

**The History of the Concept of Pain:
How the Experts Came to be Out of Touch with the Folk**
Benny Goldberg, Kevin Reuter, and Justin Sytsma¹

Abstract: In this chapter we consider the tension between how pain researchers today typically define pains and the dominant, ordinary conception of pain. While both philosophers and pain scientists define pains as experiences, taking this to correspond with the ordinary understanding, recent empirical evidence indicates that laypeople tend to think of pains as qualities of bodily states. How did this divide come about? To answer, we sketch the historical origins of the concept of pain in Western medicine, providing evidence that during large swaths of this history, medical experts characterized pains as laypeople tend to today—that is, as qualities of bodily states. The conception of pains as experiences that we find in contemporary definitions seems to be a relatively recent development corresponding with changes in the diagnostic tools available to doctors. We argue that this history is important and suggests that the most prominent current scientific definition of pain (IASP) is partly stipulative and fails to match how laypeople most often think of pain. We suggest that either we should acknowledge this stipulative character, or else should amend the IASP definition in a pluralistic fashion that notes both bodily and experiential conceptions of pain.

The standard view among philosophers and scientists today is that pains are conscious mental states—“experiences” as it is often put (e.g., Hill 2009, Kripke 1980, Lewis 1980, Putnam 1963). This view thereby equates *pains* with *feelings of pain*. But a growing body of empirical work suggests that laypeople tend to conceive of pains in a quite different way, distinguishing them from feelings of pain and instead treating pains as qualities of bodily states (e.g., Kim et al. 2016, Reuter & Sytsma 2020, Sytsma & Reuter 2017). That the views of experts and laypeople might diverge is not generally too surprising; after all, we expect experts on a topic to have some special knowledge about it. But in the case of pain, this divergence is perplexing: this was not supposed to be an instance of the experts discovering that the reality is actually quite different than we might have thought. Rather, the standard view of pains has been taken to express the dominant, ordinary conception (Aydede 2009). As such, if these really do diverge, we are left with a puzzle. How did the experts get the ordinary view wrong?

In this chapter we explore this puzzle by looking to the history of Western medicine. We argue that for the bulk of this history pains were not generally conceived of as experiences, but as qualities of bodily states. Insofar as this suggests that a bodily conception of pain is a natural “naïve” view for people to arrive at, it is congruent with the recent empirical findings. The general view among medical practitioners begins to shift during the Enlightenment, however, and this gains steam during the industrial age. While pains were initially treated as bodily phenomena with the reports of patients playing a primary diagnostic role, the development of new medical technologies promoted a shift toward an emphasis on the

¹ Forthcoming in *Advances in Experimental Philosophy of Medicine* edited by K. Hens and A. De Block. We want to thank an anonymous reviewer for helpful suggestions on an earlier version of this chapter.

clinical and anatomical observations of physicians over “patient’s tales.” This in turn set the stage for a conflict: Who do we believe when the physician’s considered judgment diverges from what the patient reports?

We suggest that this conflict led to a divergence in concepts. Over time practitioners moved from a conception of pain on which it can be known both through third-person observation *and* first-person reports, to competing conceptions that emphasize one or the other. The rise of patient-centered care in the twentieth century carried with it a focus on the patient’s experience, and these conceptions of pain then got recast: pains themselves were taken to be *experiences* known from a first-person perspective, while third-person observation of the body would at best reveal the physical *causes* of those pains. Thus, ironically, we suggest that recent attempts to take the reports of patients about their own pains seriously have promoted a conception of pain among experts that diverges from the dominant, ordinary view.

Here is how we will proceed. In Section 1, we discuss the standard view among pain researchers, detailing how it is thought to relate to the dominant, ordinary conception of pain. In Section 2, we turn to empirical work on the ordinary conception, briefly surveying the extant work, adding to it, and drawing out the tension between these findings and what experts today have generally assumed. In Section 3, we turn to the history, detailing how thinking about pain in Western medicine has shifted from a bodily conception to an experience conception. Finally, in Section 4, we return to the common definition of “pain” among researchers today, discussing how this might be revised.

1. The Standard View

While there are ongoing debates among philosophers about what pains are, the standard view is that pains are conscious mental states. This is often expressed by saying that pains are sensations, feelings, or, most commonly, experiences. Such an *experience conception* of pain is often taken for granted, with modern philosophers treating it as being largely beyond dispute. As Lewis (1980, 222) puts it: “Pain is a feeling. Surely that is uncontroversial.”

Such sentiments do not merely seem to express the belief that philosophers are (largely) in agreement about pains being experiences, but that this reflects people’s ordinary thinking about pains. This is variously put by saying that experience conceptions correspond with our intuitions, the commonsense conception of pain, or the ordinary meaning of terms like “pain” (Aydede 2009, Hill 2009). And while we might harbor skepticism about whether pains exist on such a conception (e.g., Dennett 1978), the dominant, ordinary understanding is often taken to set the topic of discourse.

The claim that pains are experiences is not only asserted by philosophers, but also to be found among pain scientists. For instance, the International Association for the Scientific Study of Pain (IASP)—arguably *the* scientific authority on pain research—defines pain as an “unpleasant sensory and emotional experience” (Raja et al. 2020, 1977). As the notes and surrounding discussion make clear, the intent here is to treat pains as mental phenomena, distinguishing them from bodily damage (as a typical but not necessary cause) and emphasizing that they are subjective.

There are, of course, many examples of scientific definitions of common terms that are not intended to fully match our ordinary understanding. These are either *purely* stipulative

definitions like the definition of a prime number (where we have no pre-theoretic conception at all), or *partially* stipulative definitions (i.e., explications). Explications often aim at providing definitions that are more fruitful for scientific investigation and that reduce ambiguity and vagueness (Carnap 1950, Brun 2016). While similarity to the ordinary understanding is still a desideratum, the resulting definition will deviate from the ordinary meaning to some extent (see Reuter & Brun 2021). To give a simple illustration, the definition of “berry” in botany diverges from the common use of the term; for instance, it excludes strawberries and includes pumpkins.

Is the IASP definition of pain perhaps intended to be a partially stipulative definition that might diverge notably from the ordinary understanding of pain? It does not seem so. The current IASP definition was revised in light of public feedback, where this included a significant number of people from outside of clinical or scientific research. This suggests a live concern with the ordinary understanding of pain. In line with this, Harold Merskey—who proposed a first formulation of the IASP definition—states that it “is important to emphasize something that was implicit in the previous definitions but was not specifically stated: that the terms have been developed for *use in clinical practice* rather than for experimental work, physiology, or anatomical purposes” (1986, 226, our italics). For the purpose of communicating with laypeople about their pains, however, a stipulative definition that notably diverged from the ordinary understanding would court misunderstanding. This is made perhaps most clear by Aydede in his extended remarks on the IASP definition. He concludes that it is “intended to say what pain in fact is in a way that doesn’t rely on controversial assumptions and theories but takes its *commonsense understanding to heart as essential* and provides as such a neutral start and guidance in scientific research and a reasonable focus in clinical settings” (2017, 457, our italics).

That said, we do *not* claim that each and every aspect of the IASP characterization of pain, is meant to capture how ordinary people think about pain. Our observation concerns merely (what we take to be) the central element of the IASP definition: that pains are experiences is not treated as something being stipulated, but rather seems to be assumed to reflect the folk understanding of pain.

2. The Tension

We have seen that the standard view among pain researchers is that pains are experiences. Further we have seen that this is not taken to be a radical new discovery that overturns our folk thinking about pain, but instead is assumed to capture it. Recent empirical work on the ordinary concept of pain, however, casts doubt on this assumption.

Over the past ten years, experimental philosophers have investigated the ordinary concept of pain using both questionnaire studies and corpus-linguistic methods (Sytsma 2010; Reuter 2011; Reuter et al. 2014, 2019; Kim et al. 2016; Sytsma & Reuter 2017; Reuter et al. 2019, Borg et al. 2020; Liu 2020, forthcoming; Reuter & Sytsma 2020; Salomons et al. 2021).² The results of many of these studies indicate that the dominant, ordinary conception—at least among North Americans—diverges from the standard view among pain researchers. Together

² Other work has looked at judgments of pain relative to other mental states or capacities, including for purposes of casting light on the folk conception of subjective experience (e.g., Sytsma & Machery 2010, Sytsma 2012, Sytsma & Ozdemir 2019, Ozdemir 2022) and revealing the dimensions of mind perception (e.g., Gray et al. 2007, Weisman et al. 2017).

the studies suggest that laypeople most often treat pains as qualities of bodily states, typically taking them to be located where we feel them to be and where we say that they are.³

According to the standard view, there is no distinction to be drawn between pains and feelings of pain. Accepting this, at least two further claims follow. First, there can be no unfelt pains (because an “unfelt feeling” is a contradiction). Second, there can be no illusory or hallucinated pains (because illusory or hallucinated pains are still feelings of pain and, hence, are real pains).

The empirical results suggest that many laypeople tend to deny each of these claims. Further, they indicate that laypeople often hold that pains and feelings of pain are different, directly contradicting the standard view. With regard to the first claim, Sytsma (2010), Sytsma & Reuter (2017), and Reuter & Sytsma (2020) have provided a battery of studies suggesting that unfelt pains are not only conceived to be possible by most laypeople, but are actually thought to be quite common. And, with regard to the second claim, Reuter et al. (2014) and Sytsma & Reuter (2017) have reported a number of studies indicating that a majority of people tend to allow for pain illusions and hallucinations.

More directly, there are studies indicating that children think of pains as objective states of the body (Gaffney et al. 1986, Esteve & Marquina-Aponte 2011, Reuter 2017). And other data suggest that a similar conclusion holds for adults. Kim et al. (2016) provide cross-cultural evidence that most laypeople in both South Korea and the United States tend to locate pains in body parts, suggesting that they are not conceiving of pains as experiences. Further, Reuter (2011) and Sytsma & Reuter (2017) conducted corpus studies in English and German that indicate that the folk distinguish between feelings of pain and pains themselves. Expanding on these corpus results, we ran a new questionnaire study to test whether laypeople accept this distinction. Participants were asked the following simple yes/no question: “Is a pain the same thing as feeling a pain?” Against what we would expect if people generally hold an experience conception, we found that the vast majority (83%) gave negative responses.⁴

We take the extant studies to provide strong evidence that the standard view among pain researchers does not correspond with the dominant, ordinary conception of pain (at least among North Americans and with hints that this might generalize). But, as discussed above, the standard view is not presented as being at least partially stipulative; rather, researchers seem to think that it reflects ordinary thinking about pain. Hence, we have got a tension.

There seem to be two basic ways of resolving this tension: either the empirical evidence is misleading or pain researchers are mistaken in their assumptions about the ordinary conception of pain. Given the range of empirical evidence on offer, as well as the general plausibility that expertise on a topic might color judgments about people’s naïve views, we find the latter to be more likely. Nonetheless, this calls for some explanation. How did this state of affairs come about?

³ Borg et al. (2020) and Salomons et al. (2021) argue for a polyeidic account of the concept of pain, while Liu (2020) argues for a polysemy account. While there are important differences between these accounts, they share the idea that laypeople not only think of pains as experiences but also think of them as bodily qualities. While these accounts potentially reduce the tension between the standard view and ordinary conceptions of pain—rendering it perhaps merely *partial*—we believe that even accepting one of these views, a notable tension remains. Therefore, as our goal is to explore this tension, we will set these debates aside here.

⁴ Participants were recruited via advertising for a free personality test on Google with ads running in the US. Responses were collected from 54 participants aged 16 or older. Of these, 45 answered “no,” which is significantly greater than 50% ($\chi^2=22.7, p<.001$).

This question raises two important issues. First, we would like to know how pain researchers came to adopt an experience conception. We will address this in the next section, briefly tracing the historical development of thinking about pain in Western medicine from antiquity through the 20th century. What we find is that across most of this history pains were primarily conceived of as bodily qualities and that the experience conception is a relatively recent development. This offers some support for the claim that a bodily conception of pain is a natural view for people to arrive at, helping to explain why it would remain common among laypeople today. And it suggests that it is the view of pain researchers that has diverged from the historical norm, not the dominant view among laypeople today. This raises the second issue: How did present-day experts come to be mistaken about what the dominant, ordinary conception of pain is?

While a full treatment of this question is beyond the scope of the present chapter, we believe the main reasons that advocates of the IASP definition of pain have given for adopting an experience conception go some way toward explaining how this has come to be thought of as the ordinary view. First, the note for the 1979 IASP definition of pain states that “each individual learns the application of the word through *experiences* related to injury in early life” (Raja et al. 2020, 1977, italics added).⁵ Reflecting on this, it might be natural to conclude that people thereby learn that “pain” refers to such experiences. This does not follow, however. That one learns a term in part through one’s experiences does not necessarily mean that they will develop an experiential conception. For instance, while most of us learned the application of the word “red” through experiences of red surfaces, this does not mean that the term refers to qualities of those experiences rather than properties of non-experiential objects (e.g., properties of surfaces or light).

Second, the note also rightly points out that “many people report pain in the absence of tissue damage or any likely pathophysiological cause.” Reflecting on this, we might infer that pains cannot be identified with bodily states and, hence, must be mental states. And drawing this inference, one might expect this to be a conclusion that people generally arrive at. But, again, this does not necessarily follow. People might be ignorant of this finding or interpret it in terms of medical ignorance—that there must be an underlying pathophysiological cause that practitioners simply have not identified yet. More importantly, it would be a mistake to assume generalization from unusual instances to the contours of the dominant concept. For instance, while most hold that colors can occur during dreams or hallucinations, it would be wrong to conclude that the dominant, ordinary conception of colors treats them as qualities of experiences.

Lastly, the note indicates that “if [people] regard their experience as pain and if they report it in the same ways as pain caused by tissue damage, it should be accepted as pain.” The IASP is correct to highlight that we should respect people’s pain reports. Nobody else is in a position to override sincere first-person reports about what someone feels. And this has normative force, suggesting that we *should* define pains in a way that recognizes the point. Further, it is easy to assume that people do think of pains in the way that we think that they should. The problem, here, is that the definition assumes that there is no distinction to be drawn between feelings of pain and pains themselves. Drawing this distinction—as the evidence suggests laypeople generally do—the spirit of the sentiment can be accepted while doubting that people tend to think of pains as experiences. That is, one can accept that people should be considered the

⁵ We will focus on the original definition here for purposes of understanding the development of this view, but comparable reasons can be drawn out of the revised definition.

ultimate authority on whether they *feel pain* without necessarily accepting that they have the same degree of authority with regard to whether their feelings are veridical.

While this brief discussion does not settle the issue, we believe it is plausible that the reasons researchers adduce for holding an experience conception of pain would also promote the assumption that this corresponds with ordinary thinking about pain. The empirical evidence suggests that this is a mistake, however. If this is correct, then a key question is how the thinking of pain researchers came to diverge from that of laypeople.

3. The History

In this section, we aim to do two things. First, we'll show on historical grounds that pains have not generally been thought of as experiences in Western medicine.⁶ Instead, we describe episodes in this history where pain seems to be understood as a bodily phenomenon known through the reports of patients. Second, we'll indicate how this conception came to be replaced with the one typically found among pain researchers today.

Due to a general lack of effective means of pain suppression, for the vast majority of human history pain has affected the weft and warp of everyone's daily lives, being part and parcel of the social world (Ablow 2017, 4). Not surprisingly, societies in general, and physicians in particular, took the fundamental existence of pain and suffering to be a bodily reality. It was part of what might be called the "tyranny" of matter, with the body being the temporary prison or workhouse of the soul, as Plato characterizes it in the *Phaedo*. Against this backdrop, across the history of Western medicine, we see the emergence not just of new modes of dealing with or mitigating pain, but new vocabularies for expressing it—various ways in which pain could be described in medical, literary, and philosophical terms (Moscoso 2012, 39–41). Thus, contrary to those assuming the inexpressible subjectivity of pain, we find that pain was treated as intersubjectively perceptible and describable.⁷

European medicine from antiquity into the modern era was in large part founded on a conception of the body that emerged from the doctrines of ancient writers like Hippocrates (c. 460–370 BCE) and Galen (c. 129–210 CE). This was the humoral theory. While the history here is complex, a common view was that our bodies are composed of four basic substances or humors—blood (*haima*), black bile (*melaina khole*), yellow bile (*xanthe khole*), and phlegm (*phlegma*). Health (*eukrasia*) was conceived of as the correct proportion and balance of these various fluids, and disease (*dyskrasia*) as some imbalance between them that caused different sorts of illnesses and symptoms. Across the ancient, medieval, and early modern periods, each humor began to be conceived as connected to the four elements (air, fire, water, earth) in different ways, as well as the four primary qualities (dry, hot, wet, cold). Thus, phlegm was associated with "cold" diseases, yellow bile with "hot" ones, and so on. This provided

⁶ One *locus classicus* of this epistemic conception of pain is Scarry (1985). A useful reconsideration of her argument, from the point of the view of history, can be found in Ablow (2017). Ablow considers the nineteenth century's ideas of "hypochondria" in the context of pain, and this account is largely congruous with and complementary to the one offered in the present essay.

⁷ There are huge swaths of the European history of the perception of pain that we don't have room to discuss here, such as Plotinus' analogy between the internal perception of pain and the external perception of vision (Emilsson 2015, 58–60). We believe that much of the broader history is amenable to the current analysis, however.

physicians with a set of possible diagnoses, as well as a language to describe disease and its effects (Smith 2008, 465).

In ancient medicine, pain was thought to be caused by disruptions in the amount and quality of the humors. Specific pains, then, were seated in various parts of the body. Thus, black bile accumulating in the liver would block the yellow bile produced there, causing it to spill over into the rest of the body, resulting in the diagnosis of jaundice (hepatitis), and the associated pain and sensitivity of the liver (e.g., Hippocrates 1988, 222–229). This is not a matter of pain being a physical cause of an experience, as this greatly understates the complex causal processes that arise from changes in the body that we experience. In ancient medicine, pain was localized wheresoever the various parts were disrupted or disturbed through injury or humoral imbalance, and while the feeling or experience of pain is a part of the ancient concept, pain was not itself taken to be merely a feeling caused by these physiological changes.

Instead, pain was a fundamental quality of living bodies, and specifically parts of bodies capable of sensation, since, for instance, elemental bodies, like the humor of bile or the element of water, were not so capable, lacking the requisite organization.⁸ That is, sensation was a capacity or function of certain kinds of physiological structures (like the liver or other organs), a capacity to register changes to that part. By the time of the Roman physician Galen, doctors knew that the nerves carried these sensations to the brain, which was thought by some to be the seat of the soul (that is, the mind). While the physician relied on the subjective reports of such pains by the patient, there seems to be little thought that the pain itself is subjective; that is, there is a difference between how the physician comes to know about pain, and whether that pain is an objective bodily state. Of course, sometimes pain can be straightforwardly recognized as resulting from a visible wound, without recourse to patient reports and humoral causation. But, in general, pain seems to have been located in the affected part of the body. This is something often conflated by historians when writing about pain, mistaking the fact that pain is *known through* sensation or feeling for the idea that pain *just is* a feeling. Our tactile experience of textures is a feeling, but we do not doubt the roughness of sandpaper.

Pain, then, had an important medical function—it was an exceptionally useful diagnostic category, based on this humoral conception of physiology. Although this alone does not rule out thinking of pains as feelings, the idea that pains were only knowable from the first-person perspective or that they were subjective mental states was never a mainstream position in the medical literature. Instead, pain was connected to bodily states of affairs—to changes of those bodily substances and parts, and their resulting physiological effects. So, for instance, in *On the Affected Parts*, Galen describes the ways in which pain is a useful diagnostic tool for discovering which parts are unhealthy or afflicted, with this being explained in terms of the overall humoral balance. In particular, he notes that some pains are typical of certain parts, and each part has stereotypical qualities that assist in diagnosis. Galen’s description of the diagnostic method of the ancient physician Archigenes (active 98–117 CE) is worth quoting in some detail:

The pain in the liver is drawing, fixed and dull and of stubborn pressure. The pain in the spleen is not sharp but heavy and tearing at the same time, similar to something resisting a crushing motion and a weight applied from the outside. The kidneys give the impression of a harsh pain and of a steady constriction with the

⁸ In this Galen follows Aristotle (2002, II.1); see, e.g., Galen (1951, I.1) and (1996, 8).

[feeling of] stabbing.... One can suffer from such an assortment of pain that it leads to some ambiguity of expression (Galen 1976, II.9, 60; see also Wilson 2013)

Galen argues that it is important to note—by means of the patient’s descriptions—which types of pains occur in which locations, and whether or not those are known to be typical of those parts (1976, II.5, 47). Following Plato and Hippocrates, he thinks that pains are caused when some part is changed contrary to its nature, as when the humoral balance of some part is altered or when the part is physically cut, torn, bruised, or the like.⁹ Thus the observation of pain was central to diagnosis.

Indeed, there is a consistent consensus, from Hippocrates to Galen and beyond, that pain is the disruption of bodily balances—what we might describe as the registering of a change in a part that is capable of sensation.¹⁰ Thus, as illustrated by the passage above, Galen expends quite a bit of effort to develop a vocabulary to express pains in the pursuit of the correct diagnosis via a kind of triangulation between patient, physician, and pain (for which, see Roby 2016).¹¹ While the specific ways patients report pain are variable and subjective—e.g., a throbbing vs. stabbing pain—the existence of the pain seated in some bodily locale is a fundamental reality to be confronted by the physician, and thus the necessity of Galen’s (and other’s) efforts at creating a consistent terminology to describe pain.¹²

We might think of this terminology as a kind of cognitive instrument allowing the doctor to make better diagnoses. Pain may be known through inference, but this is really no different than other sorts of problems in medicine. For instance, because ancient physicians lacked the technology to observe internal injuries (indeed, their knowledge of bodies was deeply limited due to prohibitions on human anatomizing), much diagnosis depended on careful observation of the patient’s behavior and reports in order to diagnose a host of issues, from unseen fractures to internal hemorrhages. In fact, one of the most fundamental debates in ancient medical theory was the status of unobserved causes, and whether physicians should use such occult (hidden) phenomena in their practice. For the empiricist sect, who rejected the use of the hidden causes of the rationalist sect, pain was thus more “real” than whatsoever were its hidden causes like the humors. Pain was among those things that both rationalists and empiricists used for diagnosis, an objective quality of the patient’s body (e.g., “let us assume that some part of the body is in pain, hard, resistant, and swollen”); the rationalist, however, goes further, by seeking, “the cause, namely, that some fluid has flowed into the part in an abnormal amount, has made it swell and, by stretching it, has caused pain” (Galen 1985, 6). The distinction between these ancient medical sects, then, is not between those who take pain to be some hidden, private experience and those who take it to be objective, but between those who use it to infer to hidden causes and those who do not. For both sects, pain was an objective state of bodily parts.

Indeed, the trope of the private, subjective nature of pain does not come to the fore in Western medicine until much later. This process begins during the Enlightenment as we find physicians gradually deemphasizing the diagnostic role of patient reports, de-linking these reports from states of the patient’s body, and instead relying more heavily on the use of clinical or

⁹ See Plato (1929, 64d1) and Hippocrates (1995, 82–83).

¹⁰ Galen argues that for this reason, there is no pain in bones, cartilage, and fat. For the full discussion of pain, sensation, and changeability, see Galen (2016, 46–53).

¹¹ While Roby seems to take as obvious the necessarily subjective nature of pain, we do not think this is either the only or the best way of reading Galen.

¹² The project of attempting to quantify pain, a project ongoing to this day, can be seen as a continuation of this ancient methodology, for which see: Noémi Tousignant (2006).

anatomical inspection, especially via scientific instruments. With this shift in emphasis, physicians' observations were increasingly cast as objective, setting up a contrast with the reports of patients, which were increasingly marginalized in the diagnostic process. Such reports were *not* objective, and hence recast as subjective. Indeed, it only became possible to insist on the fundamental subjectivity of a patient's expression of pain once there was some distance between diagnosis and patient reports, distance provided by new instruments and medical theories.

On this topic, Goldberg (2017) has examined a number of important changes to physicians' thinking about pain. The basic idea is that scientific objectivity, especially in medicine, became associated with the use of mechanical instruments to inquire into the *true* state of the patient, replacing the patient's self-reports with objective measurements via instruments constructed according to and acting by means of scientifically understood mechanical processes. By the end of the eighteenth century, the physician's diagnosis was framed by pathological anatomy and clinical observation, with illness reduced to pathophysiological changes identified by mechanically observed differences between the patient's body and the body of a healthy person.

This reliance on mechanized instrumentation and observation leads us to an interesting example of pain being treated as a physiological property of the patient's body. The late nineteenth-century American neurologist William Hammond (1886, 35) writes:

The fact that the patient denies the existence of tenderness should have no weight with the physician. Thus, a young lady consulted me for severe infra-mammary pain, headache, and nausea. I at once suspected spinal irritation, but she declared, in answer to my inquiries, that there was no sign of tenderness anywhere over the spinal column. I insisted, however, on a manual examination, and to her great surprise found three spots that were exceedingly painful to slight pressure.¹³

Patients could be wrong about their pain, because pain is an objective fact about their injury, not something the patient has transparent and unmediated access to. Of course, patient reports remain important, but they come to be interpreted in terms of the physician's objective understanding of physiology and injury. Thus, pain is to be probed in a way functionally similar to the reflexes of the knee: a poke or a prod, and a (necessary) response by the patient's body. This objective, physiological conception of pain becomes still more pronounced during the nineteenth century, with physicians increasingly coming to identify pains with lesions that could be visually inspected and confirmed, either by eye or through more complex microscopical examination if possible (Goldberg 2012).

In fact, physicians became skeptical that there could be any real pain *sans* lesion. Such a view sets the stage for conflict, placing authority for whether a person is *really* in pain with the observations of physicians rather than patients. Thus, in cases where a patient complains of pain in the absence of any lesions that the physician can detect, skepticism about the possibility of pain *sans* lesion amounts to skepticism about the patient's reports. Such conflicts are, of course, not merely hypothetical. Goldberg (2017) describes the phenomenon of "railway spine"—a nineteenth-century diagnosis founded upon the presence of back pain after a railway accident. As Goldberg argues, this was a controversial diagnosis, not just because of conflicting medical nosologies and diagnostic criteria, but because of the economic and legal

¹³ See also the analysis in Goldberg (2017, 2).

consequences of railway accidents. In particular, there were anxieties over what was described as “malingering.”

The need to present evidence in court about “actual” injury due to railway accidents meant that medical experts had to describe the grounds for a diagnosis: Was there a real, objective problem or was the testimony of pain merely the outward sign of a malingerer attempting to win a large pay-out? In this context, pain had to be inferred on the basis of detectable lesions whose presence or absence would tell the physician if there was truly pain or if the patient was merely fraudulently claiming to have pain. Take, for instance, the reporting from the journal *Medical News* in 1891 about a session on “Medical Jurisprudence and Neurology” at the 42nd annual meeting of the American Medical Association. Dr. T.H. Manley of New York presented a paper that distinguished between two forms of railway spine: “first, those cases showing distinct lesions; and, second, those cases showing functional disturbance, but with no demonstrable lesion” (Anon. 1891, 537). The second group, we might surmise, were like those who either thought or pretended to have a lasting injury, but who, upon further examination, were in fact more or less fine (minus muscle atrophy and the like). Another attendee, Dr. King of Tennessee, was even blunter: “there is no such condition as concussion without a demonstrable lesion... without exception, these cases are malingerers and only assume this condition for the purpose of pecuniary gain.” At the time, this was not settled, and, as the journal reports, “the discussion of the subject of railway spine was quite animated” with much disagreement. But by the start of the twentieth-century, doubt about railway spine *sans* lesion had triumphed, and surgeons and clinicians arrived at the conclusion that without any detectable pathology—in this case, lesions—there could be no disease, such that any *sincere* pain reports were merely the result of “traumatic neurosis” (Goldberg 2017, 3; see also Ablow 2017). That is, reports indicated some sort of psychological condition, or else were an attempt at malingering and fraud. Thus, the link between diagnosis and patient experience was broken, as the patient’s reports were no longer considered as authoritatively demonstrating even feelings of pain, let alone actual injury.

Having focused on “objective” pathology, we thus see patients’ reports recast as “subjective,” with some “pains” being treated as purely in the mind. In fact, many physicians held that it would be best to eliminate patients’ reports from the diagnostic process altogether, although here again the profit-oriented practice of medicine intervenes. For instance, the English physician Peter M. Latham noted that “among the upper classes of life, we are obliged to listen to the patients’ tale, although we generally cut it as short as possible, in order to get to our plan of investigation” (1836, 76). Such patients needed to be listened to—their concerns acknowledged—but as a medical matter their reports were not to be taken seriously. As Bourke (2014, 158) has argued, “the ‘subjective’ nature of suffering changed from being an advantage—a reason for eliciting patient-accounts—to being a drawback to the process of diagnosis.”

Moving forward in time, we see increasing faith by physicians in the ability of mechanical instruments to allow them to ignore or to replace the subjective reports of their patients, of which technologies the x-ray was perhaps the most important. As one doctor wrote, “one can predict positively that those mysterious ‘railway spines’ and conditions of like nature will disappear under the searchlight that Röntgen has put into our hands” (Bayne & Cassidy 1902, 519). Taking a longer view, then, technologies like the x-ray can be seen as the culmination of those diagnostic trends mentioned above, illness now located in parts of the body, detectable to the physician, regardless of whether or not the patient expressed or reported any pain. That is, objective pain now had to have a cause that could be detected, a “place”—and if it could not

be detected in concrete, visually observable lesions, x-rays, or what have you, then the only recourse was that the pain was subjective, located entirely in the mind of the patient.

At this point, we have something much like the modern scientific conception of pain, albeit with a decidedly different locus of concern and ongoing terminological confusion. Recall from the discussion of the IASP definition above the split between the “unpleasant sensory and emotional experience” and the “actual or potential tissue damage” that it is typically, but not always, associated with—the “pathophysiological cause” as it is put in the note to the 1979 definition. Such “causes” are the objective pathology of the physicians of the early twentieth century, while what the patient feels—their experiences—are inherently subjective.

In the ensuing century, little has changed in this equation except the specific technologies invoked as replacements for patient experience. Despite the rise of patient centered care and non-paternalistic medicine,¹⁴ physicians are still concerned with their own, expert observations, and with the ability of an array of new technologies to replace the traditional medical history with objective detection. As Tracey (2005, 130) has argued, such tools “help the physician to believe in the patient’s narrative.” And, despite the protestation of non-paternalistic medical practitioners, a patient’s authority has been stripped of its innate connection to their body, and reaches only as far as their subjective feelings. That is, as Bourke has noted, the order has reversed from the beginnings of our story: the patient’s experiences are useful only after objective instrumental investigation has occurred.¹⁵

4. Concluding Discussion

There are two conclusions we want to draw out of the historical discussion from the previous section. First, the current scientific conception of pain is not inevitable, but rather the outcome of particular nosological regimes, as well as shifts in the relative role of patient reports and mechanical diagnostic tools. The purported “obviousness” of the experience conception of pain turns out to hinge on enculturation, not some timeless dictate of *a priori* conceptual investigations. Second, this sketch of the origins of the scientific conception of pain suggests that there is good reason to consider definitions like that given by the IASP to be partially stipulative, reflecting how medical thinking about pain developed rather than the dominant, ordinary understanding. Given the aim of employing the definition in clinical practice, this is potentially problematic, raising the question of how we might improve on the IASP definition.

4.1 Cultural Variability

In this chapter, we have only traced the history of the scientific concept of pain in Western cultures, limiting our ability to make reliable inferences about the concept in other cultures. That said, while there are important factors like the railway spine phenomenon that we do not encounter in other cultures, there are also many commonalities across cultures. These are likely to have shaped the modern *expert* concept of pain in non-Western cultures in a similar way,

¹⁴ See, for instance, the classic paper by Szasz & Hollender (1956). Szasz is also (in)famous for his role in the anti-psychology movement. The literature on medical paternalism, attacks as well as justifications, is enormous, but see Häyry (2002).

¹⁵ And sometimes not even then, as we learn from the fact that the reports of women and people of color are routinely ignored by physicians. Perhaps the clearest example of this comes from Serena Williams, whose experiences were ignored until almost too late, despite being a famous athlete (Haskel 2018).

and this would no doubt be aided by the role of Western countries in medical training and research. This includes that the medical tools with which doctors investigate the bodies of their patients have spread to most parts of the globe. These increasingly sophisticated tools do not (or perhaps should not) reduce the importance of patients' pain reports, but they certainly allow doctors to determine the causes of symptoms in a more reliable and precise manner than before, and we would expect this trend to pull physicians toward a similar focus on objective pathology. As we have argued above, this shift in focus in Western medicine over time has been crucial in the downgrading of pain reports as well as in "pushing" pain into the mental realm, and we doubt that this shift has occurred only in Western countries.

Consequently, we expect that medical experts in most non-Western cultures today will define pains similarly to Western experts, especially given the effects of modern globalization. However, if our historical depiction withstands scrutiny, then cultures in which medical experts do not have access to sophisticated diagnostic tools and training are likely to operate with a different *expert* concept of pain. Accordingly, our account is falsifiable to the extent that we predict medical experts of remote cultures to tend to entertain a concept of pain that is more in line with the bodily conception.

4.2 Revising the Definition

Given the experimental data on laypeople's understanding of pain as well as the historical origins of an experience conception of pain, we propose two ways in which the IASP might respond. First, the IASP could hold on to defining pains as "unpleasant sensory and emotional experience" but add the important qualification that such a definition is partly stipulative. Second, the IASP could hold on to the aim of defining pains as reflecting the dominant, ordinary conception of pain, but then "pluralize" the definition to acknowledge both the experience as well as the bodily conception.

Let us start with the first option. The IASP definition of pain has certainly been very successful in providing medical experts with a precise definition of pain that fosters communication among those experts. Undoubtedly, it has also done a lot of good for patients, for example, by promoting a non-paternalistic outlook on patient's pain reports. These two aspects speak in favor of adhering to the IASP definition. However, when it comes to communication between experts and patients, the IASP definition has likely also fostered misunderstanding. Take, for instance, a patient who says that she has had a constant pain in her ankle for the last few days, but who believes that pain to be mostly unfelt (something which the patient might not communicate clearly to her doctor). If the doctor does not probe further into the experience of the patient, she might falsely assume that the patient constantly experiences pain in her ankle, given the experience conception of pain the doctor operates with. If the IASP were to clarify that their definition of pain is partly stipulative and does not (in every aspect) reflect the understanding that ordinary people are often operating with, miscommunication between experts and patients could be reduced. We take this to be a very desirable objective and, thus, take the first option to be a reasonable proposal.

The IASP might also go for the second option and more radically revise their definition of pain. Please note, we do *not* propose that the definition of pain as "unpleasant sensory and emotional

experience” should be replaced with one that defines pains as qualities of bodily states. Rather, an improved definition of pain should acknowledge that pains are conceived in different ways—both as experiences and as qualities of bodily states. Such a definition might note that while “pain” is sometimes used synonymously with “feeling of pain,” these are often distinguished, with “pain” then being used instead to refer to aspects of the body. Doing so would reflect not just differences between experts and laypeople, but that we find pluralism with regard to pain concepts among laypeople. It would be naive to expect that the definition of pain employed by experts over more than the last half-century has not influenced ordinary thinking about pain. And, in fact, the experimental findings are consistent with this. While we have suggested that the evidence suggests that the *dominant* understanding follows a bodily conception, this is not to say that it indicates that laypeople are univocal. Thus, in many of the studies reported by Reuter & Sytsma, a substantial minority of the participants—often around 30%—seem to entertain an experience conception of pain. Further, other researchers (Borg, Liu, Salomons, etc.) have stressed that both the experience as well as the bodily conception of pain may play an important role in our thinking about pain. As such, if our ultimate goal is to bring our scientific definition of pain in line with how laypeople understand pain, rather than just the majority of them, we need to accept the complexities in people’s thinking.

References

- Ablow, R. (2017). *Victorian pain*. Princeton University Press.
- Anonymous (1891). “Report on Medical jurisprudence and Neurology Session.” In G.M. Gould (ed.), *Medical News*, LVIII, January-June, 537.
- Aristotle (2002). *On the Parts of Animals*, trans. J.G. Lennox. Oxford: Oxford University Press.
- Aydede, M. (2009). Pain. In E. Zalta (Ed.), *The Stanford encyclopedia of philosophy* (Spring 2013 Edition). <http://plato.stanford.edu/archives/spr2013/entries/pain/>. Aydede, M. (2017). “Defending the IASP definition of pain.” *The Monist*, 100(4): 439–464.
- Bayne, F.C. & H.F. Cassidy (1902). “A resume of X-Ray work, with some personal observations.” *Maryland Medical Journal*, XLV, No.1015 (December): 519.
- Borg, E., R. Harrison, J. Stazicker, & T. Salomons (2020). “Is the folk concept of pain polyeidic?” *Mind & Language*, 35(1): 29–47.
- Bourke, J. (2014). *The Story of Pain: From Prayer to Painkillers*. Oxford: Oxford University Press.
- Brun, G. (2016). “Explication as a method of conceptual re-engineering.” *Erkenntnis*, 81(6): 1211–1241.
- Carnap, R. (1950). *Logical foundations of probability*. University of Chicago Press, Routledge and Kegan Paul.

- Dennett, D. C. (1978). "Why you can't make a computer that feels pain." *Synthese*, 38(3): 415–456.
- Emilsson, E. K. (2015). "Plotinus on *sympatheia*." In E. Schliesser (ed.), *Sympathy: A History*, 58–60. Oxford: Oxford University Press.
- Esteve, R. & V. Marquina-Aponte (2011). "Children's pain perspectives." *Child: Care, Health and Development*, 38(3): 441–452.
- Gaffney, A. & E. Dunne (1986). "Developmental aspects of children's definitions of pain." *Pain*, 26(1): 105–117.
- Galen (1951). *Matters of Health*, trans. R. M. Green. Springfield: Thomas.
- Galen (1976). *On the Affected Parts*, trans. R. E. Siegel. Basel: S. Karger.
- Galen (1996). *Elements According to Hippocrates*, trans. P. De Lacey. Berlin: Akademie Verlag.
- Galen (2016). *On the Constitution of Medicine*, trans. and ed. I. Johnston. Cambridge: Harvard University Press.
- Galen (1985). "On the sects for beginners." In R. Walzer and M. Frede (eds.), *Three Treatises on the Nature of Science*. Indianapolis: Hackett Publishing.
- Gray, H., K. Gray, & D. Wegner (2007). "Dimensions of mind perception." *Science*, 315(5812): 619.
- Goldberg, D. S. (2012). "Pain without lesion: debate among American neurologists, 1850–1900." *Interdisciplinary Studies in the Long Nineteenth Century*, 15.
- Goldberg, D. S. (2017). "Pain, objectivity and history: understanding pain stigma." *Medical Humanities*, 43(4): 238–243.
- Hammond, W. (1886). *Spinal Irritation (Posterior Spinal Anemia)*. Detroit: George S Davis.
- Haskel, R. (2018). "Serena Williams on Motherhood, Marriage, and Making Her Comeback." *Vogue Magazine*, January 10.
- Häyry, H. (2002). *The limits of medical paternalism*. London: Routledge.
- Hill, C. (2009). *Consciousness*. Cambridge: Cambridge University Press.
- Hippocrates (1988). *Affections. Diseases 1. Diseases 2.*, trans. Paul Potter. Cambridge: Harvard University Press.
- Hippocrates (1995). *Places in man*, trans and Ed. P. Potter. Cambridge: Harvard University Press.

- Kim, H. E., N. Poth, K. Reuter, & J. Sytsma (2016). "Where is your pain? A Cross-cultural Comparison of the Concept of Pain in Americans and South Koreans." *Studia Philosophica Estonia*, 9(1): 136–169.
- Kripke, S. (1980). *Naming and necessity*. Cambridge, MA: Harvard University Press.
- Latham, P. M. (1836). "Lectures on Subjects Connected with Clinical Medicine." *The Medica-Chirurgical Review and Journal of Practical Medicine*, 25.
- Lewis, D. (1980). "Mad pain and Martian pain." In N. Block (ed.), *Readings in the Philosophy of Psychology*, 216–222. Cambridge: Harvard University Press.
- Liu, M. (2020). "The intuitive invalidity of the pain-in-mouth argument." *Analysis*, 80(3): 463–474.
- Liu, M. (forthcoming). "The Polysemy View of Pain." *Mind and Language*.
- Merskey, H. (1986). "Classification of chronic pain: Descriptions of chronic pain syndromes and definitions of pain terms." *Pain, Supplement*, 3: 226.
- Moscato, J. (2012). *Pain: A Cultural History*. London: Palgrave Macmillan.
- Ozdemir, E. (2022). *Empirical Evidence Against Phenomenal Theses*. PhD Dissertation, Victoria University of Wellington.
- Plato (1929). "Timaeus." In R. G. Bury (trans. and ed.), *Timaeus. Critias. Cleitophon. Menexenus. Epistles*. Cambridge: Harvard University Press.
- Putnam, H. (1963). Brains and behavior. In R. J. Butler (Ed.), *Analytic philosophy* (2nd series) (pp. 211–235). Oxford: Basil Blackwell.
- Raja, S. N., D. B. Carr, M. Cohen, N. B. Finnerup, H. Flor, S. Gibson, ... & K. Vader (2020). "The revised International Association for the Study of Pain definition of pain: concepts, challenges, and compromises." *Pain*, 161(9): 1976–1982.
- Reuter, K. (2011). "Distinguishing the appearance from the reality of pain." *Journal of Consciousness Studies*, 18(9-10): 94–109.
- Reuter, K. (2017). "The developmental challenge to the paradox of pain." *Erkenntnis*, 82(2): 265–283.
- Reuter, K., D. Phillips, & J. Sytsma (2014). "Hallucinating pain." In J. Sytsma (ed.), *Advances in Experimental Philosophy of Mind*, 75-100. Bloomsbury.
- Reuter, K., M. Siemund, & J. Sytsma (2019). "Putting pain in its proper place." *Analysis*, 79(1): 72–82.
- Reuter, K. & J. Sytsma (2020). "Unfelt pain." *Synthese*, 197(4): 1777–1801.

- Reuter, K. & B. Brun (2021). "Empirical Studies on Truth and the Project of Re-engineering Truth." *Pacific Philosophical Quarterly*.
- Roby, C. (2016). "Galen on the Patient's Role in Pain Diagnosis: Sensation, Consensus, and Metaphor." In G. Petridou and C. Thumiger (eds.), *Homo Patiens-approaches to the patient in the ancient world*, 304–322. Leiden: Brill.
- Salomons, T. V., R. Harrison, N. Hansen, J. Stazicker, A. G. Sorensen, P. Thomas, & E. Borg, E. (2021). "Is pain 'all in your mind'? Examining the general public's views of pain." *Review of Philosophy and Psychology*, 1-16.
- Scarry, E. (1985). *The Body in Pain*. Oxford: Oxford University Press.
- Smith, L.W. (2008). "An account of an unaccountable distemper: The experience of pain in early eighteenth-century England and France." *Eighteenth-Century Studies*, 459–480.
- Sytsma, J. (2010). "Dennett's theory of the folk theory of consciousness." *Journal of Consciousness Studies*, 17(3-4): 107–130.
- Sytsma, J. (2012). "Revisiting the valence account." *Philosophical Topics*, 40(2): 197–198.
- Sytsma, J. & E. Machery (2010). "Two conceptions of subjective experience." *Philosophical Studies*, 151(2): 299–327.
- Sytsma, J. & E. Ozdemir (2019). "No Problem: Evidence that the Concept of Phenomenal Consciousness is not Widespread." *Journal of Consciousness Studies*, 26(9-10): 241–256.
- Sytsma, J. & K. Reuter (2017). "Experimental philosophy of pain." *Journal of Indian Council of Philosophical Research*, 34(3): 611–628.
- Szasz, T. S. and M. H. Hollender (1950). "The Basic Models of the Doctor-Patient Relationship." *Archives of Internal Medicine*, 97: 585–592.
- Tousignant, Noémi (2006). *Pain and the Pursuit of Objectivity: Pain-Measuring Technologies in the United States, c.1890-1975*. Dissertation, McGill University.
- Tracey, I. (2005). "Taking the Narrative Out of Pain: Objectifying Pain Through Brain Imaging." In D. B. Carr, J. D. Loeser, and D. B. Morris (eds.), *Narrative, Pain, and Suffering*, 130. Seattle: IASP Press.
- Weisman, K., C. Dweck, & E. Markman (2017). "Rethinking people's conceptions of mental life." *PNAS*, 114(43): 11374–11379.
- Wilson, N. (2013). "The semantics of pain in Greco-Roman antiquity." *Journal of the History of the Neurosciences*, 22(2): 129–143.