



## Medicalization's Communicative Infrastructure: Seventy Years of "Brain Chemistry" in the *New York Times*

Robin E. Jensen, Kourtney Maison, Benjamin W. Mann, Madison A. Krall & Melissa M. Parks

To cite this article: Robin E. Jensen, Kourtney Maison, Benjamin W. Mann, Madison A. Krall & Melissa M. Parks (2019): Medicalization's Communicative Infrastructure: Seventy Years of "Brain Chemistry" in the *New York Times*, Health Communication, DOI: [10.1080/10410236.2019.1673951](https://doi.org/10.1080/10410236.2019.1673951)

To link to this article: <https://doi.org/10.1080/10410236.2019.1673951>



Published online: 03 Oct 2019.



Submit your article to this journal [↗](#)



View related articles [↗](#)



View Crossmark data [↗](#)



## Medicalization's Communicative Infrastructure: Seventy Years of "Brain Chemistry" in the *New York Times*

Robin E. Jensen, Kourtney Maison, Benjamin W. Mann, Madison A. Krall, and Melissa M. Parks

Department of Communication, University of Utah

### ABSTRACT

Medicalization theory aims to delineate how and why non-medical issues become demarcated within the realm of medical jurisdiction. The theory postulates that medicalization is marked by diagnostic naming, medical expertise, technological standardization and the de-contextualization of experiential knowledge, and that it is driven by popular media and lay discourse as much as by the communication of health professionals and medical institutions. Although medicalization has been recognized as an inherently rhetorical act, medicalization theory does not attend to the specific communicative means undergirding its orchestration. Drawing from medicalized *New York Times* coverage of the phrase "brain chemistry" ( $N = 71$ ), we address this theoretical aperture, identifying through rhetorical analysis the most common communicative devices that emerged across 70 years of coverage and three distinct diagnoses (i.e., mental illness, addiction and overweight/obesity). Our findings reveal three central rhetorical means through which medicalization is communicated including mechanical metaphor, pedagogy of contrast, and moral enthymeme. By tracing content across time, the current study explicates the communicative infrastructure that gives rise to medicalization, thereby extending the literature from questions of *why* medicalization occurs and *what* its content is to *how* it is conveyed and imparted.

Conrad (1975) defined medicalization as a process wherein issues previously understood as non-medical are constructed as illnesses requiring medical intervention. By way of example, he cited alcoholism, drug addiction and hyperkinesis, now known as attention deficit hyperactivity disorder. More recently, Conrad (2007) argued that the "general trend over the last 100 years has been toward medicalizing human problems," noting that medicalization has continued to expand, incorporating a plethora of diagnoses and generating diverse repercussions (p. 112). Indeed, scholars have associated medicalization with problems related to "disease mongering," the creation of hierarchical patient-provider relationships, and the de-contextualization of social harms (Dubriwny, 2010; Moynihan, Heath, & Henry, 2002, p. 886). Researchers have also, however, identified potential benefits of medicalization including a reduction in stigma and the legitimation of experiences (Condit & Williams, 1997; Conrad & Schneider, 1992). Still others have concluded that medicalization's consequences are as "mixed" in valence as they are nebulous and impactful (Reissman, 1983, p. 4), a point that reveals the import of tracing how medicalization unfolds discursively.

Conrad's (2007) theory of medicalization offers a productive lens into this phenomenon, contending that medicalization is marked by the construction of a diagnosis, oversight by medical experts, employment of technologies of sight, testing, and treatment, and de-contextualization of experiences. These processes are identified as inherently disciplinary in nature as they involve the regulation of subjects according to an ever-more-precise and

therefore elusive state of health (Birrer & Tokuda, 2015). Although emphasis is often placed on medicalization as it emerges out of the discursive realm of technical experts, Conrad's theory contends that medicalization processes are supported also by public discourses communicated via mainstream media wherein lay people are described "in the languages of health and illness, [and learn to] question themselves against criteria of normality and pathology" (Rose, 2007, p. 700). Mainstream discourses of medicalization such as those communicated in popular media have been shown to play a role in constructing medicalization writ large as they reflect and perpetuate medicalizing appeals among non-technical audiences (Vitek & Ward, 2019).

Despite this delineation of medicalization's thematic components and modes of circulation, little is known about the specific communicative mechanisms by which medicalization is constructed. Scholarship employing the theory generally recognizes rhetoric as a feature of medicalization in the naming of diseases and diagnoses (Jutel, 2014), but medicalization has not been conceptualized through an overtly rhetorical lens to highlight what Lyne (2001) described as the "certain patterns of language use" that undergird its orchestration and "position people for making judgments" (pp. 5, 13). This omission has to do with the tendency in research to highlight individual case studies of medicalized conditions at distinct times, which complicates theorization across cases. By contrast, the present study offers a longitudinal analysis of discourse concerning three different categories of diagnoses. It

draws from 70 years of *New York Times* coverage of “brain chemistry” – a phrase identified as an ideograph for medicalization writ large in that it conveys the broader process by which social phenomena are medically conceptualized (Neitzke, 2016; Thornton, 2011) – to begin identifying recurrent rhetorical mechanisms that support medicalization in public discourse. Findings from this inquiry can inform future journalistic practices and public health messages so as to thwart, alter, or even support medicalization appeals in ways associated with positive health outcomes.

## Medicalization theory

Medicalization theory identifies several overlapping tenets of the medicalization process, all of which are grounded in rhetorical acts but not overtly explicated as such. For example, theorists contend that central to medicalization is the construction of a medical diagnosis, which involves naming and thereby constituting behaviors or conditions in “terms of health and illness” (Reissman, 1983, p. 4). Diagnoses are said to be legitimated by medical authorities – or representations of such authority – who justify their decrees by drawing from practices involving scientific instrumentation and surveillance (Cox, 2016). These technologies are employed to situate patients in terms of their normalcy or healthiness, pathologize those deemed too far afield, and authorize treatment (Gruber, 2016). As Barker (1998) demonstrated, diagnoses are upheld via appeals to standardization and comparison with other conditions already situated within the realm of medical jurisdiction. This point has been corroborated by studies demonstrating the role of diagnostic decrees as transformative “classification tools” (Jutel, 2014, p. 4; Segal, 2005).

Barker’s (2014) research also reveals that the diagnostic elements of medicalization are associated with a systematic de-legitimation of experiential knowledge wherein how an individual experiences health is deemed ancillary in the face of scientific data. Medicalization theory contends that the positioning of experiences and behaviors as medical functions as a device for de-contextualization, a point substantiated by case-study oriented research (Dubriwny, 2010; Koerber, Arduser, Bennett, Kolodziejski, & Sastry, 2015). De-contextualization along these lines has been shown to foster the circulation of biased discourses that reify structural inequalities. Reissman (1983) explained that members of vulnerable and traditionally marginalized populations such as children, the elderly, minorities, and women are “subject disproportionately to medical labeling” (p. 5), and subsequent theorizing has recognized the propensity to medicalize the experiences of individuals who are of lower socioeconomic status, members of the LGBTQIA+ community, immigrants and the disabled (Eckhert, 2016; Reitmanova & Gustafson, 2012; Wendell, 1996). Scholars have attributed medicalization’s function as a disciplinary device to this inclination for over-representing marginalized individuals’ experiences in the medical sphere (Riska, 2003).

These tenets suggest that communicative acts such as diagnostic naming, appeals to authority, and classification uphold

medicalization. The present study builds from these insights to pose the following research question:

**RQ1:** What are the recurring rhetorical mechanisms through which medicalization is orchestrated in mainstream print media across diverse subject matter and over time?

## Materials and methods

Data were gathered for this study via a query to the *New York Times* Historical Newspaper Archive for all pieces containing the whole phrase “brain chemistry.” We selected this outlet because the *Times* is recognized for the longitudinal role it has played in shaping elite and mainstream discourse (Soderlund, 2002). Early constant comparative analysis revealed that “brain chemistry” was used almost exclusively in the context of medicalization in these articles, which we operationalized by considering themes discussed across the literature including: (a) naming a diagnosis, (b) appealing to medical authority, (c) discussing medical testing, treatment, and/or oversight, and (d) de-contextualization. We employed these themes throughout the analytic process as “sensitizing concepts” (Charmaz, 2014, p. 30).

Our initial search for data returned 161 articles published between 1936 and 2014. After some exploratory analysis and coding, these articles were divided among the authors, read, and annotated. The authors shared their annotations and engaged in open coding (Lindlof & Taylor, 2019). Emerging codes included the four sensitizing concepts that aligned with medicalization theory, as well as topical codes related to specific diagnoses. The most common topical codes included mental illness ( $n= 34$ ), addiction ( $n= 27$ ), and overweight/obesity ( $n= 10$ ). We limited our final stage of analysis to the articles that both featured medicalized discourse and focused on one or more of these three most commonly discussed diagnoses. The resulting sample included 71 articles published from 1947 to 2017.

## Results

Our analysis suggests that the tenets of medicalization highlighted in existing theory are facilitated communicatively by a complex of key rhetorical mechanisms including machine metaphor, pedagogy of contrast, and moral enthymeme.

### Machine metaphor

Metaphors in general have been recognized as “fundamental” to the process of conveying a diagnosis in that they characterize the unfamiliar in terms of what is already known (Hanne, 2015, p. 37). For the majority of the articles analyzed, machine-oriented metaphors in particular provided a predominant framing for the discussion and medicalization of mental health, addiction and overweight/obesity. Diagnoses were explained in terms of the brain’s underlying machinery, circuitry, wiring and manufacturing. Some of these appeals referred to “machinery” in a general sense and isolated body parts and functions as if they were simply one more

mechanical object (Engel, 1956, p. SM7), explaining, for instance, that scientists were busy “finding the mechanism in parts of the brain” (Swirsky, 1992, p. 10). Twentieth-century articles were especially likely to describe the human body in terms of an automobile or tractor, overseen by the brain working as an “engine” or “motor control center” (Schmeck, 1965, p. 36) and requiring a “particular carburetor mix” of chemicals to function effectively (Scarf, 1977, p. SM8). In a story on caffeine addiction, the author explained that “caffeine revs up brain cells by interfering with the brakes that normally slow the cells down,” just as it also “prevents the breakdown of a molecule that helps drive the cell’s machinery” (Blakeslee, 1991, p. C1). Brain cells were depicted as individual mechanical apparatuses within the brain, which, according to a 1999 article, was itself the “greatest cognitive machine in the history of evolution” (Hall, 1999, p. SM42). Machine metaphors naturalized the separation of body parts from the whole person, a practice linked to objectification and a variety of negative health outcomes (Russell, 2013).

Twenty-first-century coverage also employed machine metaphors, but, in a sign of changing times, machines were discussed in terms of wiring, circuitry, and computing rather than engines and carburetor fluid. Many articles linked health problems to “faulty wiring present from birth” (Blakeslee, 2000, p. A18) or a “glitch somewhere in the fear circuitry” (Hall, 1999, p. SM42) and outlined scientific attempts to “fix faulty circuitry” (Epstein, 2004, p. F5), while encouraging readers to conceptualize the brain and other body parts “like a computer” with the potential to be “reboot[ed]” by medical interventions (Vogelstein, 2010, p. SM51). An article published on addiction functioned as a transitional piece between the centuries by combining older mechanical metaphors with newer technology focused ones, explaining that scientists were “searching for ways to alter both an addict’s genetic wiring and the rewiring of the brain that drugs initiate,” before noting that “some researchers seek ways to rev up the ‘stop’ circuitry of the forebrain – the part that considers consequences – while others look for ways to tune down the ‘go’ circuitry of the limbic system – a part of the brain involved in processing emotions (Carroll, 2000, p. F6). Each metaphorical appeal framed persons not as integrated systems but as discrete segments of parts linked to tricable effects.

In several turn-of-the-century articles, the human-body-as-machine was portrayed as indistinguishable from the technologies used to assess patients. A 1999 article entitled, “Fear itself: What we now know about how it works, how it can be treated, and what it tells us about our unconscious,” the author wrote about the experience of merging with, and thereby becoming, part of medical technology in his role as a patient. He recalled of his visit to the Yale School of Medicine that the “imaging machine filled the M.R.I. suite with a slow, mechanical throb.” He then described being hooked up to the machine, body part by body part, electrodes attached to “my left arm and to fingertips on my left hand,” each connection designed to isolate and measure his individual physiological responses (Hall, 1999, p. SM42). Similarly, a 2006 article on addiction treatments included an illustration of a brain divided into sections. Tiny nineteenth-century railroad engineers worked on each segment to restore order. They employed jack-hammers, wheelbarrows, and pickaxes

as stand-ins for pharmaceuticals promising an addiction “cure,” their anachronistic placement accentuating the machine metaphor in terms of the body and the medical technologies that had recently become available to fix its parts (Denizet-Lewis, 2006, p. E48).

### ***A pedagogy of contrast***

Medicalization was also communicated in these articles via appeals to a pedagogy of contrast wherein authors modeled the evaluation of ideas in terms of simple dichotomies. Gruber (2016) contended that medicalization involves a “training feature” that teaches how to situate the matter at hand within the realm of medical jurisdiction (p. 66). “If medicalization happens,” he explained, “then it happens first as a process of trained sight in a social domain not usually associated with medical discourses put where such medicalization is able, nonetheless, to emerge” (p. 69). Jack (2009) also demonstrated how medicalizing discourses are grounded in a “pedagogy of sight,” which she defined as the “explicit, didactic attempt to teach a new way of seeing to an audience” (p. 193). In the present dataset, the “specific rhetorical strategies rhetors use[d] to teach their readers how to see and interpret” involved that of contrasting time periods, traditions, research approaches and technologies (p. 193). In this section, we demonstrate that, by modeling contrast-oriented reasoning, these articles offered a warrant for the technical classification of diagnoses and associated medicalizing discourses (Mayes & Horwitz, 2005).

One enduring contrast emphasized across articles involved a *kairotic* appeal dissociating the past from the present. Older ideologies were upheld in terms of a stark dichotomy with newer, supposedly better outlooks. A 1975 article on psychiatry practices exemplified this framing, contending that a “new breed of psychiatrist is developing,” and that a survey of psychiatrists categorized a “psychiatrist trained before 1970 as ‘soft-headed,’ and one trained after 1970 as ‘hard-headed.’ The latter ... is likely to be better trained in brain sciences, consider himself politically ‘conservative,’ and is research oriented. He believes firmly in the importance of heredity and the brain in producing disturbing behavior” (Restak, 1975, p. 179). Along with the former/latter language at play in this excerpt, the contrast between time periods was emphasized by a break into a new paragraph where it was explained, “Psychiatrists trained prior to 1970 are likely to be politically ‘liberal’; practice some form of psychotherapy; and be as convinced of the importance of environment and psychosocial factors as causes of disturbance as ‘hard-heads’ are of the brain and heredity” (p. 179). Readers were positioned to take from this account no middle ground. They learned that post-1970 approaches brought with them superior instruction, dedication to furthering the research agenda, and a rigidity fostering high standards.

Other articles were less clear about when a break from the past had occurred but nonetheless modeled the same absolute differentiation between old and new. A 2004 article on phobias referred vaguely to the contrast between present-day treatment and the beliefs predominant “in Freud’s day,” continuing that it was “no surprise” that such conclusions had

since been debunked (Epstein, 2004, p. F5). Similarly, an article from 2000 on mental illness noted that Freudian theories of the “schizophrenic mother” were championed “well into the 1970s,” when they were appropriately “supplanted by explanations focusing on brain chemistry and biology” (Eakin, 2000, p. B9). In these pieces, contrasting “now” against “then” upheld the narrative of linear scientific progress central to medicalizing appeals and characterized such progress as “consistent and uncomplicatedly good” (Owens, 2015, p. 24). Given this framework, readers were positioned to understand that methods and accounts associated with history or tradition could only ever exist in contrast to the best and most appropriate *modus operandi*.

A recurrent means through which a contrast between research methodologies was highlighted involved the unmitigated glorification of developing technologies of sight. A 1987 article on Alzheimer’s disease explained that recently developed scientific instruments were what set a new research agenda apart, explaining “Dr. Drachman said ‘the really exciting thing’ is the large number of scientists doing research on Alzheimer’s disease, often using sophisticated techniques of molecular biology that have become available only in recent years” (Schmeck, 1987, p. C1). The article’s enthusiasm was targeted at the researchers’ visual access to elements of the body that had long gone unexplored for want of able equipment. Other pieces echoed this enthusiasm, explaining that scientists now had “new ways” of conceptualizing a range of problems because of “advances in brain-imaging technology” (Denizet-Lewis, 2006, p. E48). A 2011 article on addiction highlighted the transformative nature of neuroimaging, asserting:

The rethinking of addiction as a medical disease rather than a strictly psychological one began about 15 years ago, when researchers discovered through light-resonance imaging that drug addiction resulted in actual physical changes to the brain. Armed with that understanding, “the management of folks with addiction becomes very much like the management of other chronic diseases, such as asthma, hypertension or diabetes.” (Quenqua, 2011, p. A11)

These articles maintained that the types of research and treatment employed before modern technologies of sight had been developed were deficient. Earlier methods could not illuminate the “actual physical changes” at work and thus also could not support an accurate assessment, which – it was emphasized – involved comparison with other medicalized conditions.

From a pedagogical perspective, these appeals instructed readers in basic methods of contrast-based analysis (e.g., old-new; unseen-seen) that could function, theoretically, as precursors to more specific medical classification efforts. Yet, because these appeals did not provide enough information for readers to classify data at an advanced level themselves, they highlighted – via the omission of technical information – the need for continued medical expertise in navigating the conditions under discussion. Several articles emphasized the idea that experts could now more accurately classify medical conditions but that, despite advances in science and technologies of sight, lay people still could not and likely never would. One noted that the science behind obesity, which was described in the article in an “oversimplify[ed]” respect

to guide readers, was something that “scientists already know” (Burros, 1988, p. C8), while another on addiction included an interview with an expert in “brain-imaging studies” who, because of her expertise and access to the most recent imaging technologies, could see what was invisible to most everyone else: that a “brain chemical linked to pleasure and motivation, plays a major role in addictions of all kinds: to drugs, to alcohol and even, some say, to food.” (Duenwald, 2003, p. F5). In this way, it was argued that, although lay people could not see as experts could, they *could* appreciate the work of others positioned to decipher the scientific topics at hand. A pedagogy of contrast functioned in this respect to warrant ongoing medical classificatory work and discipline readers into comporting with technical expertise.

### **Moral enthymeme**

The third mechanism that emerged across articles involved the communication of moral responsibility via enthymematic reasoning. Research has contended that medicalization minimizes or even eliminates blame and moralization directed at individuals. Conrad (2007) argued that the medicalization process involves a “dislocation of responsibility” that “reduces self-blame,” as well as widespread stigmatization (pp. 152, 65). Excerpts from the articles under analysis for this study provide clues as to why such theoretical contentions have persisted. A number of articles suggested, as did one from 1965 on Parkinson’s disease, that evidence of physical “abnormalities in brain chemistry” are the source of a variety of “baffling disease-[s]” (Schmeck, 1965, p. E8), thereby implying that the conditions at hand manifest apart from the experiences, choices and actions of those diagnosed. An article from 1983 on depression spoke to this proposition explicitly, noting that “patients have also sought quantitative tests because they might establish that depression is biologically based and thus beyond the patient’s control” (Nelson, 1983, p. E8). Yet despite the prevalence of these sorts of comments that seemed to dichotomize medicalization and moralization, we found that moralization was profoundly evident throughout medicalizing discourses and was largely communicated not via straightforward appeals but, rather, the more elusive enthymeme, which is likely why theories of medicalization have been slow to account for its circulation and trajectory.

The enthymeme is a syllogism with at least one premise that goes unstated because it is widely understood and can be contributed by audiences (Bitzer, 1959). Significant persuasive force has been attributed to the enthymeme because its structure positions audiences to “collaborate in the inventional act” rather than encounter it passively (Gibbons, 2014, p. 436). While in most articles analyzed the responsibility or blame tied to a medicalized condition was communicated as an unstated premise via enthymeme, there were several cases that communicated a moralizing lesson in a syllogistic format and thereby revealed the substructure for the more common enthymematic delivery. For instance, a 2003 article on addiction quoted the director of the National Institute on Drug Abuse, who explained:

People say if you consider drug addiction a disease, you are taking the responsibility away from the drug addict. But that’s wrong. If

we say a person has heart disease, are we eliminating their responsibility? No. We're having them exercise. We want them to eat less, stop smoking. The fact that we have a disease recognizes that there are changes, in this case, in the brain. (Duenwald, 2003, p. F5)

What this article makes explicit but most do not is the premise that, although biological changes in the brain may perpetuate an addiction, those changes happened because of individual agency. An enthymematic version of this claim was featured in a 1995 article on addiction, explaining, “What’s addictive is that it’s exciting and it gets you out of the doldrums of day-to-day life,” said Dr. Jennifer P. Schneider, an addiction specialist in Tucson, Ariz. ‘It’s an escape, and it’s reinforcing because you get pleasure out of it. There’s a change in brain chemistry here’” (Higbie, 1995, p. B6). That this article categorized the consumption of O. J. Simpson trial coverage as addictive demonstrates both how the expansion of medicalization could lead to the “pathologization of everything” (Conrad, 2007, p. 148), and the unspoken premise that agency and choice induce disease. Similarly, a 1984 article on cocaine use contended that cocaine is a “drug that can destroy brain chemistry,” while also implying that cocaine is tied to a “feel-young culture where people talk about being ‘recreational’ users of dangerous drugs as though they were going bowling or skiing” (Schanberg, 1984, p. A27). In cases such as this one where claims about the biological basis of disease also include moral intimations about poor decision-making, “personal responsibility creeps in through the back door” (Williams, Seale, Boden, Lowe, & Steinberg, 2008, p. 264).

Although articles concerning addiction were most likely to include moral enthymemes, the moral enthymematic structure was evident across subject matter. In articles discussing mental illnesses, a type of moral enthymeme that might be called generational was often evident that attributed blame not directly to diagnosed individuals but to their parents or grandparents. In some instances, appeals to heredity or genetics that may have minimized moralization on their own were coupled with asides about parents’ actions contributing to their offspring’s illness. A 1974 article on schizophrenia first characterized the condition as largely “biochemical” with a “strong genetic component” before noting that environmental factors such as “parental inadequacy and an antisocial father” may also play a role (Brody, 1974, p. 210). This article implied that a physical or hereditary cause for disease was not mutually exclusive from more direct causes related to, for instance, “inappropriate actions of a depressed parent” along the lines of calling a child names or overscheduling them into constant and overwhelming activities (p. 103).

Finally, several articles communicated via enthymeme that there is a moral imperative to obtain medical treatment for a condition if such treatment exists. In these cases, an individual’s unwillingness to procure and subscribe to treatment was characterized as a sign of moral deficit. A 1995 article on obesity communicated this enthymeme by including the testimony of an individual who was in the process of complying with a treatment program. He explained, “I have already lost one-quarter of my excess weight. I also know that I have made a lifelong commitment to this endeavor. The main thing that I’ve learned, however, is that I can’t blame myself for a faulty gene structure” (Spear, 1995, p. 9). Although the interviewee

separated morality from medicalization by noting that his genetic structure situated him as obese, he also emphasized that he had committed himself to complying with doctor’s orders to enact a cure, adopting what the article’s title described as a “program that helps patients defeat ‘the fat gene’” (p. 9). The unstated premise was that his compliance – more than his genes, which he had managed to “defeat” – absolved him of culpability. He spoke to the kind of “moral self-transformation” that, according to Elam (2015), has become an “indispensable component of treatment and recovery” in the medicalization paradigm (p. 46). By contrast, a 2017 article on opioid addiction discussed individuals who did *not* comply with treatment, quoting a coroner who explained, “It’s easier to escape those feelings chemically, whether it’s booze or drugs” than it is to “reach out to a professional” (Foderaro, 2017, p. A25). The coroner advocated for educating people about the risks of drugs so that they might choose to get medical treatment rather than seek refuge in the use of harmful substances. Not obtaining such treatment, the article explained, could lead to early death. The moral weight of “sobbing” relatives left behind after an overdose was characterized as the price paid for medical noncompliance (p. A25).

## Discussion

In this study, we postulate that the rhetorical means through which medicalization is communicated is an integral, theoretical “node” in the medicalization process (Basnyat, 2017, p. 401). We dedicate this section to linking medicalization theory’s tenets with the rhetorical mechanisms that emerged from our analysis, thereby highlighting medicalization’s communicative grounds and extending theory in ways that can inform health communication efforts designed to mitigate, thwart, or even support medicalization efforts in the future.

Tenet one of medicalization theory involves the construction of a medical diagnosis, which, as previous research has shown (Jutel, 2014), is upheld by the rhetorical acts of naming and classification. Our findings demonstrate that a pedagogy of contrast – which models evaluative methods grounded in dichotomies – also supports the discourse of diagnoses by teaching audiences to articulate the world without middle ground and value the classification processes upon which diagnostic decrees rest. Although these contentions model certainty and assurance, qualities that research has demonstrated to be an underlying assumption of biomedicine (Greil & McQuillan, 2010), they fail to support among audiences the kinds of deliberative flexibility necessary for negotiating the competing contingencies of health-oriented trials. Our analysis reveals, also, that a pedagogy of contrast supports tenet two of the theory, which involves appeals to medical expertise. A pedagogy of contrast provides infrastructure for such appeals by modeling evaluative methods of contrast without also providing the necessary technical information for more complicated diagnostic evaluations. In this respect, individuals who are implicated by medicalizing discourses are always already directed to a medical professional for guidance because they have not been positioned to oversee their own evaluation. A pedagogy of contrast thereby demands engagement within the medical-industrial complex. This point

that seeking out and complying with medical dictates is a responsible behavior is upheld in medicalizing discourses through the subtle implication of moral enthymeme, which suggests that those who reject medical treatment are responsible for their illness. Blame along these lines has been associated with stigmatization, which constrains the self-efficacy of those targeted and perpetuates a range of negative health implications (Miller, 2019).

Furthermore, our findings demonstrate that tenet three of the theory, which regards the centrality to medicalization of technical instrumentation and surveillance, is often supported communicatively by machine metaphors. Our research substantiates scholarship demonstrating that machine metaphors encourage the conceptualization of humans through the lens of individual body parts with distinct functions and the capacity for normalcy (Jensen, 2015). At the same time, we find that they also situate the body to be evaluated primarily through the lens of technology. In this respect, evaluations of lived experiences related to the unseen world, for instance, are generally discounted under this framework, and those with the expertise to employ medical technologies are positioned to use them to view as many individual parts as can be accessed, thereby evaluating and monitoring their function and role in disease. The technologies themselves, framed as machines in their own right, are situated – through this characterization – as apparatuses for distancing medical experts from the whole persons under their care. Correspondingly, our findings suggest that tenet four of medicalization theory, which accounts for the systematic de-legitimation of experiential knowledge and de-contextualization of experiences, is also supported by machine metaphors, as well as by moral enthymeme. In the process of isolating and de-contextualizing body parts, machine metaphors facilitate the broader de-contextualization of lived experiences and social structures that animate human lives. At the same time, moral enthymemes create space for audiences to contribute unstated premises about individual responsibility to accounts of medicalization. In this way, they shift attention away from what scholars such as Dubriwny (2010) have identified as systemic forces contributing to illness, particularly those that align with and reify inequalities.

In an applied sense, these findings illuminate how communicative patterns might thwart or support medicalization efforts. For instance, one might posit from these mechanisms that successful health communication efforts to upset medicalization might involve trading machine metaphors for more holistic metaphorical clusters (for guidance on this front, see Derkatch & Segal, 2005); highlighting the middle ground of issues that go unspoken via a pedagogy of contrast (for examples, see Olbrechts-Tyteca & Perelman, 1971); and/or tracing the argumentative assumptions that form the basis of moral enthymemes (see Ratcliffe, 2007 for a discussion of the pedagogical utility of this practice). These approaches may also align with broader attempts to de-medicalize specific social issues such as disability, breastfeeding, and birth (Hogan, 2019; Torres, 2014; Zwier, 2019), particularly as upending the narrative of linear progress is nothing less than a prerequisite for de-medicalization's success. Conversely,

attempts to uphold medicalization would likely be supported by employment of one or more of the mechanisms that emerged from our analysis. Of course, the negative implications associated with the mechanisms discussed here would need to be weighed against the value in employing them.

Existing research demonstrates that medicalization is a fluid process, responding to a range of diverse socio-cultural, discursive, and material variables and changing in its manifestations and “engines” over time (Conrad, 2005, p. 3). The longitudinal nature of the study at hand provides us with the opportunity to consider some of the ways that the rhetorical mechanisms of medicalization have evolved over the seventy years represented, and to use those considerations to speculate about where the communication of medicalization may be heading. As we noted earlier, machine metaphors were almost omnipresent throughout the coverage, though the types of machines referenced changed to reflect the times. Similarly, pedagogies of contrast spanned the coverage, taking on an increasingly aggressive, authoritative tone as the years progressed and more scientific data were said to have been accumulated about any given condition. We might expect in the years to come, then, that machine metaphors and pedagogies of contrast will persist as rhetorical infrastructure for medicalization and, in the case of pedagogies of contrast, offer even more dichotomous and top-down presentations of ideas, especially as movements to de-medicalize a number of social issues threaten existing biomedical structures of knowledge, power, and resources (Eckhart, 2016). In terms of moral enthymemes, we found less evidence of this mechanism during the first decades of coverage, with a spike in enthymematic appeals to morality in the 1980s and 1990s. Part of this shift certainly had to do with a culture in which drug use was so often in the news (Reeves & Campbell, 1994), but other subject matters including mental health and obesity were also more likely to be communicated in terms of morality and failures of self-restraint. The new century offered something of a respite in these sorts of appeals, which may suggest that medicalization as a whole is on the decline or that moral enthymemes in biomedical discourse are tied more to larger cultural norms than they are to medicalization writ large. Future studies delineating the rhetorical mechanisms underlying medicalization appeals in the coming years will illuminate whether these seemingly longitudinal patterns persist and, if so, in what forms. More focused versions of this work that explicate patterns across fewer years will also be able to better attend to the dynamic and impactful cultural dynamics that drive these patterns.

This study is limited by its focus on public medicalization. The communicative infrastructure of medicalization may diverge from these devices in specifically technical or even lay contexts, though research suggesting that these spheres are intertwined indicates that our findings likely speak across spheres (Conrad & Potter, 2000). The same could be said of the content of this study as the phrase “brain chemistry” focuses our findings in ways that other ideographs for medicalization may not. Future research employing different discursive contexts and subject matter as foci is needed to support the refining of our theoretical contribution. Ultimately, we contend that, by making

explicit the communicative mechanisms of the medicalization process – figures that emerged longitudinally and across diverse subject matters – this study extends existing research to identify how medicalization is communicated and, in turn, how it might also be managed or appropriated by health communication efforts of the future.

## References

- Barker, K. K. (1998). A ship upon a stormy sea: The medicalization of pregnancy. *Social Science & Medicine*, 47, 1067–1076. doi:10.1016/S0277-9536(98)00155-5
- Barker, K. K. (2014). Mindfulness meditation: Do-it-yourself medicalization of every moment. *Social Science & Medicine*, 106, 168–176. doi:10.1016/j.socscimed.2014.01.024
- Basnyat, I. (2017). Theorizing the relationship between gender and health through a case study of Nepalese street-based female sex workers. *Communication Theory*, 27, 388–406. doi:10.1111/comt.2017.27.issue-4
- Birrer, R. B., & Tokuda, Y. (2015). Medicalization: A historical perspective. *Journal of General and Family Medicine*, 18, 48–51. doi:10.1002/jgf2.22
- Bitzer, L. F. (1959). Aristotle's enthymeme revisited. *Quarterly Journal of Speech*, 45, 399–408. doi:10.1080/00335635909382374
- Blakeslee, S. (1991, August 7). The secrets of caffeine, America's favorite drug. *New York Times*, p. C1.
- Blakeslee, S. (2000, May 4). 4 brain chemicals in babies may foretell autism and retardation. *New York Times*, p. A18.
- Brody, J. E. (1974 May 19). Schizophrenia is unyielding. *New York Times*, p. 210.
- Burros, M. (1988, April 6). Eating well. *New York Times*, p. C8. doi:10.3168/jds.S0022-0302(88)79586-7
- Carroll, L. (2000, November 14). Genetic studies promise a path to better treatment of addiction. *New York Times*, p. F6.
- Charmaz, K. (2014). *Constructing grounded theory* (2nd ed.). Thousand Oaks, CA: Sage.
- Condit, C. M., & Williams, M. (1997). Audience responses to the discourses of medical genetics: Evidence against the critique of medicalization. *Health Communication*, 9, 219–235. doi:10.1207/s15327027hc0903\_2
- Conrad, P. (1975). The discovery of hyperkinesis: Notes on the medicalization of deviant behavior. *Social Problems*, 23, 12–21.
- Conrad, P. (2005). The shifting engines of medicalization. *Journal of Health and Social Behavior*, 46, 3–14. doi:10.1177/002214650504600102
- Conrad, P. (2007). *The medicalization of society: On the transformation of human conditions into treatable disorders*. Baltimore, MD: John Hopkins University Press.
- Conrad, P., & Potter, D. (2000). From hyperactive children to ADHD adults: Observations on the expansion of medical categories. *Social Problems*, 47, 559–582. doi:10.2307/3097135
- Conrad, P., & Schneider, J. W. (1992). *Deviance and medicalization: From badness to sickness* (Rev ed.). Philadelphia, PA: Temple University Press.
- Cox, T. L. (2016). The postwar medicalization of <family> planning: Planned parenthood's conservative comic. *Escape from Fear. Women's Studies in Communication*, 39, 268–288.
- Denizet-Lewis, B. (2006, June 25). An anti-addiction pill? *New York Times*, p. E48.
- Derkatch, C., & Segal, J. Z. (2005). Realms of rhetoric in health and medicine. *Philosophy and Medicine*, 82, 138–142.
- Dubriwny, T. N. (2010). Television news coverage of postpartum disorders and the politics of medicalization. *Feminist Media Studies*, 10, 285–303. doi:10.1080/14680777.2010.493647
- Duenwald, M. (2003, August 19). A scientist's lifetime of study into the mysteries of addiction. *New York Times*, p. F5.
- Eakin, E. (2000, January 15). Bigotry as mental illness or just another norm. *New York Times*, p. B9.
- Eckhart, E. (2016). A case for the demedicalization of queer bodies. *Yale Journal of Biology and Medicine*, 89, 239–246.
- Elam, M. (2015). How the brain disease paradigm remoralizes addictive behavior. *Science as Culture*, 24, 46–64. doi:10.1080/09505431.2014.936373
- Engel, L. (1956, January 8). New approach to mental illness. *New York Times*, p. SM7.
- Epstein, R. H. (2004, January 20). Experts try fast-track fix for children with phobias. *New York Times*, p. F5.
- Foderaro, L. W. (2017, June 19). From opioid epidemic's front lines to filling in the brutal back story. *New York Times*, pp. 1–5.
- Gibbons, M. G. (2014). Beliefs about the mind as doxastic intentional resource: Freud, neuroscience, and the case of Dr. Spock's *baby and child care*. *Rhetoric Society Quarterly*, 44, 427–448. doi:10.1080/02773945.2014.957411
- Greil, A. L., & McQuillan, J. (2010). "Trying" times: Medicalization, intent, and ambiguity in the definition of infertility. *Medical Anthropology Quarterly*, 24, 137–156.
- Gruber, D. R. (2016). Medicalization of the post-museum: Interactivity and diagnosis at the brain and cognition exhibit. *Journal of Medical Humanities*, 37, 65–80. doi:10.1007/s10912-015-9336-6
- Hall, S. S. (1999, February 28). Fear itself. *New York Times*, p. SM42. doi:10.1046/j.1469-1809.1999.6320101.x
- Hanne, M. (2015). Diagnosis and metaphor. *Perspectives in Biology and Medicine*, 58, 35–52. doi:10.1353/pbm.2015.0010
- Higbie, A. (1995, July 21). At the bar. *New York Times*, p. B6.
- Hogan, A. J. (2019). Moving away from the "medical model": The development and revision of the World Health Organization's classification. *Bulletin of the History of Medicine*, 93, 241–269. doi:10.1353/bhm.2019.0028
- Jack, J. (2009). A pedagogy of sight: Microscopic vision in Robert Hooke's micrographia. *Quarterly Journal of Speech*, 95, 192–209. doi:10.1080/00335630902842079
- Jensen, R. E. (2015). From barren to sterile: The evolution of a mixed metaphor. *Rhetoric Society Quarterly*, 45, 25–46. doi:10.1080/02773945.2014.957413
- Jutel, A. G. (2014). *Putting a name to it: Diagnosis in contemporary society*. Baltimore, MD: John Hopkins University Press.
- Koerber, A., Arduser, L., Bennett, J., Kolodziejcki, L., & Sastry, S. (2015). Risk and vulnerable, medicalized bodies. *Poroi*, 11, 1–9. doi:10.13008/2151-2957.1222
- Lindlof, T. R., & Taylor, B. C. (2019). *Qualitative communication research methods* (4th ed.). Thousand Oaks, CA: Sage.
- Lyne, J. (2001). Contours of intervention: How rhetoric matters to biomedicine. *Journal of Medical Humanities*, 22, 3–13. doi:10.1023/A:1026622309671
- Mayes, R., & Horwitz, A. V. (2005). DSM-III and the revolution in the classification of mental illness. *Journal of the History of the Behavioral Sciences*, 41, 249–267. doi:10.1002/jhbs.20103
- Miller, E. (2019). Too fat to be President? Chris Christie and fat stigma as rhetorical disability. *Rhetoric of Health and Medicine*, 2, 60–87. doi:10.5744/rhm.2019.1003
- Moynihan, R., Heath, I., & Henry, D. (2002). Selling sickness: The pharmaceutical industry and disease mongering. *British Medical Journal*, 324, 886–891. doi:10.1136/bmj.324.7342.886
- Neitzke, A. B. (2016). An illness of power: Gender and the social causes of depression. *Culture, Medicine, and Psychiatry*, 40, 59–73. doi:10.1007/s11013-015-9466-3
- Nelson, B. (1983, September 11). The biology of depression makes physicians anxious. *New York Times*, p. E8.
- Olbrechts-Tyteca, L., & Perelman, C. (1971). *The new rhetoric: A treatise on argumentation*. Notre Dame, IN: University of Notre Dame Press.
- Owens, K. H. (2015). *Writing childbirth: Women's rhetorical agency in labor and online*. Carbondale, IL: Southern Illinois University Press.
- Quenqua, D. (2011, July 11). Medicine adds slots for study of addictions. *New York Times*, p. A11.
- Ratcliffe, K. (2007). In search of the unstated: The enthymeme and/of whiteness. *JAC*, 27, 275–290.
- Reeves, J. L., & Campbell, R. (1994). *Cracked coverage: Television news, the anti-cocaine crusade, and the Reagan legacy*. Durham, NC: Duke University Press.



- Reissman, C. K. (1983). Women and medicalization: A new perspective. *Social Policy, 14*, 3–18.
- Reitmanova, S., & Gustafson, D. L. (2012). Exploring the mutual constitution of racializing and medicalizing discourses of immigrant tuberculosis in the Canadian press. *Qualitative Health Research, 22*, 911–920. doi:10.1177/1049732312441087
- Restak, R. M. (1975, January. 12). Ideas and trends. *New York Times*, p. 179.
- Riska, E. (2003). Gendering the medicalization thesis. In M. T. Segal, V. Demos, & J. J. Kronenfeld (Eds.), *Gender perspectives on health and medicine* (pp. 59–87). Bingley, UK: Emerald Group.
- Rose, N. (2007). Beyond medicalization. *Lancet, 369*, 700–702. doi:10.1016/S0140-6736(07)60319-5
- Russell, L. D. (2013). Reconstructing the “work ethic” through medicalized discourse on workaholism. *Journal of Applied Communication Research, 41*, 275–292. doi:10.1080/00909882.2013.825046
- Scarf, M. (1977, April 24). From joy to depression. *New York Times*, p. SM8.
- Schanberg, S. H. (1984, February. 14). Schoolyard recreation. *New York Times*, p. A27.
- Schmeck, H. M., (1965, December. 1). Chemical deficiency of brain linked to Parkinson’s disease. *New York Times*, p. 36.
- Schmeck, H. M., (1987, November. 17). Experts voice hope in Alzheimer’s fight” recent discoveries couple prove vital to treatment. *New York Times*, p. C1.
- Segal, J. Z. (2005). *Health and the rhetoric of medicine*. Carbondale, IL: Southern Illinois University Press.
- Soderlund, G. (2002). Covering urban vice: The *New York Times*, “white slavery,” and the construction of journalistic knowledge. *Critical Studies in Media Communication, 19*, 438–460. doi:10.1080/07393180216567
- Spear, L. (1995, September. 3). Program that helps patients defeat ‘the fat gene.’ *New York Times*, p. 9.
- Swirsky, J. (1992, February. 9). An inborn vulnerability to depression. *New York Times*, p. 10.
- Thornton, D. J. (2011). *Brain culture: Neuroscience and popular media*. New Brunswick, NJ: Rutgers University Press.
- Torres, J. M. C. (2014). Medicalizing to demedicalize: Lactation consultants and the (de)medicalization of breastfeeding. *Social Science & Medicine, 100*, 159–166. doi:10.1016/j.socscimed.2013.11.013
- Vitek, K., & Ward, L. M. (2019). Risky, dramatic, and unrealistic: Reality television portrayals of pregnancy and childbirth and their effects on women’s fear and self-efficacy. *Health Communication, 34*, 1289–1295. doi:10.1080/10410236.2018.1481708
- Vogelstein, F. (2010, November. 21). A big, fat miracle. *The New York Times*, p. SM51.
- Wendell, S. (1996). *The rejected body: Feminist philosophical reflections on disability*. New York, NY: Routledge.
- Williams, S. J., Seale, C., Boden, S., Lowe, P., & Steinberg, D. L. (2008). Medicalization and beyond: The social construction of insomnia and snoring in the news. *Health, 12*, 251–268. doi:10.1177/1363459307086846
- Zwier, R. K. (2019). Taking back birth: De/medicalization and the rhetoric of the Santa Cruz birth center. *Western Journal of Communication, 1–18*. Online first. doi:10.1080/10570314.2019.1647348