Physical Science and Common-sense Psychology

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1 Introduction

Scott Sehon argues for a complex view about the relation between common-sense psychology and the physical sciences.[1] He rejects any sort of Cartesian dualism and believes that the common-sense psychological facts *supervene* on the physical facts. Nevertheless he asserts that there is an important respect in which common-sense psychology is *independent* of the physical sciences. Despite supervenience, we are not to expect any sort of *reduction* of common-sense psychology to physical science, nor are we to expect the physical sciences to *conflict* with common-sense psychology.

He argues that physical science and common-sense psychology are different kinds of enterprise. In particular, where physical science is nonnormative, objective, and causal, common-sense psychology is normative, interpretive, and teleological. Common-sense psychology explains what people do in terms of their *goals* rather than by what *causes* them to act as they do. Assignment of goals and beliefs is an *interpretive* matter. It is also *normative* in at least two respects. First, goals and beliefs are assigned at least in part by considering what people normatively ought to believe and how they ought normatively to act, given their situations. Second, and correlatively, attributing certain goals and beliefs to people has implications for what they ought to believe and how they ought to act.

In these comments, I begin by asking what are included in the physical sciences and in particular whether scientific psychology is included. I then mention ways in which biology and scientific psychology are normative, ways in which scientific psychology challenges aspects of common-sense psychology, and how contemporary scientific psychology treats goals. I say something about Sehon's discussion of supervenience and reduction and then make a few remarks about objectivity and interpretation. Inevitably, I will

[1] *Teleological Realism.* Cambridge, MA: MIT Press, 2005

mainly concentrate on issues that particularly interest me and there is much of value in Sehon's book that I am not able to discuss.

2 The Physical Sciences

Sehon's discussion suggests two different ways of distinguishing the physical sciences from other subjects. The first way simply provides a list of the physical sciences, which are then distinguished from whatever is not listed. The second way defines the physical sciences as nonnormative objective disciplines that make use of causal explanations and that do not appeal to teleological explanations in terms of goals, particularly distinguishing the physical sciences from disciplines that are normative and interpretive, that do not appeal to causal explanations, and that do appeal to teleological explanations in terms of goals. Ideally, these two ways of distinguishing the physical sciences from common-sense psychology would amount to the same thing. But they don't!

Proceeding in the first way, how might we enumerate the physical sciences? Consider this early passage from Sehon's book:

> When we think of human beings as physical objects, we use the language of physical science, and we give causal accounts ... If we want to know why a certain medicine reduces inflammation, our explanation will be couched in terms of chemical properties of the medicine and the human organism. If we want to know how a given subject will react to a particular stimulus, we would have to look deep into the neurological properties of the brain ... Both CSP [common-sense psychology] and physical science have the aim of understanding, and predicting human behavior. However, talk of mind and agency does not seem to mesh well with the language of physical science ... (3-4).

These mentions of chemical and neurological properties suggests that chemistry and neuroscience count as physical sciences. Later he writes of "paradigmatic sciences (e.g. physics, chemistry, and biology)" (57).

What about scientific psychology? That would seem to be a science with "the aim of understanding, and predicting human behavior." At my home institution, Princeton University, where Sehon received his PHD, scientific psychology is counted as one of the *natural* sciences, along with astronomy, biology, chemistry, and physics. These are distinguished from the *social* sciences, namely, anthropology, economics, history, politics, and sociology. To

be sure, psychology includes social psychology as an extremely important part. But psychology, especially including social psychology, is definitely an *experimental* rather than an *interpretive* science, unlike mainstream anthropology, for example, which, according to the home page of Princeton University Department of Anthropology, "takes an interpretive approach to the comparative study of contemporary cultures, their interactions, and their uses of the past." Sehon attributes an interpretive approach of this sort to common-sense psychology (Chapter 9). So there is some reason to suppose that psychology, but not anthropology, is appropriately grouped with the *physical* sciences.

On the other hand, as I will explain, scientific psychological research often has normative aspects and often challenges assumptions of common-sense psychology. According to Sehon, the physical sciences do not have normative aspects and cannot challenge assumptions of common-sense psychology. These points may seem to be provide reasons not to group scientific psychology with the physical sciences.

But biology, which counts as a physical science for Sehon, appears to have various normative aspects in relation to health and well-being, which are good, and diseases, which are bad. Furthermore, biological classifications are sometimes based on normative considerations. For example, organs appear to be properly defined in terms of function, which has normative implications. What makes something a heart is that its function is to pump blood. Its physical makeup is not essential to it, so there can be artificial hearts. A *good* heart is one that functions well at pumping blood. Otherwise it is a *bad* heart and something is *wrong* with it. Similarly for other organs.

Biological and medical studies provide recommendations of ways to avoid certain illnesses as well as ways to improve one's life, what vitamins to take, exercises to engage in, and so forth. Similarly, scientific psychology includes the study of causes of mental illnesses like epilepsy, schizophrenia, as well as the study of ways of leading a happier more worthwhile life in "positive psychology".[2] In these ways scientific psychology resembles biology.

Scientific psychology has other normative implications. For example, there is a large subfield arising out of work by Daniel Kahneman and Amos Tversky on "heuristics and biases" that affect the way people reason.[3] People treat an issue differently depending on whether it is framed in terms of

[2]Haidt, Jonathan (2005). *The Happiness Hypothesis*. New York: Basic Books; Snyder, C.R.R., Lopez, S.J., *Handbook of Positive Psychology*, New York: Oxford University Press (2005).

[3]Kahneman, D., Tversky, A., and Slovic, P., *Judgment under Uncertainty: Heuristics Biases*. Cambridge, England: Cambridge University Press.

losses or gains. People can make elementary errors about probability by, for example, treating a conjunction $A\&B$ as more probable than one of its conjuncts A.

Psychologists have demonstrated that people are subject to a *confirmation bias*.[4] In considering whether a suggested hypothesis is true, people tend to look for and credit only confirming evidence and tend not to look for or credit disconfirming evidence. This can be a defect in ordinary reasoning.

Psychologists have also shown that people unreasonably credit more *vivid* considerations over less vivid but more important statistical considerations. The distorting influence of vividness explains for example why people trust interviews as predictors of job or school performance, despite overwhelming evidence that the information provided by interviews is even more "noisy" than other information one typically has about candidates. Adding an interview to the decision process adds vivid noise to the process. Since people credit vivid information more than less vivid but more important other facts, decisions made on the basis of interviews and other considerations tend to be less reliable than decisions made simply on the basis of the other considerations.[5]

Bishop and Trout's important book *Epistemology and the Psychology of Human Judgment*[6] provides additional discussion with normative advice about reasoning based on work in psychology.

Psychological studies of common-sense reasoning can have normative implications by indicating ways in which people reason *badly* and by suggesting ways of improving reasoning. In this respect, contemporary psychology has a normative aspect.

3 Challenges to Common-sense Psychology

Contemporary psychology raises a number of other serious challenges to common-sense psychology. One has to do with the way in which common-sense psychology appeals to *character traits*. Empirical research in social psychology appears to show (a) that common-sense psychology tends to understand the behavior of others as reflecting broad robust character traits and (b) that people tend not to have such character traits.[7]

[4] Wason, P.C. "On the Failure to Eliminate Hypotheses in a Conceptual Task." *Quarterly Journal of Experimental Psychology* 12 (1960): 129-140.

[5] Nisbett, R. and Ross, L., *Human Inference: Strategies and Shortcomings of Social Judgment*. Englewood Cliffs, NJ: Prentice-Hall (1980).

[6] Oxford: Oxford University Press (2004).

[7] Doris, J. *Lack of Character* (Cambridge, England: Cambridge University Press, 2002).

Another challenge is to the assumption of common-sense psychology that people know why they believe as they do, why they act as they do, or even what they are feeling. Psychological studies show that people will often say they believe things for certain reasons without being disposed to abandon their beliefs if those reasons are discredited. Psychological studies have shown that many people are often inclined in the supermarket to choose the item on the right and would have chosen a different item if it had been on the right. But people are not aware they are doing this. They do not cite the fact that the item was on the right as their reason for choosing it and they deny that they chose that item because it was on the right. Similarly, common-sense psychology assumes that people can tell directly what emotions they are feeling, but psychological studies show that their beliefs about their emotions can be based on inferences about physiological changes they are undergoing. In various ways people's supposed insights into their psychological states are often merely rationalizations. People are good at making up explanations of almost anything.[8]

People can be subtly "primed" to act in various ways without their realizing that they are. Aspects of a situation can trigger automatic reactions. This is of course related to the discussion of situation versus character. Other people's actions are sensitive to subtle aspects of situations in ways that observers often do not appreciate.

4 Goals

I now want to say something about psychological research into goals. Sehon says that common-sense psychology is concerned with goals rather than causes, whereas physical science is concerned with causes rather than goals. But there is considerable psychological research showing that these goals can be triggered by features in the situation, leading agents to act in various ways that they have not consciously decided to act. Famously, someone who goes upstairs to get something while thinking of something else may end up getting undressed and going to bed. Someone driving to relatives on the weekend may end up at work or school. In these cases, it is as if the agent has certain routines or programs that take over if the agent isn't paying much attention.

[8] Nisbett, R., & Wilson, T., "Telling more than we can know: Verbal reports on mental processes." *Psychological Review*, 84 (1977) 231-259. Haidt, J., "The Emotional Dog and Its Rational Tail: A Social Intuitionist Approach to Moral Judgment." *Psychological Review*, 108 (2001) 814-834.

Learning to type or play the piano involves learning routines or programs that one does not then have to pay attention to. In the midst of one of these routines, certain goals are operative, one lifts one's finger in such and such a way in order to be able to type a "t" after typing an "i". But one has no conscious intention or desire corresponding to that goal. The goal is causally operative. Sehon argues that goals are not causes, but psychologists disagree.

Let me quote from the abstract of a recent talk by the psychologist, John Bargh, "The selfish goal".

> Richard Dawkins in "The Selfish Gene" (1976) famously argued that the gene, and not the individual, was the unit of natural selection. In brief, genes 'care' about their own propagation, not the welfare of their host organism (except as it impacts on their propagation). As evolutionary biologists have pointed out, goals and motives are the local agents in the present of genetic influences from the distant past. We argue therefore, and with some new evidence, that in human psychology, goals are to the 'self' as genes are to their host organism. Goals, even those consciously and intentionally pursued, are autonomous in their operation and, when active, can be shown to produce outcomes that are not intended or desired by the 'self' – that is, the person whose goals they are.

In discussing evolution, Sehon observes that the "goals" of "the selfish gene" are not goals of the agent whose actions are influenced by the agent's genes. But the goals that Bargh and colleagues investigate are goals of agents, even though the agents are not conscious of them.

I have been considering the claim that physical science is independent of common-sense psychology because common-sense psychology is normative, interpretive, and concerned with goals, whereas physical science is nonnormative, noninterpretive, and concerned with causes and rather than goals. So far I have been considering physical science to be a scientific discipline including physics, chemistry, biology, and neuroscience. I have raised the question whether scientific psychology should be included as one of the physical sciences. I noted that aspects of biology are concerned with function and so with teleology and norms; scientific psychology too. If this is a reason to say scientific psychology is not a physical science it is also a reason to say biology is not either.

I noted that if natural sciences are distinguished from social sciences, scientific psychology might be included in the former group—the natural

sciences (as at Princeton). In addition scientific psychology is an experimental science rather than an interpretive science like anthropology.

Scientific psychology is concerned in part with causes and with goals. It is concerned with the causes of people having goals and with the effects of people having those goals (whether or not they have corresponding wants or desires). Results in psychology can and do conflict with aspects of common-sense psychology. This raises issues for common-sense psychology, quite apart from the question whether psychology counts as a physical science in one or another sense.

5 Reduction

I now want to turn to another issue Sehon discusses, namely, whether common-sense psychology is *reducible* to physical science.

My first thoughts about this issue are these. If reduction implies that there there is no conflict, it follows that, if there is a conflict, there is no reduction. This means that, if psychology is part of physical science and psychology conflicts with common-sense psychology, as I have suggested it does, then there can be no reduction of the relevant sort.

In any event, there can be no complete reduction of common-sense psychology to scientific psychology.

I have been so far treating physical science and common-sense psychology as practices, activities, or enterprises that people engage in, involving reasoning, making predictions, possibly doing experiments, explaining and otherwise trying to understand events. Here I am following Sehon, who says, for example,

> What I have been calling common-sense psychology comprises a great variety of practices: attributing mental states in an effort to explain and predict behavior, justifying actions by reference to the way we believe or desire the world to be, attributing mental states in the course of allocating moral praise or blame, and so on (56-57).

And he goes on to say that one question he is interested in is whether we should take common-sense psychology "to be doing the same sort of thing as science" (57). This suggests that physical science and common-sense psychology *do* things.

On the other hand, we might instead try to identify physical science and common-sense psychology with sentences, principles, theories, beliefs,

propositions, or facts, which presumably do not *do* anything. This fits with the continuation of the passage from Sehon I just quoted.

> Alongside these ordinary activities, we have a body of mostly tacit general beliefs about the relationship between mental states and behavior.

Indeed, when Sehon asks about the *logical relations* between physical science and common-sense psychology, he has to be talking about sentences, principles, theories, beliefs, or propositions.

How are we to identify the relevant beliefs or propositions? One worry is that the relevant beliefs associated with physical science turn out to be inconsistent, and similarly for the relevant beliefs associated with common-sense psychology. This is no idle worry, since the heuristics and biases research shows that common-sense psychology involves numerous inconsistencies. And various parts of physical science do not always fit perfectly together. So, idealization is needed if there is to be any interesting issue about the logical relations between physical science and common-sense psychology. But it is unclear what the appropriate idealizations might be.

One idea is to consider the relation between the sum P of all the general and particular physical *facts* and the sum M of all the general and particular common-sense psychological facts. This is of course to assume that there are such facts P and M, so it is to assume that P and M are compatible (since all facts, like all true propositions, are compatible with each other). Is this to assume that physical science and common-sense psychology are true and therefore compatible? That assumption is problematic given the results in scientific psychology, mentioned above, that conflict with common-sense psychology.

Suppose M is the sum of all the *mental* facts about human beings, whether recognized, denied, or not even considered in common-sense psychology. Sehon believes that these facts M *supervene* on P, the sum of all the physical facts. In particular, he believes that in any possible world in which the mental facts about human beings in that world differ from M, the physical facts in that world must differ from P (116).

However, he argues that this supervenience claim does not imply that the mental facts M are *reducible* to the physical facts P and, furthermore, such reduction fails, because the mental facts include facts about goals that cannot be reduced to facts about causality.

A necessary condition of reduction for Sehon is this:

> The M facts reduce to the P facts only if there is some statement

> B such that from the conjunction of the B and the P facts, one can deduce the M facts.

By "one can deduce" he means that there is a proof of some sort. I take it that the premises, intermediate steps, and conclusion of such a proof would have to be statements rather than facts. So I understand him to mean something like the following:

> The M facts reduce to the P facts only if there is some statement B such that from the conjunction of the B and *a statement of* the P facts, there is a derivation of *statements of each of* the M facts.

His argument that supervenience does not always imply reduction turns on the fact that at most denumerably many conclusions can be derived from a finite set of premises, whereas there might be nondenumerably many facts to be reduced.

However, by this criterion of reduction it follows immediately that the physical facts cannot be reduced to themselves if there are nondenumerably many physical facts, which there are if mathematical facts are counted as physical facts. So, something is wrong with this criterion of reduction.

6 Objectivity and Interpretation

I want to end by saying a tiny bit about the idea that common-sense psychology involves interpretation in the way that objective physical science does not. This idea echoes the difference, stressed by Dilthey and more recently by Thomas Nagel, between two kinds of understanding, objective and subjective.[9] Objective understanding is characteristic of the natural sciences, including experimental psychology. Subjective understanding does not play a role in the natural sciences but does figure in ordinary common-sense psychological interpretation and in what Dilthey calls the "Geisteswissenschaften," sciences of the mind broadly understood to include parts of sociology, economics, political theory, anthropology, literary criticism, and history.

The physical sciences approach things objectively, describing what objects are made of, how they work, and what their functions are. These

[9] Dilthey, W. (1989). *Introduction to the Human Sciences* (R. Makkreel & F. Rodi, Eds.). Princeton, NJ: Princeton University Press. (Original work published 1883). Nagel, T. (1974). "What Is It Like to be a Bat?" *Philosophical Review*, 83, 435-450.

sciences aim to discover laws and other regularities involving things and their parts, in this way achieving an understanding of phenomena "from the outside." The social and psychological sciences are concerned in part with such objective understanding, but admit also of a different sort of subjective understanding "from the inside." Such phenomena can have content or meaning of a sort that cannot be appreciated within an entirely objective approach. There are aspects of reasons, purposes, feelings, thoughts, and experiences that can only be understood from within, via sympathy or empathy or other translation into one's own experience.

Dilthey and later Nagel argue that a completely objective account of a creature's ideas and experiences may not itself be enough to allow one to understand them in the sense of being able to interpret them or translate them in terms one understands. The objective account by itself does not yet provide a translation from that creature's subjective ideas and experiences into ideas and experiences one can understand from the inside, based on one's own way of thinking and feeling.

I am inclined to agree with Dilthey and Nagel about this,[10] but I am not convinced that it is incompatible with the possibility of a reduction of common-sense psychology to objective natural science. I am not convinced, because the Dilthey-Nagel point seems compatible with their being an objective account of what is involved in a particular individual's relevant ideas and experiences along with an objective account of what is involved in a translation between one individual's psychology and another's. The combination of these two objective accounts might then yield the relevant reduction.

7 Concluding Summary

In these remarks I have argued that in many respects scientific experimental psychology should be grouped with physical sciences as a "natural science". I have argued that there are normative aspects of biology and scientific psychology. I have argued that scientific psychology conflicts with commonsense psychology in various respects. I have argued that Sehon's account of reduction is too restrictive, because it would not allow physics to be reduced

[10]Harman, G. (1990). "Immanent and Transcendent Approaches to Meaning and Mind," in R. Gibson and R. B. Barrett, eds., *Perspectives on Quine*. Oxford: Blackwell, 144-157; reprinted in G. Harman, *Reasoning, Meaning, and Mind*, Oxford: Oxford University Press, 1999, 262-275. Harman, G. (1993). "Can Science Understand the Mind?" in G. Harman, ed., *Conceptions of the Human Mind: Essays in Honor of George A. Miller*. Hillsdale, N.J.: Lawrence Erlbaum, 111-121.

to physics. Finally, I have argued that recognizing a difference between the objective understanding that figures in physical science and the interpretive understanding that figures in anthropology and common-sense psychology is compatible with thinking that there is a completely objective account of common-sense psychology.