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When, How, and Why Did "Pain" Become Subjective? Beecher, Operationalization, and Its Problems

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Abstract

The pain-assessment literature often claims that pain is subjective. However, the meaning and implications of this claim are left to the reader's imagination. This paper attempts to make sense of the claim and its problems from the history and philosophy of science perspective. It examines the work of Henry Beecher, the first person to operationalize "pain" in terms of subjective measurements. First, I reconstruct Beecher's operationalization of "pain." Next, I argue this operationalization fails. Third, I salvage Beecher's insights by repositioning them in an intersubjective account. Finally, I connect these insights to current pain-assessment approaches, showing that they enrich each other.

Extreme operationalists have gone so far as to deny that one can depend upon what the subject says about his pain. To the writer [Beecher] this is a kind of nihilism. If this extreme view is accepted, then even when dealing with man one would have to depend upon reactions to pain.

-Henry Beecher, Measurement of Subjective Responses

"But you will surely admit that there is a difference between pain-behavior with pain and pain-behavior without pain?"—Admit it? What greater difference could there be?— "And yet you again and again reach the conclusion that the sensation itself is a Nothing."—Not at all. It's not a Something but not a Nothing either! The conclusion was only that a Nothing would render the same service as a Something about which nothing could be said. We've only rejected the grammar which tends to force itself on us here. —Ludwig Wittgenstein, *Philosophical Investigations*

1. Introduction

The clinical literature on pain assessment is replete with the bald assertion that "pain is subjective" (see, for example, McCaffery and Pasero 1997; Katz and Melzack 1999). The International Association for the Study of Pain's definition of pain has an accompanying



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note that stresses that pain "is always subjective" (IASP 2011, 209).¹ Strikingly, however, this claim is rarely argued for, and even its meaning is often left to the reader's imagination to grasp. It seems as if the guiding assumption is that we all already know what it means for some x to be "subjective," so authors do not feel the need to belabor the point.

However, I am not entirely clear on what the claim means, or what it implies. Indeed, I believe that a host of thorny issues—such as how one can measure an "inner" sensation; why we should believe we can understand something so epistemically "private;" what grounds the assumption that my experience of pain is the same as another's; and so on—lie just below the surface of such a seeming truism.

This paper seeks to address such questions by clarifying when, how, and why subjectivity became a core feature of pain assessment in biomedicine. It argues that this attempt to include subjectivity is not viable. Finally, it proffers a different way to think about pain, and connects this to recent developments in the pain-assessment literature.

To cash this out, I rely on a history and philosophy of science perspective (see Chang 2007, 235–250 for a discussion of this approach). Specifically, I examine the first attempt that I know of in biomedicine to operationalize "pain" in terms of subjective measurement. This attempt is found in the pathbreaking work of Henry Beecher (for example, Beecher 1957, 1959b). By "operationalization" and its cognates, I mean the contention that a term's meaning is "nothing more than a set of operations; the concept is synonymous with the corresponding set of operations" (Bridgman 1927, 5; see also, Beecher 1959b, 157–158). As we will see, Beecher's attempt to operationalize "pain," and the problems it generates, are still deeply embedded in much of contemporary biomedicine.

In section 2, I set the stage. I reconstruct Beecher's thoughts to show why he posited subjectivity as a core feature of his operationalization of "pain." In section 3, I discuss why subjectivity is untenable for his proposed operationalization. In section 4, I develop a different thread from Beecher's thoughts on "pain," an *intersubjective one*. Finally, in section 5, I connect this intersubjective account to the contemporary pain-assessment literature.

2. Beecher's Something: Pain, Subjectivity, and Avoiding Nihilism

Beecher's research into pain was revolutionary in the Kuhnian sense (Kuhn 2012, 52–158; for discussions of Beecher's substantial impact on subsequent clinical pain research, see Noble et al. 2005; McPeek 2007; Ball and Westhorpe 2011). He deliberately formulated a new research program for the science of pain (Beecher 1959b). Indeed, Beecher's program introduced novel conceptual connections (Beecher 1956b), shifted the targeted phenomenon from experimental to pathological pain (Beecher 1956a), and utilized innovative methodologies to study pain (Beecher 1957). Moreover, Beecher was the first researcher I know of to introduce a self-scoring pain-measurement scale to measure pain, a key component of almost all pain-assessment and research today (Beecher 1966). Critically,

¹ Wright (2017) points out that how the definition and note relate is far from clear. Further muddying things is the fact that the IASP's website provides a rather different addendum to the definition of pain, substituting "personal" for "subjective." Yet it fails to indicate this variation with a "*" as it does for other modifications. Given this, I take their published note to be the official one and the website's note to be for popular audiences. I further assume that the note is meant to clarify and refine the definition of pain. Circumspect readers should keep this in mind.

Beecher also engaged with philosophical issues surrounding pain and subjectivity. It is this philosophy that I seek to bring into view here.

To do so, first, I discuss pain research from about the mid-nineteenth to the midtwentieth century, paying particular attention to Beecher's understanding of this program. Second, I reconstruct Beecher's empirical and conceptual criticisms of this program. These points clarify Beecher's revolutionary revisions to pain research, revisions that define much of "normal" pain science today, and remind us that certain deeply entrenched assumptions about "pain" are *conceptually optional*. Finally, I discuss how these criticisms seem to leave Beecher caught between the Scylla of logical behaviorism—roughly, the contention that "pain" should be operationalized in terms of behaviors—and the Charybdis of subjectivism—crudely, each subject defines "pain" for herself via *her* experiences. Beecher's fateful decision to sail towards Charybdis sets the stage for section 3.

Beecher claims that the "scientific study of pain … [had] its beginning at 1846" (Beecher 1959b, 8). He further notes that the "general introduction of anesthesia took place in the same year, 1846." And, though this may seem coincidental, Beecher speculates that "there may have been a common tide of interest at that time in the pain problem … the scientific interest in pain stemmed directly from the fact of clinical pain." Plausibly, part of what Beecher hints at here is that the emergence of clinical research; that is, the birth of the clinic, fundamentally altered how biomedicine conceptualized disease-processes (cf. Foucault 1973, *passim*).² Expressly, the emergence of clinical research under the auspices of microbiology allowed biomedicine to operationalize the terms for disease-processes in a particular way. To wit, the signs, symptoms, and so on, of an illness were downgraded, and the etiology given pride of place. For example, "flu" became operationalized in terms of isolating and identifying the relevant causative agent responsible for the localizable tissue disruptions. Ideally, this terminates in discovering a specific microbe such as *S. pyogenes*, individuated out in part by its capacity to secrete streptolysin-s, a compound it secretes regardless of its interaction with humans (Cowan and Smith 2022, 578–580).

Similarly, for "pain," early attempts were made to operationalize it in terms of localizable nerve irritation *sans* symptomology (cf. Goldberg 2017, 37–47, for further discussion of this shift in US neurology). And Beecher emphasizes and criticizes precisely this. Hence, he stresses that during the nineteenth century, the

diagnosis of a disease and its treatment was straightforward in concept and direct in action. For each disease, there was a single cause. Find the microbe and its antagonist, and all would be well ... [This] simple formula ... came directly from the highest authorities, Pasteur and Koch ... [However,] "specificity" while an essential concept in the formulation of scientific medicine during the 19th century often *tends to prevent us from gaining a comprehensive view of the problem of disease* [especially for pain and other symptoms]. (Beecher 1962, 148; emphasis added)

 $^{^2}$ Though I find Foucault's analysis insightful in many ways, I find his seeming anti-realism in biomedicine difficult to sustain. In my mind, one laudable feature of the birth of the clinic is that it gave biomedicine the tools necessary to isolate real causative agents, track them via taxonomies, explain their effects via pathophysiology, and treat them via targeted drugs (see Cartwright 1983, 74–86, for a classic discussion of this sort of entity-based causal-realism). That said, Foucault is quite right to worry that all realisms run the risk of confusing their models with the things they model.

In other words, for Beecher, attempts to operationalize "pain" in terms of a specific causative factor prevent us from really understanding what's afoot. To see why, let me briefly discuss psychophysics, the program that attempted to operationalize "pain" in this way.

For Beecher, biophysics was the first attempt to study pain scientifically (for example, Beecher 1957). At base, this program rested on two conceptual assumptions. These are "[a] when a given number of pain endings are injured and stimulated, a given degree of pain will be experienced; and [b] that, for a given degree of pain, a given dose of morphine or similar agent is required" (Beecher 1969, 1080). Notice that this flows seamlessly from the doctrine of specific etiology. Expressly, "pain" should be operationalized in terms of localizable and observable nerve irritations. And the task of biomedicine is to isolate these irritations and treat them with analgesic drugs. Let us examine each assumption in turn.

(a) A key feature psychophysics utilizes to operationalize "pain" is intensity. Specifically, psychophysics assumes that nerve irritation depends on the intensity of stimulation that irritates the nerves. For example, psychophysics formulated the dol metric to objectively quantify the relationship between the magnitude of a stimulus such as heat and the amount of nerve irritation. From there, psychophysics then made sense of the pain experience in terms of this measurable intensity. Thus, psychophysics contends that a person's experienced pain has a direct, though complex, relationship with the intensity of the external stimulation that caused nerve irritation (for example, Hardy 1956).

From here, (b) psychophysics understood the effects of analgesics by analogy with antibiotics. In both cases, some facet of the underlying causal process is changed, which relieves the symptoms. Hence, an analgesic such as morphine alters the pain threshold by, for example, decreasing the irritability of nerves to the external stimuli. This suggests that an analgesic's mechanism of action does not involve, for example, subjective states. Indeed, much as antibiotics destroy microbes without necessarily generating subjective changes, so too with analgesics.

Before moving to Beecher's criticisms, one point is worth emphasizing. Whatever its flaws, psychophysics circumvented subjectivity entirely. To see this, consider Stanley Stevens's power law, a nomic regularity that psychophysics claimed held between stimuli and experience (Stevens 1957). The law claims

 $S=kI^{a}$

where S is a person's sensory experience, k is an arbitrary unit constant, I is the intensity of a stimulus, measured in energy, and a is an exponent that depends on specific sensory modality and type of stimulus. Notice that the constant—intensity—and exponent wholly determine a person's sensation, with *no reference to* a person's subjective pain rating (or even, arguably, subjectivity itself as it is understood in the contemporary pain-assessment literature). And this shows that understanding pain does not *conceptually entail* trying to make sense of another's subjective states, rankings, and so on.

For Beecher, both assumptions are empirically problematic and conceptually flawed. Let me briefly examine some of his criticisms.

Against (a), empirically, Beecher uses statistics to show that a direct and determinate relation between stimuli and experience does not obtain in the psychophysical literature. Indeed, he demonstrates that there is no tractable nomic regularity in the data (Beecher 1957, 1959a). Conceptually, he argues that external stimuli are insufficient for the pain experience. For example, Beecher notes that during his military service in World War II, he observed many soldiers who had severe tissue damage (and so prima facie much stimulation) and yet reported *no pain* (Beecher 1945, 1948).

Against (b), empirically, Beecher employs control trials to show that the effects of analgesic agents shift in marked ways, depending on whether the researcher knew that an injection was a placebo, morphine, or was blinded to this (Beecher 1952). Conceptually, he maintains that analgesics are "effective only if a required mental state is present" (Beecher 1961, 1105). To further this, Beecher claims it is "difficult to explain in any other way how frontal lobotomy or barbiturates can relieve pain" (Beecher 1956b, 111). Hence, Beecher contends that analgesics relieve pain by altering the patient's *mind*, not changing localized nerve responses to stimuli.

Hence, the psychophysical attempt to operationalize "pain" in terms of observable nerve irritation fails. However, this raises the question of what criteria biomedicine should utilize to operationalize "pain." Beecher considers only two other possibilities.

One possibility, logical behaviorism, operationalizes "pain" solely in terms of observable behaviors (for example, Beecher 1959b, 158–159). Roughly, such a view contends that *if certain initial conditions obtain, then "S feels pain" is true of a subject if and only if the subject manifests behaviors like crying* (Carnap 1936). In turn, this reduction sentence suggests that the meaning of "S feels pain" depends on a natural nomic regularity that connects certain initial conditions and specific behavioral manifestations (Carnap 1936). Logical behaviorists further claim that these third-personal, behavior-based, ascriptive criteria that verify if someone has pain "already underlie psychological practice" (Carnap 1959, 167). Notice that this proposed operationalization has the benefit of clarity. Since the appropriate behaviors are easily observed, we know precisely which indicators "pain" should be pegged to (see Beecher 1959b, 7, for why such clear indicators are vital). Hence, biomedicine should define "pain" *solely* in terms of observable behaviors.

For Beecher, the logical behaviorist operationalization of "pain" is empirically problematic and ethically abhorrent. He points out that logical behaviorism denies

that one can depend upon what a subject says about his pain. To the writer, this is a kind of nihilism. If the extreme view is accepted, then even when dealing with man one would have to depend upon his reactions to pain. As has already been made clear, these reactions may be quite far removed from the pain threshold. Others agree with the inaccuracy of reaction as the basis for judgment. (Beecher 1959b, 158–159)

He adds in another article that part of what this view elides is that "the pain threshold in man represents a *value judgment*" (Beecher 1956a, 19; emphasis added). We return to aspects of this in section 4.

Although I agree wholeheartedly with Beecher's assessment of logical behaviorism, he still faces serious problems. His condemnations are *not* arguments, and he has *not* provided biomedicine with an alternative way to operationalize "pain." Indeed, logical behaviorists may consistently maintain that they *are* nihilists (Carnap 1959, 167–168). They may further contend that a subject's pain-talk is *not* veridical precisely because it is emotive (for example, Ayer 1952, 102–120). Finally, they can point out that, *sans* behaviors, we lack a tractable way to operationalize "pain." They can argue that it "seems paradoxical to speak

... of measuring something which cannot be satisfactorily defined [for example, sensations]—and if this were true it would be a paradox or nonsense or both" (Beecher 1959b, 7).

To escape from this, Beecher stipulates that "pain" should refer "to an experience, not to the behavior produced by the experience" (1959b, 7). He further posits that this experience is grasped "introspectively by every man. The difficulty comes in verbalizing this well-known experience … in saying *what* it is" (1959b, 7). Hence, Beecher insists that subjectivity must be part of operationalizing "pain," lest we fall into logical behaviorism.

Critically, notice that Beecher's proposal still accepts and assumes a broadly verificationist theory of meaning for "pain" that underwrites logical behaviorism (cf. Ayer 1952, 33–45). Crudely, the meaning of "pain" still depends on some observable Something that confirms its presence or absence. All Beecher has done is to "internalize" this Something, instead of, for example, pegging it to behaviors. Crucially, this "internalized" verificationism remains a central dogma in contemporary pain assessment. For instance, the famed "pain is whatever the experiencing person says it is, existing whenever the experiencing person says it does" (McCaffery 1997, 5) is another way of saying that "pain" means what it does because a person has an experience that verifies its presence "internally."

Notice also that this verificationism theory of meaning readily lends itself to the operationalization of terms. For example, if the Something that verifies "pain" is measurable with a scale, "pain" is easily operationalized in terms of this measurement. Indeed, Beecher operationalizes "pain" in terms of *measurements* that persons make *for themselves;* namely, their subjective Something (Beecher 1959b). Again, this proposal is deeply entrenched in pain assessment, as the ubiquity of pain scales shows.

There are three points to take away from this brief historical sketch. First, the connections between "pain," subjectivity, and measurement are *not* conceptually necessary when studying pain. Second, relatedly, Beecher linked these together in the way he did because it was the only way he could think of that made sense of the "inner" features of pain-talk. Third, though Beecher's original motivation has largely been lost in history, his connections remain core features of biomedicine.

However, Beecher owes us some account of what this subjective Something is that verifies "pain" and how we measure it. It is to this topic that we now turn.

3. Beecher's Something Is a Nothing: The Impossibility of Immaculate Perception

In the last section, I discussed why Beecher needed to postulate subjectivity when reflecting on operationalizing "pain." However, this does not yet explain what this subjective Something is or how subjects measure it. Beecher is aware of this and discusses three attempts to clarify how "pain," subjective states and measurement relate. These are: (1) classical empiricism; (2) conceptual analysis; and (3) mentalization. Let me discuss each in turn.

(1) The classical empiricist attempts to make sense of the meaning of "pain" by arguing that the subject has immediate access to her experience and that this can secure the meaning. From there, measuring pain would be a matter of comparing these experiences to other possible sensations (for example, the absence of pain or the worst pain imaginable).

Beecher summarizes the position by quoting E.G. Boring's review of the influence of classical empiricism on nineteenth-century psychology. In this view, according to Boring, a sensation is "the bare content given to the mind, perception as the apprehension of the object. An object, they contended, is ... actually a meaning" (in Beecher 1957, 127). In other words, "pain" refers to a brute occurrent "inner" event that each subject knows for herself. And then measuring it would be a matter of comparing it to other bare contents. However, for Beecher, this classical empiricist view is untenable. Thus, he emphasizes that "dependable knowledge about sensation can be obtained only when the subject experiencing it makes discriminations" (1957, 127). He further claims that the capacity to make discriminations depends on the subject's "perception [of the sensation] and process of recognition [both of which] *are influenced by the subject's concept of the sensation*" (Beecher 1956b, 108; emphasis added). Let me reconstruct the philosophical underpinnings of Beecher's claims.

To begin, sensations bring into play myriad factors for a subject experiencing them. Thus, the sensation of pain often correlates with an elevated heart rate, anxiety, visual disturbances, fear, and so on. Nevertheless, "pain" applies to none of these correlates. And for a subject to reliably apply "pain" correctly requires that the subject understand which aspects of this hurly-burly the term applies to. In other words, "pain" has certain satisfaction conditions, met only by specific aspects of the "inner" goings-on. Thus, using "pain" correctly requires we actively discern and discriminate from the medley of goings-on the relevant features.

Granting this, notice that these satisfaction conditions are not simply part of the brute occurrent sensation. This is because applying "pain" to a sensation turns on the subject's awareness of *what* she is sensing in the first place. Such awareness presupposes that the subject has the capacity to compare and contrast the content of *this sensation now* with the content of other possible sensations, such as anxiety, fear, and so on. Indeed, this point holds for even something as seemingly basic as diachronically consistent applications of "pain" to the "same" sensation at different times. As Ludwig Wittgenstein brilliantly argued, "same" requires criteria of comparison that transcend the brute occurrent sensations at any given moment, as sensations that exist in the present do not have future or past sensations "built into them." This sensation now does not, somehow, presage that sensation tomorrow, nor does that sensation tomorrow harken back to this sensation now (cf. Wittgenstein 2009, §258). And this need for comparison becomes even more apparent when we measure pain with rating-scales. For example, the widely used numeric rating scale explicitly requires a subject to compare her current pain with both no pain (defined as "o") and the worst pain imaginable (defined as "10") (Abdelhady et al. 2021). However, these end-points of the scale *cannot* be part of her current sensation, as this would imply that she experiences both *this pain* and the *absence of this pain* at the same time, a reasonably explicit contradiction. All of this shows that the modal comparisons involved in the correct application of "pain" and its measurement with a scale belie the thought that the brute sensation alone is sufficient for its meaning or measurement (cf. Hegel 1977, 58-66; Sellars 1997, 53-68; Brandom 2019, 107-118).

Hence, the classical empiricist's attempt to derive the meaning of "pain" from direct experience, and then measure the denoted sensation, is not viable. This suggests that the subjective Something is a Nothing, as nothing can play this role. (2) The conceptual view begins by admitting that trying to separate the relevant sensation from the subject's recognition and application of "pain" to it

has to be an arbitrary matter. From a neurophysiological view, it would seem better to place the end of the primary response [the sensation component] just before any processing has begun; but in practical terms this is impossible. It seems necessary to call the events, including the eruption of the sensation into consciousness as primary, "the original sensation," and the succeeding events as secondary, as reaction, as processing. [However, one] must face the fact that the processing doubtless begins before awareness has been achieved. (Beecher 1959b, 158)

Let me explore how this might work and why it fails.

The primary thought here is that "pain" refers to a complex experience, a fusion of the eruption and perception. However, we can conceptually separate the two components of our experience of pain, as Beecher just did. And though such a distinction is somewhat arbitrary, it can help clarify the subjective Something's contribution to "pain." Hence, there is some moment of eruption, which we can call the sensation component, and then the subject perceives this eruption, which we can call the reaction component. The moments are distinct in that the subject's pain perception presupposes some perceived sensation. And, from there, one can then measure what "pain" denotes by focusing on the intensity of the eruption that a subject perceives. However, in reality, "pain" refers to both components. Otherwise, one can speak of mistakenly perceiving, for example, an itch as a pain, which Beecher takes as absurd (Beecher 1959b, 159).

However, the problem with this parsing is that wherever one draws the line, perception always already mediates the eruption. This vitiates the contribution of the subjective Something to the meaning of "pain." Indeed, Beecher stresses that the "perception and process of recognition are influenced by a subject's concept of the sensation, by its significance" (1959b, 159). Again, let me reconstruct the philosophy that underwrites this claim.

If we do not react to the sensation component in the right way, it is not an experience of pain for us. Generally, this point can be supported by arguing that the idea of a sensation presupposes an organism's reaction to it as, if an organism does not react, it does not have the sensation in question (cf. Dewey 1896). In a specifically human context, the primary contention is that we *interpret* some given *x* as a specific type of sensation *only because* we respond to it in a patterned way we *already understand* (Taylor 1971). For example, after crossing a rickety bridge and meeting an attractive confederate, human males tend to understand the eruption of an elevated heart rate, rapid breathing, and so on, as sexual arousal, not fear, and then lust after the confederate (see Dutton and Aron 1974, for the *locus classicus*). This suggests that males make sense of their sensation component, the eruption into consciousness of concrete physiological shifts, partly by discerning what it is a response to. Indeed, they experience their rapid breathing *as sexual desire*, not fear.

Turning to "pain" specifically, the point that the perception mediates the sensation becomes even more apparent. To see this, assume, with Beecher, that a subject cannot misperceive when some *x* counts as "pain." Granting this, since there is no distinction without a difference, and, since for pain, *esse est percipi*, there is no difference between the eruption and the perception. More intuitively, when I perceive myself to be in pain, I am in

pain; there can be no divide between the act of perception and the object perceived. If there is no divide, conceptual parsing is doomed to failure. The reaction component always already partly constitutes the sensation component, a point Beecher hints at by placing pain in scare quotes (for example, Beecher 1959b). And, if this is so, trying to measure the subjective Something by focusing on the unmediated intensity of the eruption cannot work.

Again, the subjective Something proves to be a Nothing—this time because we simply cannot access an unmediated and (supposedly!) given "sensation component" independently of its perception (cf. Sellars 1997, 94–117).

(3) The mentalization view is what Beecher ultimately seems to settle on. Specifically, Beecher claims that it is

the existence of the sensation and its recognition are then the stimuli which precipitate the important psychic reactions, presumably the major part of the processing. In the sense in which the term reaction is used here, the reference is not to physical activity, such as the withdrawal of a burned finger from the flame, but rather to the mental process set up by the original stimulation. (Beecher 1959b, 158)

Notice that this view attempts to incorporate aspects of both (1) and (2) while avoiding their failures. From (2), Beecher retains the thought that "pain" refers to a complex experience that cannot be conceptually broken into a sensation and reaction component. From (1), he attempts to retain the idea that the meaning of "pain" and measuring it depend on mental processes, not physical behaviors.

This complex view suggests the following model. We have an internal stimulus that integrates sensation and reaction. Call this the proximal aspect of the experience. However, there is also a distal aspect of the experience, the psychic responses. This distal aspect can rebound and affect the proximal aspect. However, the two are distinct. For example, Beecher claims that experimental pain generates the proximal aspect while simultaneously lacking the distal aspect (Beecher 1956a). Indeed, it is the lack of the distal aspect that Beecher uses to explain why subjects measure experimental pain differently than pathologic pain (Beecher 1959a) And, given this, the meaning of "pain" derives from both the proximal and the distal aspects, and the measurement incorporates both.

The mentalization of pain faces some profound objections. Two, in particular, are worth noticing. First, this view introduces an equivocation into "pain" that threatens to undermine assessment and measurement entirely. This is because the distinction between the proximal and distal aspects of the experience of pain is difficult to sustain. Expressly, since the distal aspect affects the proximal and the proximal aspect precipitates the distal, any clear-cut division between them becomes hard to make sense of. Indeed, Beecher seems to embrace this point as he contends that anxiety and fear are vital constituents of our pathologic pain experiences (Beecher 1969). That said, including such features problematizes pain assessment as it becomes increasingly unclear *what* providers should assess in the first place. My headache need not involve anxiety, and things that go bump in the night are not called "pain." This equivocation becomes worse for measurement as it becomes unclear if a subject measures the proximal aspect, the distal aspect, both, or neither. Tellingly, evidence from pediatric pain assessment suggests that children often confuse exactly these aspects, measuring their anxiety at one moment and their sensation-perception the next (for

example, Voepel-Lewis et al. 2012). Such confusions make Beecher's attempted operationalization rather hopeless.

Second, and worse, mentalization expands the scope of subjectivity in such a way that the very idea of assessment becomes deeply problematic. These difficulties can be seen at both a practical and a theoretical level. Let me take each in turn.

Practically, Beecher suggests that the distal aspects of pain; that is, how a subject responds to the relevant sensation-perception aspect, is psychical. However, such a view severs any conceptual connection between the sensation-perception aspect and the subject's behaviors. Indeed, Beecher points out that all such behaviors are best "called the *consequences* of pain ... directed ... chiefly to ... escaping pain. They vary all the way from a spinal reflex to a visit to the doctor, or the building of hospitals, or research activities, in order that pain might be better treated or escaped" (Beecher 1959b, 176). In turn, the claim suggesting that pain does not necessarily entail specific behaviors finds empirical support in the lack of totally reliable behavioral indicators for pain and philosophical support in the simple note that super-Spartans can have pain without ever crying, and so on (see McCaffery and Pasero 1997, 15–16; Putnam 1963 respectively).

This certainly avoids logical behaviorism. However, it raises substantial problems for pain assessment for non-linguistic or pre-linguistic persons, problems contemporary pain assessment still struggles with (cf., for example, Zanotti 2018 or Schiavenato and Craig 2010, 668, for discussions of the "linguistic bias" in the clinical context). Expressly, if the range of possible behaviors is as vast as Beecher suggests, running from no observable change to founding a research lab at Harvard, it becomes increasingly difficult to understand why certain behaviors, for example, crying, are thought to express pain, whereas others, for example, proving theorems in math, are not. In turn, this makes any principled nonverbal pain assessment hopeless as we have *no grounds* to take some behaviors as more "direct" consequences. Echoing Beecher, the inability to determine if certain behaviors express pain strikes me as another kind of nihilism.

Theoretically, this mentalization of pain readily lends itself to the idea that "pain" is part of a private language, as only the subject has the right kind of epistemic access to both the proximal and distal aspects. However, this "private language" raises intractable difficulties for measurement in both the third- and first-personal registers. To see this, assume the "official" interpretation of pain scales as a "standardized means of *measuring* pain intensity and severity" in the same way that thermometers are standardized means to measure bodily temperatures (Olatoye 2019; emphasis added. For the analogy between pain scales and thermometers, see, for example, Beecher 1963 or McCaffery and Pasero 1997).³

Granting this "official" interpretation, it follows that a person's measurements of pain are also part of this "private language," as only she knows what intensity she has pegged "seven" in a rating of "seven out of ten." Such private languages raise deep problems (obviously, see Wittgenstein 2009, §§259–272). Though we have already used several leitmotifs in Wittgenstein's complex symphony, let me explicitly discuss one now. Consider the claim:

³ A reviewer helpfully pointed out that this "official" interpretation may well be very different from how clinicians actually use and understand such scales. Specifically, clinicians may interpret pain scales *ordinally,* as ways to *rank* pain, not *measure* it per se. Though worth exploring further, I bracket this insight and assume the "official" interpretation.

Everyone tells me that he knows what pain is only from his own case [for example, that only he has access to the stimulus and psychical effects]!—Suppose that everyone had a box with something in it which we call "beetle." No one can ever look into anyone else's box, and everyone says he knows what a beetle is only by looking at *his* beetle. Here, it would be quite possible for everyone to have something different in his box. One might even imagine that such a thing constantly changing.—But what if these people's word "beetle" had a use nonetheless?—If so, it would not be the name of a thing. The thing in the box doesn't belong to the language game at all … one can "divide through" by the thing in the box; it cancels out, whatever it is. (Wittgenstein 2009, §293)

Partly what Wittgenstein is highlighting here is that this way of thinking inserts an unbridgeable gap between "pain" and the complex experience we supposedly measure. From a third-person perspective, since I cannot access the contents of another's box of experience, I have no reason to assume it is like mine, or that they have sensations at all. Indeed, such a contention is rather mad. In turn, this means I do not know which sensations they count as "pain." Since this is so, I have *no way* to understand what, for example, "seven out of ten" in their mouth amounts to, as I have no idea what they are pegging "seven" to. And so the very idea of a pain scale collapses.

From a first-person perspective, since it is very easy to imagine that the box of experience is constantly changing, waffling-for example, between the proximal, the distal, both, and neither aspect of pain-the referent of "pain" is indeterminate. Indeed, here we see that the equivocation in Beecher's account is not only a linguistic problem but also an ontological one. Sometimes a subject's utterance of "pain" includes anxiety, other times fear, yet other times, both, and sometimes neither. And this means that "whatever is going to seem correct to me is correct. And that only means that here we can't talk about 'correct'" (Wittgenstein 2009, §258). Indeed, since "pain" means whatever the subject says it does, referring to whatever portion of the complex medley of "inner" goings-on she wants, her utterances cannot be wrong (cf. McCaffery 1968). However, this also means that they cannot be right either. And if "pain" is a matter of sheer caprice on the part of the subject, the very idea of measuring such arbitrary fiats fails. Effectively, the "official" interpretation maintains that a scale measures some feature of pain-for example, intensity-via a preset metric. However, if a subject can just decide that "pain" refers to her anxiety at one moment, her fear at the next, her rapid heart rate at a third, and so on, the preset metric need not apply. Hence, bluntly, if, for "pain," anything goes, the pain scale fails to work as there need not be some uniformly given feature for it to measure.

Here, perhaps more clearly than in the other two cases, we really are left with a Nothing. Indeed, the contents of a person's box of experience may have no sensation.

In summary, Beecher's assumption that subjects can measure "pain" requires a more robust account of its meaning than "everyone knows it for herself." To this end, Beecher explored three possible ways to make further sense of "pain." However, this section shows that none of these proposals are viable. And, condensing one leitmotif of these arguments to the point of caricature, the problem is that if "pain" is purely subjective, the idea of measuring it objectively falls apart. And this seems to imply that Beecher's Something is a Nothing.

4. Rejecting the Grammar: Salvaging Beecher's Insights

Let us take stock. Beecher attempted to operationalize "pain" so that quantification of subjective Somethings became possible. However, unfortunately, the subjective Something that turned out to be Nothing. Ergo, it seems as though we have reached a dead end.

In this section, I proffer a different conception of "pain," which avoids these problems. However, as we shall see, this different conception rejects subjectivity, as discussed above. Instead, it argues that the meaning of "pain," is *intersubjective*. And such an intersubjective view salvages several of Beecher's other insights.

To bring this intersubjective account into view, let us return to Beecher. His discussion of the failure to define "pain" ends on a rather strange note. Specifically, he points out that in "view of this group's [the Lexington group led by Abraham Wikler] superb achievements ... it would take a much hardier soul than the present writer to aver that they will never succeed [in defining pain]" (Beecher 1959b, 8). This claim is striking in that it undercuts one reason Beecher found it necessary to include subjectivity in his operationalization of "pain;" that is, "pain" had to be "defined introspectively by every man." Ergo, let us consider the Lexington group's proposal. The Lexington group understands "pain" in terms of

disruptions of adaptive behavior ... What we have been aiming at, is the experimental investigation of "giving a damn" about pain, and our hypothesis is that how much one "gives a damn" about pain can be inferred from observations of the extent to which signals heralding nociceptive stimuli *which the subject cannot escape or avoid*, disrupt previously learned responses that are "adaptive." After all, is that not the basis on which we proceed in assessing "clinical" pain for the purposes of deciding whether or not to intervene? (in Beecher 1959b, 7–8)

This proposed conception of "pain" brings into play novel elements that shift the ground. Let us examine several of them.

To begin, the proto-definition contends that the meaning of "pain" turns on adaptive behaviors, not only sensations per se. Let us assume that these behaviors are best construed functionally, measured, as a rough first pass, in terms of a subject's capacity to perform her activities of daily living (for example, Edemekong et al. 2022).⁴ If this is so, several critically important things follow.

First, understanding "pain" in terms of functionality can be harmonized with Beecher's insight that the reaction component partly constitutes our experience of pain. To see this clearly, consider a persistent itch in a wound. This itch is undoubtedly an unpleasant sensation related to tissue damage (cf. IASP 2011, 209). Nevertheless, subjects do not count it as "pain." And this is partly because such itching does not limit a subject's ability to perform her activities of daily living. Granting this, subjects rely on features of their overall reaction to sensations—that is, how it impacts their ability to act and interact with the world—to classify and understand them. Hence, much as subjects rely on the presence of a nubile confederate to make sense of physiological "eruptions," they also rely on their inability to engage with the world to make sense of sensations they count as "pain."

⁴ I stress that I use "functional" in the *medical*, not *philosophical* sense in that I do not seek to make sense of pain in terms of its role in our cognitive economy. In point of fact, I doubt very much it has such a specific role.

Second, relatedly, this reactive component crosscuts between the first- and third-person registers so that pain assessment becomes far more explicable. Since subjects only count sensations as "pain" when they restrict functionality, and since functionality depends *not on* more feelings, mental chains of associations, and so on, but on how the subject acts and interacts with the world, it follows that these restrictions reveal themselves in the subject's patterns of engagement with the world. Vitally, these patterns of engagement and their loss are intersubjectively accessible. In this, there is a subtle but vital shift; namely, the "inner" now entwines with the "outer." For instance, a subject's "inner" fear reveals itself in her reluctance to handle the feared object just as much as in her rapid heart rate (Heidegger 1962, 179–182).

Drilling deeper, consider that one of our most important "inner" reactions that partly determines what we count as "pain" is the sudden realization that one has a body, a sort of present-at-hand broken thing that no longer seamlessly integrates into one's complex engagements and that itself now demands explicit attention, reflection, and interpretation (Heidegger 1962, 91–122; for a helpful commentary, see Drevfus 1991, 61–87).⁵ And this equally well shows itself in the "outer" hesitancy, jerkiness, and so on that others observe. Elaborating further, consider that my actions, intentional projects, (many) of my thoughts, and so on, often depend on my body being an unproblematic given. For example, when I open the door, I am not aware of how each of the 27 joints in my hand move; I do not intentionally will my hand to take a specific shape and grasp the doorknob, and so on. I reach out, turn the knob, and leave the room. However, this seamless functionality is lost when my hand is damaged (or whatever topic-neutral description one wishes). Instead, I am hyperconscious of how one or more of the 27 joints in my hand moves (or fails to do so); I am very deliberate in guiding my hand's grasping of the knob, and so on. Indeed, parts of the body become strangely "objectified" as I view them as, for example, a system of sinews, muscles, joints, and so on-some or all of which suddenly demand very explicit attention and overt conscious guidance (see Scarry 1985, 3-59 for an apt description of this "objectification"). Hence, the relevant loss of functionality that partly determines what a subject counts "pain" reveals itself in the "inner" as a sudden focus on parts of the body as a problem and in the "outer" as halting or absent movements, guarding, refusing to bear weight, and so on. Crucially, these interdepend. My motions are halting, awkward, and so on, precisely because I am cognitively processing each minor movement, and my overt cognitive processing makes every movement halting and awkward. The "inner" interdepends with the "outer"-my body's suddenly problematic status shows up in my attention just as much as my actions. And both the "inner" and the "outer" are underwritten by a sensation that is reacted to by a loss or reduction in functionality-that is, "pain."

From here, third, an overtly normative element also becomes vital for pain assessment via functional limitations. Indeed, the Lexington group's claim that subjects "give a damn" suggests this. Drilling into this, consider the extension of "activities of daily living." This extension is normatively inflected for three related reasons. One, engagements that fall under this extension are not derived from a brute statistical analysis of what most people happen to do over the course of a given day. Instead, the extension includes actions subjects *should* be able to do. Two, relatedly, without a prior normative understanding of what

⁵ A reviewer insightfully suggested linking pain, the body, and present-at-hand modes of presentation together in this way. I thank them for this powerful thought. However, though I draw on aspect of early Heidegger's account, for reasons of space, I cannot develop this with the care and rigor it deserves.

subjects *should* be able to do, the extension becomes wildly disjunctive and shapeless (McDowell 1998, 198–219). For example, being able to dress oneself and being able to eat are both in the extension (Edemekong et al. 2022). Nevertheless, I am hard-pressed to think of a purely descriptive property that both activities share. Finally, three, a tellingly important feature of the normativity involved in activities of daily living is that subjects *should* be able to perform them without much, if any, explicit thought. And this means that the extension of the set depends as much on *how* a subject *ought to* do the actions as the actual action-tokens themselves. Hence, getting the extension right depends on the normativity involved.

Granting that normativity is inexorably connected to pain assessment, fourth, a tractable account of the wide variations among people in pain threshold, pain tolerance, and so on begins to emerge. To see this clearly, assume that classifying a sensation as "pain" typically entails that it is bad to some degree or other. This raises the question of what *makes* the sensation that "pain" applies to bad. It seems to me that attempts to derive this badness from some invariant occult feature of the "inner sensation" do not work (cf. Bain 2017). This is simply because different subjects evaluate the same tissue damage in radically different ways. Indeed, Beecher's observation of painless wounds in World War II is a limiting case of this (Beecher 1948). Instead, the badness stems from a discrepancy between normative expectations and empirical realities. A subject cannot function as she thinks she *should*, she fixates on the part(s) of her body that is responsible for this, and behaves in more and more halting ways, which are all bad for her. Critically, since normative expectations of functionality likely differ between people, it follows that the badness of the overall situation does as well.

Following this, fifth, a radical implication looms into view. If the above is correct, people from different cultures, in varied contexts, belonging to specific groups, and so on, may count the same sort of tissue damage differently, which has implications for how they experience it and how providers should respond to it. In turn, this point has both positive and negative consequences.

Positively, it provides us an avenue to begin to explore the jarring variations of how tissue damage is experienced that occur between cultures, contexts, and so on, in a way that bald assertions about how certain cultures are "barbaric," certain persons are "dishonest," and so on do not. For instance, Areil Glucklich (2017) and Talal Asad (2003: 67-99) both point out that often a culture's ritual or religious practices inflict tissue damage on acolytes as a means of establishing ecstatic union with the Divine, not as some "irrational savagery." Alternatively, it strains credulity to claim a submissive who reports pleasure when her dom electrocutes her nipples is being "stoically dishonest" because of her "repressive culture" (Dunkley et al. 2020). For these and other examples, what may be happening is that normative presuppositions built into vocational (for example, mystic), contextual (for example, BDSM club), and so on, factors vary in such a way that they modulate the experience of tissue damage *differently*. And though investigating how this actually works will undoubtedly take a great deal of philosophical and empirical exploration, it seems far more promising than claiming that "pain" is univocally about tissue damage, that the sensation is invariantly "given," that damage being bad means pain is bad, and that any report to the contrary is either "irrational" or "deceitful."

Negatively, it suggests that what some subjects count as "pain" may not be recognized by others because of varied standards. Regrettably, I think this may well be the case and it goes some way toward explaining jarring statistical disparities at work in, for example, US pain management among ethnic groups, notably between African Americans and white people (for a meta-analysis, see Meghani, Byun, and Gallagher 2012). For instance, a provider's tacit assumption of *her* normative standards of functionality may well lead her to downgrade or outright ignore the testimony of someone from a different group, thereby committing a grave epistemic injustice against them (Fricker 2007; for a helpful discussion of how normative standards may be partly to blame, see Rieder 2019, 70–82). Moreover, such epistemic injustices may be done to oneself as when one insists, for example, that playing through the pain of a dislocated shoulder is a mark of functioning as a good football player.

All of this suggests that "pain" is *not* at all akin to "temperature" and that assessing the former is extremely different from using a thermometer. Indeed, if the reaction component modulates the experience and affects what people call "pain," understanding what "I have a pain" and "my pain is seven out of ten" mean is far more involved simply asking, "How do you rate your pain?" Critically, however, this view also provides us a way to anchor the numerals that such ratings rely on. Specifically, it suggests that the intensity that "seven out of ten" is thought to express presupposes prior functional standards, themselves dependent on a myriad other factors, a point I return to in a moment.

Pursuant to this, sixth, this integration of normativity into the ground floor of pain assessment allows us to avoid logical behaviorist nihilism without falling prey to mentalist nihilism. Moreover, it elaborates a critical and underdeveloped insight of Beecher's: "The pain threshold [and so on] in man represents a *value judgment*" (Beecher 1956a, 19; emphasis added). Let me elaborate.

Pace logical behaviorist nihilism, one can extrapolate from Beecher's claim that we *evaluate* certain behaviors as *expressions* of pain. Effectively, a subject's crying is *not* caused by some initial conditions triggering a disposition. Instead, we take a subject's crying to *convey* her pain. In other words, we treat crying as a *meaningful* response, *not* a pathophysiological reaction. In turn, by taking crying as meaningful, we can draw on semantic-like categories to assess it. Roughly, we assume that subjects cry for *reasons*, and part of the task of pain assessment is working out what these reasons are. Indeed, one can push this further and cast the inner realm *not* as a private theater of the mind where eldritch Somethings play weird roles but as an internalization of semantic-like categories that subjects utilize to make sense of themselves and their engagements with the world (cf. Sellars 1997, 94–117).⁶ In any case, the point is that "S feels pain" is true of behaviors *we take* as meaningful expressions of persons, not indifferent manifestations underwritten by, for example, stimulus–response pairs. Obviously, this view does not sit well with logical (or empirical) behaviorism.

Pace mentalist nihilism, Beecher's pregnant comment suggests that a subject's application of "pain" to a sensation *depends on* normative standards concerning how she

⁶ I beg the reader to avoid a deeply entrenched confusion here, one that I think Sellars makes. To wit, how I take something (that is, how I model it) is *not* the same as the thing-itself. A baby cries and I ascribe to this behavior a meaning. And, eventually, the baby uses this and other normative ascriptions to make sense of itself and its world, both "inner" and "outer" (Tomasello 2019 provides a wonderful empirically driven account of this process). But this does not imply that the baby "always meant" pain by crying. In this, I am replaying the vitally important debate between absolute idealists like Hegel and transcendental empiricists like Kierkegaard. And I stand firmly with Kierkegaard in that I view the confusion of a model with the thing modeled to be a blasphemous deification of Reason, one that leads to horrors (both conceptually and historically).

thinks she *should* function. Indeed, here we have the beginnings of an account of the correctness conditions for "pain." As a rough first pass, a subject should apply "pain" to all and only sensations that limit her ability to function, showing up in the "inner" in terms of the body's being a problem and in the "outer" as limping, crying, and so on.⁷ Arguably, even this crude first pass has enough resources to differentiate "pain" from "itches," "anxieties," and so on, and to provide sameness criteria in terms of identical limitations that allow subjects to track sensations over time. More importantly, it furthers the idea that a pain rating connects with functionality. Indeed, instead of using "occult rulers" to perform the *impossible task* of measuring another's subjective Something, we can make sense of "seven out of ten" in terms of ramifying functional breakdowns coupled with prior normative expectations. And though getting this right is a demanding and difficult, it does *not* require a provider to access another's inaccessible "theater of the mind" and watching the Lovecraftian horror show unfold. We return to this in section 5.

Finally, with all this in view, we can see how one can reject the grammar without denying sensations. Indeed, here, more than anywhere else, Beecher saw the correct move through a mirror darkly. Recall that Beecher's attack on psychophysics turned on his realization that the doctrine of specific etiology is a mistake for symptoms. Localized neural irritations do not make sense of "pain," nor less allow me to measure it. In my view, he should have pushed this insight further. Specifically, the application of "pain" does not depend on neural irritations, manifest behaviors, invariant subjective Somethings, particular tissue damage, and so on. Instead, "pain" interdepends with progressive breakdowns in the warp and woof of our human forms of life (Wittgenstein 2009, §II.i.2). "Pain" is indeed *about* something but this something is *not* an eldritch terror "in my mind" (or a wound or nociceptive activity, and so on) but a failure that shows itself over my entire normatively structured way of being-in-the-world (cf. Heidegger 1962, 149–225; Dreyfus 1991, 141–162; Cavell 1979, 2002).

If this is so, the conjuror's trick we need to avoid is translating "I feel pain" into R(s, p), where R is an asymmetric relation that presupposes the prior existence of the relata. Such a gloss existentially commits us to a Something = pain, and this Something must be a discrete, specific, and self-identical object that always already exists without my relating to it and casts numerals subjects utter as a measurement of this preexisting Something. Rejecting the grammar here can be done by viewing the pain relatum as a hypostatization secured via a something-from-nothing transformation out of the myriad uses we put "pain" to (Schiffer 2003, 11–155). Alternatively, it can be done by highlighting the optionality of seemingly inevitable analogies between pain talk ("I feel a pain") and perception talk ("I see a tree") or introspection talk ("I remember a tree") that drive such a logical translation forward (Horwich 2012, 170–211). In either case, rejecting the grammar returns us to a seemingly straightforward point: it is *people* who have pain *in their lives*. And getting clear on the meaning of "pain" and measuring it requires attending to the person, not, per impossible, using mental yardsticks to measure their phantasmagoric subjective Somethings.

⁷ This first pass needs a good deal of refinement. However, it serves for present purposes.

5. Metaphysicians with Pain-Assessment Instruments

In the last section, I proffered a different way of thinking about "pain," which centered on intersubjectivity and normativity, and attempted to salvage insights from Beecher. However, a reader might worry that such "heady" philosophy has no implications for practical pain assessment. In this section, I address this worry by building a bridge between my account and a vital achievement of the Pain Management Task Force (hereafter "Task Force") under the Office of the Army Surgeon General in the United States.

As a result, in large part, of the continued inability to manage pain properly in the clinic, the Office of the Army Surgeon General set up the Task Force to research the causes of this failure and to devise ways to better assess and address pain. One achievement of the Task Force was creating the Defense and Veterans Pain Rating Scale (DVPRS), a new pain-assessment tool that emphasizes functionality (Pain Management Task Force 2010, 13–15). The intersubjective account above enhances and is enhanced by this new tool. Let me elaborate.

One issue that the DVPRS faces is the need for justification. Indeed, since other pain scales have been validated and checked for reliability, it is unclear why yet another painassessment tool is necessary. To address this, the Task Force often mentions vague shibboleths about, for example, "patient-centered care" (Pain Management Task Force 2010, *passim*). This raises two problems, however. First, such truisms seem to apply equally to all pain-assessment tools. Indeed, almost every pain scale currently in use insists that the patient and her pain report be given pride of place during an assessment. Second, relatedly, one might claim that the Task Force's inclusion of functionality *undermines* patientcentered pain assessment. Specifically, if a pain report is the gold standard for pain assessment, reference to how well a patient goes about living her life is, at best, irrelevant and, at worst, may lead a provider to discount the best and most patient-centered evidence available. And this is because functionality seems to depend on third-person standards that are inherently external to the patient's subjective first-person experiences.

Here, the intersubjective account harmonizes these aspects and justifies the DVPRS. Specifically, if the intersubjective account is correct, loss of functionality is not some accidental add-on to a person's experience of pain. Instead, such functional limitations partly constitute the reactive component that subjects rely on to count something as "pain." In turn, this implies that including functionality is *not* introducing some other (and lesser) standard for pain assessment but is explicitly focusing on a previously elided aspect of the meaning of "pain" for people. Indeed, functionality *enriches* how patients and providers understand "pain." This seems to me far more patient-centered than a sort of anything-goes account. And, tellingly, empirical evidence suggests that this incorporation of a neglected aspect is *precisely why* providers and patients prefer DVPRS (for example, Blackburn et al. 2018). Hence, the intersubjective explains why including functionality in the DVPRS is conceptually and empirically laudable.

For the intersubjective account, the DVPRS provides a validated and reliable tool that can empirically cash out its insistence on functionality. Indeed, the DVPRS demonstrates that the metaphysics involved in this paper can be concretely embedded in actual clinical work, benefiting both patients and providers. Moreover, the DVPRS provides an empirical means to begin to explore how variations in things like culture, context, and so on, might modulate the experiences by changing functional standards. And it also enables systematic exploration into what parameters may cause epistemic injustice during pain assessment. Hence, this brief sketch suggests that philosophical reflections and clinical practices enhance, justify, and guide each other in vitally important ways. And, if nothing else, I believe it demonstrates that sometimes metaphysicians are good with instruments, *pace* Rudolf Carnap.

6. Conclusion

This paper has attempted to think through when, how, and why subjectivity became a central part of pain assessment. To do so, it reconstructs Beecher's pathbreaking work on the subject. It highlights the limitations of this approach and proposes ways to avoid these by focusing on intersubjective forms of life. It closes by pairing this change in gears with ongoing research streams in the contemporary pain-assessment literature.

In closing, I should make two notes. First, a reader may have been surprised that I have (as far as possible) avoided discussing qualia, the center of so many debates in the contemporary philosophy of mind. I did this because it seems to me that the philosophical issues involved in pain assessment are different. Crudely, it is one thing to reflect on the essence of pain and discuss if and how automata, animals, aliens, and angels have it. It is quite another to try and figure out if a nonverbal person with autism spectrum disorder's slamming his head into a wall is a pain behavior. Different questions require different approaches.

Second, if this has been persuasive, it shows that Beecher was pushing in the right direction. Claims that "pain" is about a specific Something misfire. Rejecting this picture is *not* denying another's pain. Instead, it is a way of stressing that it is *people* who feel pain and *people* who make utterances about it. This helps redirect our attention from inaccessible and unassessable subjective Somethings—or neuropathophysiological correlates, or Byzantine higher-order information-processing states that supervene on (are grounded in, and so on) these or some other proposals—and toward hurt people who need help returning to their usual ways of living. I will have achieved my goal if I have reminded us providers that when "someone has a pain in his hand, then the *hand* does not say so … and one does not comfort the hand, but the sufferer: one looks into his eyes" (Wittgenstein 2009, §286). Sometimes assessing and treating pain requires looking into the other's eyes, an ethical move that, sadly, I cannot develop further here.

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References

Abdelhady, Ahmed, Rawan Alshahrani, Rawabi Asaheimi, Amani Alamrani, Mohammed Alqahtani, Abdulelah Asiri, Yousef Alharthi, et al. 2021. "Review: Clinical Pain Assessment Scoring Systems and Practice Essentials in Acute and Chronic Pain. *Journal of Healthcare Sciences* 1, no. 3: 50–56. <u>http://dx.doi.org/10.52533/JOHS.2021.1107</u>.

Asad, Talal. 2003. *Formations of the Secular: Christianity, Islam and Modernity*. Redwood City: Stanford University Press.

Ayer, Alfred Jules. 1952. Language, Truth, and Logic. New York: Dover Publications.

Bain, David. 2017. "Evaluativist Accounts of Pain's Unpleasantness." In *The Routledge Handbook of Philosophy of Pain*, edited by Jennifer Corns, 40–49. New York: Routledge.

Ball, C. and R.N. Westhorpe. 2011. "The History of Pain Measurement.: *Anesthesia and Intensive Care* 39, no. 4: 529. <u>https://doi.org/10.1177/0310057x1103900401</u>.

Beecher, Henry K. 1945. "Anesthesia for Men Wounded in Battle." *Annals of Surgery* 122, no. 5: 807–819. <u>https://doi.org/10.1097%2F00000658-194511000-00004</u>.

----. 1948. "Pain in Men Wounded in Battle." *Annals of Surgery* 123, no. 1: 96–105. <u>https://doi.org/10.1097/00000658-194601000-00008</u>.

----. 1952. "Experimental Pharmacology and the Measurement of the Subjective Response." *Science* 116, no. 3007: 157–162. <u>https://doi.org/10.1126/science.116.3007.157</u>.

----. 1956a. "Limiting Factors in Experimental Pain." *Journal of Chronic Diseases* 4, no. 1: 11–21. <u>https://doi.org/10.1016/0021-9681(56)90004-2</u>.

----. 1956b. "The Subjective Response and Reaction to Sensation: The Reaction Phase as the Effective Site for Drug Action." *American Journal of Medicine* 20, no. 1: 107–113. <u>https://doi.org/10.1016/0002-9343(56)90178-4</u>.

----. 1957. "The Measurement of Pain: Prototype for the Quantitative Study of Subjective Responses." *Pharmacological Reviews* 9, no. 1: 59–209. <u>https://pubmed.ncbi.nlm.nih.gov/13431416/</u>.

———. 1959a. "Generalization from Pain of Various Types and Diverse Origins." *Science* 130, no. 3370: 267–268. <u>https://doi.org/10.1126/science.130.3370.267</u>.

----. 1959b. *Measurement of Subjective Responses: Quantitative Effects of Drugs*. Oxford: Oxford University Press.

----. 1961. "Surgery as a Placebo: A Quantitative Study of Bias." *Journal of the American Medical Association* 176, no. 13: 1102–1107. <u>https://doi.org/10.1001/jama.1961.63040260007008</u>.

----. 1962. "The Bengue Memorial Award Lecture, 1961: Nonspecific Forces Surrounding Disease and the Treatment of Disease." *Journal of the Royal Institute of Public Health and Hygiene* 25, no. 1: 147–152. <u>https://pubmed.ncbi.nlm.nih.gov/13866496/</u>.

----. 1963. "Pain." *Surgical Clinics of North America* 43, no. 1: 609–618. <u>https://doi.org/10.1016/s0039-6109(16)36979-1</u>.

----. 1966. "Pain: One Mystery Solved." *Science* 151, no. 3712: 840–841. <u>https://doi.org/10.1126/science.151.3712.840</u>. ———. 1969. "Anxiety and Pain." *Journal of the American Medical Association* 209, no. 7: 1080. <u>https://doi.org/10.1001/jama.1969.03160200044014</u>.

Blackburn, Lisa M., Kathy Burns, Elizabeth DiGiannantoni, Karen Meade, Colleen O'Leary, and Rita Stiles. 2018. "Pain Assessment: Use of the Defense and Veterans Pain Rating Scale in Patients with Cancer." *Clinical Journal of Oncology Nursing* 22, no. 6: 643–648. https://doi.org/10.1188/18.cjon.643-648.

Brandom, Robert B. 2019. *A Spirit of Trust: A Reading of Hegel's* Phenomenology. Harvard: Belknap Press.

Bridgman, Percy Williams. 1927. The Logic of Modern Physics. New York: Macmillan.

Carnap, Rudolf. 1936. "Testability and Meaning." *Philosophy of Science* 3, no. 4: 419–471. <u>https://doi.org/10.1086/286432</u>.

———. 1959. "Psychology in a Physical Language." *Logical Positivism* edited by A.J. Ayer, 165–198. New York: The Free Press.

Cartwright, Nancy. 1983. How the Laws of Physics Lie. Oxford: Clarendon Press.

Cavell, Stanley. 1979. *The Claim of Reason: Wittgenstein, Skepticism, Morality and Tragedy*. Oxford: Oxford University Press.

----. 2002. Must We Mean What We Say? Cambridge: Cambridge University Press.

Chang, Hasok. 2007. *Inventing Temperature: Measurement and Scientific Progress*. Oxford: Oxford University Press.

Cowan, Marjorie Kelly and Heidi Smith. 2022. *Microbiology Fundamentals: A Clinical Approach*. 4th edition. New York: McGraw Hill.

Dewey, John. 1896. "The Reflex Arc Concept in Psychology." *Psychology Review* 3, no. 4: 357–370. https://psycnet.apa.org/doi/10.1037/h0070405.

Dreyfus, Hubert. 1991. *Being-in-the-World: A Commentary on Heidegger's* Being and Time, *Division I.* Cambridge: MIT Press.

Dunkley, Cara R., Craig D. Henshaw, Saira K. Henshaw, and Lori A. Brotto. 2020. "Physical Pain as Pleasure: A Theoretical Perspective." *Journal of Sex Research* 57, no. 4: 421–437. https://doi.org/10.1080/00224499.2019.1605328.

Dutton, Donald G. and Arthur P. Aron. 1974. "Some Evidence for Heightened Sexual Attraction under Conditions of High Anxiety." *Journal of Personality and Social Psychology* 30, no. 4: 510–517. <u>http://dx.doi.org/10.1037/h0037031</u>.

Edemekong, Peter F., Deb L. Bomgaars, Sukesh Sukumaran, and Caroline Schoo. 2022. "Activities of Daily Living (ADLs)." *National Library of Medicine*. Florida: StatPearls Publishing. <u>https://www.ncbi.nlm.nih.gov/books/NBK470404/</u>.

Foucault, Michel. 1973. *The Birth of the Clinic: An Archeology of Medical Perception*. New York: Vintage Press.

Fricker, Miranda. 2007. *Epistemic Injustice: Power and the Ethics of Knowing*. Oxford: Oxford University Press.

Glucklich, Ariel. 2017. "Sacred Pain: The Use of Self-inflicted Pain in Religion." In *The Routledge Handbook of Philosophy of Pain*, edited by Jennifer Corns, 279–287. New York: Routledge.

Goldberg, Daniel S. 2017. *The Bioethics of Pain Management: Beyond Opioids*. New York: Routledge.

Hardy, James D. 1956. "The Nature of Pain." *Journal of Chronic Diseases* 4, no. 1: 22–51. <u>https://doi.org/10.1016/0021-9681(56)90005-4</u>.

Hegel, G.W.F. 1977. Phenomenology of Spirit. Oxford: Oxford University Press.

Heidegger, Martin. 1962. Being and Time. New York: Harper and Row.

Horwich, Paul. 2012. Wittgenstein's Metaphilosophy. Oxford: Oxford University Press.

IASP (International Association for the Study of Pain). 2011. *Classification of Chronic Pain*. 2nd revised edition. <u>https://www.iasp-pain.org/publications/free-ebooks/classification-of-chronic-pain-second-edition-revised/</u>.

Katz, Joel and Ronald Melzack. 1999. "Measurement of Pain." *Surgical Clinics of North America* 79, no. 2: 231–252. <u>https://doi.org/10.1016/s0039-6109(05)70381-9</u>.

Kuhn, Thomas. 2012. The Structure of Scientific Revolutions. Chicago: University of Chicago Press.

McCaffery, Margo. 1968. *Nursing Practice Theories Related to Cognition, Bodily Pain, and Man-Environment Interactions*. Los Angeles: University of California Press.

----. 1997. Pain: Clinical Manual. 2nd edition. New York: Mosby.

McCaffery, Margo and Christine L. Pasero. 1997. "Pain Ratings: The Fifth Vital Sign." *American Journal of Nursing* 97, no. 2: 15–16. <u>https://doi.org/10.1097/00000446-199702000-00010</u>.

McDowell, John. 1998. Mind, Value, and Reality. Cambridge: Harvard University Press.

McPeek, Bucknam. 2007. "Pain and Subjective Responses." *International Anesthesiology Clinics* 45, no. 4: 25–33. <u>https://doi.org/10.1097/aia.ob013e318142c8bc</u>.

Meghani, Salimah H., Eeeseung Byun, and Rollin M. Gallagher. 2012. "Time to Take Stock: A Metaanalysis and Systematic Review of Analgesic Discrepancies for Pain in the United States." *Pain Medicine* 13, no. 2: 150–174. <u>https://doi.org/10.1111/j.1526-4637.2011.01310.x</u>.

Noble, Bill, David Clark, Marcia Meldrum, Henk ten Have, Jane Seymour, Michelle Winslow, and Silvia Paz. 2005. "The Measurement of Pain, 1945–2000." *Journal of Pain and Symptom Management* 29, no. 1: 14–21. https://doi.org/10.1016/j.jpainsymman.2004.08.007.

Olatoye, Oludare O. 2019. "The Dreaded Pain-Scale." *Mayoclinic.org*, 26 June. <u>https://connect.mayoclinic.org/blog/adult-pain-medicine/newsfeed-post/what-to-expect-at-my-pain-medicine-appointment/</u>.

Pain Management Task Force. 2010. *Final Report*. Office of the Army Surgeon General. https://www.dvcipm.org/site/assets/files/1070/pain-task-force-final-report-may-2010.pdf.

Putnam, H. 1963. "Brains and Behavior." In *Analytical Philosophy: Second Series*, edited by Ronald Butler, 25–36. New York: Blackwell.

Rieder, Travis. 2019. In Pain: A Bioethicist's Personal Struggle with Opioids. New York: Harper.

Scarry, Elaine. 1985. *The Body in Pain: The Making and Unmaking of the World*. Oxford: Oxford University Press.

Schiavenato, Martin and Kenneth D. Craig. 2010. "Pain Assessment as a Social Transaction: Beyond the 'Gold Standard'." *Clinical Pain Journal* 26, no. 8: 667–676. <u>https://doi.org/10.1097/AJP.ob013e3181e72507</u>.

Schiffer, Stephen. 2003. *The Things We Mean*. Oxford: Clarendon Press. <u>https://doi.org/10.1093/0199257760.001.0001</u>.

Sellars, Wilfrid. 1997. *Empiricism and the Philosophy of Mind*. Cambridge: Harvard University Press.

Stevens, Stanley. 1957. "On the Psychophysical Law." *Psychological Review* 64, no. 3: 153–181. <u>https://doi.org/10.1037/h0046162</u>.

Taylor, Charles. 1971. "Interpretation and the Science of Man." *Review of Metaphysics* 25, no. 1: 3–51. <u>http://www.jstor.org/stable/20125928</u>.

Tomasello, Michael. 2019. Becoming Human: A Theory of Ontogeny. Cambridge: Belknap Press.

Voepel-Lewis, Terri, Ronald J. Piscotty Jr., Ann Annis, and Bea Kalisch. 2012. "Empirical Review Supporting the Application of 'Pain Assessment as a Social Transition' Model in Pediatrics." *Journal of Pain and Symptom Management* 44, no. 3: 446–457. https://doi.org/10.1016/j.jpainsymman.2011.09.005.

Wittgenstein, Ludwig. 2009. Philosophical Investigations. Oxford: Wiley-Blackwell.

Wright, Andrew. 2017. "An Introduction to the IASP's Definition of Pain." In *The Routledge Handbook of Philosophy of Pain*, edited by Jennifer Corns, 367–377. New York: Routledge.

Zanotti Joan M. 2018. "Handle with Care: Caring for Children with Autism Spectrum Disorder in the ED." *Nursing* 48, no. 2: 50–55. <u>https://doi.org/10.1097/01.nurse.0000529808.13784.bc</u>.