Engineering the Concept of Pain for Clinical Practice

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Abstract Conceptual engineering is often understood as the practice of assessing and improving our representational tools with specific aims in mind. In this paper, I contribute to the engineering of the concept of *pain* with a particular focus on clinical utility. My engineering efforts center on the International Association for the Study of Pain's (IASP) "official" definition of pain, first introduced in 1979 and revised in 2020. I discuss the general process of conceptual engineering and the original IASP definition of pain and identify three desiderata for a definition suitable for clinical practice: it should be accurate, cognitively tractable, and promote justice in patient care. Evaluating the revised IASP definition against these desiderata, I argue that it is vague and fails to fully address persistent misconceptions about pain, and that additional revisions are therefore needed. I then propose an alternative definition engineered to better meet the demands of effective and just clinical practice.

Keywords: pain**,** clinical practice, definition of pain, conceptual engineering

Sam's doctor said to him, "The good news is that the pain is in your head."
But I am in my head, Sam thought.

Gabrielle Zevin (2022), *Tomorrow, and Tomorrow, and Tomorrow*

1. Introduction

This paper focuses on the International Association for the Study of Pain's (IASP) influential and widely cited definition of pain. As the "leading global authority on pain," the IASP comprises thousands of scientists, healthcare and medical providers, policymakers, and other professionals united by the common goal of alleviating pain (IASP 2025a). The IASP definition of pain—introduced in 1979 and revised in 2020—is an important component of this mission and designed to provide an understanding of pain that is useful across a range of contexts.

I approach both versions of the IASP definition as products of *conceptual engineering*, i.e., the result of a deliberate process of assessment and revision guided by specific practical and theoretical aims. I then contribute to this ongoing engineering effort by critically evaluating the revised definition and proposing targeted modifications, with particular

attention to *clinical utility*. My goal is to align the IASP definition more closely with the demands of effective and just clinical practice, with the hope that doing so will help bring about conceptual change among clinicians. This is not to suggest that a well-engineered definition of pain is all it takes to achieve such change, just that the IASP definition is a meaningful site of intervention.

The paper proceeds as follows. Section 2 discusses the process of conceptual engineering in more detail, and Section 3 introduces the *original* IASP definition of pain. Section 4 explicates the desiderata for a definition of pain suitable for clinical practice; I propose that the definition should be accurate, cognitively tractable, and justice-promoting. Section 5 evaluates the recently *revised* IASP definition against these desiderata and argues that more engineering work is needed. Section 6 considers alternative definitions of pain, including one that I propose. Finally, Section 7 addresses four potential concerns about the project.

2. Conceptual Engineering

Conceptual analysis is a standard method in philosophy. The traditional approach involves specifying the necessary and sufficient conditions for the application of a concept, such as 'knowledge,' 'justice,' or 'color'.[1] Such analysis is often employed in metaphysical, epistemological, and ethical inquiry, usually with the assumption that by examining our concepts, we can gain insight into the things our concepts pick out, if they pick out anything at all. Since conceptual analysis focuses on concepts *already* in use, it often relies on thought experiments and other cases to elicit intuitions, which are seen as "guides to a concept's contours" (Goldman 2007: 12).

Conceptual analysis is contrasted with another method that many philosophers now like to call *conceptual engineering*. Conceptual engineering can be understood broadly as a (philosophical) method of evaluating and improving our ways of thinking and talking about some subject matter, with attention to the representational devices (concepts, words, etc.) involved. Revisions may be undertaken when a device is deemed defective but salvageable. The relevant defects might be semantic, moral/social/political, cognitive, or theoretical (Cappelen 2018: 32). For example, the semantic value of the device might be incoherent or vague, or the device might contribute to unjust social practices, dispose its users to bad reasoning, or hinder scientific or philosophical progress.

Sometimes the term 'conceptual ethics' is used for the normative and evaluative inquiry directed at our concepts and other representational devices (Cappelen & Plunkett 2020: 4-5). Such inquiry often involves evaluating those devices against various goods and

[1] For example, according to Grice, "[t]o be looking for a conceptual analysis of a given expression is to be in a position to apply or withhold E in particular cases, but to be looking for a general characterization of the types of cases in which one would apply E rather than withhold it" (1989: 174).

purposes. The relevant goods might include clarity, consistency, naturalness, justice, or even human flourishing, and the relevant purposes might range from cooking dinner to doing mathematics (Burgess & Plunkett 2013: 1104-1105). For example, one might seek to revise our gender concepts to better accommodate the lived experiences of trans, non-binary, and gender non-conforming individuals (for philosophical discussion, see, e.g., Jenkins 2016; Dembroff 2020) and such efforts have recently eroded the traditionally tight conceptual connection between biological sex and gender.

There are important theoretical questions in conceptual engineering, pertaining to, for example, the relationship between conceptual analysis and conceptual engineering, the nature of concepts, and the relationships between concepts, conceptions, words, and word meanings. Engaging with these general debates is beyond the scope of this paper. Although in a broad sense my project can be framed as one of engineering the clinical concept of pain, I do not take a stand on what concepts themselves are; I assume only that concepts exist, guide our interactions with our world, and can be deliberately introduced, modified, or even eliminated.

This assumption is compatible with a number of different perspectives, including psychological accounts that treat concepts as bodies of information used for categorization, reasoning, and planning. On such views, concepts may be multiply realizable, taking the form of stored exemplars, prototypes, and/or theory-like structures (Isaac 2025, 2021). Those resistant to the idea that concepts themselves could be theory-like might prefer to understand my project as part of a broader effort to change how certain people think and talk about pain—that is, as targeting theories or conceptions of pain, in addition to (just) concepts. Even on a more general level, I invite readers to adjust the framing of the paper to align with their preferred view of cognition and concepts; my central claims should remain intact across such adjustments.

I also assume that words, definitions, concepts, and patterns of thought are related in a way that modifying the IASP definition can, under certain conditions, drive or enhance conceptual change. This is not a particularly controversial assumption. For example, Amie Thomasson (2025) suggests focusing conceptual engineering efforts on *words*, which she takes to be "abstract artifacts" serving some relevant function(s). Such efforts might involve proposing new definitions for existing words—like I am doing in this paper—or introducing entirely new words. While I do not commit to specific claims about *how* the revised IASP definition would help bring about the relevant sort of conceptual change among clinicians, I note that several plausible pathways exist.

First, an appropriately engineered IASP definition could directly influence how clinicians think about pain in their practice, since the definition routinely appears in popular medical textbooks and reference texts, and in the medical literature more generally. Consider, for example, a primary care clinician evaluating a patient with persistent, difficult-to-diagnose widespread pain. If the clinician consults a clinical resource such as *UpToDate,* they are

very likely to encounter the definition (see, e.g., Tauben & Stacey 2025). It is easy to imagine such a clinician engaging with the definition to make sense of a challenging clinical case, especially if the definition diverges from their prior understanding of pain.

Second, a revised definition could shape clinicians' thinking indirectly. The IASP definition is adopted by the World Health Organization and other influential bodies, and features prominently in policy briefs, action plans, and guidelines (see, e.g., World Health Organization 2020: viii). Because of its authoritative status, the definition could be used in public health arguments that shape the structures and frameworks that influence clinical practice, such as policies on best practices, research funding priorities, institutional protocols, and insurance reimbursement criteria. Downstream effects of such shifts plausibly include conceptual change among clinicians.

Some readers might be skeptical of the prospects of conceptual engineering, either in general or in this particular case. But even skeptics would likely agree that, given the authoritative status of the IASP definition, the definition deserves careful attention. Engineering it to align with the demands of effective and just clinical practice ensures that, if relevant pathways between the definition and clinical practice exist, the definition can have the most positive impact possible.

3. The Original IASP Definition of Pain

I treat the IASP definition of pain as a product of conceptual engineering—not as an attempt to capture the ordinary concept of pain *already in use*, but as a prescriptive proposal for how the concept *ought to be used*, informed by our practical and theoretical goals. On this view, the definitional process is not (purely) descriptive but also normative: an effort to shape the concept so that it better serves its intended functions. There is some ambiguity in the literature about the role of the IASP definition, with certain writers treating it as primarily analytical or descriptive. I set that issue aside for now and return to it later, in Section 7.2.

While the IASP itself has not framed its efforts in the language of conceptual engineering, its statements suggest an engineering approach. For example, the original Subcommittee on Taxonomy, responsible for the 1979 formulation, wrote that its definitions of pain and related terms were "intended to be specific and explanatory and to serve as an operational framework" (IASP Subcommittee on Taxonomy 1979). This suggests that the definition was intended to reduce conceptual ambiguity, improve understanding, and guide professional practice, not to capture common usage.

The 1979 definition states that pain is:

> An unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage (IASP Subcommittee on Taxonomy 1979).

Importantly, the definition was accompanied by a note, which clarified its intended interpretation and usage:

> Pain is always subjective. Each individual learns the application of the word through experiences related to injury in early life. Biologists recognize that those stimuli which cause pain are liable to damage tissue. Accordingly, pain is that experience which we associate with actual or potential tissue damage. It is unquestionably a sensation in a part or parts of the body but it is also always unpleasant and therefore also an emotional experience. Experiences which resemble pain, eg, pricking, but are not unpleasant, should not be called pain. Unpleasant abnormal experiences (dysaesthesiae) may also be pain but are not necessarily so because, subjectively, they may not have the usual sensory qualities of pain.
>
> Many people report pain in the absence of tissue damage or any likely pathophysiological cause; usually this happens for psychological reasons. There is no way to distinguish their experience from that due to tissue damage if we take the subjective report. If they 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. This definition avoids tying pain to the stimulus. Activity induced in the nociceptor and nociceptive pathways by a noxious stimulus is not pain, which is always a psychological state, even though we may well appreciate that pain most often has a proximate physical cause. (ibid.)

Together, the definition and the note took a position on both the nature of pain (pain is an unpleasant sensory experience) and its etiology (pain is caused by tissue damage or psychological factors). They also provided normative guidance for engaging with patients in pain, interpreting their pain reports, and maintaining an appropriate attitude towards such reports in the absence of observable physical pathology (reports of pain in the absence of such pathology should be accepted as pain).

The definition was hugely influential. It was "accepted widely by health care professionals and researchers in the pain field and adopted by several professional, governmental, and nongovernmental organizations" (Raja et al. 2020: 1977). In fact, it came to be known as the "official" definition of pain and the standard go-to when pain had to be talked about in professional settings.

That said, the definition also sparked considerable debate, with critics pointing out its various shortcomings. These criticisms led to the formation of an IASP task force that was charged with revising the definition. Ultimately, in 2020, a modified definition was introduced, with its utility "assessed in [reference] to the new knowledge about both clinical and basic science aspects of pain" (IASP 2025b). I discuss this modified definition

in Section 5. First, however, I outline the desiderata for a definition of pain suitable for clinical practice and highlight some of the criticisms that prompted the revision.

4. Desiderata for a Definition of Pain for Clinical Practice

If the goal is to change how clinicians think and talk about pain by revising the IASP definition of pain, the first step is to get clearer on what we want the revised definition to achieve. In this section, I articulate the desiderata for a concept of pain tailored specifically to the needs of clinical practice. The discussion is informed by both historical and contemporary challenges in the diagnosis and treatment of pain.

4.1. Guidance

I proceed on the assumption that the success of an engineered concept, such as the concept of pain, should be assessed in terms of the functions (aims, purposes, goals) it is to perform (see Burgess & Plunkett 2013; Thomasson 2020). I do not commit to any specific view of functions, however. Following Jorem (2022), I assume that we can identify appropriate conceptual functions without relying on a substantive account of what functions are. In fact, because my project targets a specific professional context, identifying relevant functions should be fairly straightforward: professional communities tend to operate with clear goals, and the concepts they rely on are typically expected to serve those goals.[2]

Pain is one of the most common reasons why people seek medical care (Finley et al. 2018), and the foundational aim of the IASP is "to bring relief to those who are in pain" (IASP 2025a). Achieving this aim requires providing clinicians with conceptual tools that help them effectively reason about pain, its etiology, and mechanisms and determine appropriate treatment interventions. In fact, the IASP itself places a great deal of emphasis on the practical utility of its definitions specifically *for clinical practice* (see IASP Subcommittee on Classification 1986: S216). Wright suggests that "the IASP's definition is most coherently interpreted as a clinical tool" (2011: 25). In other words, the central function of the definition, for clinical purposes, is to facilitate these tasks:

> ***(Guidance)*** The IASP definition of pain is intended to facilitate effective diagnosis and treatment.

The definition should then be evaluated by how well it supports the function of *Guidance*. To do this effectively, it is helpful to take a more fine-grained approach and identify

[2] The concept of pain arguably fulfills many functions in everyday life: it is used to communicate experience, to elicit empathy, to justify actions, to ground legal claims, and so on. In clinical contexts, however, some functions are more central than others. While I do not deny the significance of the other functions, I set them aside in this paper.

specific desiderata for a clinically useful definition of pain. These desiderata represent the various *goods* we want the definition (and the concept) to embody. I propose three:

> The IASP definition should
> (i) be accurate and unambiguous **(*Accuracy*)**,
> (ii) be simple, concise, and easy to grasp and remember **(*Tractability*)**, and
> (iii) promote justice in clinical interactions **(*Justice*)**.

These three desiderata are no doubt closely interconnected but separating them in this way helps clarify the distinct demands they place on the engineering project. In what follows, I discuss the desiderata and their connections in the context of shifting scientific conceptions of pain (Section 4.2.), an influential folk model of pain as a detector of tissue damage (Section 4.3.), and persistent disparities in the diagnosis and treatment of pain (Section 4.4.).

4.2. Accuracy and Shifting Scientific Conceptions of Pain

Clinicians need an accurate understanding of pain to effectively diagnose and treat patients. Accuracy is therefore also an important desideratum for the IASP definition of pain: an inaccurate definition that misrepresents pain can lead clinicians to misclassify or under/overtreat medical conditions, and a definition that is vague risks fostering or reinforcing misconceptions that can have similar effects. What we need, therefore, is a definition that is both accurate and unambiguous.

History of medicine illustrates the negative consequences of inaccuracy. Consider the once-dominant conception of *pain-as-nociception,* i.e., the idea that pain is simply the neural response to actual or potential tissue damage. This conception is closely connected to the *specificity theory* of pain, i.e., the view that pain constitutes a distinct sensory modality with its own dedicated sensory receptors and pathways. First formulated by Charles Bell in 1811, the specificity theory gained traction a few decades later through the work of physiologists such as Max von Frey, who proposed the existence of specialized "pain spots" in the skin. In the early 20th century, Charles Sherrington suggested that the specialized peripheral sensory organs implicated in pain had the functional role of signaling tissue damage. Sherrington described these sensory organs as "nocicipient," and later dubbed them "nociceptors." (See Perl 2007: 71–72; Moayedi & Davis 2013: 6-8)[3]

The conception of pain as the output of a hardwired system responding to noxious input (actual or potential tissue damage) dominated from Sherrington's endorsement until the

[3] Early formulations of the idea of pain as distinct from other senses can be traced back to Avicenna (980–1037 CE) (Perl 2007). Descartes' view of pain is sometimes presented as a precursor to the specificity theory, even if Descartes himself did not postulate a sensory system *specific* to pain (Moayedi & Davis 2013: 5-6).

mid-20th century (Moayedi & Davis 2013: 8). It implicitly portrayed the brain as a passive recipient of a "pain signal" transmitted from the periphery of the body (see Melzack & Wall 1965: 971). On this view, pain without identifiable tissue damage then appeared suspicious—less "real," perhaps imagined, or even faked.

As a result, pain in cases where no physical pathology could be identified was often psychologized and delegitimized. In the history of medicine, many poorly understood conditions—ranging from rheumatoid arthritis (e.g., Chappell 1949) to migraine (e.g., Fromm-Reichmann 1937)—have been gratuitously attributed to psychological causes, which has delayed biomedical research, led to poor treatment outcomes, and contributed to stigma that persists even today. As Perugino et al. note, people with chronic pain continue to hear dismissive statements such as: "'Pain is all in your head,' 'You must be crazy,' 'If you look healthy, you cannot be in pain,' … 'It's just anxiety'" (2022: 1086).

Part of what makes the *pain-as-nociception* view attractive is its simplicity; it posits a simple mechanism and assumes a straightforward relationship between input (tissue damage) and output (pain experience). In addition, the view aligns with several empirical observations: nociceptors *do* play a key role in signaling damage and many ordinary pains *can be* easily linked to tissue injury and nociceptor activation. In addition, a condition known as 'congenital insensitivity to pain,' where individuals with missing or defective nociceptors never feel pain, suggests that a functional nociceptive system might be necessary to develop pain experiences.[4]

But these observations do not entail that tissue damage and nociception are all there is to pain. Already in the 18th century, some physicians recognized that certain kinds of maladaptive pains might arise from damage to parts of the nervous system (see, e.g., Fields 2012); such pains are now called *neuropathic*. Later, in the 1960s, Melzack and Wall proposed that even normal nociceptive signals are subject to both top-down and bottom-up modulation in the spinal cord (1965: 975-976). Melzack and Wall's *gate control theory* explained more phenomena than the specificity theory and its contemporaries but had little to say about pain in the absence of peripheral nociceptive input. As a result, in the 1990s, Melzack proposed the more complex *neuromatrix theory,* which conceptualized pain as the output of a highly distributed network in the brain (1990, 1999).

Today, a growing body of evidence supports the view that nociceptive signals are subject to complex modulation by both peripheral and central processes, and that pain emerges from interactions between the nociceptive, immune, endocrine, motor, perceptual, affective, and cognitive systems (see, e.g., Moseley 2003, 2007; Párraga & Castellanos 2023). Even in the simplest cases, such as burning your finger on the stove, pain experiences do not correlate neatly with the extent of tissue damage or nociceptor

[4] The term 'congenital insensitivity to pain' is commonly used but a more accurate label would be 'congenital nociceptor deficiency,' as Weisman et al. (2019) note.

activation. Pain is therefore not a direct response to tissue damage but the result of complex and dynamic processing in the nervous system.

The mismatch between pain experiences and physical findings tends to be especially pronounced in cases of persistent pain. Although tissue (or nerve) damage may have been initially involved, some chronic pains are likely *nociplastic* in nature, i.e., produced or sustained by altered neural processing (Fitzcharles et al. 2021: 2098).[5] Chronic pains may also result from a combination of tissue injury, nerve injury, and altered processing (Cohen et al. 2021). This suggests that, in addition to being complex, the pain system is also *plastic*, continuously adapting and "learning." This further complicates the notion that normal pain should reliably map onto nociceptive input.

But how does this relate to the IASP definition of pain? After all, the original 1979 formulation does not explicitly equate pain with nociception. It defines pain as "an unpleasant sensory and emotional experience associated with actual or potential tissue damage, *or described in terms of such damage*" (italics mine), which clearly allows for cases where pain is felt in the absence of tissue damage. In addition, the accompanying note explicitly states that nociception and pain are distinct.

The problem, I contend, is that the definition's vagueness permits interpretations consistent with a historically conditioned oversimplification of pain: that organic pain somewhat straightforwardly maps onto physical disturbances (tissue damage, inflammation, and/or nerve injury), and any pain that doesn't is a fundamentally different sort of thing, and likely psychologically caused. This interpretation is supported by another passage of the accompanying note, which states that pain in the absence of a likely pathophysiological cause is usually psychologically caused.[6] And so, even though the definition encourages viewing both kinds of pain as *real* or *genuine* pain, it reinforces a bifurcated view of pain as dividing into two basic types: organic and psychogenic. Even a clinician who acknowledges that psychological factors can play a role in organically caused pain (e.g.,

[5] The IASP adopted the notion of nociplastic pain in 2017, alongside the established categories of nociceptive and neuropathic pain (Kosek 2024). As Kaplan et al. (2024: 357-358) observe, the category of nociplastic pain likely encompasses at least two distinct subtypes: one driven by bottom-up processes (central sensitization triggered by prolonged or repeated nociceptive input) and another driven by top-down processes (central sensitization in the absence of nociceptive signaling). They also highlight the roles of aberrant neural activity and dysregulated immune function as key mechanisms underlying nociplastic pain.

[6] Cohen et al. (2018: Section 4.2.) critique the note for perpetuating "the erroneous belief that pain is either 'real,' implying that it exists 'in the body,' or 'imagined,' implying that it exists 'in the mind.'" They continue: "That the clinically untenable concept of 'psychogenic pain' is still extant reflects this enshrinement of a folk belief within the body of a defining document" (ibid.). While I agree with the general thrust of their critique, I prefer to frame the concern in terms of perpetuating the distinction between organic and psychogenic pain, rather than the dichotomy between real and imagined pain. This is because the IASP definition affirms that pain in the absence of tissue damage is real and phenomenologically indistinguishable from pain associated with tissue damage.

stress triggering a migraine) might still assume that, in the absence of an identifiable organic cause, pain is likely psychogenic.

The bifurcated view of pain is at odds with contemporary pain science which recognizes the complexity and multifactorial nature of *all* pain.[7] But it is likely encouraged by the biomedical model of disease, which implies "a predictable and linear relationship between identifiable tissue damage and the report of pain" (Quintner et al. 2008: 825). Additionally, common terms such as 'pain fiber,' 'pain pathway,' 'pain amplification,' and 'pain hypersensitivity' likely contribute to the misconception that normal (adaptive) pain is simply a matter of transmission of nociceptive information rather than a complex, dynamic process (see Párraga & Castellanos 2023; Cohen et al. 2022). These models and terms are, for that reason, also appropriate targets for conceptual engineering (see Section 7.3.).

In order to combat oversimplified notions, the IASP definition needs to do more than just state that pain is not identical to nociception; it needs to actively communicate the scientific consensus that pain is a complex, dynamic, and context-sensitive phenomenon with multiple contributing factors: biological, psychological, and contextual. This sentiment is shared among critics who have condemned the original IASP definition for failing to emphasize the multifactorial nature of pain (Morris 2003) and for lacking "precision" (Cohen et al. 2018).

There are additional concerns regarding the definition's accuracy. For example, there is significant debate about whether pain is inherently unpleasant or if its unpleasantness is, for example, the result of a cognitive appraisal that *typically* accompanies pain. Philosophers, in particular, might resist defining pain as unpleasant *tout court* because of purported counterexamples of pains that are not experienced as unpleasant (e.g., Hall 1989; see also Whitburn et al. 2017). There is also debate about whether pains are necessarily conscious or if unfelt pain is possible (e.g., Dretske 2006: 59; Aydede 2017: 451; Reuter & Sytsma 2020). Such debates matter for philosophical theories of pain, but for clinical purposes they may hold less relevance, given that people generally seek medical help when their pain is conscious and unpleasant and bothers them. When it comes to *Accuracy* in the service of *Guidance,* conveying the etiological complexity of pain seems more important.

4.3. Accuracy, Tractability, and the Folk Theory of Pain as a Damage Detector

Accuracy no doubt plays an important role in providing useful direction, but an accurate definition does not automatically facilitate effective diagnosis and treatment. A definition could be unambiguous and technically accurate but too complex, jargon-laden, or abstract to be useful in practice. If the IASP definition is to effectively guide clinical reasoning and

[7] It is important to clarify that I am not denying the influence of psychological factors on pain experience. My critique is aimed at the overly simplistic notion that if pain lacks a clear pathophysiological correlate, then it must be psychologically caused.

decision-making, it needs to be intelligible to a wide range of clinicians, many of whom are not pain experts. This means that the definition needs to be *cognitively tractable:* clear, concise, easy to grasp, easy to remember, and so on. Expert language imported from pain science, long descriptions, and phrases that require extensive background knowledge to be intelligible should be avoided, when possible.

When the goal is to change how clinicians think and talk about pain, it's good to consider potential barriers that might inhibit the uptake of new conceptualizations. One likely barrier is an influential folk theory of pain as a damage detector. This theory parallels, in simplified and more intuitive form, the outdated scientific conception of (normal) pain as nociception. Most ordinary people do not think about nociceptors when they think about pain, but many operate on the assumption that *more pain means more damage*. This suggests that they think that the pain system's job is to mechanistically convey information about tissue injury and its severity, much like a thermometer's job is to convey information about temperature.

The folk theory likely has multiple sources. It may stem, in part, from how we acquire the concept of pain as children: we injure ourselves, feel pain in the injured body part, and come to associate pain with injury. A lot of the time pain also subsides as the injury heals, further reinforcing this association. The view may also be strengthened by our familiarity with various detectors (thermometers, speedometers, and so on), given the well-known human tendency to model our understanding of our perceptual and cognitive capacities on human-made instruments. The theory also aligns with a broader folk theory of sensory perception: just as we might take the job of vision to be to provide unmediated access to the external world, we might think that pain is meant to provide direct information about tissue damage. Finally, the outdated scientific conceptions of pain mentioned in the previous section have likely played some role in shaping the folk theory.

It is plausible that many clinicians default to this folk theory, especially given how minimal pain education often is in medical schools. One review found that almost all the medical schools in the UK and USA, and the vast majority of medical schools in the rest of Europe, "had no compulsory dedicated teaching in pain medicine" (Shipton et al. 2018: 151), and that when pain medicine was taught, this was done "in a fragmented way within modules in other areas of medicine" (154). 'Pain' is a widely used folk term and, as McPherson & Plunkett note, "[f]or any folk term, a competent speaker will tend to find natural the inferences that they have come to associate with that term" (2020: 284). Clinicians, especially those lacking the kind of training that would disrupt these patterns of inference, are also likely to draw on intuitive or folk-theoretic understandings.

One of the problems with defaulting to the detector view is that it encourages clinicians to treat pain primarily as a symptom of underlying physical damage. This framing may be adequate in many cases of acute pain, but it becomes problematic when dealing with chronic pain. Some pains that persist beyond tissue (or nerve) healing, or have no identifiable physical cause to begin with, may be better understood as disorders of the pain

system itself. And even persistent pain that co-occurs with an identified condition is often maladaptive and warrants attention and treatment as a pathological process in its own right.[8] The folk theory of pain as a damage detector fails to illuminate such cases and may even actively obstruct effective reasoning about them, leading clinicians to interpret "disproportionate" or medically unexplained pain as suspicious, or perhaps as something best addressed by a psychiatrist.[9]

Once again, while original IASP definition does not actively promote the folk theory, it does not challenge it either. But it *should* challenge it, given the detrimental effects the theory might have on clinical practice. Critics have rightly pointed out that the original definition fails to sufficiently promote the view of chronic pain as a distinct disease entity with its own clinical trajectory (Treede et al. 2019). And the criticisms of the vagueness and imprecise nature of the definition apply here as well.

Even when clinicians dissociate pain from nociception, the folk theory of pain as a damage detector may continue to shape their interpretations. The theory is intuitive, often implicit, and deeply entrenched. Against this backdrop, attempts to communicate the complexity of pain might prove intractable and fail. Revisions to the IASP definition should therefore seek to explicitly dislodge it.

One way to efficiently convey new ideas is through the use of metaphors. Metaphors are powerful tools that can quickly evoke new associations and scaffold new understanding (think of the oft-used metaphor of the prefrontal cortex as the "CEO of the brain") and disrupt old ones. In this case, a potentially useful metaphor suggested by contemporary pain science is that of the pain system as a dynamic *protector* or *security system* (Moseley & Butler 2015; Rosenqvist 2024). This metaphor paints the pain system as a sophisticated threat-monitoring network which aims at preserving bodily and existential integrity, not at mechanistically detecting tissue damage. The metaphor also helpfully brings the adaptability and plasticity of the system into focus. Many home security systems have adjustable sensitivity settings, which means that they may or may not respond to physical events, like movement near windows, depending on their settings. The protector metaphor encourages us to think of the pain system in similar terms: as a flexible system whose goal is to keep us safe in constantly changing circumstances.

On this view, chronic pain can be conceptualized as the output of an *over*protective pain system. The treatment of chronic pain may then be seen as requiring individualized, multimodal system recalibration in addition to, or instead of, intervening on a peripheral

[8] For example, Cohen et al. describe chronic pain as offering "little evolutionary benefit," as "a disease onto itself," and as "associated with deleterious pathophysiological and anatomical changes, including peripheral and central sensitization, the development of new neural connections, and pathology-specific brain alterations" (2021: 2081, 2084).

[9] This is not to claim that patients' pain reports are *always* truthful, just that the detector metaphor and the associated folk theory may lead clinicians to too easily doubt pain reports that *are* truthful.

cause. Such an approach aligns with the current gold standard in the management of chronic pain. For example, the U.S. Department of Health and Human Services (2019) recommends a multidisciplinary approach based on the biopsychosocial model of care; this might involve medications, restorative therapies (e.g., physical therapy), interventional approaches (e.g., neuromodulation), behavioral approaches (e.g., cognitive behavioral therapy), and complementary approaches (e.g., massage).

If the IASP seeks to encourage deeper, more nuanced clinical reasoning and to bring into view potentially effective treatment interventions that go beyond the usual pharmacological and surgical options, aligning the definition with the protector metaphor might prove helpful. Ideally, this would help achieve both *Accuracy* and *Tractability*.

4.4. Treatment Disparities, Accuracy, and Justice

For the purposes of this section, I assume that most clinicians are generally well-intentioned and committed to upholding certain key professional ideals. The modern version of the Physician's Oath expresses these ideals clearly:

> I will apply, for the benefit of the sick, all measures [that] are required, avoiding those twin traps of overtreatment and therapeutic nihilism.
>
> I will remember that there is art to medicine as well as science, and that warmth, sympathy, and understanding may outweigh the surgeon's knife or the chemist's drug.[10]

That said, I also acknowledge that there is often a gap between such ideals and the realities of clinical practice. Pain, especially chronic pain, is frequently undertreated (and sometimes overtreated) and, in many cases, patients' pain reports are met not with warmth, sympathy, and understanding, but with skepticism or even outright dismissal. This might be true especially in cases that are difficult to diagnose (see, e.g., Treufeldt & Burton 2024).

It is also important to ask whether there are systematic differences between social groups when it comes to pain being properly acknowledged, accurately diagnosed, and adequately treated, and a significant body of empirical research suggests that there are. In the US, for example, women and certain racial and ethnic minorities (including Black and Hispanic individuals) are more likely to have their pain undertreated (e.g., Tait & Chibnall 2014; Meghani et al. 2012; Mathur et al. 2022; Hoffmann & Tarzian 2001; Hoffmann et al. 2022). Such treatment disparities constitute a *distributive* injustice, insofar as the relevant goods, whether understood as basic welfare or access to medical care and services, are not fairly allocated among those who need them.

[10] For the full text, see, e.g., Hajar 2017: Table 2.

Research also suggests that members of these groups face greater challenges in having their pain reports believed in clinical contexts (e.g., Heggen & Berg 2021; Majedi et al. 2019). When such disbelief is driven by negative stereotypes about a patient's social identity, it constitutes an *epistemic* injustice: a systematic deflation of credibility based on prejudiced views of who the speakers are (see Fricker 2007; Dotson 2014).

A well-engineered concept of pain should help align clinical practice with the ethical commitments to fairness and justice. This is not to say that injustice can be remedied through conceptual amelioration alone; health system inefficiencies and economic barriers require structural and policy-level interventions, bias and prejudice require training interventions, and so on. But the conceptual tools clinicians rely on likely *contribute* to injustice and could, also for that reason, benefit from engineering.

The IASP definition may contribute to injustice by facilitating or reinforcing harmful patterns of reasoning. As I have argued in the previous two sections, the definition aligns too easily with outdated, inaccurate views of pain. Such views can lead clinicians to prioritize third-person measures, discount patient testimony, and treat pain without clear physical correlates as suspicious, psychogenic, or even faked, resulting in poor treatment outcomes and unalleviated suffering. In aligning with these views, the IASP definition *indirectly* enables and legitimizes practices that harm some patients, especially those whose pain is difficult to diagnose.

By aligning with outdated views, the IASP definition also plays a role in *activating stereotypes*. Evidence suggests that women with difficult-to-diagnose pain are more likely to have their pain attributed to psychological causes than men with the same symptoms (see, e.g., Bernardes & Lima 2011; Hamberg et al. 2002), perhaps because women are considered more emotional and therefore more prone to somatization. Similarly, a Black patient with difficult-to-diagnose pain might be more likely to be suspected of malingering, owing to some harmful stereotype about Black people as a group (see, e.g., Punko et al. 2023).

A revised definition of pain should promote justice in clinical interactions by *actively challenging these dynamics*. It should help affirm the legitimacy of patients' *honest* pain reports, even in the absence of identifiable physical pathologies, and facilitate clinical reasoning that does not privilege third-person measures or rely on harmful stereotypes. Fortunately, in this case, the demands of *Justice* seem to align closely with the demands of *Accuracy*. I have suggested that many of the ethical and epistemic harms associated with the IASP definition stem from its compatibility with outdated, inaccurate ways of thinking about pain. By engineering a definition that disrupts such views, we can ideally facilitate clinical practice that is both more effective and more just.

5. The Revised IASP Definition

The IASP definition of pain was revised in 2020 after a two-year process. The 14-member Presidential Task Force responsible for the revision aimed to "better convey the nuances and the complexity of pain," with the hope that doing so would "lead to improved assessment and management of those with pain" (IASP 2020). This indicates that the task force recognized *Guidance* as a central function of the definition and treated both *Accuracy* and *Tractability* as important desiderata. The task force also agreed that "pain should be defined, whenever possible, from the perspective of the one experiencing the pain, rather than an external observer" (Raja et al. 2020: 1978). The emphasis on first-person perspective suggests at least some sensitivity to considerations of *Justice.*

The revised definition describes pain as:

> An unpleasant sensory and emotional experience associated with, or resembling that associated with, actual or potential tissue damage (Raja et al. 2020: 1977).

Here the only change from the original formulation is the shift from "or described in terms of [tissue damage]" to "or resembling that associated with [tissue damage]." This change was made in response to concerns that the original definition failed to apply to the pains of those incapable of self-report, including infants, nonhuman animals, and certain nonverbal patients (e.g., Anand & Craig 1996; Cunningham 1999; for discussion, see Aydede 2017, 2019a).

The note on usage saw more significant revisions. Instead of one long note, the 2020 definition is accompanied by six shorter ones:

> (i) Pain is always a personal experience that is influenced to varying degrees by biological, psychological, and social factors.
> (ii) Pain and nociception are different phenomena. Pain cannot be inferred solely from activity in sensory neurons.
> (iii) Through their life experiences, individuals learn the concept of pain.
> (iv) A person's report of an experience as pain should be respected.
> (v) Although pain usually serves an adaptive role, it may have adverse effects on function and social and psychological well-being.
> (vi) Verbal description is only one of several behaviors to express pain; inability to communicate does not negate the possibility that a human or a nonhuman animal experiences pain. (Raja et al. 2020: 1977; numbering added)

In terms of *Accuracy* and *Justice*, the two most significant changes to the note were the introduction of the ideas in (i) and the removal of the problematic passage from the 1979 note which stated: "Many people report pain in the absence of tissue damage or any likely pathophysiological cause; usually this happens for psychological reasons" (IASP Subcommittee on Taxonomy 1979). As discussed earlier, this passage explicitly

encouraged and legitimized the bifurcated view of pain and the problematic inferring of psychological causation from the absence of identifiable physical pathology. Removing it was therefore an important improvement for which the IASP task force deserves serious credit.

The addition of the first note was likely prompted by an agreement among the members of the task force that the note(s) "should emphasize important aspects of the complexity of pain that were difficult to capture in a brief definition" (Raja et al. 2020: 1978). Unfortunately, however, the note is ambiguous on a key dimension. Because the definition describes pain as a *sensory and emotional* experience, the note leaves it open whether the psychological and social factors influence only the emotional dimension of pain (or perhaps the emotions associated with pain), or also its sensory qualities, such as intensity. The problem is that the ambiguity allows for interpreting the sensory aspects of pain as being caused by either tissue damage or psychological factors, consistent with the bifurcated view.

As a whole, then, the revisions fall short of fully remedying the issues present in the 1979 version. Even if the note no longer actively promotes the bifurcated view of pain, the definition remains compatible with it. After all, the definition could be read as making a distinction between "normal" pain, which is "associated with tissue damage," and abnormal pain, including psychogenic pain, which merely "resembles" pain associated with tissue damage. The second note distinguishes pain from nociception but remains compatible with the view that, in normal cases, there is close alignment between nociception and pain. The fourth note emphasizes the importance of respecting a patient's pain report but leaves room for interpretations that some forms of pain might be psychogenic, thus not dismissing the problematic dichotomy.

In 2019, the IASP solicited public feedback on a draft of the revised definition, which stated that pain is "an aversive sensory and emotional experience typically caused by, or resembling that caused by, actual or potential tissue injury." (Raja et al. 2020: 1978). Roughly 42% of 808 respondents were "dissatisfied or very dissatisfied" with the proposed definition (notably, half of these individuals self-identified as patients or caregivers). Among the concerns raised was that the definition did not provide enough "specificity regarding the various components of pain" and that the reference to tissue injury wasn't adequately "aligned with modern conceptualization of pain." (Raja et al. 2020: 1980)[11]

The IASP task force responded by reverting the phrase "typically caused by [tissue injury]" back to "associated with [tissue damage]," reasoning that the latter formulation "does not imply a direct cause-and-effect relationship and reduces the emphasis on tissue injury"

[11] The feedback also indicated that the definition should "better capture the personal experience of pain" and be "simple and practical." As a result of the latter suggestion, the task force replaced the term 'aversive' with the simpler term 'unpleasant' in the final version (Raja et al. 2020: 1980).

(Raja et al. 2020: 1980). Still, the concerns that the definition places too much emphasis on tissue damage and fails to specify the various components of pain also apply to the final, approved version. As discussed above, the final version fails to adequately and unambiguously convey the complexity of pain, and so risks reinforcing outdated views which undermine efforts to improve clinical outcomes and promote justice in clinical interactions. The fact that these concerns are echoed in public feedback (some of it from people who are on the receiving end of clinical pain management) provides a strong reason for continued critical scrutiny. I therefore conclude that further engineering work is needed.

6. Alternative Definitions

I have suggested that, if the IASP definition is to facilitate the kind of conceptual change that can effect improvements in clinical practice, it must do more than avoid error; it must actively correct persistent misconceptions. I have also suggested that, in order to achieve this, it is important to emphasize pain's role as a dynamic protector that integrates inputs from various sources. This requires a shift in focus from tissue damage and peripheral nociception to the complex processing that goes on in the central nervous system.

There are extant formulations that make headway towards these goals. Here are examples:

(A) Pain is "a mutually recognizable somatic experience that reflects a person's apprehension of threat to their bodily or existential integrity" (Cohen et al. 2018: 6)
(B) Pain is an "experience that signals the need to take action to protect the tissues of our body" (Tabor et al. 2013: 1961)
(C) Pain is "a warning signal from your brain that depends on credible evidence to say your body needs protecting" (Moseley & Moen 2017)
(D) Pain is "a multiple system output that is activated by an individual-specific pain neuromatrix; …the pain neuromatrix is activated whenever the brain concludes that body tissue is in danger and action is required; and… pain is allocated an anatomical reference in the virtual body, upon which coherent motor output is also dependent" (Moseley 2003: 138)

(A) is explicitly proposed as a replacement for the original IASP definition. (D), while not offered as an alternative definition, is presented in the context of criticizing the IASP definition (see Moseley 2003: 130). (B) appears in a paper focused on the modulation of visual perception by pain, and (C) comes from an educational video aimed at individuals grappling with chronic pain.

While all four formulations convey the idea of pain as a protector, each has shortcomings. (A) and (D) are somewhat clunky and jargony, which undermines *Tractability;* terms like 'somatic,' 'mutually recognizable' and 'individual-specific pain neuromatrix' are not immediately clear and may obscure the intended meaning. (D) also imports language from

the pain neuromatrix theory (Melzack 1999), which adds to the inaccessibility, and potentially increases controversiality.

(B) and (C) are comparatively vague and broad, applying also to experiences that are not pain (such as the sensation of cold), thereby falling short on *Accuracy*. (B) also fails to adequately capture the complexity of pain, which contributes to the vagueness of the definition in a way that may hinder the goal of promoting *Justice*. (C) does not clarify what kind of "credible evidence" the authors have in mind, and their formulation risks placing excessive emphasis on the brain while giving insufficient attention to the phenomenology of pain experience. The latter criticism also applies to (D).

To remedy these shortcomings, I propose defining pain as:

> A paradigmatically unpleasant bodily experience that (i) arises from the dynamic interaction of biological, psychological, and contextual factors, (ii) typically functions as a protective signal, and (iii) often accompanies actual or potential tissue damage.

The formulation emphasizes the system-level complexity of pain, presenting it as a dynamic, context-sensitive protector. I use the term *paradigmatically* to allow for the possibility of pains that are not experienced as unpleasant and *typically* to allow for pains that lack an evident protective function or force. I adopt the term *bodily* because it communicates the characteristic body-directedness of pain experience, and because the term *sensory*, which it replaces, may misleadingly suggest that (a specific kind of) sensory activation is required (see Wright 2011: 42), or inadvertently reinforce the detector view of pain. I have omitted the word *emotional*, because I consider it redundant. As Aydede (2017: 441) notes, many scientists and clinicians likely interpret the term as simply indicating that pain is unpleasant (affectively valenced). And if it is instead taken to mean that pain is typically accompanied by emotional responses, that point is better suited to a note (see my suggestion for revising note (i) below).

The first clause ("arises from the dynamic interaction of biological, psychological, and contextual factors") reflects the insight from contemporary pain science that pain is complex and multifactorial. It is intended to combat the oversimplified dichotomy of organic vs. psychogenic pain, and to help validate pain reports that do not straightforwardly correspond to observable damage.

The second clause ("typically functions as a protective signal") introduces a functional framing that deliberately aligns with the protector metaphor. The goal here is to destabilize the folk theory of pain as a detector of tissue damage. The wording also highlights pain's function as a powerful motivator with wide-ranging, sometimes dramatic, effects on cognition, emotion, and behavior. Ideally, this will foster more empathetic and patient-centered approaches to clinical care. For example, telling a patient with pain to "just move

more" is often unhelpful, even if exercise would be beneficial, because to exercise, the patient might have to overcome a well-founded fear of initial pain flare-up.

The third clause ("often accompanies actual or potential tissue damage") invokes the common association between pain and tissue damage, which serves to distinguish pain from other unpleasant bodily experiences. That said, the phrasing also makes it clear that this association is neither necessary nor straightforward: pain might *often* accompany tissue damage, but some tissue injuries are painless, and some pains lack a physical correlate in the tissues of the body.[12]

To highlight the motivational force of pain, as well as its influence on the cognitive and emotional states of individuals, I also propose rephrasing the first note as follows:

> (i) Pain is always a personal experience. Its sensory aspects are usually accompanied by unpleasantness, and it tends to have broad effects on cognition, emotion, and behavior.

Together, these suggested revisions highlight the complexity, plasticity, and context-sensitivity of pain, disrupting the tight conceptual connection with tissue damage that even the revised IASP definition continues to encourage. Although the formulation is longer and more complex than the current IASP definition (and most of the alternatives discussed above), I believe that that it better fulfills the desiderata outlined in Section 3. It strikes a balance between accuracy and cognitive tractability and directly challenges the outdated views of pain which I have argued contribute to both poor clinical outcomes and injustice.

It is important to keep in mind that this proposal is not intended as an analytic definition; it is not an attempt to provide the necessary and sufficient conditions for pain. Rather, it is offered as a *normative intervention*, deliberately engineered to address the shortcomings of the current IASP definition, which I have tied to specific epistemic and practical failings in clinical practice.

7. Four Questions

In this section, I address four questions about the engineering project I have outlined in this paper: (i) why we should revise the concept of pain rather than eliminate it, (ii) whether

[12] Note that the revised IASP definition retains a reference to tissue damage "to distinguish pain from other aversive experiences (eg, nausea, itch, and dizziness)," although some members of the task force reportedly felt that the definition should have more specifically embraced nociplastic pain (Raja et al. 2020: 1981). My formulation of the definition accomplishes both goals: the first clause establishes the complexity of pain and the third clause, which introduces the association with tissue damage, helps distinguish pain from experiences like itch, while also accommodating nociplastic and other pains that might not be associated with tissue damage.

the proposed modifications to the IASP definition are genuinely needed, (iii) whether revising the definition can effect meaningful conceptual change, and (iv) whether it is appropriate to focus on a specific context in one's engineering efforts.

7.1. Eliminating the Concept of Pain vs. Engineering the Concept of Pain

Conceptual engineering usually starts with a belief that a particular representational tool is flawed and in need of revision. Tools deemed unworthy of revision (for example, due to perceived reference failure) are normally abandoned; famous examples include the concept of vital force (élan vital) in biology and the concept of ether in physics. But there are also *eliminativists about pain* who argue that the concept of pain should be abandoned and all "pain-talk" dispensed with (Hardcastle 1999; Dennett 1978, as interpreted by some, e.g., Aydede 2019b). How might the conceptual engineer respond?

The conceptual engineer might first point out that most people (including pain experts) agree that the term 'pain' has a real-world referent, even if they sometimes disagree about the precise nature of that referent. This makes 'pain' disanalogous to 'ether' or 'vital force,' whose lack of referents is universally accepted among the relevant experts. Even eliminativists themselves often continue to engage in pain-talk, which suggests their view is not that the term fails to refer altogether, but that the traditional (folk) concept of pain diverges too sharply from emerging scientific understandings to warrant continued use of the same term (see, e.g., Hardcastle 1999: 157). The conceptual engineer has a different take: if pain-talk is pragmatically indispensable, then the concept should be revised, not eliminated.

Eliminativism about pain might also be motivated by an appreciation of the variability of pain and the concern that there is too little commonality to support a unified concept.[13] But both the continuity worry and the variability worry underestimate our capacity for cognitive and conceptual flexibility. We easily recognize different pains as tokens of a single type (Coninx 2022), despite differences in underlying mechanisms, and despite our conception of pain having shifted many times throughout history. The conceptual engineer simply seeks to deliberately engineer these shifts to better align with our aims.

That said, there might be *related* concepts that are not worth preserving; the concept of psychogenic pain, for example, might be flawed beyond repair. This concept might lack a real-world referent; there is little convincing empirical evidence supporting the existence of pain that is primarily psychologically caused, independent of tissue/nerve damage or

[13] Jennifer Corns argues for *scientific* eliminativism about pain on the grounds that "neither pain nor any type of pain is a natural kind" (2020: 22). She does not, however, extend her eliminativism to the medical domain. Instead, she writes that "medicine stands at the interface" between science and folk theory, and that clinicians must "translate" patients' pain reports into terms that guide effective intervention (2020: 206). For an argument against Corns' view that eliminativism can be restricted to the scientific domain, see Gligorov 2026.

system-level dysfunction (see, e.g., Wilshire & Ward 2016). The term also continues to be used in ways that harm people (e.g., Doleys & Doleys 2021: 125). These might be good reasons to eliminate psychogenic pain from our conceptual repertoire.

7.2. Are Further Changes Truly Needed?

The original IASP definition had its defenders, some of whom might be unswayed by what I have said in this paper. For example, Murat Aydede writes that criticisms of the original definition "don't cut much ice" because the definition is "basically correct" (2017: 440), even if minor modifications could "better [reveal] the original intention of the authors" (2017: 455; see also 2019a). Rolf-Detlef Treede (2018) similarly maintains that the definition itself does not require revision, although he recommends modifying a part of the accompanying note—a change that has since been implemented. From their perspective, my call for further modifications might seem unnecessary. They might also point out that my proposed definition is (close to being) extensionally equivalent to the revised IASP definition; that is, both definitions pick out the same cases, more or less.

The distinction between conceptual analysis and conceptual engineering helps clarify the methodological nature of this disagreement. Conceptual analysis focuses on identifying the application conditions of a concept, and it can be argued that the IASP definition already successfully covers "*all* and *only* those things that we correctly call 'pains'" (Aydede 2019a: 2). If one views the IASP definition as an exercise in conceptual analysis, the current version may therefore seem (more or less) adequate. And, indeed, Aydede assumes that the definition is "intended to say what pain in fact is in a way that…takes its commonsense understanding to heart as essential" (2017: 457). Although Aydede acknowledges that some questions about pain "cannot be settled from one's armchair," he nevertheless happily concludes that "as things now stand, the IASP definition is our best guide to a common semantic understanding of what the word 'pain' means" (2019a: 7).[14]

But the goal of the IASP definition is *not* to be a guide to a common semantic understanding of what the word 'pain' means. Rather, it is meant to support the IASP's broader mission of bringing relief to people (and animals) in pain. And so, in evaluating the IASP definition, it is crucial to acknowledge, as the conceptual engineer does, that we are not dealing with just a semantic report but with an *epistemically and ethically loaded tool* that can activate stereotypes and obstruct effective diagnosis and treatment. I have argued that even the revised IASP definition has these flaws. But I have also suggested that, with more thoughtful engineering, the definition could do the opposite: facilitate more effective and just clinical practice. To accomplish this however, it must do more than merely capture all and only those things we correctly classify as pains.

[14] That said, the philosophical debate about the content of the folk concept(s) of pain is ongoing (see Hill 2009: Ch. 6; Aydede 2019b; Liu 2023).

7.3. Effectiveness Revisited

Those who agree that revisions to the IASP definition can take the form of normative interventions might still worry about the practical effectiveness of such interventions. Can revising the IASP definition really help bring about meaningful conceptual change?

While the success of any conceptual engineering project is ultimately an empirical matter, I believe there is reason for optimism in this case. First, as suggested in Section 2, the IASP definition's wide reach and status as the "official" definition of pain plausibly makes it an effective vehicle for disseminating new ways of thinking and talking about pain. The IASP itself clearly treats such revisions as practically consequential, as evidenced by its dedicating several years to the process, appointing a specialized task force, and inviting extensive feedback from scientific and clinical experts, philosophers, and individuals with lived experience of pain.

Second, regardless of whether revisions to the IASP definition can drive meaningful conceptual change on their own, it is reasonable to think that they are effective when pursued in tandem with complementary engineering initiatives. In Section 4.2., I suggested that the biomedical model of disease and various commonly used terms (e.g., 'pain fiber') are appropriate targets for such efforts. An important recent initiative concerns revisions to the *International Classification of Diseases*, the latest version of which includes a novel diagnostic category of *chronic pain* (MG30) (World Health Organization 2019). The category highlights the etiological complexity of chronic pain conditions and includes the subcategory of *chronic primary pain* (MG30.0) for cases that cannot be clearly linked to an underlying pathology or treatment. Because such pain is assumed to be multifactorial, the description discourages the inference from a lack of evidence of a physical cause to psychological causation. The IASP has been instrumental in introducing these changes (Raja et al. 2020: 1981; for discussion, see Treede et al. 2019; Nicholas et al. 2019), and the revisions I have proposed to its definition of pain plausibly enhance the uptake of the new diagnostic categories and help prevent misinterpretations.

7.4. Potential Tensions

This paper has been an exercise in *local* conceptual engineering: I have identified key desiderata for a *clinically* useful definition of pain, critiqued the current IASP definition of pain against those desiderata, and proposed an alternative definition. But the IASP definition is meant to be applicable across a range of contexts, including research and policymaking. This raises the worry that tailoring the definition to fit the needs of clinical practice might introduce tensions or trade-offs that erode the definition's broader applicability.

I find this to be a legitimate concern. While I take *Accuracy*, *Tractability*, and *Justice* to be important desiderata for clinicians, scientists, and policymakers alike, my discussion of

them has been shaped by the specific requirements of diagnosing and treating patients in pain. But this is how the revision of the IASP definition tends to work in practice. Alleviating pain is an ambitious and complex goal and when people weigh in with suggestions on how to modify the definition, their criticisms are often motivated by specific real-world issues and proposed revisions aimed at addressing those issues.

My discussion has been motivated by the worry that the recent revisions do not adequately meet the needs of clinical practice, and I have focused on clearly laying out the reasoning behind this worry. Though I have also offered an alternative formulation, I do not expect the formulation to be embraced by the community of pain experts as is. Rather, I am presenting it as an *example* of how the concerns from clinical practice could be better met. The aim is, as Williams & Craig (2016: 2422) have put it, "to generate debate and discussion that will lead to an improved definition." It is the job of future multidisciplinary IASP task forces to take the broader view, to consider tensions and trade-offs, and to arrive at an acceptable compromise. That said, I hope to have facilitated such efforts by drawing attention to the *engineered* nature of the IASP definition of pain, which clarifies the nature of the task.

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