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How to operationalize a person

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ABSTRACT

The notion of operationally defining a person is absurd, but no more so than other uses of "operationalization". 'Persons' make that absurdity particularly clear because there is no sense in which persons can be directly observed, nor defined in terms of what might be observable, and thereby exposes the emptiness of the idea of operationalization more broadly.

On the other hand, persons can be modeled, and their ontology investigated, within frameworks that can address the processes and organizations that actually *constitute* persons.

1. Introduction

In the 19th century, physicists had to cope with how science could work with in-principle not-observable phenomena, such as electrical and magnetic fields. The rough answer is that they could investigate consequences that would follow if those postulated unobservable phenomena were real — they could test hypotheses that would follow from assuming the existence of the hypothesized phenomena, e.g., electrical and magnetic fields.

Psychology rejected the scientific investigation of unobservables for much of the first half of the 20th century — psychology was supposed to be the study only of (observable) behavior.[1] This stance unraveled with the advent of cognitive science (e.g., computer programs in the brain are not observable) but, nevertheless, under the spell of "operational definitionalism", psychology has still not developed a conception of science that can take unobservable phenomena seriously in its models. Simply put, psychology — so I will argue — has no consensual way to take seriously the ontology(ies) of its own subject matter.

This point is most egregiously true for phenomena that do not directly fit into a causal, physical, factual world, such as normative phenomena.[2] Normative phenomena seem to be outside of the realm of science, even 'mystical' in some views. Among the most central of normative ontologies, of *psychological* ontologies, is that of *persons*, but the category of persons is widely ignored. Persons are the *loci* of acting, of perceiving, of knowing, of learning, of reasoning, of developing, of communicating, of meaning, of constituting social ontologies and processes, and so on — psychology is crippling itself by not recognizing the central ontology of its own subject matter. But persons are unobservable and normative — they cannot be operationalized. So, without a framework that makes sense of the roles of unobservables in science, persons will continue to be (generally) ignored.

Taking persons seriously, however, is quite possible: generate models of the ontologies of persons, and theoretically and empirically explore (the consequences of) those models. What could such a model look like? Here's one offered answer: human animals are complex agents, and agents with very complex possibilities. Among those possibilities is the developmental construction of special kinds of agents that can interact with and within, and thereby co-constitute, social realities. Socio-cultural-linguistic realities are a level of emergence beyond the level of animal agency, and so also is the developmental emergence of socio-cultural-linguistic agents — persons — that co-constitute those realities. Persons, then, are socio-cultural-linguistic kinds of agents that constructively and emergently develop from infancy through the life-span.

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[1] This is often thought to have been motivated by logical positivism, but it is arguably derived from Ernst Mach's positivism, more so than from logical positivism (Smith, 1986). The early logical positivists did try out a verifiability theory of meaning (Suppe, 1977, pp. 3–241), which is related to the Machian notion of meanings as data patterns, but also soon realized that there were serious problems with such empiricist attempts, including with the notion of operational definition (Hempel, 1965).

[2] Normative phenomena involve distinctions among which some are 'better' in some sense relative to others. If 'better' is determined by a (human) observer, then we have a *derivative* normativity — derivative from the human perspective — personal preferences, and so on. But some normative phenomena, arguably, are *intrinsically* normative: these might include issues of truth and falsity for representation, successful or unsuccessful for action, rational and irrational for reasoning, virtuous and non-virtuous for persons, and so on.

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2 Operationalization

The notion of operational definition is a descendent of Ernst Mach's radical empiricism, in which he claimed that theoretical terms were just stand-ins for patterns of empirical data (Smith, 1986). The logical positivists adopted a similar strong empiricism in their verifiability theory of meaning — the meaning of a proposition is the means of empirically verifying that proposition (the data pattern) — and later, for terms, by Bridgeman, who introduced operational definitions. Such empiricist models of meaning were recognized to have failed many decades ago by philosophers of science (Suppe, 1977, pp. 3–241), but still dominate in psychology (Bickhard, 2011, pp. 321–337).[3]

The proposal for operational definitions fails as a general epistemology, but this is especially evident for phenomena that are unobservable. In the nineteenth century, physics confronted this problem with electric and magnetic fields. In the twentieth century, much of physics deals with realms of phenomena that are not observable, even in principle. For example, quark excitations in the chromodynamics field cannot even be isolated — singleton quarks cannot occur (Bickhard, 2001; Weinberg, 1996).[4]

Operational definitions make no sense, but that, of course, does not prevent physicists from developing and testing their theories: *consequences* of the theories are derived that can be tested and observed. Empirical data are crucial to such *testing*, but not as definitions of theoretical terms.

Psychology confronted similar problems with the demise of behaviorism: e.g., computer programs in the brain could not be "operationally defined" in terms of, for example, the reaction times used to test such computational models. But psychology has not learned the same lesson that physics did more than a century ago. Operational definitionalism has become an ideology of "science" for psychology and persists as such an ideology in spite of its basic incoherence.

Part of the reason why it can persist in the face of its failure is that the term has come to be used so loosely that an "operational definition" is no longer taken as "definitional" (most of the time). Instead, it has come to symbolize being careful and precise about methods of measurement, classification, and other methodological matters. Such precision is good practice, but it is not definitional. Nevertheless, operational definitions are still the primary means by which theoretical "definitions" are proposed; one still sees phrases such as "X is operationally defined in terms of such and such a test or procedure".

One serious consequence of such practice is that Psychology is backwards and naïve regarding how to work with genuine theory. Theory, and the metaphysical assumptions necessarily made in any theory, are off-limits within the empiricist framework that dominates, and even more so given the positivistic prejudice against metaphysics that psychology has inherited. To even ask questions in such realms is still regarded as a waste of time — and is derided as "arm-chair" philosophy. These positivistic background assumptions are not as strong as they were a few decades ago, but they have not disappeared, and, most importantly, there is no alternative framework for doing theoretical work that is on offer in most of contemporary Psychology.

3 Persons

If persons exist, and cannot be operationally defined, then what sort of existence is involved? The default assumption in Western thought is that anything that exists is either a substance or entity, or it is a property of a substance or entity (Campbell, 2015; Seibt, 2010, pp. 23–57).[5] But that default assumption has been progressively overturned in the history of science (Hull, 1974) and can be seriously misguiding when it is being presumed. If fire is a substance, for example, then phlogiston is the substance that is fire, and we would like to investigate its properties. But fire is not a substance, and investigating phlogiston was a direction of research whose basic metaphysical assumption was in error.

The case of phlogiston illustrates a general historical pattern: substance assumptions have been replaced by process models: phlogiston by combustion; heat as caloric by random kinetic energy; magnetic fluid by field processes; vital fluid by open self-organizing and self-reproducing systems; and so on. I have argued that this history is a manifestation of an underlying metaphysical point: there are no basic substances, entities, or particles. The world is constituted as process — quantum field processes, or something akin (Bickhard, 2009, pp. 547–591).

So, persons cannot be operationally defined (no more so than anything else), and it doesn't make sense to consider persons to be metaphysical substances or entities[6] (shades of Descartes). Could persons be some sort of process? I will outline such a model.

[3] A problem for a verificationist model that was recognized early in the history of logical positivism had to do with universally quantified sentences such as "all swans are white". In order to verify this, all past, present, and future swans would have to be examined, and that is not possible. With regard to terms, a problematic example would be "sugar is soluble". The intuitive meaning is something like: "If any piece of sugar were to be put into water, it would dissolve." But what if the sugar were never put into water? No satisfactory way to handle such counterfactual modalities was found. There were a number of revisions and patches to these models, both for propositions and for terms, but the underlying empiricism ultimately could not be made to work (Hempel, 1965; Suppe, 1977, pp. 3–241). Simply, meanings, whether of ordinary language or of scientific language, cannot be captured as patterns of data or observables.

[4] Quark excitations (plus gluon excitations) make up protons and neutrons. Single quarks cannot be isolated because attempting to pull such an excitation apart into isolation requires so much energy that new quarks (excitations) are created that form pairs or triplets of quarks — never singletons (Creutz, 1985; Riordan, 1992; Zee, 2003).

[5] Substances, entities, and their properties are commonly taken to be observable, at least in principle (though is "air" directly observable, or do we observe *consequences* of [flow of] air?). So such kinds of metaphysics lend themselves to an empiricism. But, for example, a computer program is something that can be *realized* in a computer, but it is not *observable* (though a print-out might be) — just as the *numeral* "3" is observable, but the *number* 3 is not. They are abstractions or relational phenomena.

[6] We use the word "entity" (or multiple equivalents) to refer to various 'things' in our world, and, in that sense, entities clearly exist — trees, rocks, candle flames, and so on. But the mistake is to take "entity" as a metaphysically basic category. A candle flame, for example, is an 'entity', but it is a very different kind of entity than a rock. A candle flame is a process of flow of oxygen, etc. into a self-maintaining region of high temperature containing wax volatiles from the wick, and the subsequent removal of combustion waste products. There is no substance base — even if molecules were taken to be basic entities, the flame is the *process of flow and change* among molecules: there is no set of molecules that constitutes the flame. (What if the candle is moved; is it still the same flame? The molecules involved have certainly changed.) A candle flame has multiple phase change boundaries — e.g., various colors in the flame — and *no* boundary at which it can be isolated (if isolated, the flame ceases to exist). A rock, in contrast, is not an open process, and has one phase change boundary (from solid to gas) at its surface. A rock also has a boundary at which it can be pushed (which happens to be co-extensive with the phase change boundary) and a(n also coextensive) boundary at which it can be isolated. The candle flame, in contrast, has no "pushable" boundary and no isolatable boundary. Nevertheless, the rock is also a process (thought not an open process): it is a process of quantum electromagnetic and chromodynamic fields that has a stability in a particular *organization* of process that constitutes the rock. That is, the rock *is* an organization of (not open) process, and the candle flame *is* an organization of (open) process (Bickhard, 2009, pp. 547–591; Campbell, 2015).

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