

Scientific Discourses of Differentiation by Race, Gender, and Disability from the 19th Century Until Present Day

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1. Introduction

In 2014, researchers from Northwestern University and the University of Virginia published a study that suggested white Americans believe that black Americans experience pain and physical challenges differently than their white counterparts. When presented with photos of a black man and a white man, and asked questions about who would require more pain medicine for injuries, white participants believed that black people experienced significantly more pain than white people (Hutson 2014). Other studies have contradicted this research and suggested that as early as age 7, white American children believe their black peers feel less pain. In addition, research claims that injured black athletes will receive less treatment than their white counterparts with similar injuries, and that black patients in hospitals will receive less pain medication than white patients (Samarrai 2014, Noonan 2012). These conflicting understandings about different levels of pain in white and black bodies potentially lead to discriminatory practices in medical institutions, which have repercussions for individuals' health and racially frames social relations. In addition to race, stereotypes about the experience of pain and emotion exist in relation to gender and disability, which I will argue throughout this article. These scientific and popular discourses underlined discriminatory practices while influencing how people thought about race, gender, and disability.

The aforementioned contemporary and contradictory beliefs about black people and pain can be said to have a long history rooted in scientific debates in Europe and North America. In the 19th century, as science was rapidly professionalized, traits such as objectivity became increasingly prioritized. This process demanded divisions between who could practice science and who was a scientific object, while perpetuating these distinctions to rationalize larger cultural anxieties. The positions of women and people of color, most commonly black people, was of particular concern, as was the management of an ever-growing disabled population. One of the popular comparative projects of the era was evaluating the levels of pain and emotion in women, black people, and the disabled, as the Other, which were then contrasted with those of the male, white, and able scientist (Schuller 2012).

Scientists were expected to remain distant from their research, often erasing their own emotion in order to analyze and categorize bodies. This connected objectivity to a lack of pain and emotion, and this attitude persists today, both scientifically and popularly with regard to how pain and emotion are studied. These ideals of objectivity enforce social and scientific boundaries, so it is essential to examine the process of isolating science, promoting specific traits, and labeling groups of people as abnormal, as well as the relationship between science and society at large (Foucault 2004). I argue that perceived scientific differences in the experience and expression of pain and emotion built discriminatory discourses that underlined segregation, and these discourses continue to exert cultural influence in contemporary differentiation along the lines of race, gender, and disability. A recent example of scientific and popular discourses surrounding pain and emotion in disabled people focuses on autism, which I will address later in this article.

2. The rise of objectivity

In their book *Objectivity*, Lorraine Daston and Peter Galison describe the development of the scientific self as a public figure, combined with an increased interest in objectivity for scientists in the 19th century (2010). In a post-Enlightenment context, subjectivity refers to experiences tied to the individual and their consciousness and thoughts. Subjectivity was innate within all scientists but it was seen as a negative quality, something to be hidden or stamped out. It was tied to personal emotions, judgments, and interest in a subject, which would alter the science performed and the role of the scientist. Objectivity was therefore positioned as a means for scientists to access and understand the world around them. This emphasis on rationality and disinterest was designed in opposition to subjectivity and promoted as a value. A complete break between subjectivity and objectivity suggested that scientists were impartial, without emotions, and capable of doing the work necessary for the greater good.

The development of the “scientific self” allowed scientists to erase their subjectivity and become prestigious, valued, and objective doers of science. As the subjective self was untrustworthy and not conducive to doing science, scientists were expected to have “self-restraint, self-discipline, [and] self-control” (Ibid., 198). Scientific developments were happening in conjunction with historical shifts, particularly when it came to reflexivity across the disciplines. Reflexivity in science suggested an awareness of one’s inner emotions and their influence on external actions, which required self-control. Prior to the 19th century, the Immanuel Kant-inspired moral self was held in high esteem: a Kantian self was free, autonomous, and actively in control (Ibid., 210). As evolving understandings of the self reworked Kantian ideals

to merge with scientific thought, the new 19th-century “scientific self” held value and prestige. It asserted itself as objective: “to know objectively was to suppress subjectivity, described as a post-Kantian combat of the will with itself” (Ibid., 210). Scientists had enough resolve to exercise their agency, overcome their subjectivity, and subdue the self. Good, successful science was “the triumph of the will,” which allowed scientists to become better laborers for their nation, establishing “standards for the entire community” and serving their country’s “pulsing industrial economy and educational institutions” (Ibid., 228). To do science was to exercise the will (Ibid., 228), transforming a man into the ultimate post-Kantian self who controlled and examined the world (Ibid., 242).

During this debate, similar questions rose about active and passive roles in science (Ibid., 243). Scientists debated the use of microscopes, hand-illustrated details versus photographs, and the ability of humans to view and describe without bias. As microscopes and, later, photographs, relied on technology rather than human ability, these advances were seen as more reliable and objective methods. These tools were controversial since people were still necessary to operate the machines and room for error persisted. Although scientists had actively used their will to defeat their own subjectivity, this needed to be demonstrated outwardly, often as a challenge to other scientists. Daston and Galison reference several competitors, often bridging art and science, who questioned each other’s accuracy by referring to emotions or personal bias as negative influences on the results. For example, scientists and artists Wilhelm His and Ernst Haeckel engaged in a long professional rivalry over their methods: His used technology to trace images and take photographs while Haeckel hand-illustrated his work. His argued that Haeckel was “smuggling his theoretical prejudices” into his art and Haeckel called His an “exact[ing] pedant” who thought himself virtuous because of his methods (Daston and Galison 2012, 191). These types of arguments were detailed in scientists’ personal journals, kept as an emotional outlet and a balancing tool for the active and passive elements at play. As the authors write, “the divided scientific self, actively willing its own passivity, was only one possible self” (Ibid., 246). However, this regular assertion was necessary in order to demarcate scientists from the general public. Since scientific objects could be human, the scientist needed to separate emotions from their work. Scientific objects were full of pain and emotion and subjectivity, and always examined in contrast to the scientist, who was valued but normal, objective and active. Scientists Othered scientific objects by testing humans for pain and emotion, removing any personal connection, and comparing themselves to their subjects. These comparative studies resulted in an emphasis on differences, or categorizing people, and, as a

result, were entangled with social segregation, based on “measurable” traits, as I argue below.

3. Race, gender, and sentiment: marking the other

Anxieties about boundaries and differences between humans had been present in Europe long before the 19th century, and were often related to the desire to cleanly categorize everyone by race. In 1719, the author Abbé Dubos wrote *Refléxions critiques sur la poésie et la peinture*, and repeatedly referred to his interest in studying how humans could be so different in “inclinations and mind, although [all humans] came from the same father?” (Curran 2009, 152) Many scholars in the 18th century, particularly Europeans whose countries were engaged in colonialism, addressed race and gender in some form, no matter their field of study. Kant, the Comte de Buffon, Georges Cuvier, Christoph Girtanner, Carl Linnaeus, and others from several academic fields all discussed sexual and racial typologies. Understanding human difference was essential for classifying, ranking, and subjugating. Dubos and others were interested in external influences on “national bodies and minds” to differentiate between the French and their colonies, according to Curran (Ibid., 153). Additionally, there were anxieties of miscegenation in the colonies. How were the French to distinguish between themselves and those in their colonies? A scientifically grounded project of distinguishing between racial groups was necessary to maintain demarcations and rationalize actions. Racial science continued into the 19th century, spreading across Europe and North America, often with subprojects related to gender and disability included to further develop hierarchies.

In the late 19th century, as described by Kyla Schuller, evolutionary scientists employed sentimentalism to support gender and racial discrimination. Sentiment is defined as the mental or emotional response to physical stimuli (Schuller 2012, 278), and humans were expected to have a particular amount of sentiment if they belonged to an “evolved, civilized race” (Ibid., 278). White men were expected to have a higher level of self-control over their senses, which, as Schuller argues, led to a particular epistemology espoused by the American School of Evolution (Ibid., 278). The American School of Evolution was a self-defined group inspired by Darwin, active from the late 1860s to the early 20th century, who helped their members find academic appointments and publishing opportunities. The School argued that the formation of species (as well as that of race and gender) was determined by experiencing the senses and gaining their associated knowledge (Ibid., 278). The empiricism necessary for science was dependent on “embodied, sensory knowledge” (Ibid., 280), which also meant that objective scientists had the appropriate gender, race, and level of

sentiment in addition to their formal education. Schuller writes, “the language of ‘sentiment,’ ‘feeling,’ ‘impression,’ and ‘contact’ was a constitutive element of 19th-century science, structuring methodological approach, analytic object, and professional strategy” (Ibid., 280). Science became increasingly professionalized, a process that required setting standards for what science was and was not, and who could and could not practice it. A high but mediated level of sentiment was expected, as only a high level of impressibility could lead a man to curiosity and progress. Sentimentalism was to be regulated and refined, directing the evolution of those in control of their civility. As behavior was linked to physiognomy, this paved the way for subdisciplines like phrenology, and arguments about the mental and physical evolution of races.

In contrast to the level of sentiment expected of white men, heightened and useless sensitivity was associated with women and black people (Schuller 2012). In principle, this eliminated any possibility of women and black people practicing science, while also relegating them to the realm of scientific object. Black women in particular have long been used in medical experiments, such as new surgeries or gynecological exams. As described by Schuller, these tests were typically performed without anesthesia, as black women were seen to have a “failure to receive impressions upon the nervous system” (Ibid., 287). This made experimentation on black women a fairly inexpensive and consequence-free activity for scientists, while also promoting the perception of the “savage insensibility” to the scientific community and the public. The concept of a “savage” was typically a raced and gendered term that associated “lower” forms of humans with animals, particularly with regard to emotions, behavior, and sexuality (Ibid., 293). Black women experienced the resulting discrimination the strongest, as reflected by individuals like Saartje Baartman, who was pathologized in the 19th century as a primitive, sexual, and emotional being who reflected the fears and suppressions of Europeans. She was taken on tour across Europe and after death her body was displayed before being dissected by Cuvier in the name of science. Cuvier and others had asked for years to see Baartman nude to study her genitals and she had refused. Her body was used by scholars like Cuvier to test the idea that more “primitive” or “savage” women were more sexual and therefore closer to animals. Because Europeans were using Baartman’s body for science, they refused to return her remains to her homeland for decades (Crais and Scully 2008). Stories like Baartman’s demonstrate the intensity of the interest in studying black women and their sexualities and emotions, as well as the belief that Europeans were the ideal scientists and had a right to black women’s bodies for science.

Across the ocean, scientists used cases like Baartman's to study the experiences of pain in black people, while seeking moral reasons to further support their experiments. There were not specific studies about pain in women, unless they were black, and this type of research tended to prioritize emotions or physical traits, as in the example of Baartman. In addition to pain or other physical experiences, researchers such as Joseph Le Conte and Edward Drinker Cope, who were also founding members of the American School of Evolution, suggested that "moral sense" or "sympathy, pity, [and] love" were absent from black communities and holding them back from racial advancement (Ibid., 287). Sympathy was the most widely discussed aspect of these necessary mental traits; as studied by Susan Lanzoni, "sympathy was tethered to a variety of moral and epistemological ends" (2009, 270). Controlling sentiments was therefore described as an evolutionary progression amongst humans. Multiple studies involved assessing sympathy in the general American population in comparison to black medical subjects, to bolster racial scientific arguments about mental and moral evolution. Scientifically, sympathy ensured "civilized responses to stimuli benefit racial progress" (Schuller 2012, 287), and the discrepancy in sympathy across races justified colonial projects. Cope and Le Conte linked pain, as a physiological response, with sympathy, as a psychological feeling, which combined to shape an individual's "degree of impressibility [which] indexed its racial status" (Ibid., 295). These emotional or mental differences were used to justify social segregation, much as the differences in bodily abilities and levels of pain could rationalize slavery or colonialism. The American School of Evolution and their European counterparts argued that colonization was necessary to protect the highly evolved sentiments of Anglo-Saxons, or "only way to ensure the continued sensitivity of the civilized" (Ibid., 286). An excess of sentiment would be the downfall of society. Similar arguments existed about pain: Cope believed that sympathy enabled individuals to understand pain and contribute to the greater good, and those who couldn't understand pain needed to be guided and have their societies controlled by more evolved beings (Ibid., 288-289). As scientists argued that black people felt minimal levels of pain and emotion, and this was a clear marker of poor evolution, this concretely demonstrated a need to separate black people from white society.

4: Mental disability, pain, and emotion: a hierarchy of others

Although Schuller focuses primarily on scientific objectivity at the intersection of race and gender, there are brief mentions of disabled individuals and their levels of pain and emotion. I will focus on examples that primarily concern mental illness and developmental disabilities, as there is

more historical discourse surrounding the Othering of these disabled people. Expanding on the categories of male sentiment and female sentimentality, Schuller references the assassination of President Garfield in 1881. The subsequent newspaper editorials, written in part by Cope of the American School of Evolution, described the assassin as insane: “the emotional or sentimental elements of character have so far overcome the rational as to cause the commission of self-destructive acts” (Ibid., 292). Mental illness was therefore equivalent to being too sentimental, or lacking the ability to act rationally or for the greater good, much like the traits associated with women and black people. A lack of sympathy, or differing levels of pain and emotion, were justification for segregation and discrimination. All three categories of race, gender, and disability emphasized human difference and were extremely popular when scientists sought test subjects. Cope himself advocated for scientific professionalization, which he believed included protecting the availability of “insane, idiotic, or deformed” people as scientific objects (Ibid., 294). One of the many studies he supported was published in *Science* journal in 1889, which was published anonymously, and discussed the 1880 US census of “the defective classes.” The author also proposed work on their enumeration: evaluating heredity of disabilities, marital relations, and new forms of classification “for educational purposes” (“Census of the Defective Classes” 1889, 38).

In classifying disability, scientists have categorized those with physical disabilities as separate from those with mental disabilities (including intellectual, sensory, and developmental disorders). This is evident in the *Science* article, where the anonymous author advocated for separating the deaf and blind into a new group who could be educated, unlike those who need “eleemosynary care or restraint” (“Census” 1889, 40). The 1880 census grouped disabilities by the following categories: blind, deaf-and-dumb, idiotic, and insane. The *Science* writer disagreed with these divisions and argued that those with congenital disorders were not the same as adults who became disabled, and all conditions should be grouped by whether they affected the senses, the mind, or the body, before being evaluated separately. Census-takers were expected to contribute to scientific research and remain objective: the author of the article advised census-takers on how to contribute to scientific research in an objective way: they suggested particular language to use, standardized questions to ask, calculations to make, and genealogies to draw, so that everyone was categorized and counted correctly (Ibid., 41).

In the discourses on mentally disabled people, numerous studies were written in the 19th century regarding abnormal levels of pain in mentally disabled subjects. “Insensibility to Pain from Mental Causes,” written by Dr.

T.W. Fisher in 1869, is one of these studies. Dr. Fisher references a case of a patient who was hit several times on the head after running away and being arrested, and his resulting medical treatment. He references a testimony of Dr. Walker from the Boston Lunatic Hospital, who stated, “immunity from pain, by reason of mental disease in most of its forms, was a well-known fact and matter of record” (Fisher 1869, 416). Other studies from the mid to late-19th century are similar in content (Kendell 2001). Doctors were prone to believe that anyone with a mental disorder was unable to feel and express pain normally. The combination of criminalizing disability, segregating populations, and medicalizing crime suggests that, in principle, there were no disabled scientists, because of the criteria necessary to become a doctor. Unlike in the discourses surrounding racial and gendered Othering, disabled people were not explicitly made into scientific objects because of their lack of objectivity, but similar ideas regarding pain and emotion prevented them from practicing science nonetheless.

5. Pain and emotion in the disabled Other: contemporary discourses of autism

For disabilities, in particular mental and developmental disorders, ideas about pain and emotion are often contradictory, although significant differences are always drawn between a disabled and a non-disabled individual. Contemporary narratives about autism are a common example: the majority of articles published today about autism suggest that autistic children do not experience normal levels of empathy or pain, and are unable to express either in a regulated way (Volkmar 2005). The Diagnostic and Statistic Manual of Mental Disorders, published by the American Psychiatric Association, lists “hyper- or hyporeactivity to sensory input or unusual interests in sensory aspects of the environment (e.g. apparent indifference to pain/temperature...)” (2013). Supporting studies claim that since autistic children often express pain differently than their neurotypical peers, their pain cannot be quantifiably compared. This argument is based on research that links facial expressions or other emotional reactions to pain as representative of the level of pain felt. If an autistic child doesn’t have a standard expression of pain on his or her face when having blood drawn, even though they still feel the needle and the pain, parents and doctors argue that they are not in pain. Another study, from 2009, focused on the biological or chemical reasons that autistic children “displayed absent or reduced behavioral pain reactivity” instead of questioning the premise that facial expressions can reflect a lack of feeling pain (Tordjman et al 2009). This misconception is common enough that major autism organizations like the United Kingdom’s National Autistic Society emphasize that “people with

autism may not feel pain” on their webpage dedicated to autism and health. When organizations like the NAS and APA promote the idea that autistic people either don’t feel pain normally or express it in the same way as their peers, this idea enters mainstream society and becomes an accepted part of disability discourse.

While some opposing research exists that suggests autistic children experience pain more acutely than other children, and that they have too much empathy and emotion (but are unable to express this in a normative way, resulting in a “lack of facial response”), these often rely on the connection between autism and sensory disorders (Bumiller 2008). When combined with sensory input such as painful stimuli, a sensory disorder (autism has many comorbid disorders that address sensory processing or modulation) could result in feeling a pinch or a burn either very minimally or at an extremely painful level, or incorrectly expressing this reaction. Similar arguments exist for emotion that parallel the 19th-century discourse about sympathy in black people. One of the most common stereotypes about autistics is their lack of empathy, based largely on the assumption that they experience both pain and emotion at diminished levels, leaving them unable to recognize either in peers. Studies argue that autistic people have “impaired emotion recognition performance” and an inability to personally connect, supporting an assumed lack of empathy (Lerner et al 2013). In a broader social context, this debate is framed in questions that go deeper than empathy, like blog posts that ask “Do people with autism experience emotions?” (Big Think 2012). A study published in 2011 compared distorted social perceptions amongst subjects who were autistic, schizophrenic, or psychopaths. One of their arguments was that psychopaths cannot perceive experiences like pain in humans or animals, similar to the claims that have been made about autistic individuals (Gray et al 2011). Although the linking of autism and psychopathy is not new, it does represent the negative consequences of trying to assess pain or emotion in disabled people. Discourses linking autism and psychopathy potentially stigmatize autistics by relying on arguments about emotional processing, empathy, and levels of pain to justify social discrimination and segregation.

6. Conclusion

Although studies of the differences between scientists and bodies marked as “the Other”, whether as raced, gendered, or disabled, existed prior to the 19th century, the 19th century marked a clearly increased interest in marking categories and labeling people as abnormal. Science rationalized the process of Othering and researchers could potentially use these discourses to justify anything from discrimination to colonialism.

Whether the levels of pain and emotion were too high or too low, or if there were changes in regulation or expression, there were significant stereotypes about the differences between humans, and these stereotypes had consequences. Although objectivity is not explicitly articulated in most of these cases, the link between pain, emotion, and objectivity is historically strong enough that questions of objectivity are still relevant. As scientists distanced themselves from the Other, positioning themselves as emotionally neutral and objective, and therefore with the authority to categorize bodies in different ways, these actions served as the foundation for discourses on pain and emotion as differentiated by race, gender, and disability. This outlook remains prevalent today.

The assumed lack of objectivity associated systematically with black people, women, and the disabled led to discursive and professional discrimination. As discussed by Schuller, science and medicine were predominantly dominated by white and able men, who set the standard to their own bodies and minds, which perpetuated the damaging cycle of scientific knowledge. All scientific fields historically had low numbers of researchers who were female, black, and/or disabled, because workplace discrimination was encouraged by the discursive discrimination in the 19th century. As in the 19th century, when studies were conducted to prove concrete differences between scientists and their (black, female, and/or disabled) subjects, the resulting categories and stereotypes are carried from the laboratories to the broader world. The effects of this can still be felt today as similar research continues to be conducted, and popular opinion suggests that people haven't unlearned stereotypes about those who are different from them. In contemporary times, women, black people, and disabled people participate in science but not at the same rates as white, able men. The stereotypes that initially prevented these groups from producing science have been heavily critiqued by feminist and science studies in academia, and are slowly changing, but the effects and stereotypes from the 19th-century discourses can still be detected in today's scientific and popular texts.

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