specifically, mental acts such as consciousness, cognition, memory, volition, etc., “can easily be explained as a particular sort of relation towards one another into which portions of pure experience may enter” where “the relation itself is a part of pure experience” (McDermott 170).

Yet James continues to reject the idea that our mental lives are composed of discrete units combined or fused together by some form of “causal glue”. Instead, they are variously-related “portions” of “pure experience” which flow and “pass into” one another in a single continuous “stream of consciousness” (McDermott 196-9). In fact, memories, purposes, strivings, etc., are incidental to these primitive relations of “co-conscious transition” unifying single minds (196-8). James thus likens “pure experience” to a mosaic that needs no adhesive.

In James’ view, concepts are cognitive tools for carving out portions of the continuous sensuous flux based on our practical interests. As such, the cognitive contents need not be reflective of the structure of reality itself, but rather are based on the course of experiences they lead to, purposes they serve, and practical effects they result in (McDermott 232–43). James holds that this applies equally to our familiar categories of “things”, “matter”, “minds”, “inner”, “outer”, and so on, which are all cognitive partitions of the continuous field of “pure experience” rather than discrete things.

5. Russell’s Road to Neutral Monism

Russell’s main objections to neutral monism during this dualist phase center on his relational conception of mental episodes. First and foremost, Russell objects that: “On the grounds of the purest empiricism, from mere inspection of experience, I for my part should hold it obvious that perception [like other mental episodes] is in its intrinsic nature a fact of relation, involving an act as well as an object” (*Papers* 6, 303). Elsewhere, he adds that since neutral monism makes no act-object distinction, it cannot adequately explain various cognitive phenomena such as what is experienced, selective attention, and egocentric thought (TK, PLA).

In addition, Russell offers two arguments that experience is not essentially a matter of relations among different sensory qualities. First, he argues: “It seems to me possible to imagine a mind existing for only a fraction of a second, seeing the red, and ceasing to exist before having any other experience. But such a supposition ought, on James’s theory, to be not merely improbable, but meaningless” (TK 23). And second, he argues that: (i) persons A and B can be aware of the same object O, (ii) empirically, it seems that A and B cannot be aware of each other’s experience of O, and (iii) A and B can be aware of their own experience of O without needing to have an experience of any other object. Thus, something more than an object is needed to explain our awareness of our own mental episodes and this extra component is not another object. So, it must be a subject, act, and/or content (35).

Yet while Russell takes it that *experiencing* something does not, in principle, require the complexity of variously related sensory qualities, he sees little reason to accept James’ view that *what we experience* is a continuum rather than a complex of discrete sensory data: “if we see a coloured surface whose colour changes gradually, its sensible appearance if the change is continuous will be indistinguishable from what it would be if the change were by

small finite jumps. If this is true, as it seems to be, it follows that there can never be any empirical evidence to demonstrate that the sensible world is continuous, and not a collection of a very large finite number of elements of which each differs from its neighbour in a finite though very small degree" (*OKEW*, 148).

By 1918, Russell deems his former reservations about neutral monism unfounded. Most importantly, he concludes that introspection does not show mental acts to be intrinsically relational and gains confidence that, with ingenuity, neutral monism can explain the recalcitrant features of our cognitive lives. At the same time, he finds neutral monism attractive because it (a) commits us to a simpler ontology without subordinating either mind or matter to the other, (b) renders intelligible mind-matter interaction, (c) provides a shared subject matter for physics and psychology, and (d) harmonizes the materialist tendencies of psychology and anti-materialist tendencies of physics. Hence, Russell becomes a neutral monist and champions the view for nearly a half-century.

6. Russell's Analysis of Mind

As previously noted, Russell's *Analysis of Mind* constitutes his earliest systematic attempt to provide neutral monist analyses of minds and mental phenomena. Yet there are a number of perplexing aspects of this account. For starters, its analysis treats mental phenomena as composite systems of "sensations" and "images" bearing the right kinds of causal relations to each other—and it is far from evident that "sensations" and "images" are properly neutral in character (AM 69). And it is easy to become even more puzzled by Russell's early remarks that only "sensations" are neutral, whereas "images belong only to the mental world, while those occurrences (if any) which do not form part of any 'experience' belong only to the physical world" (25). This has led some to view Russell's theory as "disorganized demi-monism", or even dualism, rather than a genuinely *neutral* monism.

In reality, Russell's aim is to provide a naturalistic analysis of 'mental' phenomena: "I was anxious [as a dualist] to rescue the physical world from the clutches of idealism... But if I could rescue the so-called 'mental' world from him too! Then the reason for making a gulf between the mental and the physical would disappear" (*Papers* 8, 255). In particular, Russell aimed to follow Dewey (1916) in "[reducing] everything cognitive to 'pure natural events'", and acknowledged that in this regard his neutral monism's "bias or flavour is materialistic" (135, 254).

As such, Russell's claims that minds and mental phenomena are composed of "sensations" and "images" should be interpreted as broadly echoing Mach (AM 144). "Sensations" and "images" count as such not due to any special intrinsic feature they possess, but rather because they play the relevant *causal roles* within a system of pure natural events organized by psychological causal laws (*Papers* 10, 296). (And it is worth pointing out that he thinks it *likely* that science will show such laws to be reducible to physical ones, particular those regarding brains and nervous tissue.)

In fact, Russell denies that there is *any* special character, such as consciousness, "diffused throughout our mental life" (AM 288). He argues that the term 'consciousness' is used variably for a special kind of (a) intrinsic quality of mental phenomena, (b) awareness of the world, and/or awareness of mental episodes (112-13). But in each case, such features apply only to composite occurrences.

On Russell's analysis, episodes constitute objectual awareness by (1) bearing the right external relations to remote spacetime events and (2) occurring in a system with a marked degree of 'sensitivity', 'mnemic' responsiveness, and 'subjectivity'. A system "is 'sensitive' to a certain feature of the environment if it behaves differently according to the presence or absence of that feature" so as to reliably signal it (AM 131-36, 255-61). A system exhibits mnemonic responsiveness when its responses to stimuli are shaped considerably by earlier episodes such that their "proximate cause consists not merely of a present event, but this together with a past event" (85). And a system exhibits 'subjectivity' ("the characteristic of giving the view of the world from a certain place") based on how it is situated with respect to other spacetime events (101, 296). In our own case, 'subjectivity' is a matter of events in us exhibiting a high degree of sensitivity and mnemonic responsiveness "from a place where there is a brain... with sense-organs and nerves forming part of the intervening medium" (131).

Russell holds that there are three ways we can achieve 'self-consciousness' of our mental episodes. First, we in some sense 'feel' the qualities of our sensory episodes simply by 'experiencing' them: by having them occur in the right way within our mental biography (AM 139-42). Second, we can 'notice' such sensory episodes when they function as 'prototypes' for distinct cognitive episodes which are sensitive to them, resemble them in some way, and involve feelings that '*this* is occurring' or '*this* occurred' (288-89). Third, we can 'notice' our cognitive episodes via other such episodes with (roughly) the same 'prototypes' or contents by exploiting suitable associative relations between them (290-91).

Lastly, there is also (inconclusive) evidence that Russell takes the "sensations" we experience to be composite as well. For one thing, he cautions that when he speaks of the "ultimate constituents" of minds, he does not "mean necessarily such as are theoretically incapable of analysis, but only such as, at present, we can see no means of analyzing" (AM 124). And regarding Schiller's criticism that his method in AM is that of "abstract analysis in search of the 'simple' and elemental", he replies that "'simple' must not be taken in an absolute sense; 'simpler' would be a better word. Of course, I should be glad to reach the absolutely simple, but I do not believe that that is within human capacity" (*Papers* 9, 39).

It is also important to note that cases of gradual transitions of qualities convinced Russell that our sense-data consist of qualitative elements beyond the grain of our discriminatory capacities. Russell was well-aware that such considerations apply equally once neutral monism is adopted, as Holt makes that case in *The Concept of Consciousness* (which Russell read in Brixton prison): "Now as a colour red, to resume, changes to yellow, *it* does so because it is not simple... The so-called simple sensory quality is after all not simple; it is comparable with a molecule of which the component atoms remain to be discovered" (215-16). In fact, in *The Analysis of Matter*, Russell later draws on these and other considerations to conclude that "all our percepts are composed of imperceptible parts" and have imperceptible structures (1927, 282, 386).

In sum, what is clear is that by the time of *The Analysis of Mind*, Russell is no longer resistant to Machian neutral monist mental chemistry—he embraces it. And in doing so, he sets his neutral monism apart from James' anti-atomistic "radical empiricism" (at least until he is swayed by Bergson and Strong...).