



'If it can't be coded, it doesn't exist'. A historical-philosophical analysis of the new ICD-11 classification of chronic pain



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ABSTRACT

Chronic pain entails a large burden of disease and high social costs, but is seldom 'in the picture' and barely understood. Until recently, it was not systematically classified but instead viewed as a symptom or sign. In the new International Classification of Diseases, (ICD)-11, to be implemented in 2022, 'chronic' pain is now classified as a separate disease category and, to a certain extent, approached as a 'disease in its own right'. Reasons that have been given for this are not based so much on new scientific insights, but are rather of pragmatic nature. To explore the background of these recent changes in definition and classification of chronic pain, this paper provides a historical-philosophical analysis. By sketching a brief history of how pain experts have been working on the definition and taxonomy since the 1970s, we demonstrate the various social and practical functions that underlie the new ICD-11 classification of chronic pain. Building on this historical-empirical basis, we discuss philosophical issues regarding defining and classifying chronic pain, in particular performativity and pragmatism, and discuss their implications for the broader philosophical debate on health and disease.

1. Introduction

'Chronic pain constitutes an immense, invisible crisis at the center of contemporary life'. In this one, short sentence, David M. Morris (1993, p. 5), in his influential book *The Culture of Pain*, captured multiple paradoxes surrounding chronic pain. Firstly, all the achievements of modern medicine have apparently not led to people suffering less from the 'archetypical symptom' (Porter, 1993, p. 1579) for which patients have traditionally sought help from healers. 'Despite all our research', Morris (1993, p. 6), stressed, 'millions of people find themselves alone, disabled, and dispossessed by pain. Judging from the prominent position of conditions associated with it in *The Global Burden of Disease* (Rice, Smith, & Blyth, 2016; Vos et al., 2012) and from studies indicating that about 1 in 5 adults suffers from persistent or recurring pain (Breivik, Collett, Ventafridda, Cohen, & Gallacher, 2006; Dahlhamer et al., 2018), chronic pain, appears to be 'the characteristic malady of our time' (Hyson, 2001).

A second paradox is that chronic pain is an 'immense' crisis, but at the same time remains 'invisible': Chronic pain 'does not receive the media attention that cancer, AIDS, or even tuberculosis receives. It is not a public health problem, not fatal, has no biological purpose, and works in secret', wrote dentist and historian John M. Hyson (2001). He was not

only referring to the fact that chronic pain is apparently not spectacular enough to generate much interest, but also that it is an elusive phenomenon. In Hyson's view, the definition of pain as 'a disagreeable sensation, which scarcely admits of definition' that had already been formulated in 1846, was still the most appropriate description of pain. Morris reiterated this idea that pain is undefinable in his observation that 'perhaps pain is most like love in that it comes and goes of its own accord, as if obeying laws from whose knowledge we remain almost totally shut out' (Morris, 1993, p. 1).

Thus, a disturbing picture emerges of chronic pain that seems to elude all medical progress, entails a large burden of disease and high social costs, is seldom 'in the picture' and is still barely understood (Bourke, 2014, pp. 22–26; Neilson, 2016; Van der Graaf, 2020). However, there may be light on the horizon in the form of the new, 11th edition of the *International Classification of Diseases (ICD)*, which will be implemented in 2022. A notable change in the ICD-11 is that it includes chronic pain, generally defined as 'pain that persists or recurs for more than 3 months' (Treede et al., 2019), as a separate disease category (World Health Organization, 2018). This is in contrast to the current ICD-10, in which chronic pain conditions are classified under various categories and therefore remain relatively invisible. Thus, the new classification is

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expected to generate more attention for chronic pain and its management (Treede et al., 2019).

In this contribution, we discuss the ICD-11 classification of chronic pain and the associated notion of chronic pain as a disease itself from a pragmatic historical-philosophical perspective. In short, three claims are central to our argument. The first is that the current state of affairs in these matters is the historically contingent result of developments going back at least half a century, as pain experts have been working on the definition and taxonomy of chronic pain since the 1970s. Our second claim is that these pain experts were motivated by practical problems and social goals rather than theoretical considerations about the true nature of chronic pain or about the concept of disease. Our third claim is that this history demonstrates the usefulness of a pragmatist approach to the definition and classification of chronic pain and that of disease in general.

In the traditional philosophical debate on health and disease concepts (e.g., see: Boorse, 1977, 2014; Cooper, 2002; Nordenfelt, 1995, 2007; Wakefield, 1992) a wide variety of positions and definitions have been brought forward (Hofmann, 2001), predominantly formulated by means of conceptual analysis. However, no consensus has been reached on what is the ‘correct’ definition. In recent contributions, scholars argue for a more pluralistic and pragmatic understanding of health and disease concepts (De Vreese, 2017; Haverkamp, Bovenkerk, & Verweij, 2018; Powell & Scarffe, 2019; Van der Linden & Schermer, 2022; Walker & Rogers, 2018). Moreover, currently, we witness a shift from defining the rather abstract high-order ‘disease’ concept towards focusing on more concrete (changes in) the definition and classification of mid-level-order ‘diseases’ (e.g., see Green & Hillersdal, 2021; Schermer & Richard, 2018; *in press*; Tresker, 2020a, 2020b). Investigating this mid-level may provide useful insights into how the medical field actually defines and classifies clinical conditions. Taking such a bottom-up approach also implies we need a different kind of research method, however. At least one way to do this is by using medical history to study disease concepts in the present (Binney, 2018, 2021).

Hence, in this article, we do not ourselves take a position on how chronic pain should be defined, whether it should be regarded as a disease, and what would be the best typology or classification of different types of chronic pain. We will not provide a new full-fledged general theory of disease either. Instead, we want to explore the conceptual changes in definition and classification of chronic pain by exploring its history. Furthermore, we propose to make sense of these changes in definition and classification by looking through the lens of philosophical pragmatism. In particular, we will focus on the social and practical functions of past and present definitions and classifications of chronic pain. By discussing them in light of *performativity*, we demonstrate how disease classifications bring new disease categories and patients ‘into being’. We hope that this analysis will not only provide deeper insights into conceptual changes of chronic pain that have been developed over time, but also in a broader sense, that it may challenge our understanding of the relation between the conceptualization of disease and its practical consequences.

Specifically, in section 2, we sketch the historical background and realization of the first classification system of chronic pain conditions in 1986, which was mainly used for ‘internal’ purposes in the field of pain medicine. Subsequently, in section 3, we describe the genesis of the new ICD-11 classification of chronic pain, in which the emphasis shifted towards ‘external’ objectives. In section 4, using these two historical examples, we will make an inventory of the various ways in which definitions and classifications of diseases have increasingly become indispensable communicative links in the functioning of medicine as a social institution at the micro, meso and macro-levels. Following on from this historical-empirical basis, in section 5, we will argue that chronic pain, and disease in general, may be best understood from a pragmatist view, and strengthen this position by elucidating the performative character of the disease concept. Lastly, we discuss challenges and pitfalls regarding pragmatism and performativity, and provide advice on what should be considered in any future definitional and taxonomic work.

2. Background of the first classification of chronic pain (ca. 1973–1986)

2.1. Emergence of a world of pain medicine (from the 1970s onwards)

The new ICD-classification of chronic pain came about after years of preparatory work by the International Association for the Study of Pain (IASP). The founding of the IASP in 1973 marked, in the words of medical sociologist Baszanger (1998), the ‘invention of pain medicine’. In the decades that followed, she argues, a ‘world of pain’ emerged under the influence of the interaction between inspired individuals, new insights and concepts, therapeutic developments and institutional networks.

Among those inspired individuals were the American anesthesiologist John Bonica, who founded the first multidisciplinary pain clinic to treat complex pain conditions in 1948, and the British Dame Cicely Saunders, a pioneer in palliative care for cancer patients, who opened the doors to the first hospice in the world, St. Christopher’s in Sydenham, in 1967. Bonica and Saunders believed that, in contemporary medicine, pain was grossly neglected. In their view, pain was often too narrowly understood as merely a somatosensory signal or symptom of an underlying disease or injury. Therefore, practitioners and researchers did not focus on pain, but on the disease or injury. Bonica and Saunders argued that more attention had to be paid to the phenomenon of pain itself as a multidimensional problem, which required multidisciplinary treatment (Crul, 1999; Meldrum, 2007; Reynolds & Tansey, 2004; Tousignant, 2006).

They found support from researchers in the fields of neurophysiology and psychology, especially after the Gate Control Theory, formulated in 1965 by the psychologist Melzack and neuroanatomist Wall (Melzack & Wall, 1965). These researchers demonstrated that pain was a more complex phenomenon than had been traditionally thought (Bourke, 2014, pp. 10–11, 229; Corns, 2020, 87–103; Crul, 1999; Meldrum, 2007; Neilson, 2016; Reynolds & Tansey, 2004). Bonica and Saunders also received support from clinical quarters, including the British anesthesiologists, neurologists, neurosurgeons, psychiatrists and psychologists who founded the Intractable Pain Society in 1969 (from 1973 the British chapter of the IASP). These and other pioneering clinicians wanted to combat under-treatment of pain with more sophisticated techniques of anesthesiologic nerve blocks, new generations of analgesic drugs and new forms of behavioral and psychotherapy (Bourke, 2014, pp. 290–292; Crul, 1999; Meldrum, 2007; Reynolds & Tansey, 2004).

Institutionally, the ‘world of pain’ took shape in close relation to these forms of treatment. The number of palliative units and hospices, where drug treatment of cancer-related pain was paramount, grew rapidly. The IASP was the driving force behind the ‘analgesic ladder’ for cancer pain management - a three-step scheme for guiding the prescription of pain suppressing medication - launched by the WHO in 1986 and promoted for other indications from the 1990s onwards. This latter development was connected to the increase in number of specialized pain clinics, where mainly the anesthesiologic treatment of chronic pain, in particular back pain, neck pain, and neuropathic pain, was applied, whether or not in combination with psycho- and behavioral therapy (Baszanger, 1998; Meldrum, 2007; Reynolds & Tansey 2004; Tousignant, 2006).

2.2. The IASP-definition of pain (1976–1979)

Within the context of the ‘invention of pain medicine’, chronic pain came to the fore as a diagnostic and therapeutic unit. From the outset, the founders of the IASP were convinced that achieving their goals (i.e. more scientific research on and better treatment of pain) stood or fell by an adequate definition and classification of pain, and in particular of chronic pain. In 1976, they therefore appointed a Subcommittee on Taxonomy, a multidisciplinary group of pain experts led by British psychiatrist Harold Merskey (Bourke, 2014, pp. 10–11; Merskey et al., 1979; Reynolds & Tansey, 2004, p. 13). Bonica expressed the hope that all members of the IASP would consistently use the definitions and classifications to be developed by the Subcommittee in their lectures, publications, research

protocols, patient records and databases for the storage of clinical and research data. After all, the main goal was ‘to improve our communication systems’ (Bonica, 1979; see also: Merskey & Bogduk, 1994, pp. ix–x).

The best known and first achievement of the Subcommittee was the publication, in 1979, of the definition of pain that is still most commonly used today (in virtually unaltered form): ‘Pain is an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage’ (Merskey et al., 1979).

All elements of this definition have been intensely debated (Ayede, 2017, 2019; (Corns, 2020, 20–21, 160–166; Derbyshire, 2016, p. 24): Is ‘unpleasant’ an adequate and sufficient description of the pain experience (Neilson, 2016; Williams & Craig, 2016)? How problematic is the understanding of pain as a personal experience, as it implies the adoption of a subjective criterion of pain than any objective measure (Corns, 2020, pp. 20–21, 160–166; see also: Derbyshire, 2016; Tousignant, 2006)? Did the emphasis on pain as a ‘sensory and emotional experience’ serve to transcend or to reinforce the Cartesian distinction between mind and body (Bourke, 2014; Porter, 1993, p. 12)? Is the association of pain with ‘tissue damage’ too negative and restrictive, thus perpetuating a medical tradition of reductionism, localism and mechanism (Kleinman, 1993; Neilson, 2016)? Does the phrase ‘described in terms of that damage’ deny the possibility of pain for the fetus, newborn infants, animals, and patients with dementia (Anand & Craig, 1996; Morris, 2016)?

Instead of adding to the debate on these very relevant but theoretical questions regarding the content of the IASP-definition of pain, we would like to focus on its intended function as a taxonomic definition (Ayede, 2017, 2019). Murat Ayede, a strong supporter of the IASP-definition, stresses that ‘we should not confuse scientific theory construction and its application in clinical settings with the task of providing a taxonomic definition’. The function of the IASP definition was to ‘collect all and only pains as intuitively understood by the scientists and the folk alike’ (Ayede, 2019, p. 4). Jennifer Corns, a critic of the IASP-definition, also points out that it was never intended as a ‘scientific definition’ that would or should direct further research developments. Instead, Merskey and colleagues had set out to characterize pain ‘as deployed in our everyday life as part of common usage’ (Corns, 2020, pp. 163–166).

The common ground is that the IASP-Subcommittee aimed to capture all phenomena that were called ‘pains’ in everyday life and in everyday clinical practice (Ayede, 2019, pp. 2, 4; Corns, 2020, pp. 20–21, 160–166). This included cases in which there was no identifiable pathology, as Merskey and colleagues emphasized in the ‘Note’ which accompanied their definition:

‘Many people report pain in the absence of tissue damage or any likely pathophysiological cause [...]. 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’ (Merskey et al., 1979, p. 250).

As has already been mentioned, the main concern of the founders of the IASP was the neglect and undertreatment of pain patients in contemporary medicine. In their pursuit of improved treatment, in particular for ‘too many seekers of pain relief [who] were being dismissed on the grounds that their reported pains failed to conform to the simplistic scientific models of pain’ (Corns, 2020, p. 20), they adopted a definition that accepted subjective reports of pain experience as ‘genuine’ pain (Ayede, 2019, p. 5; Corns, 2020, pp. 20–21, 161; see also: Merskey, 1994). Despite all controversies, criticisms and probable shortcomings, in terms of function it was a flexible and inclusive definition, which, given its widespread adoption, suited the objectives and uses of the IASP and many health professionals of multiple disciplines in the field of pain medicine to a considerable extent (Bourke, 2014, pp. 10–11; Reynolds & Tansey, 2004, p. 13; Tousignant, 2006, 57–58; Van Rysewyk, 2016, p. 1).

2.3. Defining and classifying chronic pain (1979–1986)

From 1979 onwards, the Subcommittee devoted most time and energy to the definition and classification of ‘chronic’ pain. After all, chronic pain constituted, according to the committee, ‘a distinct phenomenon in comparison with acute pain’ (Merskey & Bogduk, 1994, p. xi). An important impetus to this view was given by Bonica, who in 1953 had defined chronic pain as ‘pain which persists past the normal time of healing’ (cited in: Merskey & Bogduk, 1994, p. xi). If the pain continued ‘past the normal time of healing’, the medical-curative model was no longer applicable. ‘Past the normal time of healing’ pain also did not fulfill the biological function of warning for danger, as acute pain did. Where acute pain was a derivative of that danger (disease or tissue damage), chronic pain thus seemed to stand on its own. It was a largely misunderstood but common phenomenon, which deserved full attention. Precisely because of its characteristic ‘persistence’, chronic pain had a lasting disruptive effect on the lives of patients (Hyson, 2001; Meldrum, 2007; Neilson, 2016).

The Subcommittee decided to take the latter, ‘persistence’, as the starting point for its definition and classification of chronic pain and removed ‘past the normal time of healing’ from the definition. The main argument was that there were many chronic pain conditions, such as rheumatoid arthritis, osteoarthritis, spinal stenosis, and metastatic carcinoma, where no ‘normal healing’ took place. Because in clinical practice it could vary from case to case how long pain had to persist before doctors spoke of ‘chronic pain’, the Subcommittee simply defined chronic pain as ‘pain that persists for a given length of time’ (IASP Subcommittee on Taxonomy, 1986; Merskey & Bogduk, 1994, pp. ix–xv).

Finally, in 1986, the Subcommittee published a more detailed classification of chronic pain, in which further differentiation of categories of pain syndromes took place. The purpose of this classification was to develop ‘a minimum standard vocabulary for members of different disciplines who work in the field of pain’ (Merskey et al., 1979). As is evident from the distinction between the two main headings of ‘relatively generalized syndromes’ and ‘relatively localized syndromes’ (see Fig. 1), the Subcommittee took the location of pain as an ordering principle. This more or less followed logically from the IASP-definition of pain, which focused on personal experience of tissue damage. As Merskey has stressed, whether or not a physical cause is present or can be identified, patients usually have experiences of pain somewhere ‘in the body’ and therefore tend to report them in terms of located tissue damage (Merskey, 1994; compare: Corns, 2020, pp. 48–53).

With the publication of the IASP-classification of 1986, chronic pain was presented for the first time as a separate nosological category. This, however, did not (yet) entail a consistent and explicit claim that chronic pain was a disease itself, but only that it was a ‘distinct phenomenon in comparison with acute pain’. Moreover, the ambition was not to replace the ICD, but to complement it: it was thought that pain specialists and therapists needed a more detailed classification structure than a general system like the ICD could offer (IASP Subcommittee on Taxonomy, 1986; Merskey & Bogduk, 1994, p. x).

3. Background of the ICD-11 classification of chronic pain (1990s–present)

3.1. From pain management to pain medicine (1990s)

In the IASP-classification of 1986, the definitions and descriptions of ‘chronic pain diagnoses’ were clinically descriptive, not etiological. This was in line with the IASP’s pragmatic approach from the outset and aimed at combating under-treatment and unnecessary suffering for patients. Pain clinics and palliative units primarily focused on improving pain treatment. In promoting the ‘analgesic ladder’, for example, an important goal was to remove practitioners’ and patients’ fear of side effects and of

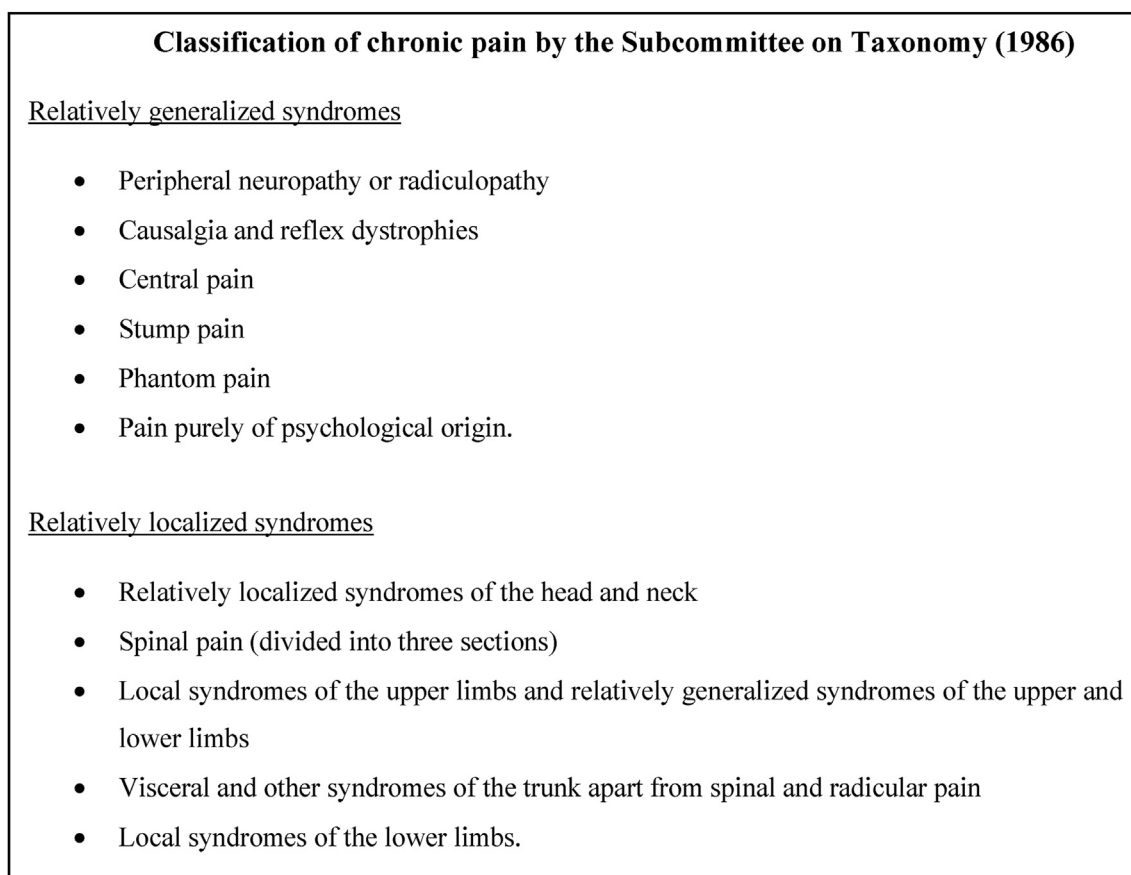


Fig. 1. Classification of chronic pain by the Subcommittee on Taxonomy (1986).

addiction to painkillers. Thus, the definition and classification of chronic pain primarily served to improve pain management in clinical practice, in a general sense by making chronic pain more visible as a distinct diagnostic and therapeutic entity, and provide a common language for pain experts (Mel drum, 2007; Merskey & Bogduk, 1994; Reynolds & Tansey, 2004).

From the scientists within the IASP, a different approach gradually took over from the 1990s onwards. New insights from fundamental research into (neuro)physiological changes in chronic pain, amongst others those on central desensitization (Woolf, 1983) and the Neuro-matrix Theory of Pain (Melzack, 1990, 2001), gave rise to new ideas and higher expectations. Firstly, although they were not necessarily meant to make such a claim, these new theories fed the view that chronic pain was constituted by an autonomous, and distinct pathology (Eijkelkamp, 2018; Kuner & Flor, 2017; Raffaelli & Arnaudo, 2017; Siddall & Cousins, 2004). Secondly, they engendered hope that pain medicine would move beyond empirical treatment based on trial-and-error to more targeted therapies based on knowledge of the actual mechanisms involved in the pathogenesis of pain (Jensen et al., 2001; Kuner & Flor, 2017; Woolf & Decosterd, 1999). Ultimately, this was expected to benefit the effectiveness of pain treatments, which still left much to be desired. Partly due to the increasing influence of evidence-based medicine (EBM), the lack of proven effectiveness of pain treatments and therapies has been an increasing concern in the world of pain medicine since the 1990s (Huygen, 2011; McQuay & Moore, 1998). Thus, according to the more scientifically oriented elements within the IASP, the combination of the developments in biomedical research on the one hand, and the rise of EBM, on the other hand, made an evolution from mere pain management to 'real' pain medicine both possible and necessary (Huygen, 2011; Woolf & Decosterd, 1999).

3.2. Pleas for recognition: criticism of the ICD-10 (2000s)

Against the background of these scientific developments, particularly the European chapters of the IASP began to advocate vigorously for the recognition of chronic pain as a 'disease in its own right' (Raffaelli & Arnaudo, 2017; Regieraad, 2011), with its 'own pathology, symptoms and signs, brought about by pain itself' (Eijkelkamp, 2018; Siddall & Cousins, 2004). However, the new insights on neuroplasticity and neuro(patho)physiological mechanisms were not sufficient and turned out not to be the main argument to support IASP's pleas for recognition of chronic pain as a disease itself.

First and foremost, the emphasis lay on the great burden of disease and social costs of chronic pain. A 2006 study, originated from the European chapters of the IASP (Breivik et al., 2006), found that 19% of European adults suffered from chronic pain on a daily basis, of which 34% had pain so severe that they scored an 8 or higher on a 10-point scale (1 is no pain, 10 is the worst pain imaginable). This study has been cited repeatedly to substantiate claims that chronic pain was a major public health issue (Dahlhamer et al., 2018; Raffaelli & Arnaudo, 2017).

According to the IASP, the ICD-10 played a significant role in the underplaying of this important issue, because it lacked a systematic categorization of chronic pain. Instead, pain conditions were placed in different categories based on where and how pain symptoms manifested themselves. For example, fibromyalgia was described under 'other and unspecified soft tissue disorders, not elsewhere classified' (M79) within the category 'diseases of the musculoskeletal system and connective tissue' (M00-M99). Additionally, chronic pain could also be classified as a symptom, 'pain, unspecified' (R52), under the category 'general symptoms and signs' (R50-R69). Finally, chronic pain could also be classified as 'pain disorder related to psychological factors' (F45.4) within the

category ‘somatoform disorders’ (F45), under the heading of ‘mental, behavioral and neurodevelopmental disorders’ (F01–F99). An editorial in the IASP’s outlet *Pain* concluded: ‘ICD-10 included many pain diagnoses, but they are somewhat arbitrarily distributed over several categories, and sometimes poorly defined’ (Rief et al., 2010).

In large part, this state of affairs can be understood as the logical result of the long, complex and highly contingent history of the ICD, during which it evolved from a detailed classification of causes of death to an universal taxonomy of disease, and from a statistical guide book to a vast information system (Lie & Greene, 2020; Moriyama, Loy, & Robb-Smith, 2011). This is not to say that there was no rationale behind the way chronic pain conditions were classified and ‘distributed over several categories’ within the ICD-10. The point here is, that the ‘fragmentation’ of chronic pain conditions across different categories became to be identified by the IASP as one of the key problems that hindered the progress, and the funding, of pain medicine. Within the field, a consensus appears to have grown that this fragmentation made chronic pain relatively invisible, and therefore underappreciated, as a medical, health care and research priority. It was therefore, in part, a matter of professional interests and rhetorical strategy, that IASP-spokesmen began to target the ICD-10: ‘The lack of adequate coding in the ICD makes obtaining accurate epidemiological data related to chronic pain difficult, prevents adequate billing of healthcare costs related to pain management, and hinders the development and implementation of new therapies’ (Treede et al., 2015). The Italian pain researchers Raffaelli and Armaudo (2017, p. 2007) stressed the repercussions for patients: ‘This situation entails the denial of the pain sufferer’s right to be recognized as ill and even affects their ability to identify themselves as ill and to receive adequate health support’. In their view, a vicious circle had arisen: ‘Without a definition of pain as a disease, [...] pain does not gain the attention it deserves and is not adequately studied in order to consolidate definitively its recognition as a disease in its own right.’

3.3. Towards the new ICD-11 classification of chronic pain (2012–present)

In light of these concerns, it was no longer sufficient for many within the world of pain medicine to have their own specialized classification to supplement the ICD. This general classification system itself had to be overhauled. In 2012, the IASP convinced the WHO that it was worth investigating whether chronic pain could be included in the ICD-11 as a separate category. An IASP Task Force, under the auspices of the WHO, then set to work, resulting in the new classification (Treede et al., 2015).

In line with the 1986 IASP classification, the Task Force generally defined chronic pain as ‘pain that persists or recurs for more than 3 months’ (Treede et al., 2019). However, the main categories in the ICD-11, ‘chronic primary pain’ and ‘chronic secondary pain’, are fundamentally different from the 1986 distinction between ‘relatively general’ and ‘relatively localized’ syndromes. Also, for the category ‘chronic primary pain’ a more specified definition is used, formulated as: ‘pain in one or more anatomical regions that persists or recurs for longer than 3 months and is associated with significant emotional distress or functional disability (interference with activities of daily life and participation in social roles) and that cannot be better accounted for by another chronic pain condition’ (Treede et al., 2019).

This testifies to the flexibility that has always characterized the IASP’s approach to the issue of taxonomy. As Bonica had stressed before, the adopted definitions and classifications did not need to be perfect. As long as they were acceptable to many workers in the field of pain medicine, they were better than the ‘tower of Babel’ conditions that had existed in the field of pain medicine. Moreover, they were ‘not fixed’ for all time, but open for modification ‘as we acquire new knowledge’ (Bonica, 1979). Indeed, new knowledge pointing at the central role of disturbed (neuro) physiological mechanisms in the central nervous system may, in part, explain the move away from a classification based on the location of the pain.

Instead, the Task Force came up with a distinction between ‘chronic primary pain’ and ‘chronic secondary pain syndromes’, (see Fig. 2). This was explained as follows:

‘In chronic primary pain syndromes, pain can be conceived as a disease, whereas in chronic secondary pain syndromes, pain initially manifests itself as a symptom of another disease, such as breast cancer, a work accident, diabetic neuropathy, chronic caries, inflammatory bowel disease, or rheumatoid arthritis’ (Treede et al., 2019, p. 21).

This distinction between primary and secondary chronic pain is not straightforward and is sometimes difficult to apply. Performing differential diagnosis for conditions that can be categorized as primary as well as secondary syndromes can sometimes be challenging, as it can be difficult to prove that a particular pathology or a lesion that is present is indeed causally related to the chronic pain experienced by the patient. Furthermore, conceptual problems arise when the related underlying pathology is healed or cured. For example, cancer-related chronic pain is categorized as a secondary pain syndrome and must be diagnosed as such, also when the patient continues to be in pain even though the cancer is cured.¹ Thus, the category of ‘secondary pain syndromes’ retains to the idea of pain as a symptom of underlying pathology or tissue damage and therefore also seems to contradict the general notion of chronic pain as a ‘disease in its own right’ with its ‘own’ specific pathophysiology.

The IASP Task Force was well aware of these and other problems, but made it very clear that their classification should be understood in the light of its purposes: the category of chronic primary pain was instrumental to the broader recognition of chronic pain as a disease, and the category of chronic secondary served to make visible the full extent of chronic pain as a public health priority. The Task Force explicitly stated that the most important thing was that all patients with chronic pain, including those with other diagnoses, came ‘into the picture’ as pain patients and received adequate treatment for their pain complaints:

‘Differential diagnosis between primary and secondary pain conditions may sometimes be challenging, but in either case, the patient’s pain needs special care when it is moderate or severe. After spontaneous healing, or successful management of the underlying disease, chronic pain may sometimes continue and hence the chronic pain diagnoses may remain and continue to guide treatment as well as health care statistics’ (Treede et al., 2019, p. 21).

4. Elements in a communication system

4.1. (Mis)communication between physicians and patients

The two goals in the citation above, ‘to guide treatment as well as health care statistics’, illustrate that the classification of chronic pain has multiple functions. The common denominator, in the words of historian Rosenberg (2003, p. 496), is that disease concepts, definitions and classifications are ‘elements in a communication system’. They offer ‘units of intelligibility’: words, language, which enable medicine to function as a social institution. To gain insight into the advantages and disadvantages, the opportunities and possible pitfalls of the ICD-11 classification of chronic pain, it is necessary to elaborate on the various social, communicative functions it fulfills at different levels: we distinguish between the micro-level of individual doctor-patient interactions, the meso-level of the community and organizations of pain researchers, specialists, and therapists, and the macro-level of healthcare systems, scientific research in general and society at large.

¹ In the ICD-11, there are ways to classify a condition as a primary and secondary syndrome at the same time, by means of ‘multiple parenting’. In general, however, chronic pain in the secondary syndromes is viewed as a symptom that is assumed to be partly caused by underlying pathology, such as cancer.

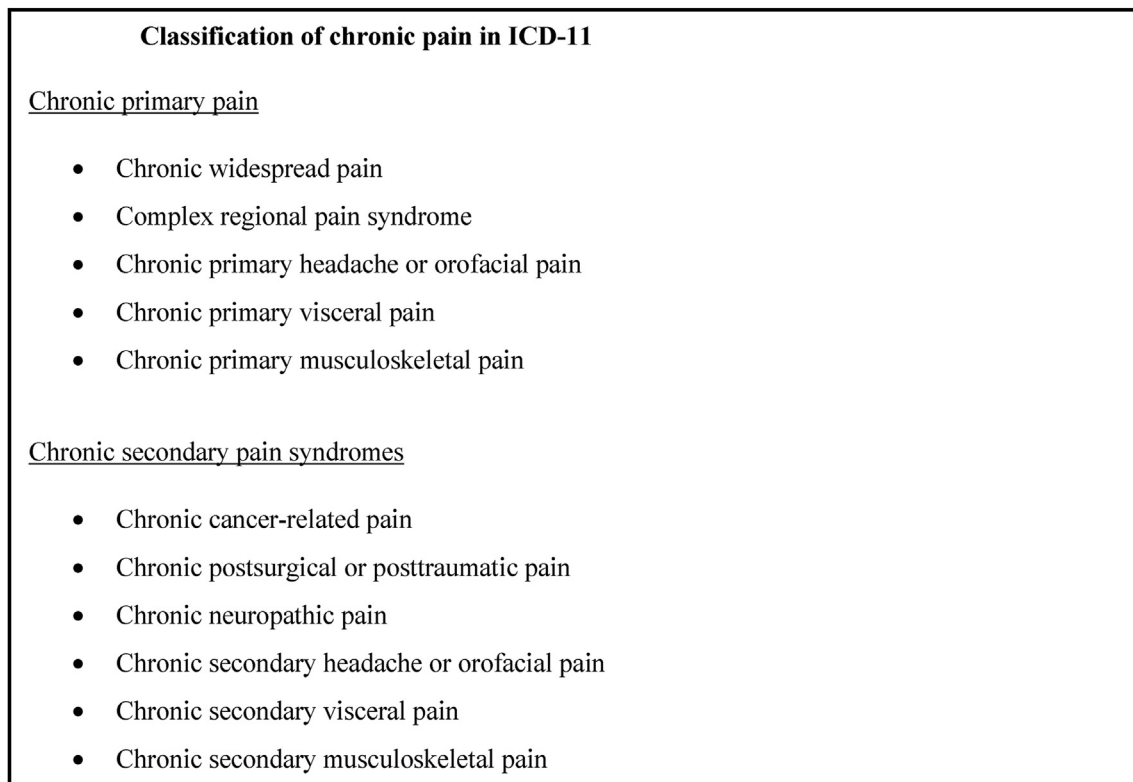


Fig. 2. Classification of chronic pain in ICD-11.

At the micro-level of clinical practice, disease definitions and classifications provide guidance and a generic framework when making an individual diagnosis. This diagnosis is an important structuring element in the relationship and communication between doctor and patient. Rosenberg notes in this regard that, historically, the social role of the physician developed around ‘the healer’s ability to put a name to the patient’s pain and discomfort’ (Rosenberg, 1992, p. xvii). This ‘name’ for their suffering gives the patient a (more or less understood) answer to the question of what is wrong with them. In practice, however, this ‘construction of meaning’ (Hutschemaekers, 1990) can also be the beginning of a misunderstanding and miscommunication between doctor and patient.

Physicians often see diagnoses (and classifications of clinical pictures on which they are based) as nothing more than a tool, an agreed-upon arrangement that helps them gain an overview of the patient’s situation and to subsequently design the treatment plan. Thus, disease classification serves as a ‘vehicle of clinical knowledge’ (Engelhardt, 1985) and diagnosis as ‘a resting place for the mind’, an intermediate step towards the choice of therapy. According to the Danish internist and philosopher Wulff, diagnostics is therefore not a *causal* system, as is often thought, but a *predictive* system. The diagnosis, at least from the doctor’s perspective, points ahead to treatment (Wulff & Göttsche, 2000). With regard to ICD-11, this is highlighted by Treede et al. (2019), who maintain that an adequate classification of chronic pain is needed ‘to guide treatment’ and to ensure that all patients with chronic pain receive the ‘special care’ they need.

For patients, especially those with serious, long-term or chronic illnesses or handicaps, the diagnosis is not just an adjunct to the therapy, but has a significance of its own. For them, the diagnosis is an end in itself, which not only describes their situation or the problems, but also explains them. The diagnosis or disease definition can therefore determine the patient’s self-image to a considerable extent (Rosenberg 1992, 2002; Wulff & Göttsche, 2000). Obviously, this can have both positive and negative influences on the patient’s self-understanding, but with regard to chronic pain, both pain patients and the IASP seem to have

emphasized the positive side. This is reflected in the strong need of patients and patient organizations for the definition and recognition of their complaints as a ‘disease in its own right’ (Meldrum, 2007). For Raffaelli and Arnaudo (2017), the new ICD-11 classification of chronic pain touches on ‘the pain sufferer’s rights to be recognized as ill’ and ‘their ability to identify themselves as ill’.

This quote implicitly indicates that the definition and classification of chronic pain also fulfills important functions outside the clinical context of diagnosis and treatment. The extent to which patients can present themselves as ‘ill’ and are recognized as such by family, friends, employers and other social relations, largely shapes their social role and identity (Burnham, 2012). Their status, whether recognized or not, as someone with a ‘disease’ often also determines the extent to which they have access to services and facilities, are eligible for all kinds of financial compensation, are exempt from social obligations and are judged on their moral responsibility (Nordenfelt, 1993; Rosenberg, 1992). The social and financial effects of all this can be significant and they can be both positive, in terms of support, participation and emancipation, and negative, in terms of overtreatment, medicalization, exclusion and stigmatization; the opioid crisis in the United States (and elsewhere) is a strong reminder of how ‘real’ and devastating these effects can be (Keefe, 2021). In this context, medical sociologists point at the *power of definition* that physicians exercise by making diagnoses, not only at the micro-level, but also and perhaps above all at the meso and macro-levels. Such power requires responsible, careful application, and with it reflection and further analysis (Bowker & Star, 1999; Conrad, 2007; De Swaan, 1988; Horstman, De Vries, & Haveman, 1999, pp. 32–38).

4.2. Internal and external communication at the meso- and the macro-level

The IASP-classification of 1986 appears primarily to have had an ‘internal’ function at the meso-level of the nascent field of pain medicine. The main objective of the Subcommittee on Taxonomy was, in the words of Bonica, ‘to improve our communications systems’ (Bonica, 1979). The definition and classification of chronic pain was supposed to contribute

to the evolution of a common language for the world of pain medicine itself so that all experts, scientists and practitioners in the field could understand each other and exchange ideas. In particular, researchers needed a common language, as it is virtually impossible to conduct epidemiological studies into prevalence, incidence, morbidity, determinants, and risk factors, without agreed-upon disease categories. Furthermore, in clinical studies, randomized trials, Big Data research, systematic reviews and evidence-based clinical practice guidelines, the evidence is usually ordered according to specific disease categories or entities (Bolt, 2015; Bolt & Huisman, 2020; Bowker & Star, 1999; Rosenberg, 2002).

When the new classification of chronic pain in the ICD-11 was drawn up, the importance of 'external' communication at the macro-level came explicitly to the fore. It was no longer deemed sufficient to have, as a corollary to the ICD, their 'own' specialized IASP-classification. The ICD itself had to be overhauled. As long as chronic pain conditions were 'scattered' over all kinds of different categories in the ICD, the issue of chronic pain as such remained largely unnoticed by policymakers and research authorities. Therefore, one of the main aims of the classification of chronic pain as a separate category in the ICD-11 was to make chronic pain visible as a major social and (public) health issue, an important topic for the research agenda, a priority for health care policy and something to pay more attention to by clinicians (Treede et al., 2015, 2019).

The pursuit of increasing visibility of chronic pain was not only an important driver behind the realization of the new ICD-11 classification, but also behind the IASP's pleas for the recognition of chronic pain as a disease in itself. This can largely be attributed to the shift of emphasis from internal communication at the meso-level to external communication at the macro-level. As long as the IASP Subcommittee on Taxonomy primarily worked to develop common definitions and terms for the world of pain medicine itself, there appears to have been no need or necessity to explicitly and consistently promote the view that chronic pain is a disease in its own right. As was apparent from the widespread adoption of the IASP definition of pain from 1979, there was a great willingness within the world of pain medicine to take pains, as subjectively experienced by patients, seriously, and to accept them as 'genuine', even in the absence of observable pathology. Similarly, there was a widely shared view among pain experts and therapists that chronic pain deserved special and systematic attention as a 'distinct phenomenon in comparison with acute pain'. This resulted, in 1986, in a definition and classification system which presented chronic pain as a diagnostic and therapeutic unit, but not yet emphatically as a 'disease'.

The idea of chronic pain as a disease, with its 'own pathology', did gain some currency from the 1990s onwards under the 'internal' influence of scientific developments. However, the strong need for its recognition as a disease in its own right, as the word 'recognition' already indicates, had more to do with the social reality 'outside' the world of pain medicine. In society, it has become increasingly true, that, in some ways, a health problem only 'exists' when it is defined, recognized and classified as a disease category (Rosenberg, 1992, p. xiii). In the course of the last half century, disease categories have become 'the' ordering and regulatory principle within most healthcare systems. 'If it can't be coded, it doesn't exist' is sometimes said in jest (Rosenberg, 2003, p. 499). Rosenberg refers to this as a 'bureaucratic imperative'. The bureaucratic needs of the welfare state, of health insurers, of reimbursement systems and hospital management (e.g., standardized patient records) require that patients can be categorized by means of disease classifications (Rosenberg, 2002).

This historical development is reflected in the evolution of the ICD as an information infrastructure. Every successive new edition of the ICD entailed not only a considerable increase in size, but also a significant expansion of uses and objectives. To the original function as a tool for purely statistical research into causes of death, all kinds of non-statistical applications have been added to the ICD, including those for medical records, hospital indexing and financial compensation systems (Bowker & Star, 1999; Lie & Greene, 2020; Moriyama et al., 2011).

5. Pragmatism, performativity and pitfalls

5.1. Through the lens of pragmatism

Up to this point, we have discussed various practical aspects that we consider part of the social functions of classifying chronic pain as a disease. On the microlevel, this includes: (1) to be used by patients to adapt their self-narrative (expressing self-illness relation), and (2) to facilitate societal and financial arrangements for patients. On the meso- and macrolevel, this includes: (3) to enable ascribing the sick-role to people, (4) to stimulate research and development of treatment programs, (5) to improve communication (both internally and externally), (6) to promote chronic pain as a public health problem, and (7) to facilitate diagnosing and to guide treatment (i.e., classification as a clinical description rather than a scientific explanation).

On basis of this analysis, we conclude that the disease concept in relation to chronic pain has acquired an institutionalized value in our society, which involves many important practical aspects. In the philosophy of medicine, it has been argued that discussions about the disease status of a particular condition are often disguised as a scientific and objective question but initially concern evaluative, political and normative issues (Worrall & Worrall, 2001). Nevertheless, the pragmatic significance of the disease concept often remains underexposed because there is too much emphasis on the theoretical aspects of a definition. That is, philosophical discussions have been primarily focused on the question of whether a definition, in theory, successfully describes its extension. However, a philosophically adequate theory is expected to describe both the practical function as well as the theoretical status of the disease concept (Agich, 1997). We need a definition for making practical decisions because we want to be able to substantiate why a condition can legitimately be classified as a disease, but at the same time, there may be practical issues that question the legitimacy of the definition itself. This back-and-forth between theory in practice, in which practice relies on theory but can also place theory into question, is characteristic for the philosophical movement of pragmatism.

The relationship between the theoretical status of the disease concept and the associated practical aspects appears to be reciprocal. The way disease is defined has implications for how this definition can be used in practice, and by whom. But these practical uses can also influence the definition of disease, and criticize it or place requirements on what a definition should look like in order to be used. Yet, putting forward these kinds of practical aspects as an argument for recognizing chronic pain as a disease might not be considered as a valid reason in itself. Obtaining all these kinds of practical benefits can be a good motivation to advocate for classifying a condition as a disease, but do these practical benefits justify the classification? Behind the practical issues usually lies a much more fundamental discussion on the fairness and legitimacy of the established genus of diseases. Why is one condition viewed as a disease but not the other? On what basis of which criteria can a condition legitimately be classified as a disease?

For decades, the request to classify chronic pain as a disease was declined. Neither the pathological character of chronic pain, nor the patients' suffering, was considered to be sufficient evidence to classify it as a 'disease in its own right' (Cohen, Quinter & Buchanan, 2013). Viewing chronic pain as a disease would presumably give problems of causal explanation: the pain would be described as being caused by pain. Therefore, being able to demonstrate patho-anatomy or pathophysiology and/or to describe the etiology turned out to be of great importance to opponents of the new classification (Raffaelli & Arnaudo, 2017). In contrast, proponents were much more responsive to the subjective experience of illness: the suffering, physical disability, and social consequences for this patient group (Loeser, 2005; Sullivan, Cahana, Derbyshire, & Loeser, 2013).

Similar oppositions can be observed within the overlapping debate on 'medically unexplained symptoms' (Eriksen, Kerry, Mumford, Lie, & Anjum, 2013; Sharpe & Greco, 2019), of which chronic pain conditions

were (previously) viewed as being part of. Moreover, similar disputes can be observed within the broader philosophical debate on the general ‘disease’ concept, in which polarized debates on objectivist/naturalist versus subjectivist/normativist accounts have reached deadlock (Van der Linden & Schermer, 2022). Interestingly, however, in contrast to the philosophical debate, it appears that the medical field has succeeded to overcome this polarization by giving priority to the pragmatic ends of medicine. Although more scientific knowledge was gained on chronic pain over time, the decision to change the classification was not primarily made on the basis of new empirical data. Instead, it was a normative decision that was pragmatically motivated. This challenges the traditional way of classifying diseases. While acknowledging the complexity of defining and classifying disease(s), we might take a more pluralistic approach, viewing elements such as evidence for pathology and etiology as just two of many possible ways to make sense of the suffering of patients.

In pragmatism, the term ‘pragmatic’ does not just refer to opportunistically serving our immediate practical interest, but to the interdependence of theory and practice. The pragmatist position challenges the division between theory and practice by pointing to the function of theoretical work as enabling us to perform actions (e.g., conducting scientific studies, or diagnosing patients), which in turn can give us empirical grounding to construct new definitions and hypotheses about underlying mechanisms of what we are trying to understand (Chang, 2016). On the other hand, pragmatism reveals that practices are always based on intellectual ‘habits’ such as, in this case, intellectual habits of thinking about health and disease that the notion of chronic pain may challenge. When looking through the lens of pragmatism, it becomes clear that one cannot easily separate the theoretical from the practical, and that indeed the interplay between the two can lead to more sophisticated theories and more effective actions. Practical aspects of classifying a condition (such as chronic pain) as disease are therefore deemed important in formulating what is disease (Walker & Rogers, 2018). Moreover, reasoning from a pragmatist approach, a definition or classification of chronic pain will never entail a description that is ‘true’ in a realist sense, but will always represent one that is temporal, and that is culture and practice sensitive.

5.2. Performativity of disease categories

Although shifts in ICD classification might seem mundane, the classification systems we use for diseases may actually shape the nature of medicine in significant ways and have powerful effects on how health and disease are understood by both practitioners and patients (Lie & Greene, 2020). Here, we might make use of the concept of performativity.² Performativity was originally introduced in philosophy of language to designate utterances that do not merely describe the world, but also perform in it (Austin, 1962; Searle, 1989). For instance, ‘I promise..’ performs the act that it describes, and ‘Hello’ performs the greeting. However, presently we recognize that all language has a performative function, including definitions (Culler, 2000; Te Molder, 2015). The definition of chronic pain was not created ‘in a vacuum’, but with a specific function in mind: to communicate amongst the medical and scientific community, to identify patient groups, to enable scientific research that finds treatment for this condition, to create medical specialties around this issue, and so on.

The widening definition of chronic pain in terms of primary and secondary pain simultaneously describe a patient group and brings that

patient group into being, because now they can ‘legitimately’ describe themselves as chronic pain patients – to themselves, to their family, their insurance and their employer. This also means that now the patient group – but also the insurer, employer, etc. – have a stake in the definition. The way chronic pain is defined, for instance, where the cut-off point is put between ‘acute’ and ‘chronic’ pain, is consequential for someone who is just a few weeks before or after that point. On the micro-level, a diagnosis for a patient is something that they can use in everyday life, for instance, by legitimizing taking time off work, or by explaining to their friends and family that what they have is not just ‘all in the mind’ but a recognized medical condition (see also: Koesling & Bozzaro, 2021). Moreover, they now also have a way in which they can describe and make sense of their symptoms to themselves, in which it may matter to them psychologically to think of themselves as ‘having a disease’ or ‘having vague complaints’.

In this sense, the ICD-11 classification does not only describe chronic pain but also actively performs its meaning as a disease. Patients can use the classification to perform social actions such as describing themselves in relation to their pain and the world: ‘I have chronic pain’, ‘I am a chronic pain patient’. On the meso- and macro-level, the classification gives ‘body’ to the complaints of patients, and generates ‘existence’ into our (social) world. This does not necessarily mean that what we describe is a social construct, but that the way we describe it is always one of many possible ways of describing, each of which has specific social and material consequences for what we can or cannot do with it. One might be inclined to think that the ‘degree’ of performativity is higher in some diseases than in others. However, this seems only to be the case because some disease names and definitions are more vivid or metaphorical than others.³ This does not imply that performativity is of a lesser degree or even not at stake in other diseases. In fact, putting it more strongly, even descriptions of ‘hard’ scientific phenomena, such as black holes and sub-atomic particles, have a performative character. By naming, defining and classifying them in certain ways, we already shape the way we think of them and perceive them. Thus, we use language to describe a phenomenon that in return performs an active role in our perception of the phenomenon itself.

From a performative perspective, a continuing problem with the definition of chronic pain is that performativity is not so much determined by intentions of the one who creates them, as by the social and linguistic functions they are able to perform within the culture of which they are part. An example of this process can be found in ongoing debates on the impact of the Diagnostic and Statistical Manual of Psychiatric Disorders (DSM) on perceptions of mental disorder in both patient and professional communities. For example, it has been argued that we live in a ‘DSM culture’, which has both positive as well as negative implications for psychiatric practice (Tekin, 2011). On the one hand, patients may use the classification for self-understanding and may provide direction to treatment and recovery, which is considered a positive aspect. On the other hand, the descriptive classification may also negatively impact the way patients frame their experiences, for example, perceiving their experience as a ‘neurobiological imbalance that is unchangeable’. However, this process is not exclusive for the classification of psychiatric disorders. Performative concepts, including ‘disease’, are inherently subject to cultural and societal factors. In other words, while committees and health care practitioners possess ‘power of definition’, they do not have ‘control’ over how the definition is used, and which adverse side effects it might have. In this sense, chronic pain and chronic pain patients could be viewed as *moving targets* (Hacking, 2007): they are not fixed entities (as we often assume), but they change substantively by studying and using them.

² The use of performativity in relation to (medical) categories and classifications is not new (e.g., see Greco, 2012; Hacking, 2007). However, in Hacking, for example, performativity is only viewed to be relevant to ‘social kinds’. And in Greco, performativity is used specifically to describe the category of MUS, which is said to be representing ‘diagnostics in no man’s land’. Here, we use performativity specifically in relation to defining and classifying chronic pain.

³ For example, ‘bipolar disorder’ directly appeals to our imagination by metaphorically referring to two poles. For many types of cancer, on the other hand, this does not seem to be the case. Yet, by defining a certain state as a certain type of cancer, one does not only describe the state but also actively shapes its meaning. A good example of this is the new notion of IDLE in cancer typology (see Esserman et al., 2014).

5.3. Possible pitfalls and challenges for future definitions and classifications

While acknowledging and valuing the pragmatic and performative character of the new ICD classification of chronic pain, and that of ‘disease’ in general, it remains important to be aware of possible adverse side effects. Every way of defining and classifying disease will have its benefits and downsides, in relation to the type of function that has to be fulfilled. Even the attempt to describe chronic pain in objective scientific terms is performative, because the reason for doing so is to enable scientific progress to focus on the phenomenon more precisely. This implies that we could classify a condition as a disease for various reasons. However, this does not mean that we could classify anything as a disease. Putting too much emphasis on one particular approach/model of disease may create more problems than it solves.

For example, placing emphasis on the reductionist or mechanistic medical model may be useful for particular scientific purposes, but it may also lead to counterproductive results. That is, such a model seems unable to grasp multidimensional phenomena such as chronic pain, and cannot sufficiently account for the complex causal structures ‘behind’ diseases (Severinsen, 2001). Moreover, over-emphasis on the descriptive side of disease often comes with the lack of meeting the evaluative side of the disease concept. Hence, many aspects of the social function of disease classification would be left out of the picture. One may solve some of these issues by using a normativistic or a holistic model of disease, focusing on subjective illness experience rather than biological substrates. However, putting too much emphasis on such a model may render the disease classification vulnerable for losing its scientific legitimacy and might, in some instances, lead to problems such as medicalization and over-diagnosis/treatment. Hence, the social and institutional value of the disease status could suffer from inflation.

To arrive at a meaningful classification of chronic pain it seems key to balance between medicalizing, on the one hand, and normalizing on the other. Therefore, defining and classifying disease requires careful consideration of the pros and cons. This is an issue that requires an answer on both medical and philosophical level. In practice, looking at expert panels that are responsible for classifying diseases and adjusting diagnostic criteria, this balancing between advantages and disadvantages is evident (Doust et al., 2017). This process does not adhere to specific philosophical theories of disease, but rather looks at the pragmatic value of changes in classification. A description of disease classification that seems to be in line with actual practice is given by medical doctor and philosopher H. Tristram Engelhardt (1985):

‘... typologies of disease are not true or false in any straightforward way but rather are more or less useful in the conduct of clinical medicine. The lines of classification are, in short, as much invented as discovered, where the criteria for good inventions must in the end be based upon the typologies in the treatment and prevention of disease.’ (p. 67).

According to Engelhardt, the pragmatic starting point should therefore lie in the promotion of the treatment and prevention of disease.⁴ Disease classification is therefore of dynamic nature and should be used as a conceptual tool. This description remains abstract, as it does not explicitly state where the boundaries of disease classification lie. However, it appears to be exactly this dynamic nature of disease that makes it impossible to establish the boundaries of disease a priori. With any

⁴ The philosophical position of Engelhardt is not always straightforward. Some of his work has been criticized for being relativistic (Binney, 2021). In contrast to Engelhardt’s backward-looking approach, we take an approach that is forward-looking. We can say we were ‘wrong’ about earlier definitions and classifications and we can change them in accordance with our current day knowledge, norms and values.

attempt to achieve some kind of general definition of disease, a value judgment is inherently made (Nordby, 2006).

In addition to Engelhardt’s description, we might want to note that the classification of disease could also be based, for example, on scientific ends, or any other specific goal for that matter. However, it might not be of much use for clinical medicine in that case. The fact of the matter is, we use classification as a conceptual tool to ‘mold’ a reality that is useful for certain practical purposes. However, we should not forget why we have molded it in that particular way in the first place. Thus, we should be aware of the pitfalls and challenges that come with performativity. Once a phenomenon is described in a certain way (e.g., a disease) it actively constitutes our conception of reality, and this conception may be reinforced by its use. This may render the phenomenon that is described, in our case ‘chronic pain’, vulnerable to the problem of reification (Rosenberg, 2002; for reification problems in psychiatry, see Hyman, 2010).

6. Conclusion

The history of the classification of chronic pain is not only a biomedical history of new insights into the ‘disease’ of chronic pain, but also a social history of the emancipation and profiling of pain patients, therapists, experts and researchers, as well as lobbying and ongoing negotiations in the world of policy, organization and management of science and health care. With regard to the historicity of disease, Jones, Podolsky, and Greene (2012) distinguish three changes: people have different diseases than before, doctors have different ideas about disease, and the social significance of disease has changed. These changes have played an important role in the history of the classification of chronic pain.

With the shift of the disease pattern in society, from infectious to chronic and degenerative conditions, chronic pain has become an increasing issue. Despite all the possibilities for pain relief, there is an increasing need to call attention to this problem. Changing ideas about chronic pain, from more than a symptom to a ‘distinct phenomenon in comparison with acute pain’, and the improvement of pain management, not only drove the establishment of the IASP, but also helped to further define and classify chronic pain. More recently, new insights into the complex pathophysiology of chronic pain have helped drive recognition as a ‘disease in its own right’ and its new classification in the ICD-11. However, in this process, pragmatic considerations have become dominant under the influence of various social factors. Over the past decades, based on the wishes and needs of the scientific enterprise, the health care system, health care policy, patients (organizations) and society as a whole (the health culture), the value and significance of having clearly distinguished disease categories has continued to grow.

The new ICD-11 classification could help to improve the situation for chronic pain, in terms of attention, recognition, money, more research, more insights and better treatment. In order to actually understand the implications of this potential step forward, to combat unwanted side effects and to promote the desired effects, it is important to properly analyze the various social and communicative functions of disease classification at different levels and for different stakeholders. It may be necessary to put the significance of the ICD-11 into perspective, by critically questioning the high value that is attached to specific disease categories and entities in practice, and science and health care policy. In order to maintain the legitimacy of chronic pain as a diagnostic and clinical entity, it is also necessary to continue to ask questions about its theoretical-philosophical underpinnings. What criteria must be met in order for a condition to be considered a disease?

The history of chronic pain shows us that this important question cannot be answered in a vacuum. How we define disease theoretically has practical consequences in the real world, but at the same time, ‘the world talks back’ - issues in practice may question the successfulness and usefulness of our theoretical notion of disease. Therefore, we have suggested to approach ‘disease’ from a pragmatist position, in which theory and practice are considered to be interdependent. This enables us to see

that defining disease and classifying diseases is a complex issue that asks for a process of continuous adjustment and reflection. Moreover, we have shown that this pragmatist position becomes even more apparent when considering disease as a performative concept, which not only describes but also actively shapes meaning. Partly for this reason, disease is not a static phenomenon, but a dynamic, historically changing phenomenon.

Furthermore, throughout the history of defining chronic pain, different parties have recognized the pragmatic functions of the definition. Since the definition of chronic pain has been subject to repeated transformation, from a historical perspective it is reasonable to assume that the ICD-11 classification is not the last say on the matter. Our aim is not to propose a new definition, but rather say something about the ‘contours’ of what any definition of chronic pain should take into account. Bonica and Saunders already recognized that one implication of seeing chronic pain as a multidimensional phenomenon is that it requires multidisciplinary treatment. It is therefore perhaps not surprising that any definition of chronic pain will also perform multiple functions, some of which we have seen to clash with one another: accurately and precisely describing the phenomenon, enabling health care practitioners to recognize and treat it, creating the basis for a medical discipline which can bring together funding and medical expertise, being able to recognize people as belonging to a patient group, which in turn has physical, psychological and social, but also financial and legal implications for those patients.

In addition, disease definitions and classifications, on the one hand, due to their high institutional value, have a tendency to ‘solidify’, while on the other hand, ‘disease’ is subject to dynamic social processes and is therefore prone to changes. Jones et al. (2012, p. 2338) wrote in this regard:

‘We must continue to adapt health systems and health policy as the burden of disease evolves (...). Disease is a complex domain of human experience, involving explanation, expectation, and meaning. Medical professionals must acknowledge this complexity and formulate theories, practices, and systems that fully address the breadth and subtlety of disease’.

Of ‘the world of pain medicine’ that has matured in recent decades, this requires a reflective and flexible attitude, with an eye for the responsibility that comes along with ‘power of definition’, a basic understanding of the social functions of the conceptualization, diagnosis, definition and classification of chronic pain and an awareness of the need for constant updating and adaptation of the common ‘language’ about chronic pain. As John Bonica (1979) already argued, the definition and classification of chronic pain is not fixed but open for modification ‘as we acquire new knowledge’. As we have argued in this paper, this ‘new knowledge’ does not and should not only entail new biomedical insights, but should also incorporate the various practical, social and communicative aspects that come with defining and classifying diseases.

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References

- Agich, G. (1997). Toward a pragmatic theory of disease. In J. M. Humbert, & R. F. Almeder (Eds.), *What is disease?* (pp. 219–246). Humana Press.
- Anand, K. J., & Craig, K. D. (1996). New perspectives on the definition of pain. *Pain*, 63, 3–11. [https://doi.org/10.1016/0304-3959\(96\)03135-1](https://doi.org/10.1016/0304-3959(96)03135-1)
- Austin, J. L. (1962). In J. O. Urmson, & M. Sbisá (Eds.), *How to do things with words* (2nd ed.). Oxford University Press.
- Ayede, M. (2017). Defending the IASP definition of pain. *The Monist*, 100, 439–464. <https://doi.org/10.1093/monist/onx021>
- Ayede, M. (2019). Does the IASP definition of pain need updating? *Pain Reports*, 4(5), e777. <https://doi.org/10.1097/PR9.0000000000000777>
- Baszanger, I. (1998). *Inventing pain medicine: From the laboratory to the clinic*. Rutgers University Press.
- Binney, N. (2018). The function of the heart is historically contingent. *Studies in History and Philosophy of Biological and Biomedical Sciences*, 68–69, 42–55. <https://doi.org/10.1016/j.shpsc.2018.05.003>
- Binney, N. (2021). Using medical history to study disease concepts in the present: Lessons from Georges Canguilhem. *Teorema*, XL(1), 67–89. Retrieved April 4, 2022, from <https://dialnet.unirioja.es/servlet/articulo?codigo=7817966>.
- Bolt, T. (2015). A doctor's order: The Dutch case of evidence-based medicine (1970–2015). *Garant*, 76–83.
- Bolt, T., & Huisman, F. (2020). Disease specificity and evidence-based medicine: A historical perspective. *European Journal of Person Centered Healthcare*, 8, 308–314. <https://doi.org/10.5750/ejpc.v8i3.1795>
- Bonica, J. J. (1979). The need of a taxonomy. *Pain*, 6, 247–248.
- Boorse, C. (1977). Health as a theoretical concept. *Philosophy of Science*, 44(4), 542–573. Retrieved October 12, 2021 from <https://www.jstor.org/stable/186939?seq=1>.
- Boorse, C. (2014). A second rebuttal on health. *Journal of Medicine and Philosophy: A Forum for Bioethics and Philosophy of Medicine*, 39(6), 683–724. <https://doi-org.eui.m.oclc.org/10.1093/jmp/jhu035>.
- Bourke, J. (2014). *The story of pain: From prayer to painkillers*. Oxford University Press.
- Bowker, G. C., & Star, S. L. (1999). *Sorting things out: Classification and its consequences* (Chapter 3 & Chapter 10). MIT Press.
- Breivik, H., Collett, B., Ventafridda, V., Cohen, R., & Gallacher, D. (2006). Survey of chronic pain in Europe: Prevalence, impact on daily life, and treatment. *European Journal of Pain*, 10, 287–333. <https://doi-org.eui.m.oclc.org/10.1016/j.ejpain.2005.06.009>.
- Burnham, J. C. (2012). The death of the sick role. *Social History of Medicine*, 25, 761–776. <https://doi.org/10.1093/shm/hks018>
- Chang, H. (2016). Pragmatic realism. *Humanities Journal of Valparaíso*, 4(8), 107–122. <https://doi.org/10.22370/rhv.2016.8.499>
- Cohen, M., Quintner, J., & Buchanan, D. (2013). Is chronic pain a disease? *Pain Medicine*, 14(9), 1284–1288.
- Conrad, P. (2007). *The medicalization of society: On the transformation of human conditions into treatable disorders*. Johns Hopkins University Press.
- Cooper, R. (2002). Disease. *Studies in History and Philosophy of Biological and Biomedical Science*, 33(2), 263–282.
- Corns, J. (2020). *The complex reality of pain*. Routledge.
- Crul, B. J. P. (1999). *Mens en pijn: Achtergronden en mogelijkheden van pijnbestrijding*. Valkhof Pers.
- Culler, J. (2000). Philosophy and literature: The fortunes of the performative. *Poetics Today*, 21(3), 503–519. <https://doi.org/10.1215/03335372-21-3-503>
- Dahlhamer, J., Lucas, J., Zelaya, C., Nahin, R., Mackey, S., DeBar, L., et al. (2018). Prevalence of chronic pain and high-impact chronic pain among adults. *Morbidity and Mortality Weekly Report*, 67, 1001–1006. <https://doi.org/10.15585/mmwr.mm6736a2>
- De Swaan, A. (1988). In *In care of the state: Health care, education and welfare in Europe and the USA in the modern era* (Chapter 7). Oxford University Press.
- De Vreese, L. (2017). How to proceed in the disease concept debate? A pragmatic approach. *Journal of Medicine and Philosophy: A Forum for Bioethics and Philosophy of Medicine*, 42(4), 424–446. <https://doi.org/10.1093/jmp/jhx011>
- Derbyshire, S. W. G. (2016). Chapter 2. Pain and the dangers of objectivity. In S. van Rysewyk (Ed.), *Meanings of pain* (pp. 23–36). Springer.
- Doust, J., Vandvik, P. O., Qaseem, A., Mustafa, R. A., Horvath, A. R., Frances, A., et al. (2017). Guidance for modifying the definition of diseases: A checklist. *JAMA Internal Medicine*, 177(7), 1020–1025. <https://doi.org/10.1001/jamainternmed.2017.1302>
- Eijkelkamp, N. (2018). Chronische pijn: Een ziekte-entiteit met complexe onderliggende pathologie. *Nederlands Tijdschrift voor Obstetrie en Gynaecologie*, 131, 70–73.
- Engelhardt, H. T. (1985). Typologies of disease: Nologies revisited. In K. F. Schaffner (Ed.), *Logic of discovery and diagnosis in medicine* (pp. 56–71). University California Press.
- Eriksen, T. E., Kerry, R., Mumford, S., Lie, S. A. N., & Anjum, R. L. (2013). At the borders of medical reasoning: Aetiological and ontological challenges of medically unexplained symptoms. *Philosophy, Ethics, and Humanities in Medicine*, 8(11). <https://doi.org/10.1186/1747-5341-8-11>
- Esserman, L. J., Thompson, I. M., Reid, B., Nelson, P., Ransohoff, D. F., Welch, et al. (2014). Addressing overdiagnosis and overtreatment in cancer: A prescription for

- change. *The Lancet Oncology*, 15(6), e234–e242. [https://doi.org/10.1016/S1470-2045\(13\)70598-9](https://doi.org/10.1016/S1470-2045(13)70598-9)
- Greco, M. (2012). The classification and nomenclature of ‘medically unexplained symptoms’: Conflict, performativity and critique. *Social Science & Medicine*, 75, 2362–2369.
- Green, S., & Hillersdal, L. (2021). Aging biomarkers and the measurement of health and risk. *History & Philosophy of the Life Sciences*, 43(28), 1–23. <https://doi.org/10.1007/s40656-021-00367-w>
- Hacking, I. (2007). Kinds of people: Moving targets. *Proceedings of the British Academy*, 151, 285–318.
- Haverkamp, B., Bovenkerk, B., & Verweij, M. (2018). A practice-oriented review of health concepts. *Journal of Medicine and Philosophy*, 43(4), 381–401. <https://doi.org/10.1093/jmp/jhy011>
- Hofmann, B. (2001). Complexity of the concept of disease as shown through rival theoretical frameworks. *Theoretical Medicine and Bioethics*, 22, 211–236. <https://doi.org/10.1023/A:1011416302494>
- Horstman, K., De Vries, G. H., & Haveman, O. (1999). *Gezondheidscultuur in een risicocultuur: burgerschap in het tijdperk van de voorspellende geneeskunde*. Rathenau Instituut.
- Hutschemaekers, G. (1990). *Neurosen in Nederland: Vijfentachtig jaar psychisch en maatschappelijk onbehagen*. Sun.
- Huygen, F. J. P. M. (2011). *Pijn is van iedereen en van niemand*. Rotterdam: Inaugural lecture Erasmus University.
- Hyman, S. E. (2010). The diagnosis of mental disorders: The problem of reification. *Annual Review of Clinical Psychology*, 6, 155–179. <https://doi.org/eur.idm.oclc.org/10.1146/annurev.clinpsy.3.022806.091532>
- Hyson, J. M. (2001). Man and pain: Eternal partners. *Journal of the History of Dentistry*, 49(3), 115–121.
- IASP Subcommittee on Taxonomy. (1986). Classification of chronic pain. Descriptions of chronic pain syndromes and definitions of pain terms. *Pain*, 24(suppl), S1–S226.
- International Classification of Diseases 11th Revision. The global standard of diagnostic health information. <https://icd.who.int/en>
- Jensen, T. S., Gottrup, H., Kasch, H., Nikolajsen, L., Terkelsen, A. J., & Witting, N. (2001). Has basic research contributed to chronic pain treatment? *Acta Anaesthesiologica Scandinavica*, 45, 1128–1135.
- Jones, D. S., Podolsky, S. H., & Greene, J. A. (2012). The burden of disease and the changing task of medicine. *New England Journal of Medicine*, 366, 2333–2338. <https://doi.org/10.1056/NEJMp1113569>
- Keefe, P. R. (2021). *The empire of pain: The secret history of the Sackler dynasty*. Doubleday.
- Kleinman, A. (1993). What is specific to Western medicine?. In *Companion encyclopedia of the history of medicine* (Vol. 1, pp. 15–23) Routledge.
- Koesling, D., & Bozzaro, C. (2021). Chronic pain patients' need for recognition and their current struggle. *Medicine, Health Care and Philosophy*, 24, 563–572. <https://doi.org/10.1007/s11019-021-10040-5>
- Kuner, R., & Flor, H. (2017). Structural plasticity and reorganisation in chronic pain. *Nature Reviews Neuroscience*, 18, 20–30. <https://doi.org/eur.idm.oclc.org/10.1038/nrn.2017.5>
- Lie, A. K., & Greene, J. A. (2020). From Ariadne's thread to the labyrinth itself - nosology and the infrastructure of modern medicine. *New England Journal of Medicine*, 382(13), 1273–1277.
- Loeser, J. D. (2005). Pain: Disease or dis-ease?. The John Bonica Lecture: Presented at the third Congress of World Institute of Pain, Barcelona 2004. *Pain Practice*, 5(2), 77–84. <https://doi.org/eur.idm.oclc.org/10.1111/j.1533-2500.2005.05204.x>
- McQuay, H. J., & Moore, R. A. (1998). *An evidence-based resource for pain relief*. Oxford University Press.
- Meldrum, M. L. (2007). Brief history of multidisciplinary management of chronic pain, 1900–2000. In M. E. Schatman, & A. Campbell (Eds.), *Chronic pain management: Guidelines for multidisciplinary program development* (pp. 2–13). Informa Healthcare.
- Melzack, R. (1990). Phantom limbs and the concept of a neuromatrix. *Trends in Neurosciences*, 13(3), 88–92. [https://doi.org/10.1016/0166-2236\(90\)90179-E](https://doi.org/10.1016/0166-2236(90)90179-E)
- Melzack, R. (2001). Pain and the neuromatrix in the brain. *Journal of Dental Education*, 65, 1378–1382. <https://doi.org/eur.idm.oclc.org/10.1002/j.0022-0337.2001.65.12.tb03497.x>
- Melzack, R., & Wall, P. D. (1965). Pain mechanisms: A new theory. *Science*, 150(699), 971–979. Retrieved April 13, 2021 from <http://www.jstor.org/stable/1717891>.
- Merskey, H. (1994). Logic, truth and language in concepts of pain. *Quality of Life Research*, 3(1), S69–S76.
- Merskey, H., & Bogduk, N. (Eds.). (1994). *Classification of chronic pain: Descriptions of chronic pain syndromes and definitions of pain terms* (2nd ed.). IASP Press.
- Merskey, H., Bonica, J. J., Carmon, A., Dubner, R., Kerr, F. W. L., Lindblom, U., et al. (1979). Pain terms: A list with definitions and a note on usage. Recommended by the IASP Subcommittee on Taxonomy. *Pain*, 6, 249–252.
- Moriyama, I. M., Loy, R. M., & Robb-Smith, A. H. T. (2011). In H. M. Rosenberg, & D. L. Hoyert (Eds.), *History of the statistical classification of diseases and causes of death*. Retrieved April 13, 2021 from http://www.cdc.gov/nchs/data/misc/classification_diseases2011.pdf.
- Morris, D. B. (1993). *The culture of pain*. University of California Press.
- Morris, D. B. (2016). Chapter 23. Animal pain: The limits of meaning. In S. van Rysewyk (Ed.), *Meanings of pain* (pp. 289–401). Springer.
- Neilson, S. (2016). Pain as metaphor: Methaphor and medicine. *Medical Humanities*, 42, 3–10.
- Nordby, H. (2006). The analytic-synthetic distinction and conceptual analysis of basic health concepts. *Medicine, Health Care and Philosophy*, 9(2), 169–180. <https://doi.org/eur.idm.oclc.org/10.1007/s11019-006-0002-7>
- Nordenfelt, L. (1993). On the relevance and importance of the notion of disease. *Theoretical Medicine*, 14, 15–26.
- Nordenfelt, L. (1995). *On the nature of health: An action-theoretic approach*. Dordrecht: Kluwer Academic Publisher.
- Nordenfelt, L. (2007). The concepts of health and illness revisited. *Medicine, Health Care and Philosophy*, 10, 5–10. <https://doi.org/eur.idm.oclc.org/10.1007/s11019-006-9017-3>
- Porter, R. (1993). Pain and suffering. In W. F. Bynum, & R. Porter (Eds.), *Companion encyclopedia of the history of medicine* (Vol. 2, pp. 1576–1591). Routledge.
- Powell, R., & Scarffe, E. (2019). Rethinking “disease”: A fresh diagnosis and a new philosophical treatment. *Journal of Medical Ethics*, 45, 579–588. <https://doi.org/10.1136/medethics-2019-105465>
- Raffaelli, W., & Arnaudo, E. (2017). Pain as a disease: An overview. *Journal of Pain Research*, 10, 2003–2008. <https://doi.org/10.2147/JPR.S138864>
- Regieraad Kwaliteit van Zorg. (2011). *Chronische pijn*. Regieraad Kwaliteit van Zorg.
- Reynolds, L. A., & Tansey, E. M. (Eds.). (2004). *Wellcome Trust Centre for the History of Medicine at UCL: Vol. 21. Innovation in pain management. Wellcome Witnesses to Twentieth Century Medicine*.
- Rice, A. S. C., Smith, B. H., & Blyth, F. M. (2016). Pain and the global burden of disease. *Pain*, 157, 791–796. <https://doi.org/10.1097/j.pain.0000000000000454>
- Rief, W., Kasa, S., Jensen, R., Perrot, S., Vlaeyen, J. W. S., & Vissers, K. C. P. (2010). The need to revise pain diagnoses in ICD-11. *Pain*, 149, 169–170. <https://doi.org/10.1016/j.pain.2010.03.006>
- Rosenberg, C. E. (1992). Introduction - framing disease: Illness, society, and history. In C. E. Rosenberg, & J. Golden (Eds.), *Framing disease: Studies in cultural history* (pp. xiii–xxvii). Rutgers University Press.
- Rosenberg, C. E. (2002). The tyranny of diagnosis: Specific entities and individual experience. *The Milbank Quarterly*, 80, 237–260. <https://doi.org/10.1111/1468-0009.t011-00003>
- Rosenberg, C. E. (2003). What is disease?: In memory of Oswei Temkin. *Bulletin of the History of Medicine*, 77, 491–505. <https://doi.org/10.1353/bhm.2003.0139>
- Schermer, M. H. N., & Richard, E. (2018). On the reconceptualization of Alzheimer's disease. *Bioethics*, 33(1). <https://doi.org/10.1111/bioe.12516>
- Schermer, M. H. N., & Richard, E. Preclinical disease or risk factor? Alzheimer's disease as a case study of changing conceptualizations of disease. *Journal of Philosophy of Medicine* (in press).
- Searle, J. (1989). How performatives work. *Linguistics and Philosophy*, 12, 535–558.
- Severinsen, M. (2001). Principles behind definitions of diseases: A criticism of the principle of disease mechanism and the development of a pragmatic alternative. *Theoretical Medicine and Bioethics*, 22, 319–336. <https://doi.org/eur.idm.oclc.org/10.1023/A:1011830602137>
- Sharpe, M., & Greco, M. (2019). Chronic fatigue syndrome and an illness-focused approach to care: Controversy, morality and paradox. *Medical Humanities*, 45(2). <https://doi.org/10.1136/medhum-2018-011598>
- Siddall, P. J., & Cousins, M. J. (2004). Persistent pain as a disease entity: Implications for clinical management. *Anesthesia & Analgesia*, 99, 510–520. <https://doi.org/10.1213/01.ANE.0000133383.17666.3A>
- Sullivan, M. D., Cahana, A., Derbyshire, S., & Loeser, J. D. (2013). What does it mean to call chronic pain a brain disease? *The Journal of Pain*, 14(4), 317–322. <https://doi.org/10.1016/j.jpain.2012.02.012>
- Te Molder, H. (2015). Discursive psychology. In K. Tracy, T. Sandel, & C. Ilie (Eds.), *The International Encyclopedia of Language and Social Interaction*. John Wiley & Sons, Inc. <https://doi.org/10.1002/9781118611463.wbiels158>
- Tekin, S. (2011). Self-concept through the diagnostic looking glass: Narratives and mental disorder. *Philosophical Psychology*, 24, 357–380. <https://doi.org/eur.idm.oclc.org/10.1080/09515089.2011.559622>
- Tousignant, N. R. (2006). *Pain and the pursuit of objectivity: Pain-measuring technologies in the United States, c. 1890-1975* (Chapter 2). PhD-thesis McGill University.
- Treede, R. D., Rief, W., Barke, A., Aziz, Q., Bennett, M. I., Benoliel, R., et al. (2015). A classification of chronic pain for ICD-11. *Pain*, 156, 1003–1007. <https://doi.org/10.1097/j.pain.0000000000000160>
- Treede, R. D., Rief, W., Barke, A., Aziz, Q., Bennett, M., Benoliel, R., et al. (2019). Chronic pain as a symptom or a disease: The IASP Classification of Chronic Pain for the International Classification of Diseases (ICD-11). *Pain*, 160, 19–27. <https://doi.org/10.1097/j.pain.0000000000001384>
- Tresker, S. (2020a). A typology of clinical conditions. *Studies in History and Philosophy of Science Part C: Studies in History and Philosophy of Biological and Biomedical Sciences*, 83. <https://doi.org/10.1016/j.shpsc.2020.101291>
- Tresker, S. (2020b). Theoretical and clinical disease and the biostatistical theory. *Studies in History and Philosophy of Science Part C: Studies in History and Philosophy of Biological and Biomedical Sciences*, 82. <https://doi.org/10.1016/j.shpsc.2019.101249>
- Van der Linden, R., & Schermer, M. H. N. (2022). Health and disease as practical concepts: Exploring function in context-specific definition. *Medicine, Health Care and Philosophy*, 25, 131–140. <https://doi.org/10.1007/s11019-021-10058-9>
- Van Rysewyk, S. (2016). Chapter 1. A call for study on the meanings of pain. In S. van Rysewyk (Ed.), *Meanings of pain* (pp. 1–22). Springer.
- Van der Graaf, Y. (2020). Een gespierd en pijnvrij 2020. *Nederlands Tijdschrift voor Geneeskunde*, 164, B1643.

- Vos, T., Flaxman, A. D., Naghavi, M., Lozano, R., Michaud, C., Ezzati, M., et al. (2012). Years lived with disability (YLDs) for 1160 sequelae of 289 diseases and injuries 1990–2010: A systematic analysis for the Global Burden of Disease Study 2010. *Lancet*, 380, 2163–2196. [https://doi.org/10.1016/S0140-6736\(12\)61729-2](https://doi.org/10.1016/S0140-6736(12)61729-2)
- Wakefield, J. (1992). The concept of mental disorder: On the boundary between biological facts and social values. *American Psychologist*, 47, 373–388. <https://ocw-ovid-com.eur.idm.oclc.org/article/00000487-199203000-00001/HTML>. (Accessed 12 October 2021).
- Walker, M. J., & Rogers, W. A. (2018). A new approach to defining disease. *Journal of Medicine and Philosophy: A Forum for Bioethics and Philosophy of Medicine*, 43, 402–420. <https://doi.org/10.1093/jmp/jhy014>
- Williams, A. C., & Craig, K. D. (2016). *Pain*, 157, 2420–2423. <https://doi.org/10.1097/j.pain.0000000000000613>
- Woolf, C. J. (1983). Evidence for a central component of post-injury pain hypersensitivity. *Nature*, 306, 686–688. <https://doi.org/10.1038/306686a0>
- Woolf, C. J., & Decosterd, I. (1999). Implications of recent advances in the understanding of pain pathophysiology for the assessment of pain in patients. *Pain*, 82(suppl), S141–S147. [https://doi.org/10.1016/S0304-3959\(99\)00148-7](https://doi.org/10.1016/S0304-3959(99)00148-7)
- World Health Organization. (2018). Frozen version of ICD11 for implementation. Retrieved April 13, 2021 from <http://www.who.int/classifications/icd/en/>.
- Worrall, J., & Worrall, J. (2001). Defining disease: Much ado about nothing? In W. S. Smith, J. S. Smith, & D. Verducci (Eds.), *Life – Interpretation and the sense of illness within the human condition. Medicine and philosophy in dialogue* (pp. 33–55). Springer.
- Wulff, H. R., & Getzsche, P. C. (2000). *Rational diagnosis and treatment: Evidence-based clinical decision-making* (Chapter 3 & Chapter 4) (3rd ed.). Blackwell Science.