Introspectionism Reconsidered

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Introspection and the Birth of Scientific Psychology

Ironically, the first "scientific psychology" was systematic introspection. From 1860 until 1927, experimental psychology was born in Germany, and developed into a formal program of introspection that flourished in America until the death of its last great practitioner, E.B. Titchener. How could something as unscientific as introspection be considered an experimental science? There was no other definition of scientific psychology at the time, and Wilhelm Wundt, the official founder of the introspectionist school, was committed to experimentation defined by controlled observation and measurement.

The introspectionist school, later dubbed “Structuralism” by Titchener, was pragmatic. The goal was to identify and describe the elemental contents of mind. The introspectionists hoped to produce a catalog of mental elements, a psychological analogy to the periodic table of elements in chemistry. The introspectionists were ardently anti-philosophical, and hardly bothered themselves with perplexities such as “What is consciousness?” and “How is introspection possible?” They simply generated thousands upon thousands of descriptions of mental states, with few explanations or theories.

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According to Titchener, “Scientific method may be summed up in the single word ‘observation’” (1909, p. 19).

What is introspection?

Introspection is inspection of one’s own thoughts, feelings or mental states. In common sense terms, we turn our attention "inward." Common sense tells us that we have direct access to our own experience. We believe we can know something about our own mind, even though we can't say how we know.

Wundt did not think of himself as an introspectionist in a philosophical sense. He just used self-observation as a source of empirical fact. Wundt’s term, “Selbstbeobachtung” can be translated either as “Self-observation” or “introspection.” Self-observation suggests Wundt’s straightforward acceptance of the legitimacy of observation of “psychological facts,” without the epistemological and ontological problems that “introspection” implies for us today.

Titchener, who wrote in English, used the term “introspection” more self-consciously:

Moreover, psychological observation is observation by each man of his own experience, of mental processes which lie open to him but to no one else. Hence while all other scientific observation may be called inspection, the looking-at things or processes, psychological observation is introspection, the looking inward into oneself. (Titchener, 1898 p. 27).
Both Wundt and Titchener accepted unquestioningly the possibility of, and the usefulness of introspection, when brought under appropriate experimental control, as a method for studying consciousness.

**A First Person Methodology For Studying Consciousness**

Philosophers and psychologists concerned with the study of consciousness are interested in the introspectionists’ claim to have found an experimentally controlled methodology for “looking inward.” Such a methodology would not treat consciousness as an “it,” to be spoken of in third person declension, but as a first-person experience, where, as Deikman (1996) puts it, “I=awareness.”

Why do we need a first-person methodology? According to Chalmers (1996), one reason is that consciousness is directly known only by personal experience.

Our grounds for belief in consciousness derive solely from our own experience of it. Even if we knew every last detail about the physics of the universe -- the configuration, causation, and evolution among all the fields and particles in the spatiotemporal manifold -- that information would not lead us to postulate the existence of conscious experience. My knowledge of consciousness, in the first instance, comes from my own case, not from any external observation. It is my first-person experience of consciousness that forces the problem on me. (1996, pp. 101-102).

Kazniak (1997), contemplating the formation of the Consciousness Studies center at the University of Arizona, said,
[Another] thing that I think the center must achieve is to find a nontrivial way to bring first- and third-persons perspectives on consciousness together. As should be clear to everyone, third-person approaches now dominate academic discourse, particularly within the sciences (including social & behavioral sciences). There is an inherent distrust of first-person methodologies…As I see it, much ground work will need to occur in establishing the reliability of first-person methods, in order for these to be accepted as having an equal epistemic status with third-person approaches. (Kazniak, internet posting, 10/30/97).

First-person methods for study of consciousness include phenomenology, systematic contemplation or meditation, and introspection (Varela & Shear, 1999). Classical introspectionism is well positioned for a reconsideration. When behaviorism eclipsed introspectionism (i.e., Watson, 1924), it also established absolute intellectual hegemony over experimental psychology in America for a half century. With the ascendance of cognitive psychology (i.e., Neisser, 1967) and now of consciousness studies, the idea of an introspective methodology is worth a second look.

**Experimental Introspectionism**

The cornerstone of experimental introspectionist psychology was Gustav Fechner's publication of "Elements of Psychophysics" in 1860. There were other ongoing investigations into what we would today call experimental psychology, such as studies of animal behavior, investigation of neurophysiology and vision, and
measurement of human intelligence. But the line of work stemming from Fechner is the one that pried direct inquiry into consciousness free of its philosophical past.

Fechner thought that the mind and the body were related by a quantitative formula. He suggested that a mental event like experiencing a change in brightness was a function of the energy applied to the sense receptors. If you gradually increase the physical output of a light, the subjective experience of brightness would change arithmetically with geometric changes in the physical stimulus. This relationship was named the "Weber-Fechner Law" (Fechner acknowledged his contemporary, Weber, who, he later learned, had said something similar). The Weber-Fechner law is,

\[ S = K \log R, \]

where \( S \) is the unit of mental sensation, \( K \) is a constant, \( R \) is the magnitude of the stimulus required for the observer to report \( S \). The constant \( K \) indexes sensitivity of each sense modality, different for touch than for vision, for example, and its value is determined empirically.

The logarithmic relationship between stimulation applied to the receptors and the mental sensation expresses the fact that a person notices a change in mental sensation by reference to what sensation is already going on. At the absolute threshold of pitch, for example, where \( S=0 \) (no sensation), a fixed value of sound intensity at a frequency can produce the change to \( S > 0 \) (sensation). Once a pitch is above the threshold of detection, the change in frequency needed for the observer to detect a change in pitch (called the just noticeable difference, or jnd), is \( \log R \), where \( R \) is expressed in units of the physical stimulus. Experiments confirm that a linear scale of jnds above threshold is produced by
correlated geometrical changes in the physical stimulus, over a wide range of values, within well-defined limits.

**Measurement of the Mind**

Publication of Weber-Fechner law opened up for the first time the possibility of a scientific study of the mind. Kant had pronounced in the 1700’s that psychology could never be a science because it was impossible to measure psychological phenomena. That was the generally accepted wisdom in 1860. With the publication of Fechner's book, everything changed. The mind could be measured, or as we might say today, it could be indexed quantitatively.

Wilhelm Wundt read Fechner's book and saw that it was more than just a study of sensations. He set up a laboratory in Leipzig in 1879 to start a full-fledged scientific investigation of the mind. Trained as a physiologist, Wundt knew that stimulation of a sense organ produced activity in the brain. However, the brain and the mind were parallel systems, he believed, so it was possible to study the mind without having to track down the neurological details. As a parallelist, he was not troubled by any “explanatory gap” between physiology and experience. Wundt wanted to learn how consciousness resolves into elementary conscious sensations, and to discover how these elements are connected. To do this, he did not need physiology, but rules for introspection. The Weber-Fechner Law was made to order for him.

About a third of the output of Wundt’s lab involved Fechnerian psychophysical scaling, mostly in vision, in areas such as brightness, color, contrast, apparent visual size, and optical illusions. Similar work was conducted in auditory sensation, touch, taste, and time-sense. Experimentation was also done on reaction time, where rather than just
describe sensory changes, the observer had to react as quickly as possible by pressing a key when change was detected. Attention was studied by providing observers with a vigilance task and then inserting distracting stimuli. Measurements were taken of thresholds for noticing the distraction at different degrees of stimulus complexity. Feelings were studied by measuring heart rate, respiration and muscular tension. Also subjective feelings in response to stimuli were studied using the method of paired comparisons.

For all these experiments, the so-called introspective method involved a range of techniques, most of them variations on the basic psychophysical paradigm. Vermersch (1999) emphasizes the sophistication of the methodology. It was not, as one might imagine from the modern connotation of the term, “introspection,” a matter of a person sitting around daydreaming. Introspection for Wundt meant measurement, control, and repeatable observation (self-observation).

Wundt's student, E.B. Titchener, took the introspectionist agenda to Cornell University in 1893 and for 35 years carried on the work of analyzing the elements of consciousness using experimental introspection. Titchener gives this example of prototypical methodology for experimental introspection:

Suppose, again, that the chord $c-e-g$ is struck, and that you are asked to say how many tones it contains. You may repeat this observation; you may isolate it, by working in a quiet room; you may vary it, by having the chord struck at different parts of the scale, in different octaves.
It is clear that, in these instances, there is practically no difference between introspection and inspection. You are using the same method that you would use for counting the swings of a pendulum, or taking readings from a galvanometer scale, in the physical laboratory. (1909, p. 21).

According to Titchener, there are two classes of control for experimental introspection. The “special rules” refer to the control conditions for stimulus presentation.

Again, if you were trying to distinguish all possible tints of blue, it would be a special rule that you should work always by the same illumination: always by dull daylight, or always by the same electric light, etc. For a blue seen in sunlight is different from the same blue seen in dull daylight. (1898, p.34)

The “general rules” must be observed in all investigations involving experimental introspection. They are:

1. Be impartial. Do not form a preconceived idea of what you are going to find by the experiment; do not hope or expect to find this or that process. Take consciousness as it is.

2. Be attentive. Do not speculate as to what you are doing or why you are doing it, as to its value or uselessness, during the experiment. Take the experiment seriously.
3. Be comfortable. Do not begin to introspect till all the conditions are satisfactory; do not work if you feel nervous or irritated, if the chair is too high or the table too low for you, if you have a cold or a headache. Take the experiment pleasantly.

4. Be perfectly fresh. Stop working the moment that you feel tired or jaded. Take the experiment vigorously.

(Titchener, 1898, pp.34-35).

An error in general procedure was the “stimulus error.” For example, if you look at a ripe tomato and say, "The tomato is red," you are doing it wrong. You are paying attention to the tomato, not to your own mental experience. You have broken the first two general rules. What you should report is something like, "Redness."

Titchener considered his own highly trained introspective observers to be so good that they had become mere recording instruments of the mind. He said,

…the practised observer gets into an introspective habit, has the introspective attitude ingrained in his system; so that it is possible for him, not only to take mental notes while the observation is in progress, without interfering with consciousness, but even to jot down written notes, as the histologist does while his eye is still held to the ocular of the microscope. (Titchener, 1909, p. 23).
Results

So what exactly are the elements of consciousness? According to Titchener, there are three classes of elements: sensations, images, and affections. The sensations were the mental elements as given by the senses. Titchener and Wundt had discovered about 50,000 sensations. Images were the elements of ideas, and affections were the elements of emotions. All the elements had attributes: quality, intensity, duration, and clearness (and for vision, extensity in space). The qualities multiply the number of discrete sensory conditions one might discern to 194,250 for vision and 46,222 for the other senses, for a total of 240,470.

Despite this impressive quantity of findings, Titchener's and Wundt's scientific psychology did not seem compelling to other scientists, who increasingly preferred third-person observation, especially of animal behavior. When Titchener died in 1927, so did the whole introspectionist movement. The quarter of a million findings meticulously gathered over so many decades are forgotten.

Criticism of the Introspectionists

How did the introspectionists manage to go so far off course that their whole agenda and all their results were completely abandoned? Certainly the intellectual climate changed by the 1920's. Behaviorism was the new paradigm in psychology and dominance in philosophy had moved from the Continent to Britain. But if the introspectionist program had been able to show important results and an airtight methodology, there is no doubt it easily would have withstood or accommodated those changes.
Criticisms of the introspectionist program are numerous and well-known, but none of them is serious enough to account for the collapse of introspectionism, a point reiterated by Vermersch (1999). Here are examples of the most common criticisms.

It is often argued that the self-report cannot be trusted. This criticism seems pertinent when we consider faulty memory, untrustworthy eyewitness testimony, visual illusions, lapses of attention, and the way language can shape articulation of experience. But the criticism loses its effect in the context of the psychophysical experiment. The experimenter turns up the energy of the light and the subject reports "brighter." If we cannot trust this sort of "eyewitness testimony" then we cannot trust any scientific observation. Cognitive psychology today depends almost entirely on the “plausible assumption” of the validity and reliability of people’s self-reports (Chalmers, 1996, p.217).

Another criticism is that the introspectors did not agree on the facts. But actually they did, for the most part. The Weber-Fechner law is valid because when thousands of observations are made, over hundreds of people, the results converge on a reliable set of values (Watson, 1913). The introspectionists did not have good agreement where they diverged from sensory psychophysics. Great intellectual battles were fought over the existence or non-existence of “imageless thought.” Today, scientific psychology computes the inter-judge reliability for categorical observations. Wundt and Titchener used only the simplest statistics, a field that was in its early days.

Critics object that introspection is actually retrospection. Some time must elapse between the observation of the mental state and the reporting of it so introspection is not actually observation of what the mind is doing, but a report of what it has done. Short term memory falls off quickly, so at least some of the introspective experience could be
lost. This might be true, but it is no justification for the assumption that introspection works by a different mental process than ordinary scientific observation. Wundt was very clear that the mental process is the same (Wundt, 1862/1961).

Retrospection is a criticism that could be applied to any comparative observation. If two tones are sounded in succession we would not say it is impossible to compare them because of memory loss of the first tone before the second. Today we know the retention curve for sensory stimuli over the course of milliseconds from their perception (Neisser, 1967). We can estimate that the time frames involved in memory decay of sensations would not have been a serious problem for the introspectionist paradigm.

Another standard objection to the introspectionist methodology is that introspection may significantly change the mental experience being examined. For example, if you try to introspect on anger or pain, you may find that its intensity diminishes. But diminishes compared to what? You obviously need at least two data points to define “diminished.” This is a measurement issue that simply needs to be clarified. Titchener solved the problem by invoking retrospection:

To get over this difficulty, you must wait to introspect until the processes that you wish to examine have passed by. Let them run their course undisturbed: then call them back by memory, and look at them. They are now dead, and cannot be changed by your observation. (Titchener, 1898, p. 28)

Four Problems For Introspective Science

The “standard” criticisms are not strong enough to invalidate introspectionism as a method. But they hint at more serious issues arising from basic principles of science. Of
these, four seem to be incompatible with a method of introspection. Science requires
that…

1. **Objects are External**

   The objects of study are external to the observer -- external to her mind and her
   body, and her attitudes, feelings, affiliations, economic interests, and all aspects of her
   subjectivity. Scientists do not study themselves. They study objects other than
   themselves. The point of scientific control is to isolate as much as possible effects of the
   scientist from the object of the study. This is how “objectivity” is assured. The
   introspectionist paradigm would seem to fly in the face of this principle.

2. **Objects Obey Causality**

   Objects are susceptible to the law of causality that governs all physical objects.
   Mental objects, being non-physical, might not obey causality if causality is only a
   property of physical objects. Secondly, objects cannot be causes, only effects. Objects
   behave in response to application of energy, but they are not intrinsically causal.
   Introspection seems to mix subjectivity and objectivity, risking subjective preference
   contaminating objective mental causality. Further, causality among mental objects is not
   a well-defined concept.

3. **Perception is Unbiased**

   Science assumes that perception is veridical. Simple vision, audition, and so on
   are believed to be accurate and true. Dials and gauges can be read objectively. The same
   confidence does not apply to introspection, where we are less sure what “an observation”
is, how it is performed, how susceptible it is to subjective preference, and whether or not it is accurate.

4. Objects Are Public

Science is conducted by a community of scientists. Consensus on descriptions and explanations requires that the objects observed be available for public inspection. Study of a private object, whether it is a unique cell culture kept secretly in one person’s laboratory, or a mental object in one person’s mind, cannot be a scientific study. Introspection seems to violate the principle of publicity in its attempt to study private phenomena of consciousness.

How Introspectionism Dealt With The Four Problems

There are other requirements of scientific method, such as standard language, replicability, falsifiability, and so on, but they are implications or consequences of these general four principles. And there are doctrinal assumptions that scientists might make about the method, such as that it requires belief in materialism, direct realism, physical reductionism etc. But such beliefs are not actually necessary to science and do not affect evaluation of introspectionism as a scientific method.

The introspectionists maintained a pragmatic, even naïve disregard of evolving principles of science, based on their distaste for all things metaphysical. That attitude left them isolated and increasingly irrelevant as mainstream philosophy of science congealed. It is useful to look at how the introspectionists addressed the Four Problems.
Where their answers came up short, we can ask what would be needed for a better answer.

1. Objects are External

“External” and “internal” have spatial concreteness in physics. Obviously, for introspection, the nonphysical objects are neither. But there is nothing inherent in the principles of science that requires the objects of study to be physical, or prevents them from being abstract (see Varela & Shear, 1999). The object of study must be distinctly separate from the scientist, not in a crude spatial way, but conceptually, separate from subjectivity.

Wundt implicitly assumed that there is no difficulty separating the conceptual, analytic part of one’s self from the immediately experiencing part. A modern example of this distinction is self-monitoring, or metacognition (Nelson, 1996), which can be easily performed by anyone, and does not confuse the observation with the observer.

Titchener was more explicit about the separation between the observer and the observed in introspection.

… the typical man of science plays a double part. As a man of science, in the true ultimate sense, he employs the scientific method of observation: the method which confronts attitude with object, at the level of existence, merges the two into one, and brings direct acquaintance with fact. As scientific investigator, he leaves the world of existence for the world of logical meaning, the universe of sufficient reason, and thinks out experimental procedures for the controlling of his observation. (Titchener, 1929/1972, p. 45).
The difference between these two roles played by “the man of science” is the difference between impartial observation and logical analysis. Impartial observation was “meaningless observation,” according to Titchener. Its essential feature is the elimination of meaning from observation. Failure to adhere to this principle resulted in the “stimulus error,” mistaking interpretation for observation.

Titchener understood that the objects of psychology are dependent on the experiencer, in the sense that there is no experience without an experiencer. There is no such thing as experience-in-itself, loose in the world. But this contingency does not rule out the possibility of objective observation of experience by the experiencer. All that is needed is the attitude of “meaningless impartiality” to keep them apart.

**Evaluation of the Introspectionist Claim of Objectivity**

Wundt's assertion of metacognition seems convincing in light of today’s research, and the objectivity of phenomenal sensory experience seems solid in view of the reliability of psychophysical findings. For phenomena more complex than simple sensory ones though, just declaring objectivity is not adequate. In order to assure objectivity in scientific introspection, it is necessary to accept something like Titchener’s attitude of “impartiality” as a mode of observation, distinct from the mode of interpretation. It is a special attitude similar to Husserl’s (1913/1975) “first reduction,” or “epoche.” The attitude is already familiar to natural scientists. Charles Darwin was famous for writing in his notebooks observations that did not agree with his theory. He knew his natural tendency was to minimize or overlook them. How was it possible for Darwin to separate his “natural tendency” of subjective preference from the impartiality
of his observation? He simply adopted the mode of impartiality that most scientists are familiar with.

An attitude of impartial observation would be the control procedure for introspective objectivity, if introspectionism were to qualify as a science. The special attitude would have to be much better defined, and include training for acquiring it. Consensus would have to be built for its efficacy in insulating subjectivity from the objective phenomena studied. Establishment of a defined attitude of impartial (“objective”) observation seems possible, especially with computer-controlled media which could assist training people in non-assumptive, anti-hermeneutic perception. Petitmengin-Peugeot (1999), for example, developed an interview method for helping people describe experience non-judgmentally. With any training method there could be calibration procedures for a person to validate that they were in the correct mode. The use of such a standard procedure would be analogous to how we do arithmetic “publicly.” Several people can add 9 and 7 “in their heads” and get the “same” answer, because the terms and operations of the procedure are already agreed upon.

2. Objects Obey Causality

There are two parts to the problem of causality faced by introspectionism as a science. First, how could the introspectionists be sure that interactions among elements of the mind were free of subjective biases arising from the will? Second, when it comes to combinatorial rules among the elements, what if mental elements, being non-physical, did not conform to any causal principles at all?

Titchener addressed the first issue by elaborating Wundt’s position on the pure objectivity of elements.
The primary datum, the original content of knowledge, he [Wundt] terms the Vorstellungsobjekt. … The Vorstellungsobjekt is wholly and solely ‘object’; there is in it no trace of reference to a subject. It is, however, an object of a certain kind: namely … in Wundt’s generalised terminology, an object ‘of idea.’ … The character of objective reality is not super-added upon an originally subjective idea, but is intrinsic, present from the very first, so that it can be separated out only by a later process of logical abstraction. (Titchener, 1929/1972, p. 100.)

In the course of time … naïve [experience] gives way to reflective knowledge. Subject and object are now discriminative, and the ‘object of idea’ appears accordingly as a content of experience which is at the same time both objective and subjective. Henceforth, then, two standpoints are possible to the investigator: he may view the ‘objects of idea’ as objects which stand over against the subject in independent reality; or he may view them as ideas, as a particular kind of subjective experience. (ibid., p. 100)

[Wundt] reminds us that the ‘subject’ which is discriminated from the ‘object,’ and from which abstraction is made by natural science, is the psychological subject, and not the ‘knowing subject’ of a theory of knowledge. The ‘knower’ is presupposed by psychology and the natural sciences alike. (ibid., p. 103).

The introspectionists had a compound answer to the problem of subjectivity lurking among the objects of study. First, they assert a psychological realism, wherein
the phenomena of experience are “given” directly as intrinsically objective, just as simple perceptual objects are “given” objectively to the senses. Having appeared “on their own,” these objects can be readily analyzed into subjective and objective components. Chalmers (1996) makes a similar distinction between sensory awareness and conscious judgment. Furthermore, the analyzed subjective component is a reified “psychological subjectivity,” not the living subjectivity of the investigating scientist, a distinction Depraz (1999) calls the theoretical vs the existential subject. Just as natural scientists can analyze objects without getting confused about what is the object and what is the analysis of the object, an introspectionist can readily abstract (theoretical) subjective and objective components of an observation.

As for causality among mental objects, Wundt argued that the word “cause” is applicable to mental events. To quote Boring (1929) on Wundt,

…we find that physical causality is understood in terms of the quantitative equivalence of cause and effect in terms of energy; the two are not only correlated events in which the cause is prior to the effect, but they are so related that the cause can be translated into the effect by reducing the relation to the transfer of a determinable amount of energy. There is no mental energy, nor any other all-pervading concept to which everything psychical can be reduced. Therefore we must understand that there is no equivalence intended when we speak of psychic causality… (Boring, 1929, pp. 330-31)

For evidence that the elements of consciousness behave lawfully, Wundt cited the Weber-Fechner law. Wundt also specified several causal “laws” by which conscious
elements behaved, such as the psychological law of relativity, the law of psychic contrast, and the law of psychic relations.

**Evaluation of the Introspectionist Argument for Mental Causality**

In philosophy of science the consensus of opinion is that Hume got it right: causality is an attribution we are willing to make to phenomena that appear repeatedly in constant conjunction. There is nothing in the concept of causality which precludes it applying to mental objects. Cognitive psychology describes many lawful regularities among mental events, such as the serial position effect in learning lists of verbal items (Ebbinghaus, 1885), and of course the Weber-Fechner law.

But the serial position effect, and other causal relationships of consciousness, could be regularities of subjectivity, or what Chalmers (1996, p. 221) calls conscious experience rather than conscious content. Causality among objects implies that they behave like billiard balls on a felt. It assumes that objects are “inert.” But in the absence of any principles like kinetics, mechanics, gravitation, thermodynamics, or other “energy” to motivate the behavior of mental billiard balls, the Humean inference of causality seems less compelling for mental objects.

The solution to the dilemma seems obvious. What’s needed is a description of the mental “energy” that motivates the behavior of the mental objects. Motivation is not literally energy, as Wundt pointed out, but the analogous intrinsic cause of objective effects. The source of intrinsic causality for the behavior of conscious objects would have to arise from subjectivity, not from the objects themselves. That relationship could be studied explicitly to clarify the concept of mental causality.
Some introspectionists, notably Kulpe (1893) and Brentano (1874) took such an approach. Kulpe and his students discovered “conscious attitudes” (*Bewusstseinslagen*) and “mental predispositions” (*Aufgabe*) which were not objects in the Wundtian sense but perhaps reified functions of subjectivity which operated on the objects. (Wundt and Titchener were skeptical about these findings).

Brentano said that the intentional act was really the fundamental datum of consciousness. The object of the act was secondary. When one sees a color, the color itself is not mental, he said, but a property of the physical object. What is mental is the act of seeing it. Of course there is no meaning to “seeing” unless something is seen. The act always implies an object. The color which is seen exists only because of the intentionality of the act. A mental act thus contains its object within its intentionality. (Titchener was condescendingly dismissive about this “unfortunate tendency to functionalism” in experimental introspection.)

Developments like Kulpe’s and Brentano’s were suppressed by Titchener, while the whole field of introspection was increasingly ignored by just about everyone else. The exploration of the relationship between subjectivity and objectivity in consciousness was never fully developed. It is an avenue of exploration a scientific introspection would need to continue, in order to establish principles of motivation for mental objects that could support inferences of mental causality.

3. Perception is Unbiased

Science assumes that in general, perception is immediate and accurate. But can the same assumptions be made about introspection? Wundt had no doubt that the difference between observation in physical science and “self-observation” was simply a
difference in subject matter. The psychological processes were essentially the same. There is no special inner sense that is used for introspection. If perception is veridical, so is introspection.

Wundt accepted Kant’s view that pure empiricism is not possible. Perception of physical objects inevitably must be conceptually filtered. Wundt therefore believed that observation of physical objects was psychologically mediated, not direct. Quoting Boring on Wundt:

Physics takes experience mediately and its data are conceptual. In fact, it is because its data are conceptual that its method is mediate, for its elements are inferred, and are not given immediately as phenomena in experience. The permanence of matter is conceptual, for no experience in itself is permanent.

(Boring, 1929, p. 327)

So when comparing physical perception and introspection, Wundt would argue that introspection is actually more direct and intrinsically more likely to be accurate than ordinary perception, which involves inference.

**Evaluation of the Introspectionist Claim of Unbiased Observation**

Whether one adopts a Kantian “unconscious processing” theory (e.g., Bruner, 1973), or the approach of “direct realism” (J.J. Gibson, 1966), it is well-documented that perceptual processes are learned (E.J. Gibson, 1969) and hardly infallible. There is no real justification for the assumption that ordinary perception is intrinsically objective (Alston, 1993). The history of science is replete with examples of presumed veridical
perception turning out to be mostly interpretation (Kuhn, 1962). Ernst Mach (1885) explicitly challenged physicists to account for their naïve belief in direct, veridical perception. He argued that all scientific observation is necessarily based on phenomenal sensation. Husserl (1954/1970) argued for the same reason that phenomenology was propadeutic to science.

The issue is how to agree on a definition of veridicality. In science, accuracy of an observation depends in part on its reliability and its coherence within the existing body of observations, and ultimately on the criterion of the ostensive, or “point-to” definition. In perception of physical objects we can always agree on the correct definition of an object by gathering around the thing and looking at it (and pointing, literally, or verbally at it). Gathering around a thing and pointing to it actually proves nothing, as philosophers have argued (For example the possibility of inverted qualia: see Locke, quoted and discussed by Chalmers, 1996, p. 263). Nevertheless, most people accept that ostension, or “show and tell,” provides the best criterion for the veridicality of perception. In fact, agreement can be reached this way.

The problem for a science of introspection is to find a similar social criterion for veridicality of observation. One could be an anchoring case of psychophysical observation, where ostensive definition of the physical stimulus is possible. Observers would “take turns” looking at both the physical and phenomenal objects via the psychophysical procedure, to experience the standard phenomenon and verify its definition for themselves. The psychophysical procedure produces robust and reliable mental phenomena for simple sensory stimuli. This would constitute the “public validation” of the observational method, required for production of scientific evidence. Validation of the method assures the validity of its observations (Goldman, 1997).
For more complex phenomena, a similar criterion could be developed once the fundamental mode of impartial observation, described earlier, were defined, agreed upon, and practiced. A canonical observation would anchor the observational mode. It would be possible to establish criteria of veridicality against any number of paradigm cases for public validation of introspective observation.

4. Objects are Public

Science, as a social epistemology, requires that the objects of study be available for inspection by anyone. The introspectionists addressed the publicity issue in two ways. Titchener argued that even though each individual consciousness is accessible only to its experiencer, everybody has one. There is a universal structure of the generalized normal, adult human mind. That is the reason Titchener named his brand of introspectionism “Structuralism.” This universality provides publicity in the sense that every observer has access to the “same” object.

The normal mind of the civilised man is the standard of reference in all psychology… This truth cannot be too strongly emphasised: Psychology study must begin as the study of the normal adult mind by the method of experimental introspection… we know very much more about the normal adult mind than about the minds of the insane, or of children and animals. This is natural: the only mind that a psychologist can observe directly is his own, a normal adult mind; all other minds must be observed indirectly, and (as has just been said) explained in the light of the standard mind. (Titchener, 1898, p. 287)
As to how we even know that other people have minds, let alone a “standard mind,” Titchener treats the question almost with incredulity.

… there can be no doubt of the matter as regards other men. The whole of our common life -- family life, social life, civic life, national life -- is based upon the assumption that we all have minds, and would be impossible if the assumption were falsified by the facts. (Titchener, 1898, p. 16).

The second response of the introspectionists to the issue of publicity is that the presentation of the stimulus in the psychophysical procedure is a control for individual differences. Empirically, almost any human being will give reports of her mental sensations that are consistent with the Weber-Fechner law. While the mental sensations themselves are private, the results of the psychophysical procedure demonstrate that the private sensations are virtually universal, so in that sense, public. In turn, this supports Titchener’s claim of a universal standard for consciousness.

**Evaluation of the Introspectionist Argument for Publicity**

Titchener’s assertion of the “standard mind” is pragmatically necessary. If every instance of consciousness is totally unique, then of course no science of consciousness is possible in principle. So it is necessary to assume that something like a standard mind exists. Moreover, just as there are commonalties to be observed in medicine and biology and generalizations to be made from examination of individual specimens, it is reasonable to suppose that the same situation would apply in the study of consciousness and that a standard mind does exist.
However, you would not expect to discover such commonalties by studying the contents of consciousness. Particular phenomenal experiences would be contingent on an individual’s immediate environment and life-history. Rather, you would study the operation, or functions of consciousness, that is, conscious experience, in order to appreciate its invariant characteristics. Of course, to study these, they would be reified into theoretical objects themselves, but that is a separate analytic process (what Vermersch, 1999, calls “meta-reflection”) from experience of primitive sensory phenomena. Wundt’s and Titchener’s almost exclusive focus on the sensory objects of consciousness was a particularly poor starting point for discovering universal facts about consciousness. That error is easy to correct by studying conscious experience at least as much as content.

What about the practical argument that the psychophysical stimulus constitutes sufficient publicity for the introspectionist science? That is essentially the model for cognitive psychology today. The problem is that the psychophysical method is a third-person method. The experimenter infers the observer’s conscious processes from the correlation between physical stimulus and verbal response. But cognitive psychology does not have a sound enough basis for making such inferences to assure their reliability or accuracy (Goldman, 1997). That is exactly why we would like a first-person methodology, to move from inference about consciousness to direct observation of consciousness.

Wundt’s and Titchener’s protestations to the contrary, the psychophysical method is not a first-person method. Introspection, commonly understood, would be a first-person method. Psychophysics, like cognitive psychology, is a third-person method. If
you claim to be an introspectionist using a first-person methodology, referring to the psychophysical stimulus as a criterion of publicity is just spurious.

Psychophysics as Dialog

This error in the introspectionist conceptualization of their own method was serious and contributed greatly to the downfall of their whole agenda. But surprisingly, instead of marking the ultimate dead-end for introspectionism, it opens up a promising possibility for its renewal.

What was not obvious to Wundt and Titchener, or to Fechner either, is that the psychophysical experiment is a social transaction between the experimenter (E) and the observer (O). E’s presentation of the stimulus is a part of a “dialog.” E does not just make lights flash and tones sound for no reason. E presents selected and designed stimuli to O, for the express purpose of having O examine them. The presentation is part of a communication between them. Conversely, O is not just sitting, relaxing, when a big red circle appears unexpectedly on the wall. Rather, O is prepared to “receive,” to “hear” the presentation by E, and when it occurs, to “reply” to E with a report.

The purpose of the stimulus is to constrain the dialog and therefore, to constrain both E’s and O’s conscious experience. That constraint makes it possible for E to understand what O means when O says “Redness,” or “Same,” or gives some other introspective report. Without the context of the constrained dialog of the experimental transaction, O’s so-called “reports” would just be incomprehensible gibberish to E.
Introspectionism as Dialog

Wundt and Titchener knew that the psychophysical stimulus was crucial for the introspectionist experiment, but they did not properly understand why. For example, Titchener (1898) said:

It is clear that in most cases two persons are needed for the performance of a psychological experiment. The ‘subject’ or ‘observer’ introspects; the ‘experimenter’ arranges the conditions. Thus the subject would introspect, in the instance given, to see what contribution the various stimuli made to the formation of the idea under investigation; the experimenter would arrange the instruments for flashing the stimuli, would do his best to keep the subject in an even frame of mind, and would record the character of the stimuli given and any indications that the observer might show (by incidental remarks, by restlessness, etc.) of steadiness or unsteadiness of thought. (Titchener, 1898, p. 31)

Part of E’s job was to monitor O’s frame of mind. How could E be expected to do that? E would use the same sort of social cues that anyone would in a social situation -- interpreting remarks and observing restless gestures, and so on. The introspectionist method described by Titchener implicitly accepts and relies on the normal understanding that people have of each others’ “frame of mind” in a social transaction such as a dialog.

Introspectionism As a Second-Person Science

It turns out that experimental introspection is a second-person science, based on the mutual understanding that arises from a dialog. De Quincey (1998) calls this
phenomenon of consciousness “intersubjectivity.” In a sensitive and honest dialog, the participants each have their consciousness affected, or conditioned by the other’s, creating a hybrid consciousness-in-relationship, a kind of co-subjectivity that Buber (1970) called the “I-Thou”.

This definition of intersubjectivity as co-subjectivity is not the same as ordinary interpersonal relations, which is what philosophers of science mean by the term (Goldman, 1997). Calling evidence and method intersubjective in philosophy of science just means they are public. But this ordinary definition of intersubjectivity as social intercourse ultimately rests on co-subjectivity, the ground of shared experience that allows people to understand each other at all. The apparent privacy of mental phenomena is only a problem for a third person stance. A second-person, participant-observer point of view of intersubjective consciousness is inherently transpersonal, or public.

Intersubjectivity in the special sense of co-subjectivity is neither purely subjective, nor purely objective. Intersubjectivity is not about “me” or about “you,” but about “us.” It is a “second-person” view of consciousness. Likewise, introspectionism as a second-person science does not study my consciousness, or your consciousness, but our consciousness. It is the consciousness of participants in a relationship, players on a team, members of a discussion group. As participants, each has direct access to the co-conscious intersubjectivity they are part of. At the same time, a relationship is inherently transpersonal. I use “intersubjectivity” in the special sense of the second-person point of view of consciousness.

Why didn’t the introspectionists see the intersubjective, dialogic nature of their method? Mental contents were the objects of investigation. By focusing exclusively on the objects of consciousness the introspectionists overlooked the subjects. Their
assumption of the first-person stance blinded them to the nature of the interpersonal relations involved in actually doing the work.

Second-person consciousness is directly accessible. It is not an inference (de Quincey, 1998). It is “given” like Wundt’s primitives and Chalmers’ (1996, p. 220) “awareness.” But intersubjectivity is not interobjectivity. The E does not have direct access to the contents of O’s consciousness, only direct access to O’s subjectivity. Fortunately, the intersubjective process of socialization that both E and O have undergone establishes a high degree of interobjectivity through the shared mental models of reality that constitute a culture (Shore, 1996). Dialog connects O’s observations with E’s understanding, via their shared culture. Thus introspectionist observations are inherently public because of social cognition (Levine, Resnick & Higgins, 1993), and because of the shared subjectivity (intersubjectivity) engaged in making the observations. Introspectionism as a second-person method thus has public objects and public process.

The psychophysical experiment can be interpreted as a highly formalized dialog between E and O, around the stimulus object. The third-person stimulus-response language can prevent us from seeing the role of the so-called stimulus. It is like the object in a “show and tell” discussion, not a probe to make a person verbalize. It could perhaps better be called the focus object rather than the stimulus.

In a second-person science of consciousness, the focus object might be a photograph or a verbal presentation as is typical in cognitive psychology experiments, but it is not presented as a “stimulus.” The E and the O discuss the focus object until they agree on its relevant perceptual and cognitive features, a process of calibration of their psychological mode and descriptive terms. Both E and O are trained in introspective objectivity. The focus object is then systematically varied by E to manage subsequent
dialog about the observer’s conscious experience. The experience is reported by O, not inferred by E. O uses introspection as the basis of the report. The E asks questions and the O explains. E uses the tacit intersubjective and interobjective understandings that E and O have about their common language, culture, and environment, until the O’s observations are clear to E. The same process could be followed if the “object” were a reified act of consciousness, such as coming to believe something.

The second-person method is thus like a collaborative phenomenological investigation (possibly implementing what Depraz, 1999, calls a “co-reduction”). An anchoring focus object and calibrated attitudes are used to explicitly optimize intersubjective and interobjective relationships. The O is the principal introspector, guiding E intersubjectively to the “dependent variable,” the affected conscious object. The E provides the “independent variable” with the focus object and management of the context for the dialog. With multiple measurements of this kind, and with multiple Os, ordinary sampling and statistical methods control individual differences.

The method is more than just an interview about mental phenomena, where the object of discussion may be vague, poorly discriminated and inadequately conceptualized. It is more than a third-person experiment, where dialog is suppressed in favor of E’s unilateral inference about consciousness. It is more than an anthropological observation (e.g., Geertz, 1984) where the commonality of mental models (interobjectivity) is tenuous. The second-person method goes beyond a first-person contemplation of consciousness that cannot be readily translated from an individual account to a public body of knowledge. It is a method that leverages pre-existing intersubjective consensus for physical observation and language into phenomenal
observation, and pre-existing interobjective consensus from the shared culture into articulation of conscious experience.

Wundt and Titchener followed a similar procedure when they applied the psychophysical method beyond exploration of purely sensory phenomena. But they did not extend the method accordingly to accommodate abstract, non-perceptual data. Consequently, when Os reported widely divergent observations, about feelings, for example, the E could infer nothing and conclude nothing. The E should have just followed the O to the observation, and discussed it with O. The introspectionists falsely clung to scientific objectivity by having E take O’s verbalization as the dependent variable, in a third-person stance, rather than taking the status of the phenomenal object under investigation as the variable, from a second-person stance.

**Conclusion**

The search for a first-person science is a quest for a square circle. There is first-person introspection, of course. We all know how to do that, more or less. Why don’t we just go to our rooms and introspect on consciousness? The reason is that we would like to have some shared understanding, as a community of investigators, about the nature of consciousness. That is, we want a science, inherently a social endeavor.

But we already have a scientific psychology, represented by cognitive psychology. As a scientific project cognitive psychology has produced many volumes of findings. Why don’t we just combine them to determine the nature of consciousness? The reason is that cognitive psychology is third-person science, which only allows inferences about the nature of consciousness. We can’t agree on those inferences.
What we want is a direct observation of consciousness without inference or interpretation, yet which is still a social project. The introspectionists believed they had defined and implemented a third-person method for first-person, direct observation of consciousness. Actually they had not. But they may have outlined a viable basis for a science of consciousness anyway: a second-person science. Introspectionism understood as a second-person science meets both the needs of direct observation and scientific publicity. There remain many problems to be solved for it, such as the need for detailed specification of phenomenal objectivity and mental causality, but looking at the introspectionist’s experimental design as an intersubjective dialog rather than as private observation, the possibility of a science of consciousness seems promising.

References


