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Editorial

Toward A Naturalistic Neuroethics of Pain Care

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We enlarge on our proposal to unify the naturality (both biologically and phenomenologically) of pain in its existential reality. Neuroethics should support the recognition of the objective identity of real pain and maintain the whole patient at the foreground for ethically responsible pain medicine. The virtues of medicine have been fracturing into divergent moral directions, affecting even principled ethics. The practitioner's duties to both doing good and doing no harm, when scaled to entire mono-modal fields and monolithic approaches to pain, can amount to a retreat from the responsibility to lessen patient suffering. Humanistic and scientific worldviews, with the advice and assistance of both philosophy and neurophilosophy, should harmonize their joint enterprise of benefitting humanity. Nature, including organisms, were stripped of norms and normative value and thus left adrift without ethical implications, yet medicine has always known how health and malady alike are naturally norming for vulnerable organic beings. The neuroethics of pain positions the pain sufferer as the natural focus for both neurophysiological investigation and psycho-behavioral study and treatment. Pain is of the organic world, not just coincidentally in it nor superveniently near it. Neuroethical naturalization only asks that pain is addressed as an agent-level capability where nature evolved pain to be, so that medical approaches to pain treatment treat patients foremost as bio-psychosocial persons.

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The multiple clinical fields that treat painful maladies would axiomatically not be expected to approach pain in the same ways, nor necessarily treat a particular patient's pain using the same set of methods and tools. Interventional anesthesiology employs its toolkit of biochemical and anatomical knowledge and interventions to mitigate pain; neurology utilizes its insights to the functions of nerves and the nervous system, evermore harnessing a variety of neurotechnologies; and psychiatry approaches pain as a cognitive, emotional and behavioral manifestation of the embodied nervous system embedded within a social environment. Let us also not forget the pioneering work of John Bonica, which was engaged within the practice of physical and rehabilitation medicine, with aims toward reconstituting the pain patient's agency in the varied domains and dimensions of their life. Common – and essential – to each and all of these developments has been a natural motivation to recognize and appreciate pain for the bio-psychosocial reality it entails.

To be sure, the moral prescriptions of research and clinical ethics have expanded to keep pace with such multi-disciplinary ways to address pain(s). Along the way, the construct of "pain" as viewed biomedically, and "pain" as expressed in psychological interviewing and colloquial use are not in ontological vicinity. Hence, it may be that the ultimate ethical duties owed to each person presenting as a pain patient tend to disappear from peak prioritization in the process. As a developing discipline (1), neuroethics applies iterative neuroscientific knowledge towards understanding the moral mentality of humans in the service of ethical responsibility for humanity. Arguably, given

humanity's evolutionary position of dominion and stewardship, that responsibility has extended to all of planetary life in its surviving and possibly sentient modes.

A neuroethics of pain cannot presume a fast launch from some interdisciplinary consensus, and an ontological basis for pain's reality remains elusive (2,3). Calls for a full accounting of pain's complexity and plurality could not easily add up to a unified theory of pain as a biological reality. Nevertheless, hopes for a well-disciplined neuroethical paradigm for pain (4) are not ill-timed or misplaced today. Comprehensiveness assumes heightened pertinence as a therapeutic ideal given the inevitable spread of medical specializations and the expansion of behavioral health services (5). What integration and unification neuroethics could afford pain research and therapeutics remains to be fully construed and constructed, as compared with main alternatives, and must be introduced into a comprehensive ethical approach to pain care. Herein we extend our findings and arguments from previous essays in this journal (6,7) as continuing contributions to a neuroethics of pain, which seek to operationalize sound guidelines for medical investigations and ethical practices.

Pain Reunified

An ontology for existence and an axiology for values that drift apart could not work for bioethics, where questions such as, "What's the matter with that patient?" and "What is mattering to this patient?" remain inextricably fused. If the actionable question of the clinician is, "How can I help this patient?" then trying to fix the matter (of physiology, biochemistry, and so on) would be an exercise in insensitivity when pain is deemed immaterial, ontologically and morally, after the body is declared "innocent" of any confirmable pathology. The lesson learned is less than complimentary: having one medical ethics about bodily pain treatment and another humanistic ethics for mental pain management juxtaposes ethical responsibilities in opposition. An ethics for the material world set against an ethics for the immaterial realm looks like a philosophical or theological relic. Yet, resorting to dualism tends to be persistent. A humanistic-minded accusation of excessive medicalization of and for the body, while well-intentioned, sends a tacit message that no medicine for the mind would be needed or expected. For their part, those content with pain's medicalization can be just as content with suffering's psychologization. We argue that neuroethics must look elsewhere for a fresh approach to pain's ontological and axiological unification.

Neuroscience certainly contributes discoveries that are consistent with phenomenological accounts. Pain, lacking sensory simplicity, has exteroceptive aspects about relaying nociceptive stimuli, while engaging interoceptive functionality through multiple pathways and brain-mediated complexities, given that neural signaling occurs both "bottom-up" and "top-down" (8-11). Localizing the generator of pain somewhere in the extensive nervous system, inclusive of numerous cortical regions (12,13), will likely remain an elusive goal. That extensivity is reflected in the ample variability of pain's experienced temporalities and intensities. Acute pains bear their adjectival distinctions such as stings, stabs, aches, burns, throbs, and so on. Chronic pain emotionally deepens them with duration and dispiritedness (14,15). Pain's ability to blend with threat assessment, fear response, anxiety, depression, isolation, and other emotional states all more corporeal than ideational, further illustrates how the body's capacity for pain couldn't be easily localizable or definable.

Pain's psychological dimension is unquestionable, and its pull upon attention is undeniable. If pain must be so mental, then pain's identity would lie more with the mind and its properties. Having pain could be akin to having an aversion, intention, belief, or desire, which display distinctive attributes in phenomenal consciousness. Following this mentalistic route, pain, like many mental states, is representational, bearing an interpreted signal of irritation sent from the body. As with signaling in general, not all signs are reliable, so the absence of anything physiologically treatable can suggest an over-taxable mind. Across a mind-body divide, one sort of pain couldn't help account for the other, no matter how intertwined pathways are tracked within the nervous system.

What does pain itself communicate about its reality? The full phenomena of pain have as much objectivity as subjectivity because the suffering being, in its organic unity, embodies painfulness holistically. Pain does not operate to either be privately hidden or publicly transparent. Nothing about pain's reality functions so as to stay entirely on the side of inner consciousness, or solely on the side of outer behavior. Pain is so physio-emotional that the entire being is involved with its processes and performances (6). Precisely because pain is so intimately personal, it's also thoroughly interpersonal: via expression(s) and social effects.

Despite what might be taken to be some form of transcendence, there is nothing about pain's character that violates naturalism. Indeed, as a naturally evolved system, pain operates with multi-faceted utility for survival. Pain is subjective but far from solipsistic, and not any less organically physiological for its being so intimately psychological across a range of attributions: pain as stimulus; pain as sensation; pain as signal; pain as symptom; pain as stigma; pain as syndrome; and many more manifestations. We have sketched an operational view, PAIN as HEED (hurtful, engaging, emotive, directive), to identify the neuro-experiential commonality of pain sufferers regardless of particular morphology, etiology, biomarker, or treatment (7). As an "enviro-bio-psycho" model, PAIN evolved for animals needing conferred adaptive and survival advantages. The purposes for which pain evolved have not been left behind with humanity's technoscientific advances.

Pain Comes Naturally

Whether somatic, symptomatic, or syndromic, of acute or chronic duration, and presented by human or nonhuman sufferers, pain worth attending should be evident enough to lend focus to expert remedies. Taking a multiple-factor view of a malady, as we do with PAIN, might be viewed as yet another opportunity for a division-of-labor approach, which defeats the purpose of understanding the malady's reality. Even the biopsychosocial model of pain has been faulted for permissive retreats to medicalization (16), psychologization (17), or fostering yet another procedural emphasis in the name of intervention (18). Clinical, counseling, and community avenues for dealing with pain may not be adequately coordinated or sufficiently researched sufficiently (19-21). Despite, or perhaps due to, its theoretical breadth, no biopsychosocial model of any disease or health problem can enforce its own practical implementation or ensure its continued scientific validation.

Rather than perpetuating that deficit of clinical and ethical coordination, a neuroethics of pain unified around a patient-centered approach could restore momentum to the virtues of humanistic medicine by applying the knowledge of science. A biological basis and unification of pain that closes dualistic gaps can excise excuses for dividing duties to patients between (a) treating the pain inside the body, and (b) treating pain in the mind. These domains are mutually inextricable. The neuroethics of pain positions the pain sufferer as the natural focus of clinical and ethical attention. Pain is a natural matter fit for concomitant neurophysiological investigation (8), and psycho-behavioral study and treatment (22).

Pain is of the organic world, not just coincidentally in it nor superveniently near it. Pain evolved. Does such naturalization offend or deter any part of ethics? We claim certainly not. Neuroethical naturalization requires no elimination of subjective feeling nor any dismissal of the vocal patient. Holistic approaches that address pain as an agent-level manifestation, as a capability occurrent where nature evolved pain to be, are entirely compatible with medical approaches to pain treatment that similarly treat patients foremost as (bio-psychosocial) persons. The moral virtues of relieving suffering – however treatable – could not, and we argue should not be alien to the ethical virtues of the practicing physician (23). Ethical attention directed to the level of the whole person, not just subjectively but also inter-relationally, regards and respects a person's agency and autonomy-seeking conduct. Are any of these human goods and ends unnatural, as if we are living dismembered and disembodied lives?

Humanistic and scientific worldviews should seek to harmonize their joint enterprise of benefitting humanity. Philosophy bears evidence of how these worldviews have not yet dropped their defensive shields or surrendered their ontological swords. Nature, including those biological entities, was stripped of norms and normative value and thus left adrift without ethical implications. Since the time of the ancients, medicine at its core has always known better (24). If there is anything of which medicine knows well, health and malady alike are naturally norming for vulnerable organic beings. Neuroethics in its broadest scope is contributory to bioethics – a bioethics as life ethics and life's ethics – and as such should be both human-hearted and naturally humane (25). Sufferers seeking relief from pain deserve responsible aid and comfort, absent discrimination, disparagement, or dismissal.

Sharing Pain and Sharing Responsibility

While a complete ontology of pain eludes medicine, clinical factions enact their expertise by fractions and halt at boundaries in obduracy. The virtues of medicine can fracture into divergent moral directions, affecting even principled ethics. The practitioner's duties to both doing good and doing no harm, when scaled to entire mono-modal fields and monolithic approaches to pain, can amount to a retreat from the responsibility to lessen patient suffering (26). The duty of beneficence, magnified out of psychological propor-

tion, admits suffering into a welcoming mental space. The duty to respect autonomy, after mental suffering gets settled as authoritative, may preempt searches for somatic or neurological causes, further unsettling a patient's sense of self-integrity. Finally, medicine cannot maintain justice within its own house, as factional, disciplinary divergences in constructs of pain's identification and a patient's identity in turn allow the unjust treatment of those who are suffering the ravages of pain (27,28).

Justice needn't be elusive. A philosophy of pain medicine can regain its ethical balance by matching cautious non-maleficence with clinical non-intransigence, moderating beneficence with non-mentalization, and respecting patient autonomy through conversational collaboration (29). In particular, a few reminders about naturally normal pain may help. It is entirely normal for the hurting organism to have a heightened subjectivity and self-concern. The hurting subject will normally prioritize pain reduction over most goods and values. There is nothing abnormal about a hurting individual expressing behaviors conducive to obtaining pain relief. And, specifically for humans, there is nothing inherently abnormal or illicit about a person becoming self-centered about pain's grip, or pursuing pain relief as well as physical remedies to be released from its grasp. The burden of proof, clinically and ethically, lies on health care providers to justify failing to treat such a naturally compelling problem as pain.

Conclusion

In conclusion, no matter the fate of our proposal to unify the naturality (both biologically and phenomenologically) of pain in its existential reality, a role for neuroethics to heal hurtful disciplinary divisions should be welcomed and fostered. No discipline should artificially force apart what nature has already unified. Living beings, both human and non-human, authentically express and enact pain the only way pain can be lived, and lived with. Good medicine strengthens the valuable degree of integrity and autonomy that those who suffer can recover in their daily lives. The objective identity of real pain and the whole patient should remain in the foreground for ethically responsible pain medicine – regardless of particular disciplinary perspectives or practices.

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