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The Change in Sraffa's Philosophical Thinking

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Abstract.

The availability of Piero Sraffa's unpublished manuscripts and correspondence at Trinity College Library, Cambridge, has made it possible to begin to set out a more complete account of Sraffa's philosophical thinking than previously could be done with only his published materials and the few comments and suggestions made by others about his ideas, especially in connection with their possible impact on Ludwig Wittgenstein's later thinking. This makes a direct rather than indirect examination of Sraffa's philosophical thinking possible, and also shifts the focus from his relationship to Wittgenstein to his own thinking *per se*. I suggest that the previous focus, necessary as it may have been prior to the availability of the unpublished materials, involved some distortion of Sraffa's thinking by virtue of its framing in terms of Wittgenstein's concerns as reflected in the concerns of scholars primarily interested in the change in the his thinking. This paper seeks to locate these early convictions in this historical context, and then go on to treat the development of Sraffa's philosophical thinking as a process beginning from this point, arguing that his thinking underwent one significant shift around 1931, but still retained its early key assumptions. Thus the approach I will take to Sraffa's philosophical thinking is to explain it as a process of development largely within a single framework defined by his view of how modern science determines the scope and limits upon economic theorizing.

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The Change in Sraffa's Philosophical Thinking

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1. Introduction

The availability of Piero Sraffa's unpublished manuscripts and correspondence at Trinity College Library, Cambridge,[1] has made it possible to begin to set out a more complete account of Sraffa's philosophical thinking than previously could be done with only his published materials and the few comments and suggestions made by others about his ideas, especially in connection with their possible impact on Ludwig Wittgenstein's later thinking. This makes a direct rather than indirect examination of Sraffa's philosophical thinking possible, and also shifts the focus from his relationship to Wittgenstein to his own thinking *per se*. I suggest that the previous focus, necessary as it may have been prior to the availability of the unpublished materials, involved some distortion of Sraffa's thinking by virtue of its framing in terms of Wittgenstein's concerns as reflected in the concerns of scholars primarily interested in the change in the his thinking. Indeed, one thing the unpublished materials appear to demonstrate is that from quite early on Sraffa had strong independent philosophical convictions that appear to have been related to a set of philosophical debates that occurred at the beginning of the twentieth century about the nature and philosophical significance of modern science. This paper seeks to locate these early convictions in this historical context, and then go on to treat the development of Sraffa's philosophical thinking as a process beginning from this point, arguing that his thinking underwent one significant shift around 1931, but still retained its early key assumptions. Thus the approach I will take to Sraffa's philosophical thinking is to explain it as a process of development largely within a single framework defined by his view of how modern science determines the scope and limits upon economic theorizing.

Recently, in drawing on Sraffa's unpublished papers, Heinz Kurz and Neri Salvadori have characterized Sraffa's philosophical view dating from his earliest constructive work as objectivism, and have argued that this objectivism was central to his later theory of value and distribution. They also state that the problem of what Sraffa meant by objectivism, and how this view was related for him to the debates over science in his time has "never been raised, let alone answered" (Kurz and Salvadori, 2008, p. 261; also cf. Kurz and Salvadori, 2004). Moreover, they make and defend the further statement that Sraffa's

[1] The papers are deposited in the Wren Library. The catalogue, prepared by Jonathan Smith, archivist at the Wren, is at: http://rabbit.trin.cam.ac.uk/~jon/Sraffa/Sraffaframeset.html. See Smith (1998) and Kurz (1998) for summaries of the contents.

"concept of objectivism changed over time," so that we need to "distinguish broadly between two conceptualisations, one belonging to the first period of his constructive work up until August 1931, the other belonging to the time thereafter" (*Ibid*.).

Clearly this represents a highly significant development in Sraffa scholarship. At the same time, it essentially constitutes a new beginning for research on Sraffa's philosophical thinking, since not only have Kurz and Salvadori, as they candidly note, not "'solved' the problem or … 'unveiled' all its fascinating detail" (*Ibid*., pp. 250-1), but there are further issues to be addressed regarding how an identifiable philosophical view now attributable to Sraffa relates to other philosophical positions debated during his time. I thus take Kurz and Salvadori's focus on Sraffa's objectivism as my point of departure. Its focus is the 1931 change in Sraffa philosophical thinking highlighted by Kurz and Salvadori, but also declared by Sraffa himself in his unpublished August 1931 'Surplus Product' paper (D3/12/7:161). The advantage of adopting this focus is that it exhibits Sraffa making an explicit philosophical judgment regarding what he believed to be important to the defense and explanation of his theory of value and distribution. Moreover, that judgment involved not an abandonment of his earlier objectivism but rather a reconsideration of how it had to be understood. Thus Sraffa both re-oriented and also deepened his philosophical view at this point in his development, all *en route* in his estimation to providing a more secure basis for his own economic thinking (and his critique of neoclassical economic theory), which was always a strong, if not the main motivation driving his philosophical reasoning. Examining this episode thus allows us to begin to make sense of Sraffa's philosophical commitments. That in turn will allow us to begin to re-appraise their relation to the philosophical ideas of others with whom he interacted, Wittgenstein in particular.

In section 2 the paper discusses Sraffa's early objectivism view, and identifies it with the philosophical doctrine of physicalism. Section 3 briefly discusses the origins and some of the twentieth century development of this doctrine, in order to provide a frame for Sraffa's view in terms of the history of thinking about science in his time. Section 4 discusses the problems Sraffa believed his early view created for his economic thinking according to his 1931 paper, uses his assessment of these problems to show how he modified his early objectivism, and relates this modified objectivism to twentieth century debates over the meaning and scope of physicalism. Section 5 then attempts to further characterize Sraffa's post-1931 objectivism in terms of his likely views regarding two issues central to the evaluation of physicalism related to the concept of subjectivity. Section 6 briefly discusses Sraffa's relationship to Wittgenstein in regard to their views of physicalism/objectivism. Section 7 concludes with an attempt to say what the later thinking of Sraffa and Wittgenstein might have had in common and what this might tell us about Sraffa's mature views.

2. Sraffa's early objectivism

Sraffa's early objectivism was the product of his interpretation of the history of the theory of value from its pre-classical beginnings in William Petty and François Quesnay to Marshall's theory of value in his

own time.[2] For him, the key concept involved in explaining value was that of physical real cost (D3/12/42: 33-56). As he put it, "the sort of 'costs' which determines values is the collection of material things used up in production" (D3/12/7; quoted in Kurz and Salvadori, 2008: 253). This view was objectivist for Sraffa in two related ways: first, by contrast with subjectivist accounts of cost and value developed by the marginalist economists, which Sraffa saw as basically ideological in nature, and second as emphasizing the measurable nature of material things used up in production, which he saw as reflecting a scientific point of view. Petty, he believed, had correctly captured this latter emphasis on measurable material things used up in production when he explained the subsistence of labor in terms of the things labor consumed. This also allowed an accurate determination of what was not used up in production, namely, any surplus on costs of production. Smith, Ricardo, and Marx, Sraffa argued, lost track of this scientific measure of physical real costs when they substituted the quantity of labor for the quantity of food consumed by the worker as the explanation of cost, and thereby also lost the ability to produce an accurate measure of the economic surplus.[3] They proceeded in the way they did, Sraffa argued, because they lacked the mathematical tools that would have allowed them to determine the value of many different commodities in terms of physical real cost, namely, the method of solving a set of simultaneous equations each representing a commodity's value in terms of the commodities consumed in its production, and so had alternatively proceeded by reducing the heterogeneity of commodities to a single measure of value in terms of labor consumed.[4] What Sraffa then recommended was that one combine Quesnay's circular flow idea and the simultaneous equation solution method to determine the value of a set of commodities in terms of how those commodities were used up in production, and thus restore Petty's physical real cost measure of value. The *Production of Commodities by Means of Commodities* (Sraffa, 1960) was the ultimate outcome of this analysis, one that made it possible to scientifically explain commodity values and the size of the surplus scientifically in terms of physical real cost, understood as the commodities used up in production.

The hallmark of Sraffa's early objectivism, then, is the principle that truly scientific explanations in economics need to be formulated in physical terms. This view is often associated with the doctrine of materialism, the general view that material reality explains all the world's phenomena, but in Sraffa's specific emphasis on representing all concepts in science in terms of measurable real quantities it goes beyond this general view, and constitutes a particular application of it. But Sraffa was not alone in advancing this kind of view. By the third decade of the twentieth century it had important influential

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[2] Here I rely on Kurz (1998) and Kurz and Salvadori (2005); also see Kurz (2003).

[3] "The fatal error of Smith, Ricardo, and Marx has been to regard 'labour' as a quantity, to be measured in hours or in kilowatts of human energy, and thus commensurate to value" (D3/12/11: 36; quoted in Kurz and Salvadori, 2008: 254).

[4] The need to proceed in this way, Sraffa argued (cf. Kurz and Salvadori, 2008: 253-4) – as he later explained more fully in his "Introduction" to Ricardo's *Principles* (Sraffa, 1951) – was brought home to Ricardo when he sought to go beyond the single commodity corn model *Essay on Profits* approach to the distribution of the surplus to an economy with multiple commodities.

proponents as part of a widening reaction against the early phenomenalist tenets of the Vienna Circle and logical positivism, namely Otto Neurath (1931a, 1931b, 1931c) and Rudolf Carnap (1932), and had come to be called physicalism (cf. Stoljar, 2005; Stern, 2007; Uebel, 1995).[5] Mathieu Marion, in his recent discussion of Sraffa's early philosophical thinking, sees Sraffa's objectivism as a form of physicalism, and also takes Sraffa's concept of physical real cost and his simultaneous equation approach to be the basis of his understanding of an objectivist point of view (Marion, 2008: 224ff). Marion is interested in the philosophical interaction between Sraffa and Wittgenstein, and asserts that, "one of Wittgenstein's first and most important moves away from the *Tractatus* consists of the adoption, around 1930, of a 'physicalist' stance, which is related to Sraffa's 'objectivism'"(Marion, 2008: 227; also cf. Hintikka and Hintikka, 1986, 138). As Wittgenstein had only returned to Cambridge and met Sraffa the year before, it may well be that Sraffa's apparent adoption of his objectivist point of view in the late 1920s influenced Wittgenstein. But the history turns out to be more complicated than this, and I accordingly return to the issue of the influence(s) Sraffa and Wittgenstein may have had on each other in section 6. First, then, it is important to be clear about the basis for saying Sraffa's early thinking was physicalist.

Physicalism is the view that scientific explanations, whatever their subject matter, always need to be framed in terms of the language of physics and the physical sciences. Two characteristics of Sraffa's objectivism clearly identify it with physicalism. First, obviously Sraffa understands his concept of real physical cost in terms physical laws. Kurz and Salvadori admirably demonstrate this in their review of the evidence in Sraffa's papers regarding his readings in science (Kurz and Salvadori, 2008: 260ff), showing that he explicitly associated his "objective point of view" and a "natural science point of view" (D3/12/7: 161 (3) and D3/12/13: 16 (9), 18; quoted in Kurz and Salvadori, 2008: 261). Second, less obvious but no less important is Sraffa's commitment to a key principle underlying physicalism, what I call the semantic thesis.[6] The semantic thesis is the requirement that, since scientific explanations need to be formulated in physical terms, should the phenomena of interest not be represented in this way in ordinary language, they must then be translated into that type of language. Sraffa adhered to this principle both in his argument that the quantity of labor measure of value fails to translate into a physical real cost measure of value, and in his insistence that commodity values and economic surplus could only be scientifically represented when translated into sets of simultaneous equations. That is, simultaneous equation systems constitute the scientific language into which our ordinary language used to talk about the phenomena of cost and value needs to be translated.[7] On these grounds, then, Sraffa's

[5] Phenomenalism is the doctrine that only sensory experiences – sometimes referred to as sense-data – exist, and physical objects are only theoretical constructions based upon them.

[6] Also referred to as the linguistic thesis (Stoljar, 2005). I prefer 'semantic' since it refers to the domain within linguistics concerned with meaning.

[7] For Sraffa, the ordinary language used to talk about the phenomena in the case of commodity values was that of 'factors of production.' In a draft to parts of the preface of *Production of Commodities* likely written in the 1950s Sraffa was especially clear about this, saying that his point of view implied "replacing the notion that 'commodities are produced by factors of production' with … [one in which] '*commodities are produced by commodities*'

early objectivism, or his taking what he understood to be an objectivist point of view, seems broadly equivalent to physicalism as it emerged in the early 1930s.

But if Sraffa not only early on adopted a physicalist point of view, but according to the evidence in his papers significantly revised his early view in August 1931, what was it in his early view that he felt had to be changed? Further, what reasons did he have for revising his initial view, and might his reasons have been related to the debates about physicalism at the time? To begin to address these questions, the next section discusses a number of central issues involved in the doctrine of physicalism; the section after then turns to the change in Sraffa's thinking with these issues in view.

3. Physicalism as a philosophical doctrine

In the debates over physicalism since its emergence as a specific philosophical doctrine in the 1930s two issues have arguably been foremost: (i) whether it implies everything is physical – termed the completeness question; and (ii) what is meant by 'physical' – termed the condition question (cf. Stoljar, 2005). The first issue is a metaphysical or ontological one regarding the nature of reality, and brings up many classic questions in philosophy, including the status of mental states and the relationship between mind and body. Following Donald Davidson (1970), philosophers now seem to be broadly in agreement regarding how to approach this issue, whether or not one is a proponent of physicalism. The second issue is more epistemological in nature in being associated with the interpretation of modern physical science as an explanatory framework. In this case less agreement seems to obtain, and there are a number of difficult problems that have gone unresolved, two of which are especially relevant to Sraffa's thinking, and will thus be discussed below.

(i) Regarding the completeness question and the status of mental states, physicalists may either be reductionist, arguing that mental or psychological states need to be reduced to and explained physically in terms of the brain states,[8] or they may be non-reductionist, allowing that mental or psychological states have a distinct character but depend in some important way on physical brain states. Davidson (1970) was responsible for generally moving opinion from the former to the latter view in connection with his application of the concept of supervenience to physicalism. Supervenience is a relation of dependence between two things that excludes their identification. Thus as Davidson argued:

(D3/12/7: 2; quoted in Kurz and Salvadori, 2008: 255). The factors concept is a term of ordinary usage (by economists' standards) in that it simply refers to the stuff conventionally believed to underlie production. In contrast, for Sraffa commodities are defined in a very non-ordinary sense in terms of a system of circular flow interdependencies.

[8] An extreme version of this view is eliminativism, which argues that mental or psychological states do not exist at all (cf., Churchland and Churchland, 1988).

> mental characteristics are in some sense dependent, or supervenient, on physical characteristics. Such supervenience might be taken to mean that there cannot be two events alike in all physical respects but differing in some mental respect, or that an object cannot alter in some mental respect without altering in some physical respect (Davidson, 1970: 214).

Mental events (or states), then, are not identified with physical events (or states), and therefore cannot be reduced to them, but they nonetheless depend or supervene upon them – a view termed supervenience physicalism (cf. Stoljar, 2005).[9] Though are many views of how this supervenience relation ought to be understood, it provides a means of giving primacy to the physical without adopting the implausible reductionist idea that mental states just are physical states. In any event, for physicalism thus understood to be interesting at all something needs to be said about what 'physical' means (the condition question). Here there are two main kinds of answers (Stoljar, 2005).

(ii) A theory-based conception of physicalism supposes that 'physical' refers to the science of physics and physical theory as generally understood by scientists, such as the theory of atomic structure. In contrast, an object-based conception of physicalism supposes that 'physical' refers to whatever objects in the world are said to be physical, where this is a matter of their having certain types of properties, such as mass and occupying space and time. The first conception seems to have been what Neurath intended in emphasizing what is studied by science, while the second seems to be what Carnap intended with his program of analyzing the structure – the logical syntax – of language as suitable for all types of objects (cf. Stern, 2007: 319-20).[10] Clearly the two conceptions are related, but the latter is arguably more versatile in virtue of its generality and in not tying physicalism to a particular historical state of physical theory. In this sense physicalism is essentially an expression of methodological or scientific naturalism, the general view that science advances through empirical investigation of nature, where nature is understood in particular to be a domain in which the principle of causality invariably applies.

Whichever answer one gives to the condition question, physicalism understood in terms of the supervenience relation and broadly framed in terms of physical objects is a view in which causal relationships in nature are ultimately explanatory of the way the world works. This means, as Davidson puts it, that "an object cannot alter in some mental respect without altering in some physical respect" (Davidson, 1970: 214). Yet is physicalism in this sense true? Philosophers have also raised objections to physicalism, and I briefly summarize two main ones that specifically address the issue of what is 'physical' in order to place the view in a larger perspective.

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[9] The concept of supervenience is often seen as a means of explaining the relationship between different sciences. With respect to economic life, for example, this would imply that all economic facts are determined by and depend on physical facts, but that the economic is nonetheless not reducible to the physical. That is, economics supervenes on physical science.

[10] I turn to Wittgenstein's view of the matter below in section six.

The first concerns the *qualia* concept which refers to the felt quality or subjective character of human experience. The point about *qualia* is that they tell us that there are some things one cannot know without having an experience of them, such as the sensation of color (Jackson, 1986). One of course has an experience in time and space, so supposing this is somehow a part of having an experience, an experience then has physical characteristics. At the same time, as having an experience is a subjective matter, it is not fully explainable in terms of its physical features, at least as these are traditionally understood. Nor does simply saying that the subjective character of an experience supervenes on the physical give us a way of addressing *qualia*, since we are not dealing with two separate realms here, but rather a hybrid type of phenomenon that appears to combine them. At the very least, then, it follows that we cannot clearly say that the domain of the physical is strictly physical if we are to insist that 'physical' must only be understood in terms of such objective measures as mass and occupying space and time. Rather it seems we need an enlarged concept of 'physical' that is indexed by a collection of properties which we might altogether associate with a 'naturalistic' but perhaps not a strictly physical point of view.

A second objection concerns the intentional character of mental states. Mental states are said to be intentional in the sense that they are 'about' something: one believes that …, one feels something, etc. But for much of twentieth century philosophy 'aboutness' has not been regarded as a physical property of the world. One response to this – made famous by Gilbert Ryle – was to interpret mental states not as intentional but as dispositions of a creature to behave in one way or another, on the grounds that the vocabulary of dispositions is conventionally used to describe many physical processes, such as that it is a dispositional property of ice that it will (or 'is disposed to') melt at a certain temperature.[11] Yet for a variety of reasons this characterization of mental states has not been thought very plausible. Interestingly, however, one of Ryle's students, Daniel Dennett, has taken related but different tack on intentionality by embracing it as a natural phenomenon in his intentional stance functionalism view (Dennett, 1987). Much behavior of sentient creatures, he argues, can be described 'as if' it were intentional in the strong sense of that term, whereas their behavior is more accurately described as involving the variety of orientations they take on their worlds that are functional to their existence. This means it is not necessary to ascribe mental states to any sentient creatures, but it nonetheless allows us to use the language of intentionality in an informal way in science. However one appraises this view, we can see what its goal is in that it seeks to naturalize the language of intentionality, and thus that we are entitled to employ a broader idea of the 'physical' than most physicalists originally believed.

Here I do not attempt to assess the merits of either of these recent strategies for re-developing the meaning of physicalism, but instead turn back to Sraffa and the problems he believed by 1931 his early physicalist view had created for his economic thinking. My argument, in fact, is that he saw a need to expand his objectivist point of view along lines that anticipated some of the ways in which philosophers have since explored re-interpreting physicalism.

[11] The classic statement of this view is Ryle's critique of Cartesian dualism in *The Concept of Mind* (Ryle, 1949).

4. The change in Sraffa's philosophical thinking

In this section I first address how Sraffa thought his early objectivism had to be revised, and then relate this thinking to the doctrine of physicalism. Sraffa, we noted, registers his first serious doubts about his early objectivist point of view in his August 1931 'Surplus Product' paper (D3/12/7:161). The turning point in his economic thinking over the winter of 1927-28 (Garegnani, 2005) had been his decision to abandon the Marshallian demand-and-supply framework in favor of the surplus/cost of production approach of the classical economists. The cost of production for him was the physical real cost of production associated with the measurable things used up in production, namely, the quantities of commodities necessary to produce commodities. This was all straightforward when economies did not produce a surplus, but a dilemma emerged, Sraffa argued, when one considered economies that produced a surplus.

> If one attempts to take an entirely objectivist point of view, the very conception of a surplus melts away. For if we take this natural science point of view, we must start by assuming that for every effect there must be a sufficient cause, that the causes are identical with their effects, and that there can be nothing in the effect which was not in the causes; in our case, there can be no product for which there has not been an equivalent cost, and all costs (=expenses) must be necessary to produce it (D3/12/7: 161; quoted in Kurz and Salvadori, 2008: 268).

The surplus, in effect, was not strictly necessitated by physical real costs, because, Sraffa had concluded (Kurz and Salvadori, 2008: 265-7), it depended on capitalists being 'induced' rather than necessitated to not 'decumulate' their circulating capital by consuming luxury goods. This meant that subjectivist factors somehow operated alongside the objectivist 'natural cost' that Sraffa had initially believed fully explained the determination of commodity values in his new simultaneous equation system method. The first leg of the dilemma was thus was that if one retained the principle that 'for every effect there must be a sufficient cause,' the idea of a surplus disappeared.

> *This is the great difficulty: the surplus is the object of the inquiry, but as soon as it is explained, a cause is found for it, and [it] ceases to be a surplus. This sounds as if the object of the inquiry had been defined as 'the unknown', but if the inquiry is successful it becomes known, and the object of the inquiry ceases to exist!* (*Ibid.*).

The second leg of the dilemma was then that if one stood by the idea of a surplus, costs could not be regarded in an exclusively objectivist way as understood in terms of the principle of sufficient reason. Thus Sraffa commented: "Another solution, however lies in criticizing the above application of the principle of sufficient reason" (*Ibid*.). Given his primary commitment to the classical approach and the idea of the surplus, and given his conclusion that the concept of capitalist 'inducements' could not be excluded from his simultaneous equation system method representation of commodity values, this is the route Sraffa elected.

> Thus there must be a leak at one end or the other: the 'closed system' is in communication with the world.
>
> When we have defined our 'economic field', there are still outside causes which operate in it; and its effects go beyond the boundary. This must happen in any concrete case ….
>
> The surplus may be the effect of the outside causes; and the effects of the distribution of the surplus may lie outside (D3/12/7: 161 (3-5); quoted in Kurz and Salvadori, 2008: 268).

That is, while the objectivist principle that 'for every effect there must be a sufficient cause' – or principle of sufficient reason – might be sustained in 'closed system,' the 'economic field' could not be regarded as a 'closed system.' Put differently, an economic surplus approach needed to combine an objectivist point of view with an analysis of those 'outside causes' that arose in the world in which the 'closed system' is in communication.

This view, it seems, allows us to say quite readily what Sraffa's post-1931 position was regarding the first of the two main issues associated with physicalism, which is whether physicalism implies everything including mental states is to be seen as somehow physical (the completeness question). Clearly in what he wrote above Sraffa rejects the reductionist position that mental states are just brain states, since he allows there are subjectivist factors involved in determining the surplus.[12] At the same time, Sraffa does not abandon his objectivism with respect to the 'closed system' that constitutes the 'economic field.' Moreover, in his unchanged emphasis on physical real cost he certainly accords fundamental importance to the physical. Thus it seems fair to say that his view adopts the first part of what is involved in Davidson's supervenience thesis, namely that "mental characteristics are in some sense dependent, or supervenient, on physical characteristics" (Davidson, 1970: 214). But what about the second part of Davidson's definition, namely "that there cannot be two events alike in all physical respects but differing in some mental respect, or that an object cannot alter in some mental respect without altering in some physical respect" (*Ibid*.)? I suggest that if we move forward to Sraffa's later *Production of Commodities* treatment of luxury goods and distinction between basic and non-basic products, we get a clue regarding how he thought about the matter. There the value of luxuries as non-basic goods depends upon the value of basic goods (in that the latter are required in their production), but the value of luxuries does not enter into the value of basic goods, whose value is determined only in terms of basic goods, and thus in terms of physical real cost (Sraffa, 1960, 7-8). The value of luxury goods includes a subjective element, but alteration in their value must be accompanied by alteration in the value of basic goods used up in their production. On this understanding, then, Sraffa's objectivism appears to also imply the second part of Davidson's definition, and thus generally corresponds to what has come to be called supervenience physicalism.

[12] This is also Marion's evaluation of Sraffa's early objectivism: "there is no claim that that the 'subjective' concepts should be reduced to 'objective' ones" (Marion, 2008, 224).

This then invites us to ask what Sraffa's view was regarding the second of the two main issues involved in the interpretation of physicalism, namely, what is meant by 'physical' (the condition question). For the two main kinds of answers that have been proposed (Stoljar, 2005) – a theory-based conception, where 'physical' refers to what physicists generally mean by the term (Neurath's view), and an object-based conception, where 'physical' refers to whatever objects in the world are said to have such properties as mass and occupying space and time (Carnap's view) – a case can be made that Sraffa held an object-based conception, actually both before and after 1931. Though he was quite interested in the science of his time (cf. Kurz and Salvadori, 2008: 260ff), his physical real cost idea is not formulated in terms of the physical theory languages scientists used (such as atomic structure or the periodic table) but more generally in terms of the general idea of physical measurability. Further, Sraffa can be said to share the object-based conception alternative to employing the actual languages of science which Carnap promoted in terms of the goal of developing a structure or a logical syntax for scientific languages. For Sraffa in terms of the 'economic field' this 'logical syntax' was the simultaneous equation method he thought allowed a scientific treatment of commodity values. Thus seen, Sraffa's objectivism is essentially an expression of a scientific naturalism, or the view that science advances through empirical investigation of nature, where nature is understood to be a domain in which the principle of causality is dominant.

Sraffa's post-1931 view can consequently be characterized as supervenience physicalism employing an object-based conception of what is meant by 'physical.' This conception, we saw, leaves unexplained the specific nature of the "outside causes which operate" on and in the 'economic field' which Sraffa associates with the distribution of the surplus. Given his objectivist characterization of the 'economic field' and rejection of subjectivist thinking regarding commodity values, it seems that these "outside causes" need to be somehow explained in subjectivist terms. I turn to this issue in the following section in connection with the two objections to physicalism discussed at the end of section three.

5. Sraffa on subjectivity

The two objections to physicalism discussed in section three concern the phenomenon of *qualia* and the intentional character of mental states. Both lie within the domain of subjectivity, and concern what Sraffa saw as "outside causes" that operate on and within the 'economic field.' Both are immediately related to the dilemma Sraffa identified in his analysis of economies that produce a surplus, since the role which 'inducements' play in capitalists' decisions regarding luxury consumption versus circulating capital re-investment is a matter of both the felt quality or subjective character of human experience involved in their consumption, and of their belief that (the 'aboutness' of intentionality) they can either consumer or re-invest. The issue, then, is how are these subjective phenomena to be explained relative the physical realm?

One physicalist strategy is to sharply differentiate the domains in which the physical and the subjective operate. Once this is done, however, there is little basis for explaining how they might be related, and

the logic of the situation is to abandon or reduce one domain to the other.[13] This does not appear to be Sraffa's strategy. In section three, I thus sketched a strategy which weakens the distinction between the physical and the subjective, in this case by treating both *qualia* and intentional states as subjective phenomena that are in some fashion also physical. Note that this strategy involves modifying what gets counted as 'physical' since if that concept is understood only in terms of mass and space and time, it is unlikely to accommodate more physicalist interpretations of *qualia* and intentional states. Here I do not seek to review the philosophical merits of this strategy, but rather ask what Sraffa's economic – and political – analysis implies regarding an objectivist interpretation of subjective phenomena.

First, then, consider the significance Sraffa's later distinction between basic and non-basic commodities has for the *qualia* aspect of capitalist consumption. The value of non-basic luxury commodities depends upon the basic commodities used up in their production. As their value influences their subjective appeal or in terms of *qualia* their felt quality, the latter ought not to be thought of as purely subjective but as having a basis in physical real costs. Compare to this a thoroughly subjectivist view of value that was implied by the early phenomenalist tenets of the logical positivist Vienna Circle. On that view, experience is delivered in the form of privately apprehended 'sense impressions' or 'sense-data,' and this alone determines the subjective value that individuals place on objects of consumption. By contrast, then, Sraffa's approach employs what was termed above the semantic thesis, the physicalist idea that scientific explanations need to be formulated in physical terms, though not necessarily in a reductionist manner. At the same time, his analysis of economies with a surplus combines the 'economic field' with the "outside causes which operate *in* it" (D3/12/7: 161 (3-5); quoted in Kurz and Salvadori, 2008: 268; emphasis added). Thus the subjective phenomenon of capitalist consumption operates in and influences the nature of the physical world, so that it is not possible to define the 'physical' strictly in terms of the traditional categories of mass and space and time. In this regard Sraffa can be said to have maintained a scientific naturalism, but did so in a broad way that aligned social distributional factors alongside physical real cost ones.

Second, consider how physicalists might address the nature of beliefs as intentional. If they are to be thought of as subjective phenomena susceptible to physical explanation, then their basis ought to reside in material circumstances. Sraffa, unfortunately, did not make the nature of beliefs part of his systematic thinking in the period of his constructive work. This is not to say he did not have strong views about how beliefs were constituted, since his convictions regarding the politics of class struggle in his time tells us he did. Indeed it seems clear that his interaction with Antonio Gramsci would have led him to a number of quite specific views regarding the social economic determinates of belief (cf. Naldi, 2000). Thus further investigation of this interaction might well make it possible to say something about Sraffa's view on this issue. However, as this paper's focus is upon how Sraffa developed an objectivism/physicalism philosophical position in connection with his effort to explain surplus economies, I leave this investigation to others more knowledgeable about Sraffa's interaction with Gramsci. Suffice it to say that all else in Sraffa's philosophical thinking points toward a physicalist view

[13] Such as in Ryle's attempt to treat mental states as dispositions to behave.

of the nature of beliefs as intentional, though just how he might be said to have understood such an idea remains to be explained. I turn, then, to the interaction between Sraffa and Wittgenstein.

6. Sraffa and Wittgenstein

Much of the past scholarship on the relationship between Sraffa and Wittgenstein has focused on Wittgenstein's very positive acknowledgement of Sraffa's influence on the development of his ideas in the *Philosophical Investigations* (Wittgenstein, 1953, viii; also cf. McGuiness, 2008).[14] Its premise is that Wittgenstein was still attached to the arguments of his earlier *Tractatus* when he met Sraffa in Cambridge in 1929, and that Sraffa was instrumental in disabusing him of the key ideas advanced there and moving him in the direction of his later views. The difficulty with this argument is that there is little direct evidence for it. Neither Wittgenstein nor Sraffa ever say in their known writings what exactly the latter's influence was, and this allows for multiple interpretations of what it might have been. However, the recent availability of evidence in Sraffa's unpublished writings regarding his attachment to objectivism/physicalism, combined with evidence that has been available for a number of years in Wittgenstein's correspondence regarding his own attachment to physicalism, now demonstrate that this general story of Sraffa's influence and the premise it assumes cannot be sustained.[15]

The turning point in this revised history is Carnap's 1932 physicalism manifesto (Carnap, 1932). Though Neurath had first used and coined the term (which Carnap acknowledged), Carnap developed its philosophical meaning in connection with his elaboration of the idea of a logical syntax (or metalogic) for scientific explanations. The idea of a logical syntax (or a logical grammar), in fact, had been extensively used in Wittgenstein's *Tractatus*, and Carnap sent Wittgenstein an offprint of the 1932 paper shortly after its appearance. Wittgenstein's reaction, however, was outrage that in his view Carnap had borrowed his ideas without acknowledgement, and he immediately wrote to Moritz Schlick that Carnap had drawn so extensively on his own unpublished work that when he eventually published it, readers were likely to believe he had instead plagiarized Carnap (letter from Wittgenstein to Schlick, May 6, 1932; translation from Hintikka 1996, 131).[16] Schlick then wrote to Carnap suggesting he ought to

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[14] For contributions to this past scholarship, see Malcolm (1958), Fann (1969), Roncaglia (1978), Davis (1988), Monk (1990), Sen (2003), and Marion (2008).

[15] The following paragraph is based on Stern (2007, 320ff), which also discusses the history and literature on the so-called Wittgenstein-Carnap priority dispute.

[16] Wittgenstein wrote to Schlick that Carnap had stolen apples from 'Wittgenstein's tree' – a metaphor that recalls the one attributed to him in regard to Sraffa that the latter had made him feel as a tree with all its branches cut off (Malcolm, 1958, 15). Because the importance of the idea of a logical syntax in Wittgenstein's *Tractatus*, there is some debate among historians of philosophy regarding the extent to which physicalism underlies the *Tractatus*, Wittgenstein never used the term 'physicalism' anywhere in his writings, but this view is now ascribed to him by a number of scholars (Stern, 2007: 326ff; also see McGuiness, 1991 and Uebel, 1995)

acknowledge Wittgenstein, and set out a list of relevant points on which the two shared understanding. Though there is room for interpretation regarding what Wittgenstein believed had been 'plagiarized' from his views, the upshot seems to be that Wittgenstein believed that physicalism, as it had come to be called following Neurath the previous year, was already effectively in the *Tractatus*, so that Carnap's explicit defense of physicalism was tantamount to plagiarism of Wittgenstein's views.

Consider, in any event, what this all means for interpreting the Sraffa-Wittgenstein connection. First, if Wittgenstein in his own view was already a 'physicalist' in the *Tractatus*, and Sraffa adopted such a position in the process of giving up his Marshallian approach only after 1926, then their interaction from 1929 (when Wittgenstein returned to Cambridge) to 1931 (when Wittgenstein complained to Schlick and Sraffa wrote his 'Surplus Product' paper) would have been a period when they were largely in agreement rather than in disagreement.[17] Thus either it is unclear how or not the case that Sraffa was responsible for re-directing Wittgenstein's thinking. Second, though in 1931 each had reason to re-think their views, the ways in which they did so did not imply disagreement. Wittgenstein was driven by Carnap's paper to make his commitment to physicalism more explicit, and Sraffa revised his view of objectivism's scope and meaning. Of course it is difficult to compare these two sets of developments, framed as they were by issues in their two respective disciplines as well as by interactions each had with others that were not shared. Nonetheless, the overall conclusion seems to be that Sraffa and Wittgenstein were generally in philosophical agreement from the time they first knew each other, and accordingly that each more likely influenced the other than simply that one influenced the other as they worked out their respective ideas. Arguably, then, the more interesting issue regarding their interaction is how their apparent common ground, appraised differently by each, played into their subsequent respective pathways. This is the subject of a much lengthier discussion than be given here, but in the closing section I attempt in a very provisional way to outline one way in which this common ground might be explained that could have central importance in the thinking of each.

7. Sraffa and Wittgenstein's later views

The challenge facing any examination of Sraffa's post-1931 philosophy concerns how he modified his early objectivism. Again the problem is the paucity of written evidence. However, one way to proceed – albeit with many caveats – would be to begin with the judgment Sraffa makes in his 'Surplus Product' paper about how the 'economic field' is influenced by the "outside causes which operate *in* it" (D3/12/7: 161 (3-5); quoted in Kurz and Salvadori, 2008: 268; emphasis added), and attempt to relate this idea as it may be found in *Production of Commodities* to comparable ideas in Wittgenstein's later thinking, on the

[17] Marion further develops how this agreement might be understood in terms of critiques each had of subjectivism, particularly as targeted Ernst Mach (Marion, 2008, 228ff).

grounds that they seem to have shared a similar overall view after 1931. I sketch such an argument here as one strategy for investigating Sraffa's mature philosophical views.[18]

Sraffa's judgment can be better understood by contrasting it with what he does not say. He does not say that the 'economic field' is simply affected *tout court* by "outside causes" impinging *upon* it, but rather says that these "outside causes" work *within* the 'economic field' in a such a way as to modify its functioning. His case is that of economies that produce a surplus where distribution, which is not determined objectively as are the values of commodities in terms of physical real cost, nonetheless comes to play a role in the determination of commodity values. In effect, in his later thinking Sraffa regards the 'economic field' as what can be described as only a relatively autonomous domain in that its own functioning is changed by those outside forces associated with distributional changes that operate within it. Indeed, the 'economic field' would only be fully autonomous in economies that do not produce a surplus in that their functioning would be fully determined in terms of objective physical real costs. But such economies were not Sraffa's chief concern. Critics might argue of course that the idea that 'economic field' was only 'relatively autonomous' could only be conjectured and that there was no evident reason to attribute it this character.[19] But Sraffa anticipated this criticism in *Production of Commodities* where he demonstrated that the 'economic field' indeed has this relatively autonomous character within his equation system from the perspective of the standard system and standard commodity device.[20] From this perspective, Sraffa's modified post-1931 objectivism is a subtle one in that it both preserves a physical basis for the world of production and at the same time shows it to be influenced by a social activity that operates upon and within it.

Consider, then, Wittgenstein's later thinking. I draw on one well known theme in the interpretation of his work to develop a view parallel to Sraffa's modified objectivism/physicalism (and to offer a further perspective on Wittgenstein's physicalism as well). It has be argued that one thing central to Wittgenstein's later thinking is his critique of the idea of a private language via his account of rule-following in language games (Hintikka and Hintikka, 1986, 243).[21] Wittgenstein's argument can be

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[18] This strategy is similar to Marion's argument in terms of the use of parallels. His position is that "the mathematics used in *Production of Commodities* and Sraffa's 'algorithmic' thinking are in conformity with Wittgenstein's constructivist stance on the foundations of mathematics" (Marion, 2008, 230ff). My focus is different in that it is not focused on what Sraffa's mathematics tells us about his philosophy.

[19] Such a position would be appropriate to a Marshallian supply-and-demand sort of view that rejects surplus analysis and the physical real cost basis Sraffa believed it depended upon.

[20] His belief that the 'economic field' is relatively autonomous derived from his unchanged pre-1931 philosophical conviction that objectivism/physicalism is true, that is, that physical real cost underlies value. Thus upon setting out the standard system he felt entitled to say: "The Standard system is a purely auxiliary construction" (Sraffa, 1960, 31).

[21] Hintikka and Hintikka (1986, 138) argues that the signal change in Wittgenstein's thinking was one he made in 1929 from a phenomenological to a physicalistic language. Their timing of this change is inconsistent with Wittgenstein's own claim that 'physicalism' was already in the *Tractatus*.

understood as saying that all languages are rule-governed, and that since rule-following is a public activity, language meaning must be determined in public settings in the various different language-games in which we use it. A private language, however, were it conceivable, would seem to be one that is fully autonomous. I suggest, then, that parallel to Sraffa's view above, language games were conceived of as relatively autonomous by Wittgenstein, just as were types of commodity production by Sraffa. The one involves determining meaning and the other involves determining value (two different sorts of production), and the rule-governed character of the former, understood by Wittgenstein in terms of an ordinary physicalistic object language, is comparable to the quantitative determination of the latter, understood objectively by Sraffa in terms of physical real cost. At the same time, just as for Sraffa commodity value determination depends on distributional factors that operate within the 'economic field,' so also for Wittgenstein rule-following depends on social practices that are not part of language-games but nonetheless operate within them. There seems to be a parallel, then, between the later Wittgenstein and the later Sraffa as concerns their shared understanding of the idea of the relative autonomy of natural/physical systems that are nonetheless influenced by the human world. Put differently, they seem to share a conception of just how the natural and social worlds ought to be seen as connected which treats the former naturalistically and the latter historically.

There is more that could be explored in terms what this common ground may involve,[22] but I close with a general assessment of what the paper has concluded. First, if the here view is correct, then Sraffa and Wittgenstein followed related but disciplinarily independent pathways from the late 1920s to the end of their lives. They may not have reasoned on the same subjects, but their philosophical intuitions were shared. One of the main results of this was their ability to sustain a systematic scientific naturalism within the social domain by explaining the openness of closed systems. This made it possible for them to isolate and distinguish the open character of the larger social space, as much as it allowed them to account for the more highly determined natural world in which physical categories applied. For Sraffa this larger open social space was the realm of politics and class struggle; for Wittgenstein this was the continual construction of meaning in human activity. Second, Sraffa, who is the main subject of this paper, it may now be argued, was a much more complete philosophical thinker than it has been possible to claim heretofore and prior to the availability of his unpublished writings. He had an abiding set of philosophical commitments from the time of his constructive research program, he appears to have successfully dealt with a key problem he identified in that view in such a way as to advance more secure grounds for his mature economic analysis, and his philosophical and economic thinking turn out to have been more closely intertwined than previously believed. We may finally add that his later modified objectivism is fairly sophisticated conception that is consistent with an important philosophical position widely held today central to understanding the nature and role of modern science – supervenience physicalism – and in that sense his thinking reflects a main philosophical strategy for reconciling science and the human world. The goal of this paper was to set out in broad outline what the view involves,

[22] Thus, for example, one might investigate whether the concept of a fully autonomous structure – economies without a surplus and private languages – constitutes a type of concept experiment designed to exhibit the more complex character of relatively autonomous structures.

place it in historical context, and thereby help make an understanding of Sraffa's philosophical thinking a more important part of understanding his overall approach.

References

Carnap, Rudolf (1932) "Die Physikalische Sprache als Universalsprache der Wissenschaft," *Erkenntnis*, 2 (5/6): 432-465; translated as Carnap 1934.

Carnap, Rudolf (1934) *The Unity of Science*, M. Black, ed. and trans., London: Routledge & Kegan Paul, Trench, Truber. Reprinted as Carnap 1963.

Carnap, Rudolf (1963) "The Physical Language as the Universal Language of Science," in *Readings in twentieth-century philosophy*, W. Alston and G. Nakhnikian, eds., New York: Free Press: 393-424.

Churchland, Paul and Patricia Churchland (1998) *On the Contrary: Critical Essays 1987-1997,* Cambridge, MA: The MIT Press.

Davidson, Donald (1970) "Mental Events," in *Essays on Actions and Events*, Oxford: Oxford University Press: 207-223.

Davis, John (1988) "Sraffa, Wittgenstein and neoclassical economics," *Cambridge Journal of Economics* 12 (1): 29-36.

Dennett, Daniel (1987) *The Intentional Stance*, Cambridge, MA: MIT Press.

Fann, K.T. (1969) *Wittgenstein's Conception of Philosophy*, Los Angeles: University of California Press.

Garegnani, Pierangelo (2005) "On a turning point in Sraffa's theoretical and interpretive position in the late 1920s," *European Journal of the History of Economic Thought*, 12 (3): 453-492; reprinted in Kurz, L. Pasinetti, and Salvadori, eds., *Piero Sraffa: The Man and the Scholar*, London: Routledge, 2008: 79-118.

Hintikka, Jaakko (1996) "Ludwig's Apple Tree: Evidence Concerning the Philosophical Relations between Wittgenstein and the Vienna Circle," in *Ludwig Wittgenstein: Half-Truths and One-and-a-Half Truths (Selected Papers, Volume 1)*, Dordrecht: Kluwer.

Hintikka, Merrill and Jaakko Hintikka (1986) *Investigating Wittgenstein*, Oxford: Blackwell.

Jackson, Frank (1986) "What Mary Didn't Know," *Journal of Philosophy*, 83: 291-5.

Kurz, Heinz (1998) "Against the Current: Sraffa's unpublished manuscripts and the history of economic thought," *The European Journal of the History of Economic Thought*, 5: 437-451; reprinted in H. Kurz and N. Salvadori, eds., *The Legacy of Piero Sraffa*, Cheltenham: Edward Elgar Publishing, 2003.

Kurz, Heinz (2003) “The Surplus Interpretation of Classical Economics,” in *The Blackwell Companion to the History of Economic Thought*, W. Samuels, J. Biddle, and J. Davis, eds., Oxford: Blackwell: 167-183.

Kurz, Heinz and Neri Salvadori (2004) “Man from the moon: on Sraffa’s objectivism,” *Économies et Sociétés*, 35: 1545-1557.

Kurz, Heinz and Neri Salvadori (2005) “Representing the production and circulation of commodities: On Sraffa’s objectivism,” *Review of Political Economy*, 17 (3): 414-441; reprinted in Kurz, L. Pasinetti, and Salvadori, eds., *Piero Sraffa: The Man and the Scholar*, London: Routledge, 2008: 249-277.

Malcolm, Norman (1958) *Ludwig Wittgenstein, A Memoir*, London: Oxford.

Marion, Mathieu (2005) “Sraffa and Wittgenstein: Physicalism and Constructivism,” *Review of Political Economy*, 17 (3): 381-406; reprinted in Kurz, L. Pasinetti, and Salvadori, eds., *Piero Sraffa: The Man and the Scholar*, London: Routledge, 2008: 217-242.

McGuiness, Brian (1991) “Wittgensteins Beziehungen zum Wiener Kreis,” in *Jour Fixe der Venunft. Der Wiener Kreis und die Folgen*, W. Hochkeppel, ed., Vienna: Holder-Pichler-Tempsky: 108-26; trans. as “Relations with and within the Vienna Circle,” in McGuiness 2002: 184-200.

McGuiness, Brian (2002) *Approaches to Wittgenstein: Collected Papers*, London: Routledge.

McGuiness, Brian, ed. (2008) *Wittgenstein in Cambridge. Letters and Documents 1911-1951*, Oxford: Blackwell.

Monk, Ray (1990) *Ludwig Wittgenstein. The Duty of Genius*, London: Jonathan Cape.

Naldi, Nerio (2000) “The friendship between Piero Sraffa and Antonio Gramsci in the years 1919-1927,” *The European Journal for the History of Economic Thought*, 7 (1): 79-114.

Neurath, Otto (1931a) “Physicalism: The Philosophy of the Vienna Circle,” *The Monist*, 41: 618-623; reprinted with minor corrections in Neurath 1982: 48-51.

Neurath, Otto (1931b) “Physikalismus,” *Scientia*, 50: 297-303; translated in Neurath 1982: 52-57.

Neurath, Otto (1931c) “Soziologie im Physikalismus,” *Erkenntnis*, 3: 393-431; translated in Neurath 1982: 58-90.

Roncaglia, Alessandro (1978) *Sraffa and the Theory of Prices*, New York: Wiley.

Ryle, Gilbert (1949) *The Concept of Mind*, London: Hutchinson’s University Library.

Sen, Amartya (2003) “Sraffa, Wittgenstein, and Gramsci,” *Journal of Economic Literature*, 41: 1240-1255.

Smith, Jon (1998) “An archivist’s apology: the papers of Piero Sraffa at Trinity College, Cambridge,” *Il Pensiero Economico Italiano*, 6: 39-54; reprinted in H. Kurz and N. Salvadori, eds., *The Legacy of Piero Sraffa*, Cheltenham: Edward Elgar Publishing, 2003.

Sraffa, Piero (1951) “Introduction,” in P. Sraffa, ed., with the collaboration of M. Dobb, *The Works and Correspondence of David Ricardo*, Volume I, *On the Principles of Political Economy and Taxation*, published for the Royal Economic Society, Cambridge: Cambridge University Press: xiii-lxii.

Sraffa, Piero (1960) *Production of Commodities by Means of Commodities: Prelude to a Critique of Economic Theory*, Cambridge: Cambridge University Press.

Stern, David (2007) “Wittgenstein, the Vienna Circle, and Physicalism: A Reassessment,” in *The Cambridge Companion to Logical* Empiricism, A. Richardson and T. Uebel, eds., Cambridge: Cambridge University Press: 305-331.

Stoljar, Daniel (2005) “Physicalism,” *The Stanford Encyclopedia of Philosophy*, ed. E. Zalta, http://plato.stanford.edu/; accessed 13 April 2010.

Uebel, Thomas (1995) “Physicalism in Wittgenstein and the Vienna Circle,” in *Physics, philosophy, and the scientific community*, K. Gavroglu *et al*., eds., Dordrecht: Kluwer.

Wittgenstein, Ludwig (1953) *Philosophical Investigations*, Oxford: Blackwell.