

## The Ambiguity of „Pain“

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### **Abstract**

In this paper, it is argued that „pain“ is an ambiguous term, given that a term's meaning is determined by its usage. I show that the official definition of the *International Association for the Study of Pain* does not meet the necessary conditions of definitions in general. Pathological and nonpathological cases provide evidence that there is no common feature shared in all cases falling under „pain“. With the ambiguity of „pain“ established, I sketch the consequences for a scientific inquiry into pain, and for ethical theories working with pain as a relevant concept.

**Key Words:** Pain, Ambiguity, Definition, Explication, Pain Asymbolia, Phantom Limb Pain, Pain vs. Pleasure, First Person Reports

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### 1. **Introduction: Unified in Pain**

It seems like pain ought to be one of the most clear cut terms, given how much we invest to get rid of it: 34.3 billion \$ a year are spent in Australia alone on chronic pain; 80% of all visits to the doctor are pain related. Given the amount of resources we – patients, companies, and governments alike – spend on research, treatment and alleviation, we have to ask ourselves: Is it one thing we are concerned with? This would determine whether we are fighting a war against a common enemy on different fronts, or whether we are locked in a bar brawl without a unifying strategy or common cause on either side. Our intuition surely is that the term „pain“ actually refers to a homogeneous family of phenomena, one whose members

share a commonality. It is exactly this belief of the unity of pain that will be questioned and denied in this paper. In contrast, I will argue for a strategy of *divide and conquer* in science and ethics.

## 2. The Ambiguity of „Pain“ in Science and Subjects' Reports

It was on their IVth World Congress in 1984 that the IASP phrased a highly influential definition of „pain“. The IASP's definition (*IASPDef*) reflects our intuitions from an experienter's view point quite well:

Pain: An unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage.

Imagine stubbing your foot on the wardrobe. The sensation felt is unpleasant, and it may anger you to live through it. Surely, this is associated with the damage just inflicted upon your toe.

However, we should not be too benevolent with this definition. Defining is a game with high stakes, as definitions express universal equivalents. This entails that one single counterexample negates a definition as fitting: If it is possible that p without q, then it is not universally true that p and q come together. The IASP acknowledges the testability of their definition in a note to their official definition:

*Note:* [...] Many people report pain in the absence of tissue damage or any likely pathophysiological cause [...]. *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.*

If a patient talks about pain, and this pain does not exhibit unpleasantness, being a sensation, being an emotion, being experienced, is associated with, or is described in terms of tissue damage, we know that these are unnecessary features of pain. This is exactly why *IASPDef* fails: Counterexamples are available, and no single feature mentioned is shared by all things subsumed under „pain“ which is not also shared by a number of other things clearly not being pain.

If we concentrate on reports by patients, then we need to bracket *being an experience*: It is entailed by the report that the pain was also experienced. This caveat does not challenge the overall argument. There might be the possibility of unconscious pain. Then, *being an experience* is also not necessary. If on the other hand unconscious pains are indeed impossible, then *being an experience* does not distinguish pains from other

experiences like warmth or blueness, and the IASPDf fails for this reason. (Another remark on the side: IASPDf assumes pain to be composite of sensation and emotion without determining the relation between the both. A way out is to assume a somatic theory of emotions, making emotions sensations; but it is a risky manoeuvre to tie the success of a definition of pain to the truth of a specific theory of emotions.)

First then, unpleasantness: The majority of pains is unpleasant, but this is not true of all pains. One can refer to masochism, in which something is experienced as being pain and eliciting sexual pleasure. As unclear as the phenomenology of masochistic pain might be, we still have to acknowledge the possibility of experiencing pain as pleasant, and this rejects the necessity of unpleasantness for pain. Less juicy but more spicy: the hotness of food is a mild form of pain as the capsaicin triggers pain receptor. In tasting, we sometimes misattribute the pain experience as being a taste experience, yet we enjoy this oral pain and often even ask for more. These are two examples of pain being pleasant.

Yet, Pain can be also *neither* pleasant *nor* unpleasant. Patients with pain asymbolia „recognize pain but lack appropriate motor and emotional responses to painful stimuli applied anywhere on the body surface.“ Pain asymbolics are able to classify noxious stimuli as painful; in their judgements, a sensation falls under the class of „pain“. However, they were indifferent to the painful stimulus. Pain asymbolia is, as Nikola Grahek argued, a case of pain without negative evaluation, and therefore, of pain without unpleasantness; it is also case of pain without pleasantness.

The case of pain asymbolics also raises doubts for the necessity of pain being emotionally charged; but one does not need to refer to pathologies: Being hypnotised during dentistry is a state in which pain is felt as pain, but not as being tied to an emotion. Jesse Prinz, proposing a somatic theory of emotions, points out that pain can be a pain without being accompanied by an emotion. He argues further that the unpleasantness of pain is redundant, as it is accounted for by the accompanying emotions: „Pain feels bad because it contains anxiety, not because it is valent.“

This leaves *being a sensation*, although „sensation“ can have different meanings: in the case of meaning „being experienced“, we have already provided an argument above. Yet, „sensation“ might also mean „being felt in a sensual way“. This again can be understood in two ways: As being a perception or as being a merely feeling of the body. The difference is crucial, as perception entails veridicality, i.e. when I perceive a bottle standing on the table, then there is necessarily a bottle on the table. Otherwise, I am having a bottle illusion. This does not hold for mere feelings: A dreamt itch is still itchy.

Is pain a perception? Transitive or intransitive? A perception is transitive if and only if a person perceives *something other* with her body. This entails intersubjective accessibility in the same mode of perception. However, you and I cannot perceive the same tissue damage in the same

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perceptual modality; only one alone person feels one individual pain. To allow bodily sensations to still be perceptions, Armstrong introduced the notion of intransitive perceptions: a person perceives *the body* with the body. Ticks, itches and orgasms might fall under this category, but does pain? Phantom limb pain is a clear counterexample: the sufferer feels pain in a body *where there is no body*. If pain is a perception, and perceptions are veridical, then phantom limb pain can only be a pain *hallucination*. Surely, one does not want to claim that these patients are merely hallucinating pain – they are in real pain.

Pain is therefore not necessarily a perception. Is it necessarily bodily? Contrary to our intuitions, there are actual cases in which people talk about pains without it being a bodily sensation. There is pain that is a sensation, but is not embedded into one's own body image: Empathic pain, feeling the pain of others *as pain*. Empathic pain might lack the incorporation into one's own body image, but shares the negative evaluation and a need to act upon, while still being a sensation. This point is supported by the studies of Singer et al., in which subjects were asked to rate the painfulness and unpleasantness of merely watched in contrast to actually felt painful stimuli, and did so significantly similar, „irrespective of whether the pain was applied to themselves or to the partner.“ The neural correlate of empathic pain is also part of the neural pain matrix of actual pain; furthermore, it feels painful to the empathic subjects without being phenomenally incorporated into their own body image.

What we are left with is *associated with tissue damage* and *described in terms of tissue damage*. Association is too arbitrary to count as necessary. Laughing hysterically about somebody who just fell down the stairs – an instance of *Schadenfreude* – can also be an unpleasant sensation, followed by shame and associated with tissue damage; just with somebody else's. This is definitely not pain, even though it is strictly in accordance with the IASP's definition. We also ought to be reluctant to claim describability as a necessary condition for pain: Think of a newborn baby being slapped. Surely, she screams and feels pain without describing it. Even if left alone, she has pain without anybody ascribing it to her. We should hold on to our intuition that pain is not description-dependant. Pain existed before language, descriptions, theories, linguistic or social communities were around, fulfilling in most cases an important evolutionary function.

As we have seen, none of the features deemed necessary by IASPDf is actually necessary: Pain can be a sensation and emotion without being unpleasant, as in the case of masochism or spicy food. Pain can also be an unpleasant emotion without being a bodily sensation, as in the case of phantom limb pain. Pain can be a sensation without being unpleasant or an emotion, as in the case of pain asymbolia. Pain can also be an unpleasant emotion and sensation without being tied to the body or being owned by the experiencer. Still, these phenomena can be called „pain“ felicitously. In conclusion, „pain“ refers not to one class, but a cluster of different

phenomena. It is impossible to give a real definition for cluster terms like „pain“ as they necessarily lack a unifying feature.

#### 4. Consequences for Science

If „pain“ is an ambiguous term, then pain science cannot be reductive. Reduction is a relation between terms of two theories, and all terms referring to family resemblances are impossible to reduce as the reduction relation cannot hold between the ambiguous usage of normal language and the exact usage of scientific language.

However, this does not mean that there can be no science of pain; The claim is merely that „pain“ needs to be somehow broken down into a coherent classes of phenomena, which in turn might be reducible. Explication, as Carnap called this process, is not a one-to-one-relation, but a one-to-many-relation. The usage of a normal language term is analysed and parts of its usages are rebuilt in the exact language of a given science, namely physics; e.g. „Water“ can be explicated as „H<sub>2</sub>O“ even though „H<sub>2</sub>O“ is not synonymous to water in every case: „My old cat can't hold his water any longer.“

But is this picture of explication transferable to pain science? Hardly, as we are dealing with a term referring to a phenomenal experience. At the moment, we are lacking an acceptable theory of the physical basis of consciousness. Given this general epistemic hindrance, it seems impossible to know which explications in physical language are adequate.

Given the constraints for space, I can only sketch an alternative: In the critique of the IASPDF, we relied not on physical language, but on phenomenological reports. It therefore seems possible to explicate „pain“ a language referring to phenomena. We would aim for structural explications, i.e. naming more fine grained elements and their relation to each other. In the case of „pain“, such elements might be evaluation, personhood, ownership, integration into a body image, etc. The phenomenological explication will get us a class of possible structures of conscious experience which show some family resemblance to paradigmatic cases of pain. They will in turn enable patients to express their own experience in a more adequate way – something Virginia Woolf called for when she wrote that „[t]he merest schoolgirl, when falling in love, has Shakespeare and Keats to speak for her; but let a sufferer try to describe a pain in his head to a doctor and language at once runs dry.“

This structural taxonomy is expressed in the form of relations of elements to each other. Given a specific relation  $R(a,x)$ , we might now search for commonalities in the neural basis. It might very well be the case that two different groups of neural events elicit mental state  $x$ , e.g.  $p$  and  $q$ ;  $a$  can stand in a relation with  $x_p$  or with  $x_q$ . Given this possible result, it seems worthy to inquire whether there is a felt difference between an  $R(a,x_p)$ -pain with an  $R(a,x_q)$ -pain. If there is a felt difference, we have a further taxonomy which was unavailable from the experiencer's viewpoint alone. If there is no felt difference, science will learn something about the minimally sufficient grain

level of the supervenience base of conscious R(a,x)-pain. This general sketch illustrates what Ayede and Güzeldere proclaimed: Pain science might be a paradigmatic case for a science of consciousness *per se*.

### 5. Consequences for Ethics

The most practical lesson the ambiguity of pain teaches us is in ethics, as pain and pleasure were seen as antipodes by many theorists. Consider Jeremy Bentham:

A thing is said to promote the interest, or to be *for* the interest, of an individual, when it tends to add to the sum total of his pleasures; or, what comes to the same thing, to diminish the sum total of his pains.

Being able to feel pain or pleasure has thereby constrained the application of ethical theories like Bentham's utilitarianism. A utilitarian holds that the moral value of an action is determined by its manipulation of the ratio of pleasure to pain. Here, a moral object (something we have to act morally towards) can only be an entity that is able to feel pleasure or pain. Therefore, a puppy probably is a moral object, while a table is not. Consider compassionism: the driving force behind acting ethically is our ability to feel the pain of others and wanting to prevent it. This entails that our ability to feel empathic pain constitutes the class of moral subjects, (the class of entities able to perform moral acts). In conclusion, the ability to feel certain kinds of pain determines whether a given ethical theory is applicable in a given case.

Mind though whether the judgement „X is in pain!“ is true depends on which understanding we have of „pain“. The ambiguity of „pain“ then calls for a revision of such moral theories in at least two ways. First, the case of masochism and pain asymbolia show that pain is not the antipode to pleasure: Pain can be pleasant, or it can be neither pleasant nor unpleasant. In conclusion, not every pain is ethically relevant. Therefore, the first challenge for ethical theorists is clarifying exactly which kinds of pain are ethically relevant. I suggest: Only those pains that incorporate negative emotions like anxiety and whose prolonged having enslaves the ability of shifting one's attention away from them. Here, pain is only relevant *in virtue of* its emotional charge. The implication for treatment is: To teach emotional control.

Secondly, as we are becoming more and more aware of the varieties of pain experiences and their affordances to a neural basis, it is more and more evident that lots of non-human entities like animals (but possibly artificial life forms as well) are able to feel pain in a morally relevant sense. However, it is also clear that some individuals are not able to feel such morally relevant pains. This will determine whether e.g. experiments on encephalopodes are permissible – a case in which our moral intuitions falter.

The elucidation of the application of some ethical theories depends on the one hand on ethicists clarifying which pains are morally relevant, and on the other hand on scientists revealing which neural bases elicit which pain experiences. In conclusion, the ambiguity of „pain“ calls strongly for a revision of established ethical theories, and also for a revision of our relation to our closest and most distant non-human relatives and offspring. The simplistic talk of pain and pleasure in ethics cannot go on in the light of this evident conceptual unclarity.

### Notes

<sup>Mark</sup> No textbook on pain seems to do without, e.g.: Moore, R. J., *Preface*. In *Biobehavioral Approaches to Pain*. R. J. Moore (ed), New York: Springer, 2009, pp. vii-viii. Basbaum, A. I. and C. M. Bushnell, *Introduction*. In *Science of Pain*, A. I. Basbaum and C. M. Bushnell (ed), Amsterdam: Elsevier, 2009, pp. ix-x.

<sup>2</sup> International Association for the Study of Pain. *Pain Terms: A Current List with Definitions and Notes on Usage*. In *Pain*, Supplement 3, 1986, pp. 345-361.

<sup>3</sup> Shortly mentioned in: Dretske, Fred. *The Epistemology of Pain*. In *Pain: New Essays on Its Nature and the Methodology of Its Study*, Murat Ayede (ed), MIT Press, Cambridge, MA, 2005, pp. 59-73.

<sup>4</sup> Rachels, Stuart. *Is Unpleasantness Intrinsic to Unpleasant Experiences?* In *Philosophical Studies*, 99 (2), 2000, pp. 187-210. On page 201, Rachels sketches the space of logical possibilities for the pleasure-pain-relation in masochistic experiences.

<sup>5</sup> The *locus classicus* of somatic theories of emotions is: James, William. *What Is an Emotion?* In *Mind*, 9, 1884, pp. 188-205. Newer formulations of somatic theories of emotions is also: Prinz, Jesse. *Gut Reactions: A Perceptual Theory of Emotions*. Oxford University Press, Oxford, 2004; Damasio, Antonio et al. *The Somatic Marker Hypothesis and the Possible Functions of the Prefrontal Cortex*. In *Philosophical Transactions: Biological Sciences*, 351 (1346), 1996, pp. 1413-1420.

<sup>6</sup> On different locations of the body, capsaicin (C<sub>18</sub>H<sub>27</sub>NO<sub>3</sub>) is experienced as pain. If you are still not convinced, ask yourself what you would call such an experience were it to happen in your knee after a tennis match. Ask yourself also whether it would be possible to imagine something like a sweetness experience in your knee.

<sup>7</sup> Berthier, M. et al. *Asymbolia for Pain: A Sensory-Limbic Disconnection Syndrome*. In *Annals of Neurology*, 24, 1988, pp. 41-49.

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<sup>8</sup> Grahek, Nikola. *Feeling Pain and Being in Pain*. MIT Press, Cambridge, MA, 2007, p. 38ff.

<sup>9</sup> Prinz, Jesse. *Gut Reactions: A Perceptual Theory of Emotions*. Oxford University Press, Oxford, 2004. The quote is from page 117.

<sup>10</sup> Armstrong, David. *Bodily Sensations*. Routledge, London, 1962.

<sup>11</sup> Singer, Tania et al. *Empathy for Pain Involves the Affective but not Sensory Components of Pain*. In *Science*, 303, 2004, pp. 1157-1162. The quote is from page 1159.

<sup>12</sup> Carnap, Rudolf. *Der logische Aufbau der Welt*. Felix Meiner Verlag, Hamburg, 1998; Carnap, Rudolf. *Induktive Logik und Wahrscheinlichkeit*. Springer, Vienna, 1959.

<sup>13</sup> Woolf, Virginia. *On Being Ill*. Paris Press, 1928/2002.

<sup>14</sup> This is a rephrasing of a neurophenomenological approach in analytic terms. For a more phenomenological leaning, see: Varela, F.J. *Neurophenomenology: A methodological remedy for the hard problem*. In *Journal of Consciousness Studies*, 3 (4), 1996, pp. 330-349; Thompson, Evan et al. *Neurophenomenology: An Introduction for Neurophilosophers*. In *Cognition and the Brain: The Philosophy and the Neuroscience Movement*. Andrew Brook and Kathleen Akins (eds). Cambridge University Press, Cambridge, 2005, pp. 40-97.

<sup>15</sup> Ayede, Murat and Güven Güzeldere. *Some Foundational Issues in the Scientific Study of Pain*. In *Philosophy of Science*, 69 (Supplement), 2005, pp. 265-283.

<sup>16</sup> Bentham, Jeremy, *An Introduction to the Principles of Morals and Legislation*. Dover, Mineola and New York, 1780/2007, p. 3.

<sup>17</sup> Two prolific defenders of compassionism are Albert Schweitzer and Arthur Schopenhauer. See: Schweitzer, Albert. *Die Ehrfurcht vor dem Leben – Grundtexte aus fünf Jahrzehnten*. Beck, München, 1991; Schopenhauer, Arthur. *Über das Mitleid*. dtv, München, 2005.

<sup>18</sup> These points have been made extensively by e.g. Peter Singer. I would like to refer especially to: Singer, Peter. *Animal Liberation*. Harper, New York, 1975/2009; Singer, Peter. *All Animals Are Equal*. In *Animal Rights and Human Obligations*. Tom Regan and Peter Singer (eds), Prentice Hall, Englewood Cliffs, 1989, pp. 73-86.



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