ARTÍCULOS
DE INVESTIGACIÓN

Future pain as a present concern*

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Recibido: 29 de marzo 2021| Aceptado: 23 de agosto de 2021
https://doi.org/10.17533/udea.ef.345748

Abstract: Pain is multidimensional, complex; it affects the ontological structures of the human being and exceeds spatio-temporal boundaries. Therefore, it is universally felt with an impact in the past, moving to the present, and projecting to the future. There are efforts to ease or completely eliminate the impact of pain, however, a good understanding of its biological and anthropological dimensions is necessary for proper orientation of such undertakings. This article identifies some social, cultural, medical-scientific, and individual factors that account for the changes in modes of experiencing and managing pain. It posits that there is a general unpreparedness on the physical, psychological, and spiritual levels for continued pain in the future. It thus analyses factors that need to be learnt in order to promote favourable alterations in mental attitudes, pain sensitivity, and tolerance to pain. Preparing for a future of pain requires interdisciplinary reflection on the bodily, emotional, and spiritual components that constitute the pain experience so as to re-direct its trajectory.

Key words: multidisciplinary, moral education, future pain, empathy, human pain

* This study was funded by Pan Atlantic University.

Cómo citar este texto:

Onaga, A. (2022). Future pain as a present concern. *Estudios de Filosofía,* 65, 133-152. https://doi.org/10.17533/udea.ef.345748

El dolor futuro como preocupación presente

Resumen: El dolor es multidimensional y complejo, afecta las estructuras ontológicas del ser humano y supera los límites espacio-temporales. Por lo tanto, se siente universalmente con un impacto en el pasado que se traslada al presente y se proyecta al futuro. Existen esfuerzos para mejorar o eliminar por completo el impacto del dolor, sin embargo, es necesaria una buena comprensión de sus dimensiones biológicas y antropológicas para orientar adecuadamente dichos emprendimientos. Este artículo identifica algunos factores sociales, culturales, médico-científicos e individuales que explican los cambios en los modos de experimentar y gestionar el dolor. Plantea que existe una falta de preparación general en los niveles físico, psicológico y espiritual para un futuro de dolor continuado. Así, analiza los factores que deben aprenderse para promover alteraciones favorables en las actitudes mentales, la sensibilidad al dolor y la tolerancia al dolor. Prepararse para un futuro de dolor requiere una reflexión interdisciplinar sobre los componentes corporales, emocionales y espirituales que constituyen la experiencia del dolor para reconducir su trayectoria.

Palabras clave: multidisciplinario, educación moral, dolor futuro, empatía, dolor humano

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The multidimensionality of human pain

Human pain is a universal experience that is spatially and temporally extended so that it affects all humans of all times and places. Its historical extension moves from the past to the present with current indicators that project into the possible future. However, human pain is multidimensional and complex, so projections like these cannot be linear or simplistic.

This fact is evidenced by the interest and reflections it has generated since the onset of human history. There is a strong likelihood that this interest will be projected into the future. Presently, there is an interdisciplinary approach in the understanding and management of pain. In spite of all the progress, there are still many people living with pain and pain-related suffering (Macfarlane, 2016). When suffering occurs, there is engagement of the ontological structures of the human being making it not only multidimensional but complex as well.

Pain has a subjective and an objective dimension; reactions to it are not linear, identical, or totally predictable even in the same subject. It is influenced by realities within and outside the mind and body and by relations with the world. The largest scientific body for the study of pain, IASP (International Association for the Study of Pain), recognises that pain is not simply a symptom, a sensation, or an emotion but a disease in its own right which can affect functioning on multiple levels (IASP, 2020).

Diverse disciplines such as those of the biological sciences, psychology, neuroscience, philosophy, and theology study the various facets and dimensions needed for a continued understanding of this human experience. It is particularly important as the burden of pain and suffering increases. Any study on pain in the present, as it affects the future, is thus relevant for the better confrontation of pain.

Progression in the understanding of the nature of pain shows that there has always been a human response to it on both the individual and communal levels. On both levels, the attitudes to pain are filled with the hope of ease or complete elimination. It occasionally appears that the desire for total elimination outweighs that of amelioration. The scientific projections for genetic modifications, the ethically thorny issues with care at the end of life, e.g. euthanasia, and the general unpreparedness for living with pain point to a desire for a painless future. Is there a problem with desiring the complete elimination of human pain? I do not think that this in and of itself is undesirable. However, the prospect of completely eliminating pain has been associated with other attitudes that do not augur well for the overall flourishing of the human being.

There is a current confidence in modern medicine to eliminate pain. This confidence or expectation has sometimes blurred the lines of medical limitations. It has led to the medicalization of human life where all aspects of well-being are brought under the purview of medicine. The term medicalization is used pejoratively to suggest a kind of medical imperialism where medicine extends to domains that are not in its confines.

Thus all human problems become medical problems (Conrad & Muñoz, 2010). This, along with some other factors, has changed the modern-contemporary attitude toward pain. Disregarding the side of history we are on, the spectrum of attitudes manifests the rational, relational, and moral nature of human beings. The solutions and remedies are thus adaptations through reason in response to perceived necessities.

The human confrontation of pain is significantly different from that of animals, which is ordinarily directed to concrete occasions. The human approach transcends the particular to search for the causes, nature, meanings, and ends of that universal experience of pain or suffering (Onaga, 2020). To confront pain is not synonymous with its elimination and is, therefore, a more realistic approach. While accepting the possibility of future elimination of pain, one should be open to positive or negative adaptations to pain. Since the pain experience depends on a functional nervous system for any sentient animal, there is a stable basis for its continued existence. Human pain, in addition, has the aspect of self-reflection and introspection which moves the pain experience away from a purely biological dimension to include psychological, social, moral, and spiritual ones. These latter aspects make it probable to adapt to pain in a variety of manners.

It is in fact this rich complexity of dimensions that constitute the difficulty in completely eliminating pain from human existence. Presently, pain is an endemic, growing, and often invisible crisis (Macfarlane, 2016). It is firmly inserted into the fabric of human living, so much that the IASP has defined it as an unpleasant sensory and emotional experience associated with or resembling that associated with actual or potential tissue damage (IASP, 2020). The accompanying note adds that the nature of human pain is personal, distinct from nociception, a learned experience with a personal report which is expressed verbally and non-verbally and can serve either adaptive or aversive roles. It is therefore a subjective experience that includes specific sensory and emotional qualities which are common to *all* pains and *only* pains.

The progressive change in human pain experiences

Pain has been a topic of philosophical reflection from classical to contemporary times. Its understanding has been influenced by social, cultural, political, and religious factors. In classical philosophy, pain was understood to be doubly impactful on the body and *psyche* and to be related to moral excellence. The shared notions for early philosophers and physicians were of pain as a corporeal event which is disruptive, sudden, and unnatural. Dominant medieval reflections also extolled the unity of the physical and psychological dimensions in pain experiences which often reflect the presence or absence of moral equilibrium and spiritual stability.

Although pain has always existed in some situations as serious, severe, and demoralizing, there is evidence that there was an increased capacity to tolerate it in

Estud.filos n.º 65. Enero-junio de 2022 | pp. 133-152 | Universidad de Antioquia | ISSN 0121-3628 | ISSN-e 2256-358X
https://doi.org/10.17533/udea.ef.345748

ancient and medieval times as compared to later periods (Le Breton, 1999). These pains were often borne with the knowledge of their inevitability and limited options for remedy. Even medical practitioners exercising their craft with the limited options for pain control, were not indifferent to the great pains that had to be endured by their patients from the disease or the cure (Buytendijk, 1958). How has this capacity gradually reduced over time?

In the Middle Ages, an essential aspect of the treatment of pain involved spiritual life considered essential for individual or communal development. Hospitals were built around monasteries and in such places, the care of the sick, the suffering, and the dying took place. It also became the center for the study of the nature and composition of medications which gradually spread to become schools of learning and universities. This means that the confrontation of pain incorporated aspects of life beyond the physical domain.

Modern and contemporary reflections on pain, on the other hand, have been influenced by a scientific-medical worldview that gives greater importance to the physiological and psychological processes. This initial biomedical model has given way to a bio-psycho-social one which is richer because it expands the notion of pain. The biopsychosocial model accepts that the subjects of pain are involved in such a way that behaviour, emotions, physiology, and mental states are modified by the interpretation of pain events (Engel, 1977; Gatchel, R., Peng, Y.B., Peters, M., Fuchs, P. & Turk, D., 2007). In fact, Bastian, B., Jetten, J., Hornsey, M. & Leknis, S. (2014) argue that only through a biopsychosocial study of pain can some of its positive and more hidden biological meaning be understood. There are, however, limitations to the application of the biopsychosocial aspects of pain. This is because cultural, social, and spiritual dimensions remain mainly unaccounted for, thus this biopsychosocial model does not represent the human involvement with pain completely.

Modern-contemporary states of preparedness for pain

The improved scientific view of pain in contemporary times has been accompanied by changes in the actual experiencing of it. There is a reduced capacity to bear pain which some attribute to a heightened sensitivity or decreased thresholds that reduce pain tolerance. This type of change in pain sensitivity and tolerance has a predominant basis in neural structures. It has been noted that there can also be increased sensitivity to suffering even when pain thresholds remain the same (Mitchell, 1892). Buytendijk had specifically pointed out that reduced physical pain tolerance is a generational phenomenon resulting from changes in mental attitude influenced by advances in modern medicine (Buytendijk, 1958). The increased availability of analgesics and anaesthesia has indeed altered the panorama for pain sensitivity. The question that arises is which came first? Was it the increased sensitivity to pain in modern times that necessitated

the discovery and use of more effective analgesics and anaesthetics? Or was it the use of these drugs which led to drug tolerance and heightened sensitivity?

De Moulin's theory is that human beings have always suffered pains and searched for methods of relief. It is not that pre-modern times were devoid of excruciating or devastating pain. It is simply that modern times have more effective scientific methods that make pain amelioration easier. Before that, the human being simply hardened himself against the painful situation which became an attitude towards life (De Moulin, 1974). Modern man, on the other hand, attaches exaggerated importance to the slightest irritation of his sensitivity, and tries much more than his ancestors, to eliminate even the most trivial pain, and because of this, he habituates himself to experience pain more easily and more intensely.

Whatever the case, both arguments accept that there is a change in the way of experiencing and confronting pain whether it has occurred due to a change in mindset or a biological restructuring of pain systems. In both cases, there is a clear trend towards a future of increased pain and suffering.

There is a pressing issue therefore with the preparedness for an increased burden of pain and suffering. On the physical level, lifestyles have moved towards an emphasis on physical fitness and health, but it does not appear that this translates necessarily to a state of physical preparedness for pain in the future. This is because these forms of 'suffering' are willfully chosen so that even though they task one physically, they do not carry the disruptive aspect of a pain and suffering experience which is usually non-volitional and longer lasting (Brady, 2018). Ironically, the greater dedication to physical fitness, beauty treatments, plastic surgeries, and aesthetic improvements, have led to better general health and longer life spans. Living longer is also associated with a higher incidence of chronic illnesses, cancers, dementias, and aging with attendant pain and suffering. The body is being prepared to last longer, but will it last *better*?

Current neuroscience shows that there is no specific pain centre in the brain, rather there is a general involvement of cerebral structures in a complex network of neurons. The spinal cord is crucial to the transmission of pain sensation with the axons coalescing to form tracts transmitting sensory-discriminative and affective-motivational information to and from the brain (Auvray, Myin, & Spence, 2010). Adaptive changes occur with neuroplasticity which is the natural ability of the brain to undergo structural and functional changes to new or changing internal and external situations (Lombo & Giménez-Amaya, 2014). The changes can be beneficial or harmful and help with the processes of learning and memory which influence pain behaviour. A biobehavioural view asserts that learning helps to predict future events by filtering information through pre-existing knowledge, previous experiences, and information processing. These in their turn reinforce thinking, feeling, and behaviour (McMahon, Koltzenburg, Tracey & Turk, 2013). In a way, future pain is learnt and becomes incorporated into the physical

Estud.filos n.º 65. Enero-junio de 2022 | pp. 133-152 | Universidad de Antioquia | ISSN 0121-3628 | ISSN-e 2256-358X
https://doi.org/10.17533/udea.ef.345748

processes of the brain. Pain behaviour and neural networks are thus presently modifying our future confrontation of pain even structurally.

On the psychological level, the opioid crisis is just one of the manifestations of an inability to bear with so much pain and suffering. There is an increased psychological fragility manifested in greater difficulties in handling frustrations, anxieties, and failures. Therapies like the cognitive-behavioural ones and acceptance commitment therapy have been helpful and supportive and will continue to develop (Bond & Dryden, 2002).

In ancient and medieval times one could fall back on a spiritual legacy which, while not encouraging the experiences of pain and suffering, taught one how to see in contradictions the loving action of God, but much of contemporary secularized society is deprived of these considerations. In our present culture, where individualism and moral relativism reign, there is a spiritual unpreparedness that rejects the idea of a Supreme Being on whom human beings are dependent or to whom they can turn to for help (Taylor, 2009).

There are thus socio-cultural factors in present society that account for the changes in pain experience and confrontation. In such a pluralistic society, it is overly simplistic to point to a single factor as largely contributory. Just as traditions and cultures have been transmitted from generation to generation to fit circumstances in any society, pain behaviours are usually widely occurring in a particular socio-cultural context (Peacock & Patel, 2008). This shows up the dynamic nature of culture as a living system moving from past to future and explains in part how the experience of pain has expanded spatially and temporally.

A significant part of contemporary times is an increase in interpersonal communication and sharing via the internet. These exposures occur in films, news reports, video games, internet sources, blogs, and social media. These mediums are thus referred to as "distant" media in the sense that they are not experienced as first-person events directly. Whether this has translated to deeper interconnectedness to ameliorate suffering is not as clear. On one hand, pain narratives are more easily available with individual stories or phenomenological accounts which facilitate the understanding of one's own and others' pain situations (Edwards, Mark, Thacker & Swisher, 2014). Perhaps it is a manifestation of the need to share with others in a mutually dependent fashion. If this is so, it is an unconscious counter-movement to bring the experience of pain closer to a first-person relatable perspective. This I believe has been useful in alleviating pain and making it more tolerable where there are communities with similar experiences with whom one can share. Still, it may be too precocious to say that this has translated into greater empathy given that with the present globalization, incessant exposure to violence and suffering through distant media can deaden one's reactions to them and encourage a certain level of aloofness.

Distant media thus cannot replace the interpersonal aspect of lived pain experiences which should ordinarily improve in a society that is communicating more. The fear is

that there may be heightened depersonalization about other's pain with development of callous attitudes towards the suffering of others (Onaga, 2020). In ancient and medieval times, there was constant exposure to illness, pain, suffering, and death with the difference that there was greater physical proximity to these events. Family members tended to be heavily implicated in the care of the sick so that distance could be lessened and empathically facilitated. The present growth in the Internet age is sure to affect the future of pain at the level of involvement, empathy, and active confrontation.

Other factors that have contributed to present disconnectedness in painful experiences are related to the prevalence of individualism and excessive autonomy as already alluded to. The dominant focus of many sciences is the elimination of this experience, yet there are some undeniable benefits which are discussed below.

Anthropological relevance of pain

A discussion about the relevance of pain and suffering may appear to endorse the experiences as positive, good, or necessary for human growth. This, however, is not the case because attitudes that accept and seek pain and suffering, as goods or pleasures, are fundamentally flawed. Rather, the premise for arguments of an anthropological relevance of pain takes off from the universality of the experience of pain and suffering. These experiences co-exist with any form of sentient life and though intrinsically negative, they can motivate the personal growth of any individual that is open to it.

The intrinsic badness of pain makes it necessary to search for meaning beyond a superficial level because the answers that initially emerge from any pain or suffering experience are negative. This is unsurprising given that pain is essentially an absence of a good or the indication of malfunctioning. The search for the meaning of pain reveals the underlying depths and dimensions which make pain experiences private and subjective, apart from its objective badness.

There have been debates about whether pain is opposed to pleasure which fall outside the scope of this paper. However, there is an unpleasant quality that is intrinsic to the experience of pain. This unpleasantness is another indication of its negative state that involves the absence of some good or perfection. Since there are subjective and objective dimensions to pain, it is possible that such an experience which is objectively bad can be subjectively oriented to stimulate personal growth in some aspect. This means it can be instrumentally good or a relative evil. Some will deny that pain is value laden or an axiological phenomenon (Massin, 2019). However, pain announces in its way the presence of a physical evil without being the ultimate evil. In other words, pains are bad *pro tanto* by contrast to being bad *in toto* or bad overall.

Therefore, one can discuss the positive aspects of pain as those that are constructive or of anthropological relevance even if not all translate to a transformative experience. The constructive consequences can arise with overcoming the challenges of lived

Estud.filos n.º 65. Enero-junio de 2022 | pp. 133-152 | Universidad de Antioquia | ISSN 0121-3628 | ISSN-e 2256-358X
https://doi.org/10.17533/udea.ef.345748

pain and its disruptions to the relations of self and world. They can be epistemic or personal, voluntary or involuntary. Positive transformations do not occur in all cases since human beings are free and ultimately shaped by the repeated decisions and actions they undertake.

An anthropological or biological relevance of pain is the conservation of health and harmonious interactions with the environment and others. Pain protects the organism from further injury and ensures recovery and repair of already damaged parts. Although this is true in many cases of acute pain, it may not account for chronic or persistent pain or all cases of acute pain. When pain continues long after the stimulus is withdrawn or continues even when the part has been protected and kept safe, it becomes a reason for suffering. Persistent pain can make it difficult to find the meaning of that experience or orient it to constructive personal growth. For medical science, discovering the cause of disease, or linking the event to some past experience may be sufficient explanation. On the lived level, however, this is insufficient meaning and until other meaning is found, there are existential questions that the subject needs to face and resolve before growth can occur. The pain event is thus conceptualized in the context of a particular human life in understanding of the body, self, relations with others, and the future.

The experience of significant pain often leads to a re-evaluation of one's life. Some nihilists would attribute badness and meaninglessness to all pain and suffering, considering it as brutal, blind, valueless, or associated with conflict and repression (Green & Palpant, 2014). According to Viktor Frankl, however, there is no meaning of life apart from the human beings who have an emotional, cognitive, and spiritual need (Frankl, 2008). The search for meaning is an activity for cognitive beings although it may not always be successful. Thus, human lives are relational and unfold in biographical accounts which are incomplete without a good description of the pain episode which becomes a part of one's life story. Ultimately, the search for meaning is the core of the anthropological problem and impacts the psychological dimensions of pain and the knowledge that one acquires from that experience.

The psychological effects of pain can heighten emotional sensitivity, memory, attention, and empathy. The early studies on frontal lobotomies provided one of the first insights into the close relationship between pain and its psychological effects (Tan & Yip, 2014). Sensory, affective, and cognitive elements became distinguishable from one another. Moreover, it was noted that certain affective or cognitive states were not only associated with the pain experience but also with direct causes and consequences of this state.

The knowledge one acquires with pain can result from the existential questions and quest for meaning with pain episodes. When this knowledge is achieved in a balanced way, it leads to greater self-knowledge. Self-knowledge in this context is a condition in which one tries to understand and make sense of given experiences to fit them into a broader life narrative. In trying to put it into a life narrative, it

challenges the person to find an explanation and a meaning for it. There is, therefore, a reciprocal relationship between the experiences of pain and deeper knowledge of it for future purposes. Wisdom, on the other hand, is a broader concept which encompasses self-knowledge but is not limited to it. It can be considered the ability to understand with a unique insight what lived experience entails. It develops over the course of a life and gives one expertise, and the capacity to advise appropriately especially concerning life's more important and difficult decisions or challenges. It requires familiarity with practical rules, the reality of things, and knowledge of one's personality in relation with others.

Transforming pain experiences

The re-dimensioning or re-structuring of life in pain is related to the competence aspect of wisdom and is a desired outcome. It is important that wisdom does not remain on the epistemic level but is translated into good actions and a good life. This is because one can have knowledge about what is ultimately good or important but remain unwise in judgement, decisions, and actions. One may also appear to act consistently well but have a flawed view about the important principles for a good life. This is where the need for moral education comes in. It grooms one for both the epistemic and competence dimensions of wisdom with regard to handling pain (Baehr, 2019).

Pain experiences can be disorienting to the ordinary ways of experiencing the world, selves, and others. Moral education will help orient these experiences based on valued principles. Therefore, there is a cyclic dependence of action on knowledge and knowledge on action and with each closed cycle, action and knowledge are potentiated and the individual becomes more of a protagonist for his future.

The suffering experience additionally causes a change in the spatiotemporal coordinates of the sufferer. This opens up space and slows down time facilitating the reflection on oneself, one's body, and the relation to other activities. It facilitates reflection on being, ultimate realities, and fundamental existential questions. Pain and suffering also capture attention and focus awareness on immediate reality. New manifestations, emotions, and comportment which the suffering experience provokes become material for reflection and transformation. Such experiences may include new ways of tackling spatiotemporal changes, changes in relationships, experiences with hospitals, hospital personnel, medical treatments, and the culture of modern healthcare. All of these can be incorporated into the wisdom gained and moral education that orient present experiences to better ones in the future.

With the proximity to personal pain and the pain of others, there is a constant reminder of one's vulnerability and finitude which ultimately affects the way one lives. For some, the reminder of mortality translates into living in the present and living to the full. On other occasions, there may be the natural tendency to evade the question

Estud.filos n.º 65. Enero-junio de 2022 | pp. 133-152 | Universidad de Antioquia | ISSN 0121-3628 | ISSN-e 2256-358X
https://doi.org/10.17533/udea.ef.345748

of one's vulnerability or reminders of finitude so that there is a hiding from the present. Depending on the type, severity, and source of pain, a temporary avoidance of reminders of finitude or vulnerability becomes a psychological defence mechanism that aids the confrontation of that particular pain episode. This attitude can, however, become permanent as it ultimately translates to an avoidance of reality and a denial of the need to build constructive attitudes towards suffering.

Reflections on human biological existence make it obvious that human life is finite and limited in many ways. These limitations include a broad range of defects and weaknesses in physical, moral, intellectual, psychological, or social spheres. Pain and suffering are especially apt to act as reminders of vulnerabilities. They are intrusions on this biological existence and violent reminders that natural life is limited. Current attitudes towards pain and suffering favour the denial of these reminders of finitude but that is a futile attitude which does not augur well for the confrontation of pain either in the present or the future.

Alongside the awareness of one's mortality, there can also be the experience of transcendence. These can result from the existential questions about meaning we have already discussed. The desire for transcendence becomes more obvious with these irruptions into the life narrative that disrupts many aspects of psycho-social life. The content of meaning can be limited to the cause and course of the pain experience and how to overcome it on the physical, psychological, or social levels. Other responses can attempt to address more amply the "for what" or the "for who" that goes beyond the pain and suffering experiences and opens up human capacities to higher realities. The questions "for what" or the "for who", once it is directed outside the self, have the potential to truly contribute to self-transcendence. The choice for transcendence, meaning, and transformation can be chosen or rejected.

Notwithstanding the obvious negative experiences with pain, chronic pain experiences can thus be followed by personal growth. Its significant occurrence has resulted in the use of certain terminologies to label this phenomenon. Some of these terms include adversarial growth, flourishing, benefit-finding, heightened existential awareness, perceived benefits, positive by-products, positive changes, positive meaning, post-traumatic growth, self-renewal, thriving, transformational coping, and so on (Linley & Joseph, 2004). Most of these expressions refer to positive change or growth experienced following a significant event associated with pain and suffering.

What of those situations where pain is not positively transformative? Barbara Ehrenreich tells of her experience in handling the devastating diagnosis of breast cancer and the added pressure from support groups and medical personnel to manifest a positive attitude (Ehrenreich, 2010). For some patients, there may be undue strain placed on them to accept their pain or illness with gratitude. They are even expected to demonstrate attributes and skills which require time and habit to acquire. There ought to be a realistic acceptance of a pain situation where suffering, despair, anger, ignorance etc can be displayed as part of the process of positive transformation. These

transformations may take time in forming or may not even manifest until much later or only with future significant episodes of pain. These are further evidences of pain as multidimensional and complex.

Part of wisdom is to understand that what one is going through transcends that particular experience and impacts the whole being and narrative. To remain in the destructive and negative aspects of the experience will only allow the spread of negativity to the wider dimensions. At the same time, each one discovers a positive transformation at the most appropriate time through the right balance between self-knowledge, knowledge of the causes of the pain, and wisdom about life; realities and the relation with the world and transcendent realities. Solely acknowledging the negative consequences of pain and suffering has led to concentrating on relieving pain and suffering without concern for the consequent growth in many dimensions that may occur. We cannot overlook the fact that traumatic life experiences can sometimes generate more in the way of beneficial reflection than positive experiences. The reflections that arise are related to the epistemic dimension of wisdom which assesses what the world is like or of how the world works and directs it to what is ultimately good (Baehr, 2019).

Another aspect of growth associated with the experience of pain and suffering occurs when there is an awakening of moral sensibilities with increased reliance on the support of others to achieve goals. (Tedeschi & Calhoun, 2014). Closer, more intimate, and more meaningful relationships with other people can become part of a person's experience. Relationships may be affected unequally so that while stronger bonds appear, other relationships disappear or become embittered. This explains the popular adage that one can know one's true friends in a hard or painful situation. Yet the biological tendency for sentient beings to empathize with suffering moves one to offer aid in such a situation especially when there is an established relationship (Leonard & Cano, 2006). Witnessing others reacting to painful events can instigate immediate or gut-level emotional experiences which lead to the arousal of empathy in the observer. This is because experiences can be shared either through communication or through observation because there is an intricate interplay of neural networks involving the anterior insula and medial or anterior cingulate cortex which make it possible. The neural response to pain produces vivid episodic memories of the event and makes it possible to distinguish personal emotions from others' emotions and react appropriately (Riess, 2017).

Thus, the pain of others can be felt in one's body when communicated or observed but distinguished from one's own pain. It is an attenuated form of the pain that is felt by the observer for others so that one can empathize with another's pain without being overwhelmed by it. This makes the one empathizing more capable of offering aid to the one in need (Riess, 2017). The subsequent awareness of the necessity for interdependence can then transform people into kinder, gentler versions of themselves (McMillen, 1999).

Estud.filos n.º 65. Enero-junio de 2022 | pp. 133-152 | Universidad de Antioquia | ISSN 0121-3628 | ISSN-e 2256-358X
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Unfortunately, the response to another's pain is not always positive. Two types of affective empathic reactions have been described in relation to observed pain. There may be reactions oriented to the self which generate fear or anxiety about one's safety. The other response is oriented to the other with responses of sympathy or compassion. However, the natural response of empathy or compassion may be deliberately distorted. Since the expression of pain indicates the need for support or attention, the situation may be manipulated by some as a tool to demonstrate power, threaten, torture, or coerce (Scarry, 1985). This is possible because pain occurs both at an automatic reflexive level which is uncontrollable and at a controlled, intentional, and reflective level. The latter is what makes it possible to alter observer reactions to pain. Part of future research in this area will be directed to understanding the basis for the translation of these natural empathic responses to adaptive or maladaptive behaviour (Riess, 2017).

Another negative aspect of the empathic response is that emotional exhaustion can result from prolonged or repeated exposure to another's pain and erode relationships. Those with chronic pain can additionally exhibit anti-social behaviours like anger and aggression which weakens social ties. This shows that the experience of pain considered simply as a biological event does not automatically translate to stronger social ties, empathy, or compassion. However, the focus on eradicating pain reduces an important factor that biologically resonates with others and makes shared experiences stronger. It is also unreasonable to focus on totally eradicating a phenomenon that forms a part of many daily activities that require some form of transformation. Beyond the present state of affairs, one needs to look at how the future can be shaped by the pain systems we currently have.

The future of pain as shaped by the present

Human pain as understood in the present has certain stable aspects. It is this stability that explains why pain has continued universally over time and space. There is an established biological constant that constitutes the pain pathway and continues to be studied by the diverse sciences of pain. This pain pathway is intimately connected to the experience of selves so that through human rationality, appetites, and will, there is active participation in one's own pain and the pain of others. This interconnectedness engages pain subjects in an experience which while in itself is isolating, creates intersubjective bonds that engage the world in expressive and meaningful ways (Fullarton, 2020).

In the ordinary course of existence, it is easy to forget that life is tenuous and fragile. Pain and suffering, therefore, act as reminders of the debt that is owed to existence. This is achieved in many ways. At the most fundamental level is the perception of bodily threat. Pain or illness breaks through everyday complacency to remind one that there is a radical dependence and interdependence with the body. The subject is made

aware that the body is a material, physiological organism with physiological processes, events, and structures over which one has limited control. The close union between body and self however makes it possible to sense any bodily alienation as a threat to the self. The perceived threat to the self at its deepest and most profound level is the existential threat of non-being and thus the threat of mortality. With a realization of mortality, one becomes aware that the present is a gift, just as the body is a gift and one cannot take future compliances of the body for granted (Onaga, 2020).

The greater realization of the close relationship between the physical, psychological, and spiritual, or between the body and the self has led to the establishment and development of palliative and hospice care. The idea of hospices had already been promoted by early Christian tradition and in contemporary times has been directed to pain care at the end of life. Advances in this specific area of pain management arose as a consensus between the experiences of two major pain centres. Kathleen Foley, who took over the work begun by Raymond Houde in 1951, represented the Memorial Sloan-Kettering Cancer Centre in New York. Robert Twycross represented the St Christopher's Hospice started by Cicely Saunders in 1971. Foley had drawn up the first taxonomy of cancer pain and Twycross had been treating and investigating pain in the terminally ill with the conclusion that opioids were effective in this patient population and opioid dependence rare. Cicely Saunders outlined a systematic approach to the control of pain in terminally ill patients while giving attention to their social, emotional, and spiritual needs. To these combined aspects of pain, she gave the name "total pain" which revolutionized the conceptualization of patients' suffering (Saunders & Clark, 2006).

The concept of total pain implies that there are personal, social, moral, and spiritual dimensions to pain and proposes a multidisciplinary approach or total care to provide adequate treatment in an empathic and peaceful setting. This development has been important to the current and future trends with pain care given that there are challenges with this care particularly in the terminally ill and the dying. Palliative and hospice care are slowly spreading universally but also face their challenges. However, multidisciplinary clinics and palliative care centres will be establishments for a better future with pain at the end of life.

The current increase in the number of multidisciplinary pain clinics has facilitated the growth of research. There is a focus not only on the structural disorders responsible for pain but also the functional disorders which are concurrent (Cassell, 2004). An important aspect of research in pain care involves genetic research geared towards modifying future pain experiences. Genetic therapy is sustained by the possibility of generating genomic information which can work towards the delivery of new cures and reduce the anticipation of suffering (Green, 2014). Since it is unlikely that there is a unique pain gene, multiple genes are needed to remedy the associations with the development, processing, and perception of chronic pain. These gene therapies thus work on various levels to influence expression, behavioural and emotional responses.

Estud.filos n.º 65. Enero-junio de 2022 | pp. 133-152 | Universidad de Antioquia | ISSN 0121-3628 | ISSN-e 2256-358X
https://doi.org/10.17533/udea.ef.345748

The future of pain therapy as seen in the medical sciences appears to rest with gene therapy which can target treatment to a specific gene located as the locus of problems. This is a form of precision medicine that takes into account individual variability in genes, environment, and lifestyle for the prevention and treatment of diseases. It requires further advances in molecular biology, genomics, proteomics, and bioinformatics.

One current situation with projection for the future involves transhumanism. Here technology takes over. Transhumanism is a scientific and philosophical movement that proposes to overcome, through the present and future technologies the limitations of the biological condition. The driving desire is to remodel the human being through modifying or totally transforming the body to arrive at a state of higher and better function (Fukuyama, 2003). These desires are, however, not novel in human experience. The desire to refashion human beings based on varying frames of the understanding of betterment has always existed. The Greek mythologies idealized certain creatures unrecognizable as human beings although with identifiable human traits; puritan projects wished to control sinful nature through the use of the force of the law; totalitarian governments attempted to remould their subjects through strict regulation; writers have been creating utopian worlds; and eugenics has been embraced by some as a means to better humanity. The future will undoubtedly continue to look for the means of refashioning humanity. Transhumanism falls within this framework where technology promises to transform human birth, life, and death.

The idea of eliminating pain without taking into account its anthropological aspects in a sentient and rational nature is problematic. This is what makes the transhumanist position difficult to accept as a future human solution to the problem of pain. It addresses the pain event as one merely located in the body which requires the elimination of the biological system that sustains it. However, as previously discussed, pain, though spatially located in the body, involves the whole self, in a close relationality with the world and the others. Its confrontation, thus, requires an approach that incorporates the biological, psychological, social, and spiritual dimensions. A purely technological approach does not achieve this integration and will not augur well for the future of individual growth.

There are other forms of coping which have endured from ancient times and it is left to us to consider if they should be translated to future pain. One such example is stoicism. Stoicism has been a response to human problems since the Hellenistic period and has its roots in cynicism. In this school of thought, pain is considered a passion that is weak and false and best tackled with *apatheia*. *Apatheia* was understood as composure or equanimity achieved through voluntary dominance of reason on unhealthy passions like pain. This perfect control however results in a suppression of certain elements of the experience or the self (Balzly, 2018). The stoic emphasis on self-control and dominance has found echoes in contemporary ways of confronting pain and is likely to be transmitted to the future.

The state of *nirvana* is similar in that it aims at the direct destruction of the unhealthy desires and cravings which result in pain and suffering. It flows from the Buddhist philosophy which is based on the impermanence of everything and interdependence in such a way that there is no independent substance or essence. This means that the self is understood as a part of the ever-changing becoming that everything is and does not remain for future considerations. It is presently gaining a lot of ground in discussions about stress management and pain relief. It is relevant to the future but will require a better understanding of the self rather than its elimination.

An understanding of the human self means accepting the active interrelation of the reason, will, and affections rather than their suppression. It promotes true autonomy without denying human sociality and interdependence. The form of validation that occurs with stoicism is self-directed and that of the state of *nirvana* self-eliminating instead of intersubjective or transcendent. Human flourishing is more easily associated with a potentiation of the self in relation with others rather than elimination or suppression. When this is rightly pursued, it can translate to future attitudes towards pain which promote individual as well as interpersonal bonds. This autonomy in the past and present has contributed to the improvement of pain care and in the sharing of relatable first-person experiences. These in turn have facilitated the alleviation of pain experiences through science and communities. There is some hope that this will translate to the future although it requires an active attitude of learning and re-learning.

Learning from pain grows from the ability to accept life's inevitable limitations like failures and disappointments, the ability to live in the present, to revise one's life goals in the face of unwarranted calamity, and to co-exist with events outside of one's control while voluntarily choosing to profit from these events (Carel & Kidd, 2020). In a society where this is widespread, one lives with people who can be open about their weaknesses and needs without fear of recrimination or condemnation from others. In such an eventuality, pains, sufferings, and serious illnesses provide an opportunity to honour and serve one another and to draw closer in ever-deepening relationships of selfless love. It is thus that not only human vulnerability is shown and accepted but also human transcendence is made evident.

In the dialectic between the natural human desire for improvement and the need to overcome limits, the person requires a means to overcome adversity without alienation or identity loss. Already, many chronic pain patients believe that they have a limited ability to exert any control over their pain. This is why from the cognitive–behavioural perspective people suffering from chronic pain are viewed as having negative expectations. These negative maladaptive appraisals about the pain situation reinforce pain and lead to disability-enhancing behaviour, over-reaction to nociceptive stimulation, anxiety, and depression. A true understanding

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of human freedom potentiates human capacities without replacing them and relies only secondarily on technological and pharmacological progress.

Human freedom is also manifested in moral education which looks towards the attainment of human goods and is not closed in on itself. It emphasizes subjectivity while recognizing the objective dimensions of flourishing. Stable habits are thus required to know, decide, and act in a certain way that promotes growth with chronic pain. These habits are also required to change negative or maladaptive attitudes which only add to suffering. This stable disposition is neither automatic nor ateleologic but consciously goal-directed and moulds personal motivations in a given direction, hence the need for education.

Moral education thus consists in this formation and transformation of character which gradually extends to all the events of one's life to include and take advantage even of the painful ones. When this is begun in the present, it does not eliminate the pain experience for the future but it provides a future where each one is the driver of his personal narrative, yet open to the others in ever-increasing bonds of relationality.

Conclusion

Human pain has been discussed as a multidimensional, complex experience which involves physical or neural structures and deeply affects the ontological structures of the human being. It impacts on all human dimensions when it is chronic, severe, or persistent. A deeper comprehension of the levels of involvement and the factors affecting the stable transition from generation to generation will aid plans for its future confrontation.

We have reviewed the physical indicators that restructure the nervous system so that it can be rightly said that the human being is wired for pain. It is inevitable that pain will continue to exist in spite of the attempts to completely eliminate it. Preparedness for significant pain experiences in the future need to be laid down in the present otherwise, the crisis with pain will continue to increase and debilitate future generations.

Socio-cultural factors such as increased connectivity, the distance introduced by virtual media, individualism, and autonomy can either work for or against the future of pain. Psychological and spiritual gaps and weaknesses which make it difficult to accept and grow from the pain experience are currently widespread and will not augur well for a future of increased pain and suffering.

An attitude that fully potentiates the capacity of the human being as a rational, moral, and spiritual being is proposed as essential for moulding our future with pain. This attitude involves an active interaction with oneself and others while going through significant pain. This can ameliorate the current experience and incorporate it into

one's narrative. It can also direct towards the future development of habits that make it possible to understand and confront pain courageously.

Attitudes that seek to completely eliminate the experience, the experiencing self, or the biological structure that makes pain possible are merely utopic and incomplete. They do not take into account the multiple dimensions of the pain experience and the complexity of pain care. Moral education is important for the learning and transmission of attitudes that lead to positive personal growth with time. Future research can focus on creative ways of teaching our generation the physical, psychological, moral, and spiritual tools to confront the inevitable experience of pain and suffering that comes with age, chronic illnesses, failures, and disappointments.

With these in mind, scientific efforts geared towards holistic pain care, psychological interventions that potentiate the unity of body and self, moral initiatives which emphasize self-transcendence and inter-relationality, and spiritual attitudes that promote true transcendence need to be encouraged.

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