

UNDERSTANDING NOCIOCEPTION: THE RHETORICAL LANGUAGE OF PAIN

Patrick J. D. Kennedy
The University of Nebraska-Lincoln

Since the onset of the Western medical practitioner in the late 14th century, medicine has depended on rhetoric to persuade a skeptical audience of the legitimacy of its claims. Initially, the very status of the practitioner depended on his or her abilities to persuade the clientele. However, during the rise of the 17th century Galilean scientific revolution, the authority of medicine was increasingly established through the practice of sound, scientific methodology, thereby slowly marginalizing the rhetorical relationship between the physician and the patient (Morigliano 87-89). Science replaced art, and the core of medical theory became shaped by scientific progressivism that still exists today.

There are certain medical phenomena, however, that defy the traditional notion of scientific absolutism and bring forth a new dependence on rhetoric in the patient/doctor dyad. John Ioannidis's recent study shows that approximately one-third of highly-cited, original research studies were either contradicted or expanded upon by subsequent studies (218). Ambiguities and irregularities such as these can confound physicians' efforts to appropriately treat a patient's afflictions.

One example of this is a medical phenomenon termed the *pain perplex*. According to Atul Gawande, the pain perplex is defined as the mental sensation of pain without a justifiable or recognizable cause (99). Currently, the two most prolific examples of the pain perplex are phantom limb pain and chronic pain, both of which are diagnosed at alarming rates in the United States (Rosenfeld 119). When faced with this phenomenon, the physician is forced to rely less on scientific theory and more on the patient and the humanistic components of their affliction.

To treat the ailment, the physician is obligated to treat the mental pain based on the patient's description. The patient must provide a coherent and accurate account of his pain, and the physician then matches the patient's assessment with her professional understanding of pain. During this process, the actuality of the pain response is almost always lost in the efforts to reproduce its feeling in human language. Thus, the physician must be able to interpret a patient's rhetorical argument in order to utilize language as a vehicle of treatment. Rhetoric has become more essential to the quality of life for the patient. Together, pain and rhetoric have created a complex and intricate component of preventative medicine that has revolutionized primary care.

Using patients' narratives, this essay analyzes the rhetoric used to recreate chronic, acute, phasic and post-operative pain and suffering. The rhetorical analysis of these narratives will help map a preliminary understanding of the role of rhetoric in treating a patient and the developing partnership between medical science and rhetoric.

Personal Interpretation of Pain and Rhetoric

During my medical experiences with pain in rehabilitation and research, I have obtained a unique

insight into how and why the rhetorical relationship between patient and physician is a necessary component of the patient's well-being. Over the span of two and a half years, I embarked upon an interdisciplinary research project that involved detailed studies of the cognition of pain, patient care, rhetoric and science, perception philosophy, and an extensive review of pain and illness narratives, both in literature and medical observation. The unique perspective of each academic interpretation of pain demonstrated how rhetoric can be used appropriately in the patient/doctor dyad to provide more efficient patient care.

My first extensive research experience with pain occurred at the Arkansas Children's Hospital (ACH) in Little Rock, Arkansas. I was responsible for monitoring the vital signs (heart rate, blood pressure, and respiratory capacity) of critically ill children in the Intensive Care Unit (ICU) during the day. The ghostly images of lifeless children fueled my desire to understand the full cycle of pain and how it impacted these children's lives beyond what could be seen through observation. Consequently, I spent my nights performing collaborative research on the neurophysiology of pain in the Neurobiology Pain Laboratory at the University of Arkansas for Medical Sciences (UAMS).

The scientific understanding of pain is miniscule, but the neurological and biochemical components are highly complex, causing the science of pain to be considered by many as an art form rather than a science (Holzberg et al. 202). In an effort to transcend traditional areas of pain research, the members of the Neurobiology Pain Lab conducted a series of experiments to test the correlations between neurological and psychological development using traditional genetic and biochemical approaches. In these studies, we advanced the idea that pain affects the developing nervous system physiologically, creating the potential to cause cognitive and psychological dysfunction.

A human's developing nervous system is analogous to a sapling. Just as the limbs of a tree can be pruned, sliced, and shaped to a perfect fit, so can our nervous system (Touwen 76). However, the alterations to our nervous system occur through intangible means, including prenatal stress, pain, and other psychological components (Schneider et al. 264). Physical pain has both a biological component and a salient psychological component that work together to shape a person's innate understanding and sensation of pain.

Because concepts of pain extend beyond the physical senses, the second component of my research entailed analyzing medicine from an alternative perspective: mixing the humanities with the sciences. After exploring multiple literary genres, I was struck not by what I found but by what I did not find. I began to question, "How is it that physical pain, one of the most ubiquitous and quintessential human responses, is alarmingly underrepresented in the various mediums of literary expression?" If an artist, a person who finds ways to express the inexpressible, has difficulty depicting pain, then how is patient who is not a writer supposed to accurately convey pain to the physician?

The language used between patient, who attempts to reproduce the pain, and her physician adheres to conventions of Aristotelian rhetorical theory. Combining literary analysis with research conducted on the cognitive and biochemical transduction of pain, I attempted to construct a behavioral understanding of pain and the rhetorical connection between patient and physician through passive observation. During a brief period as a hospital technician at Bryan LGH Hospital in the Post-Anesthesia Care Unit (PACU) in Lincoln, Nebraska, I slowly started to map a comprehensive model of how rhetoric comes to be the major force in the diagnosis and treatment of the patient in pain.

Each research component advanced my intellectual and personal appreciation of pain. The clear distinctions between medical science, social science, and the humanities became blurred, demonstrating pain's inability to be defined within traditional boundaries. In this sense, rhetoric was a useful construct used to fill the gaps and mend the irregularities of the pain perplex.

The Relationship between Mental and Biological Components of Nociception

In order to diagnose a patient's pain effectively, the physician must bridge two polarized, yet essential components of the pain response. First, the physician must ascertain the biological source of pain. The neurological onset of pain acts to serve as a preliminary warning mechanism against an internal biological abnormality. This, in turn, triggers a series of biochemical reactions that stimulate sedentary pain receptors (NMDA receptors) to undergo neurological excitation.

The second component a physician must become familiar with is the mental perception of pain, which is known as *nociception*. While most occurrences of pain are hypothesized to be similar biochemically through the activation of NMDA receptors, the psychological sensation of pain is conversely hypothesized to be incomprehensible in the realm of modern, cognitive understanding (Holzberg et al. 202-203). Philosophers have diverse understandings and explanations of nociception. The realist theory views nociception as a reality rather than a fabrication of the mind. Others view pain as a source of adverbialism, which posits that the experience of nociception is "just the experience itself, but is not related to anything tangible" (Campbell 145).

Several theories have been proposed to help explain the relationship between the physical and mental components of the pain response. Medical scientists tend to associate with the theory of specificity, which is a modernized version of Descartes's ideas of specific causality (Hattab 99-100). This theory states that a nerve or nerve ending, when stimulated, is the initial chemical precursor to the cerebral interpretation of pain by the Central Nervous System (CNS). Other theories, including the Pattern Theory of Pain and the Affect Theory of Pain, hypothesize that psychological and sociological events act as the ultimate modifiers of nociception (Defrin et al. 502). Ronald Melzack and P. D. Wall's Gate Theory of Pain hypothesizes that two specific neural tracts located in the spinal column control the degree, amount, and sensation of pain interpreted by the CNS (42). This theory states that there is no unilateral input to this spinal region. Rather, there is multiple sensory, psychological, and higher CNS processing (such as memory) that contribute to the "gate" of the spinal cord.

Despite current support for the Gate Theory, there are circumstances that defy its cause-reaction clause. Most notably, the pain perplex is a salient counterargument to the biological propositions of the Gate Theory. The American Academy of Pain Management estimates approximately 50 million people suffer from neuropathy today (Weiner 1). Many of these cases have no discernable cause, destroying any modicum of explanation in the modern understanding of nociception, limiting a doctor's effectiveness in treating a patient's pain (Gawande 127).

Rhetorical Analysis of Pain Narratives

Conventional medical training teaches students to view medicine as a science and the doctor as an impartial investigator who builds differential diagnoses as if they were scientific theories. According to Trisha Greenhalgh, "This approach is based on the somewhat tenuous assumption that diagnostic

decision making follows an identical protocol to scientific inquiry—in other words, that the discovery of ‘facts’ about a patient’s illness is equivalent to the discovery of new scientific truths about the universe” (324). However, physicians are now more willing to acknowledge that certain areas of medical practice are not as infallible as once perceived under the foundations of the theory of evidence-based medicine (EBM).

Rhetoric has become an important tool in constructing a more modernized form of EBM. Many have used the concept of a “rhetorical triangle”—*logos* (the message), *pathos* (the power to stir the emotions, beliefs, values, knowledge, and imagination of the audience) and *ethos* (the credibility, legitimacy, and authority of the speaker)—to emphasize how the subtleties of rhetorical persuasion have found their way into the physician’s workplace (Van de Ven and Schomaker 88-89). Scientific evidence is *one* component of persuasion. In ideal circumstances, the argument presented by the patient will be convincing (*logos*) to the physician if the argument is supplemented by credible research proponents (*ethos*), which stir the physician’s interests, needs, and emotions (*pathos*). However, because of the ambiguous nature of the pain perplex, the *ethos* of a patient’s rhetorical argument is minimized and the *pathos* is heightened.

Finding an appropriate balance between a patient’s description and the physician’s interpretation of the pain experience is one of the most difficult dilemmas faced by physicians today. Physicians have a propensity to view language as they view science: as logical, mathematical entities that can help deduce the most coherent answer to the problem. However, physicians have often found the language of pain to be illogical, which is further complicated by the wide array of painful descriptions. Pain ultimately has adverse effects on deductive language, disallowing a precise, logical description. Elaine Scarry states, “Physical pain does not simply resist language but actively destroys it, bringing about an immediate reversion to a state anterior to language, to the sounds and cries a human makes before language is learned” (13). The patient bases his or her description of pain on previous associations and experiences with nociception. Like love and other metaphysical components of the mind, there lies the great problem: “It is precisely because it takes no object that it, more than any other phenomenon, resists objectification in language” (12). It is for this reason that many physicians and scientists believe there is an *imaginary* component that transfers the purpose of pain, transcribed by the underlying biochemical reactions, to the mind for interpretation. In fact, Sartre first hypothesized the imagination as a potential shuttle of pain from the mind to the body (214).

A patient I worked with and observed at the PACU at Bryan LGH Hospital demonstrated how the creativity of language can impact the treatment of pain. This patient, who had recurring bouts with chronic lower back pain, described her pain this way: “It’s sweaty today. The sweat burns all up and down my spine. It tingles all the time. Not the good tingling, but it feels like tiny spiders are crawling around with sharp, pointy blades.” In my observation, patients diagnosed with chronic pain had the most unique and imaginative descriptions of pain. Physicians listened more acutely to a patient’s description when that patient used language not commonly heard by the physician. In this sense, imaginative language resulted in a better chance of receiving proper pain medication.

While cognitive scientists try to comprehend pain in terms of its connection between the patient’s mental interpretation and its physiological purpose, physicians must use a limited understanding of a patient’s psychological intent to diagnose a patient’s pain. Consequently, the patient must not only

articulate the degree, variation, and duration of his or her pain but must also convince the physician that the pain exists in the first place. This presents a pervasive problem for any patient who experiences chronic pain or phantom limb pain: the “belief factor” (Gawande 127). Thus, the physician and the patient must compromise so that both entities in the patient/doctor dyad accept the pain as a reality.

From my experience as a hospital technician, I would describe the physician’s propensity to distribute pain medication as highly restricted. If the patient appears to the physician to be credible, the physician will prescribe pain medication. In Aristotelian terms, the patient must display practical intelligence (*phronêsis*), a virtuous character, and good will (32). Moreover, physicians must interpret a patient’s credibility in the wake of booming insurance premiums and increasing pressures from the Food and Drug Administration (FDA) to reduce the number of proliferate drug users in the United States (Rosenfeldt 193).

A physician can assess the intensity, quality, and type of pain according to a patient’s rhetorical description. These classifications are called “pain scales,” which help the physician choose the most accurate and complete treatment for the patient’s pain (Hyland 74). Unidimensional scales usually assess a single dimension of pain according to a patient’s rhetorical account of his or her pain experience (74). The numeric rating scale is the most commonly used unidimensional scale. Patients rate their pain on a 0-to-10 scale or a 0-to-5 scale, with 0 representing “no pain at all” and 5 or 10 representing “the worst imaginable pain.” Pain intensity levels are measured at the initial encounter, following treatment, and periodically, as suggested by guidelines and the clinical situation. The categorical scale provides a simple means for patients to rate pain intensity using verbal or visual descriptors of the pain.

Although unidimensional scales are useful for assessing acute pain of clear etiology (e.g. post-operative pain), they may oversimplify the assessment of some types of pain. Therefore, physicians recommend the use of multidimensional tools in the assessment of complex or persistent pain. Examples of multidimensional tools include the Initial Pain Assessment Tool, which was developed for use in the initial patient evaluation. This tool elicits information about characteristics of the pain, the patient’s manner of expressing pain, and the effects of the pain on the patient’s life.

The McGill Pain Questionnaire is one of the most extensively tested multidimensional scales in use. This tool assesses pain in three dimensions (sensory, affective, and evaluative) based on words that patients select to describe their pain. Words such as “pulsing, flashing, stabbing, sharp, gnawing, burning, hot, stinging, tender, exhausted, fearful, punishing, annoying, tearing, and nagging” are commonly used to express the urgency of the body to correct the internal abnormality (9). This questionnaire provides a simplistic explanation and classification of the pain by grouping a series of words together according to the map. For example, if a patient were to say “searing, pulsing and shooting” in combination or to describe the same pain, it would be characterized in the thermal, temporal and spatial divisions of the brain (9). This information could provide valuable information to the physician, allowing him to classify the pain more clearly.

Implications of Rhetoric and Pain

Despite the importance of rhetoric in the treatment of nociception, the role of language is often limited. While each scale discussed above relies exclusively on the rhetorical description given by the patient, these models sometimes fail to appropriately classify a patient's pain. These scales have attempted to transform language into a science without accounting for the illogical nature of the language of pain. Nonetheless, these models are an excellent step in recognizing and acting on the intersections of rhetoric and medicine.

Frequently, a physician will view the source of pain as an overactive central nervous system. Anti-epileptic drugs (Dilantin and Tegretol) can be prescribed to dampen the effect of the brain, preventing full neuronal processing and essentially cutting the lines of communication between patient and physician (Gopinath et al. 96). While this can be an effective treatment for few extreme cases, these drugs hinder the patient's ability to express pain in words, facial expressions, and non-verbal gestures. Even if the patient might not experience mental pain, a patient's biological pain may cause a negative response on a person's cognitive processing after the pain has regressed (Anand 736), demonstrating that even though a patient's language is removed, the pain remains.

There are also legislative restrictions that limit the role of rhetoric in the patient/doctor dyad. In 1991 a *Pain Research Group* survey of state medical board members demonstrated a need to provide updated information about opioids and pain management to medical board members (Hill 55). A national survey revealed a need to provide more education about pain management to oncology physicians (Hill 57). These and other studies caused state legislatures to construct new legal parameters for prescribing opioids. States including Texas and California enacted the intractable pain treatment acts (IPTA's), which limited the usages of opioids in the treatment of intractable pain. These IPTA's generally define medical use of opioids for intractable pain as a therapy of last resort, even if the patient has cancer (Hennessey).

IPTA's have caused physicians to become more cautious in prescribing pain medication. Over the course of my research, I have frequently witnessed a general rule when physicians prescribe opioids: at whatever intensity the patient describes their pain, the physicians will divide by two to determine treatment. For example, if a patient describes her pain as "excruciating," then the normal 10 cc's of morphine she could receive according to the pain scale would be cut to 5 cc's of morphine. While this limits analgesic and opioid abuse by patients, it also causes improper pain management and needless suffering in the 97 percent of patients who do not abuse opioids (Rosenfeld 211).

Appreciating the narrative nature of pain and the subjective aspects of clinical method does not require us to reject the principles of evidence-based approaches. Nor does such an approach demand an inversion of evidence-based medicine so that personal anecdote carries more weight in decision-making than scientific deduction. It is only within such an interpretive paradigm that a physician can meaningfully draw on all aspects of evidence, including her case-based experience; the patient's individual cultural, sociological, and psychological perspectives; and the patient's descriptions to reach an integrated clinical judgment. As one patient with sickle cell anemia puts it, "[My doctor] gives me my medicine. Her philosophy is: Why be in pain when you don't have to be? That's the philosophy all doctors should have, but they don't" (Rosenfeld 125). The patient should hold the right to persuade the doctor that he is in pain and needs treatment. As pain continues to destroy conventional ideas and

determinant theories, the need for rhetoric to explain this anomaly will increase.

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