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From Hysteria to Hormones and Back Again: Centuries of Outrageous Remarks About Female Biology

Amy Koerber

In this persuasion brief I suggest how rhetorical-historical insights into the scientific and medical discourses of female hormones are relevant to current organizational and institutional diversity initiatives, especially those that aim to increase the number of women in leadership positions. Many of the examples I cite in the essay make specific reference to hormones, and as I argue, hormones often serve an enthymematic function in these expert arguments, both past and present. More specifically, I argue, discourses about hormones allow people who do not possess any scientific expertise to make authoritative-sounding claims that resonate with popular beliefs about women's bodies and brains. Uncovering these historical tendencies in scientific and medical discourse offers new perspectives on the obstacles that women face in today's workplaces. In this persuasion brief I aim to discuss these perspectives in ways that make the findings of rhetorical-historical research relevant to the many different stakeholders, leaders, and policymakers who are currently working to help women rise to leadership positions in many different fields.

Keywords: science communication, political discourse, women's health, female biology, leadership, diversity

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When Google engineer James Damore recently wrote an internal memo arguing against Google's diversity efforts, he made several authoritative claims about female biology. These claims were meant to support his larger argument that the gender disparities in the high-tech industry are a result of biological differences between the genders—not a result of gender discrimination. As Damore explained, “men and women biologically differ in many ways” (n.p.). Hormones played an important role in Damore's argument, as is often the case in popular and expert explanations of sex difference. For example, Damore supported his claims about biological difference with several “facts,” including a statement that the differences he identified “often have clear biological causes and links to prenatal testosterone.” Then Damore went on to say, “these differences may explain why we don't see equal representation of women in tech and leadership.” He listed several examples of these biologically determined differences:

- Women “have a stronger interest in people rather than things.”
- Women have “higher agreeableness,” and this means they have “a harder time negotiating salary, asking for raises, speaking up, and leading.”
- Women experience “neuroticism (higher anxiety, lower stress tolerance),” and “This may contribute to the higher levels of anxiety women report on Googlegeist and to the lower number of women in high-stress jobs.”

In the remainder of his memo, Damore elaborated his theory of presumed biological differences as a reason why we do not see more women in high-tech leadership positions. As he said, “These positions often require long, stressful hours that may not be worth it if you want a balanced and fulfilling life” (n.p.).

At this point, readers from any discipline might be asking why an engineer at Google feels qualified to make such extensive claims about female biology and its relationship to women's professional success. These kinds of questions about the expertise, authority, and credibility of those who make claims on a subject such as female biology are questions that rhetorical scholars of health and medicine are well equipped to address. We use a wide variety of methodological approaches to address such questions, and our research findings in this area have important implications that extend beyond our narrow academic field. As Judy Segal (2005) says, the findings

of rhetorical research in health and medicine can be “useful” for “clinical practice and health policy” even if they cannot be “applied” in the same way that clinical research, or some social science research, can be applied directly to healthcare practice or policy (p. 4). In this persuasion brief I broaden the scope of Segal’s claims about the usefulness of rhetorical-historical research in health and medicine to explore how the findings of such research can have relevance that even extends beyond clinical practice and healthcare policy. Specifically, in this persuasion brief, I address those stakeholders in the academy, and in the private sector, who are leaders in workplace diversity initiatives.

For every James Damore in the world, there are organizations and initiatives that are dedicated to helping women succeed in the academy, the high-tech sector, and elsewhere. These include freestanding organizations such as Catalyst, a “nonprofit organization with a mission to accelerate progress for women through workplace inclusion” (n.p.), but they also include efforts within organizations and institutions. In fact, Damore’s memo was titled “Google’s Ideological Echo Chamber,” and it was provoked by a diversity initiative that was underway at Google when he wrote it. His memo included scathing criticism of Google for, in his words, creating “several discriminatory practices” to try to help women overcome the obvious gender disparities that exist at Google. Specific examples that he mentions include “programs, mentoring, and classes only for people with a certain gender or race,” “special treatment for ‘diversity’ candidates,” and “hiring practices which can effectively lower the bar for ‘diversity’ candidates” (n.p.).

What Does Rhetoric Have To Do With It?

In a rhetorical-historical project that I have recently completed, I explore a centuries-long pattern of language use that has developed around one of the concepts that played an important part in Damore’s argument: hormones. One of the key findings of my rhetorical-historical study is that hormones have become a shorthand version of more complicated arguments about female biology. To use a term from rhetorical theory, hormones serve an enthymematic purpose—that is, they allow long, complex arguments to be condensed into something simple so that an engineer, or a politician, or a business executive, or a judge can speak with great credibility on a topic such as female biology.

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In classical rhetoric, enthymeme was defined as an abbreviated syllogism—a deductive argument in which one of the premises is left unstated, usually because the audience already assumes this premise to be true, so leaving it unstated allows the argument to be more concise and impactful. In contemporary rhetorical theory, enthymeme has been defined more broadly to include any argument that is condensed or made brief by leaving a key component unstated. The omission that characterizes enthymemes makes such arguments especially powerful. Thus, enthymemes facilitate movement within the minds and bodies of audiences at a given time and place, but they also allow ideas to move across physical, digital, and geographic space, such as when a scientific study receives a great deal of media attention and then feeds into the frenzy of popular beliefs that can surround a topic that piques public interest.

My own findings about the enthymematic function of hormones in scientific and popular discourse emerged from an extensive rhetorical-historical study of a large number of scientific and medical texts, extending from ancient times to the present. My study reveals how in the early twentieth century the term “hormone” started gradually to replace the concept of hysteria—which had been used to explain female problems since the beginning of recorded history—while still allowing ancient ideas about female biology to persist in modern scientific texts. This study’s findings are relevant to workplace diversity initiatives because they reveal some of the hidden assumptions and patterns of language use that pose obstacles to initiatives that aim to increase diversity and bring more women into leadership positions—whether in high-tech industry, the sciences, or the academy or private sector more broadly conceived.

To briefly summarize my research findings, the “mansplaining” of female biology evident in James Damore’s memo is not really anything new. This kind of mansplaining has been going on for a very long time—all the way through recorded history, actually. A lack of qualifications, or of scientific facts, has never stopped self-designated “experts” from making authoritative claims about female biology. Throughout much of that history, it was hysteria (which derives from the Greek word for womb) that provided the dominant metaphor in these “mansplain-ations.” However, when British physician Ernest Henry Starling coined the term hormone in a 1905 lecture to the Royal Society in London, the experts suddenly had access to a whole new vocabulary for diagnosing female problems (Koerber, 2018).

For at least a couple of decades before Starling first used the word hormone, experts knew there was a chemical substance that enabled the organs to communicate with each other to enable processes like digestion and respiration. However, they did not have a good word to describe these substances—they were using vague terms like “chemical messenger” and “internal secretion.” None of these terms was powerful enough to win the argument, so the experts kept going back and forth, quibbling over how to interpret the same old evidence. But when researchers finally had a word they could all agree on, the science moved forward after decades of standstill. By 1915, endocrinology had become established, and this field continued to experience rapid growth for many years after that.

The impact of hormones on scientific understandings of the female body has been profound. The belief in hysteria, which spans the centuries of recorded history, was based on wild imaginings about the womb wandering around inside a woman’s body, whereas the relatively new belief in hormones is based on scientifically verified chemical substances with resulting behaviors and systemic effects that can be measured, documented, and replicated in the laboratory. The short version of this story is that science has gradually come to replace mysticism and religious beliefs as the basis for understanding women’s bodies and women’s health.

As we see in examples such as the Damore memo, however, some aspects of the transition from the hysterical woman to the hormonal woman have been far less absolute than we might expect. The reasons for this are made apparent through close examination of the scientific texts in which this transition occurred. When medical experts first introduced terms like “premenstrual tension” in the mid-twentieth century, for instance, the language they used to describe symptoms was taken directly from medical texts in previous eras that described female symptoms affiliated with hysteria. Using the rhetorical concept of metaphor, which derives from the Greek term for “carrying over,” we can see how the earliest configurations of the hormonal woman in mid-twentieth-century medical texts carried over meanings that, in the older medical texts, had been carried by the hysterical woman metaphor.

And even in the most recent medical texts, written within the last decade, researchers approach female hormones from perspectives that are shaped by centuries of belief in the idea that women’s bodies are fundamentally irregular and much more difficult to manage than men’s bodies. The very fact that there is a whole body of scientific research devoted to topics

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such as “pregnancy brain” is reminiscent of a distrust of the female body that has its origins in the centuries-long belief that the uterus has a special influence on the female brain and that women’s health—both mental and physical—is defined by this problematic body-brain relationship. Furthermore, when we consider how this information is communicated to the public with headlines such as “Changing Hormones and Mood Swings: What You Can Do” (Bouchez, n.d.) and “Mommy Brain: Yes, It’s a Thing” (Lucia, n.d.), it becomes even clearer that ancient beliefs about the female mind-body relationship have not entirely vanished from our popular imagination.

As rhetorical scholars of health and medicine, an important part of what we do is illuminate the processes through which new scientific terms and concepts gradually morph from older terms and concepts. This kind of rhetorical-historical research on language and meaning allows us to understand the history of medical beliefs on a subject such as female hormones as a rhetorical movement that is characterized by anything but progression along a straight line. Rhetorical-historical research suggests that the forms of movement that are evident in these scientific rhetorics are best characterized as folding, fluxing, morphing, and twisting. Through close examination of the scientific and popular texts that facilitate these forms of movement, we can see how a concept such as hormones never fully breaks from its history, but instead, comes to encapsulate key ideas from that history, reshaping these concepts in ways that fit the demands of ever-changing rhetorical contexts. This highlights a fundamentally conservative element of the scientific endeavor, suggesting that one reason why new ideas emerge is to preserve old ways of thinking—to make those old ideas acceptable to new audiences—rather than only effect a clean break from the past.

A Few Additional Examples

In a recent *New York Times* article, Gerri Elliott, a former senior executive at Juniper Networks, recounts a story about a workplace experience that was related to her by a colleague: “A presenter asked a group of men and women whether anyone had expertise in breast-feeding. A man raised his hand. He had watched his wife for three months. The women in the crowd, mothers among them, didn’t come forward as experts” (Chira, 2017). And, turning to a less light-hearted example, in 2012, Missouri Congressman Todd Akin caught the attention of audiences around the world with his

public comment that rape was not likely to result in pregnancy because “from what I understand from doctors, that’s really rare. If it’s a legitimate rape, the female body has ways to try to shut the whole thing down” (Alter, 2014). And Akin is not the first modern public figure who has made remarks like this about the female body. *Washington Post* reporter Sarah Kliff (2012) traces a series of comments along similar lines back to at least the 1980s, documenting how such arguments, for several decades, have been used to deny the necessity of exceptions for rape in anti-abortion legislation. The common theme in all these examples, and a theme that also connects these examples to the claims that Damore makes in his memo, is powerful public figures making authoritative claims about female biology without any actual qualifications to do so—except that they are men who occupy positions in society that enable them to speak authoritatively on any subject about which they wish to speak authoritatively. Additional examples reported by Kliff include Stephen Freind’s 1988 remark that during rape, “a woman secretes a certain secretion, which has the tendency to kill sperm,” and Garance Franke-Ruta’s 1995 claim that “The facts show that people who are raped—truly raped—the juices don’t flow.”

When a politician such as Todd Akin attests publicly that a woman cannot get pregnant if she is “legitimately” raped, it might be easy to dismiss those remarks as coming from a crackpot politician who has no scientific credibility. Of course, we can take some solace from the fact that Akin lost his election in 2012 after those remarks went viral. And we can take even more solace, perhaps even enjoy some laughter, from the fact that Akin made a complete horse’s ass of himself two years later in a 2014 interview when he said, “I had a number of people in my campaign that were children . . . who were conceived in rape,” and MSNBC host Chuck Todd responded by pointing out something that might seem obvious to most people: Akin’s statement about all the people in his campaign who were conceived in rape completely contradicted his 2012 claim that women’s bodies would shut down conception in the course of a “legitimate rape” (Alter, 2014). But now that we are living in a new reality, we cannot afford to feel quite so comfortable or amused by President Donald Trump’s well-documented history of public misogynistic remarks, which often refer to specific aspects of female biology.

Through the many different examples I am providing in this essay, I am trying to make clear that there is a danger in setting aside outrageous remarks about female embodiment—whether they are made by a

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crackpot misogynistic politician who *loses* the election after making the remarks, or by a crackpot misogynistic politician who *wins* the election and becomes president of the United States after making these remarks. Rhetorical-historical research that explores the centuries of scientific discourse on female biology that precede the present moment offers us a unique perspective on these current discourses. Without understanding this preceding discourse, and without understanding how the earliest references to female hormones were literally built from the concept of hysteria that dominated expert beliefs about women's health for centuries prior to the 1905 emergence of the word hormone, we will never understand why the discourse of Todd Akin, James Damore, President Donald Trump, and so many others like them can keep surfacing and resurfacing, again and again, even in the twenty-first century. Specifically, the rhetorical-historical research that I have conducted over the last few years reveals a phenomenon that manifests itself in an endless number of rhetorical configurations throughout the eras of recorded history—configurations in which the female mind and body repeatedly emerge as foreign, mysterious, or defective versions of the male mind and body.

Action Items

Rhetorical-historical research in health and medicine is relevant to stakeholders involved in diversity initiatives at Google and elsewhere because, as Damore's memo makes clear, the problem that stakeholders on all sides of this controversy are addressing is fundamentally a rhetorical problem. Like any rhetorical problem, it can be viewed from many different, often conflicting, perspectives. From one perspective, when Damore makes these claims about female biology, he is benefitting from a long tradition that has enabled men to make authoritative claims about female biology, whether or not they possess any expertise in this area, and whether or not they have any credible scientific findings to sustain their claims. It is easy, of course, for those who would argue against Damore to depict him as misogynistic, ignorant, and ridiculous. But from another perspective, we need to be careful focusing too much on Damore as an individual because that might cause us to ignore the fact that a man like him has hundreds of years of "science" to back him up. If we do not pay attention to that long tradition of scientific discourse, it is hard to grasp why there will always be individuals like Damore or Akin who can make claims like these and be believed

by some audiences. From yet another perspective—one that I find especially concerning—the same people who are likely to be the most vocal critics of the kind of language that appears in Damore’s memo are, at the same time, often willing to accept casual claims about female biology when these claims appear in a less blatantly misogynistic manner. For example, it is not uncommon for women themselves to talk about the “pregnancy brain” that they experience, or about “feeling hormonal.” And, in fact, when I have discussed my research in public forums, more than one woman has expressed concern that my rhetorical critique of such language might risk denying their capacity to describe what they are experiencing. I acknowledge this risk, but I still contend that until we interrogate the scientific origins of all of these patterns of language use—blatantly misogynistic language as well as the mundane phrases that seem less shocking—we cannot fully understand why it is that people like Damore and Akin keep resurfacing; nor can we fully appreciate the severity of the damage that is caused by any of these remarks.

Returning to the question of workplace diversity initiatives, one of the ways in which this rhetorical problem can be summarized has been expressed eloquently by a leading expert in this area who recently said, “it is difficult if not impossible to believe that you can be what you cannot see. If there’s no one like you ‘up there,’ it’s not likely you’ll get there . . .” (Silva & Ibarra, 2012). This is a useful way to characterize this rhetorical problem because it captures the importance of the relationship between the images people see on a daily basis and their beliefs about what they can become or what they can achieve. And it’s important to note that these ordinary images that people see on a daily basis are often less shocking and attention-grabbing than the obviously misogynistic words of Damore and Akin, both of which went viral and gained wide readership. But rhetorical-historical research on the scientific discourses of female biology is perfectly suited to exposing the layers of meaning that lie behind the surface of discourses that we see on a daily basis, similar to the manner in which archaeologists illuminate current practices by exposing layers of meaning from the past.

What I ultimately want to argue is that current efforts to address the diversity problem in today’s workplaces, organizations, and institutions are always going to be hampered by the fact that they are only addressing the surface of the problem. I certainly applaud these efforts, and as an academic administrator at a large public research university, I am also actively involved in these efforts on a daily basis. But as long as we are only looking

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to increase the number of particular demographic groups who occupy particular positions, the changes we implement will only scratch the surface. Rhetorical-historical research lets us take the next step and see the patterns of language use that make it seem normal for women to remain underrepresented in the higher ranks, especially in areas such as the high-tech and financial sectors. Until we look beneath the surface of crackpot, misogynistic remarks and acknowledge that the assumptions stated in these remarks are actually embedded in the same expert scientific discourses that we have always treated as neutral and authoritative in the Western tradition, we will not fully appreciate why the battle we are fighting is such a hard one. Another important component of this is acknowledging that we often participate, perhaps unknowingly, in perpetuating such problematic assumptions when we casually use terms such as “pregnancy brain” or “feeling hormonal.”

Before we can work toward a goal such as increasing the number of women in leadership positions, we need to step back and do an archeological dig that exposes and dislodges the deeply entrenched assumptions that, for many centuries before this, have made it seem impossible, or at least unlikely, that a woman could succeed as a leader. Instead, when we hear the word “diversity” in today’s discourse, it is often part of a moral argument for an organization’s obligation to increase its diversity, as visible on the surface. For example, in early 2017, after several media reports made clear that gender discrimination and sexual harassment were rampant at Uber, the company’s CEO, Travis Kalanick, responded by acknowledging that only “15.1% of [Uber] employees are women.” He also promised to improve “diversity and inclusion at Uber” and to “fight for and support those who experience injustice” (Swisher, 2017).

I am asking us (stakeholders interested in increasing diversity, myself included) to take a more expansive view, to start imagining diversity initiatives that go beyond scratching the surface. We need to re-frame the diversity conversation so that, from the beginning, we insist on the inherent benefits of diversity in knowledge production, reporting, and reception. The common thread connecting the varied examples that I have presented in this essay is that they are all examples of situations in which we grant too much authority to experts, just because they are perceived as experts, and even if they do not possess qualifications to speak on the subject about which they are speaking. It is not, by any stretch of anyone’s imagination, a coincidence that most of these experts belong to the same demographic

group: white Western males. Until we acknowledge the long historical tradition that has allowed this single group to speak authoritatively about women, we will have a hard time fighting against this tendency. There is a sharp contrast between the automatic authority that is granted to these experts in so many different domains and the absolute lack of credibility that is granted to women themselves to speak about their own experiences as embodied individuals. And unfortunately, sometimes women participate in these patterns—hence, the breastfeeding example above, and the use of terms such as “pregnancy brain.” Certainly we can find other ways to speak and think about female biology, but it’s going to require a lot of hard work.

The larger point I want to make, in closing, is that this is not just a matter of social justice, or of everyone getting a chance to sit at the table where expert knowledge comes to be. This is ultimately a pathway to making better knowledge. And here is where I am intentionally looking beyond the disciplinary borders that delineate what counts as the rhetoric of health and medicine (RHM), and invoking some recent social science research that I believe complements our rhetorical scholarship in important ways. In addition to the obvious moral reasons why it is important to achieve greater diversity in institutions and organizations involved in expert knowledge production, I believe that recent research in the new field of social physics has the potential to help us think of this situation in terms of practical benefits. That is because social physics provides us with quantitative evidence that shows organizations function more effectively, and are more productive and successful, when mechanisms are in place to ensure that ideas are, as Alex Pentland (2014) says, harvested from everyone in the organization. Pentland defines social physics as “a quantitative social science that describes reliable, mathematical connections between information and idea flow on the one hand and people’s behavior on the other” (p. 4). He and his team use this new science to provide empirical evidence that demonstrates the value of achieving broad input in decision-making from all sectors of an organization, rather than limiting decision-making authority to a few individuals located at the top of an institutional hierarchy. In Pentland’s words, social physics “enables us to predict the productivity of small groups, of departments within companies, and even of entire cities. It also helps us tune communication networks so that we can reliably make better decisions and become more productive” (p. 4). Pentland goes on to assert that, “When decision making falls to those best situated to make the decision rather than those with the highest rank, the resulting organization

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is far more robust and resistant to disruption” (p. 211). Working with his team of graduate students and colleagues in the MIT Lab that he directs, Pentland designed a method of collecting data on all kinds of human interactions within specific organizations, including electronic communication such as e-mail but also precise counts of the quantity and nature of face-to-face interactions and phone calls. He claims that this groundbreaking method of data collection provides quantifiable evidence to show the monetary value that an organization can accrue by achieving a more diverse workforce and ensuring that everyone in this workforce is able to contribute good ideas.

Although Pentland’s (2014) social physics approach is implemented in the context of specific organizations, and is thus geared toward business professionals, I believe the ideas established in his team’s study can potentially revolutionize the arguments we make in favor of workplace diversity. Rather than continuing to depict this as a problem that individuals face and that institutions need to solve to benefit these individuals, we can come to understand diversity as a goal that will enable academic institutions, and the scientific enterprise at large, to produce more and better knowledge.

This social physics approach suggests that our whole world can benefit from achieving a knowledge-producing enterprise that is more inclusive—that is, achieving an apparatus of scientific knowledge production that incorporates contributions from a wider, more diverse group of knowledge producers. Similar ideas are also reinforced in recent leadership communication research. For example, Judith Baxter’s (2015) study of gender difference in leadership teams is perhaps one of the first to offer close scrutiny of gender dynamics in different kinds of teams: male-only, female-only, and mixed gender teams. The most important finding about the teams included in this study is the value of diversity to team productivity. As the author concludes, “Gender balance and diversity within a leadership team enables its members to utilize a wider linguistic and business communication repertoire, leading to more supportive working relationships and the successful accomplishment of business leadership goals” (p. 448).

The approach that I am advocating allows us to understand that the problem with the long history of misogyny that permeates medical discourses of female biology is not just in the content of the ideas that it has perpetuated, but in the fact that the knowledge production has been almost entirely a one-way process, with men producing knowledge about women. This persistent pattern, accumulated over so many centuries, is why even in

today's scientific discourse we see so many deeply embedded judgments that are made by men about women. If you live in a world in which there is a centuries-long tradition dictating that one group will be the knowledge producers and another will be the objects of knowledge, it is not surprising that the former group will be granted expert authority in everything they say, while the latter group will be perpetually depicted as mysterious, pathological, uncontrollable, and in need of further explanation.

Although they might use different words, like suggesting that women have “juices” that control reproduction or that their bodies can “shut the whole thing down,” hormones or something like them have a special role to play in the diverse examples I have used in this essay to highlight the contrast between the knowers and the objects of knowledge. Recall that in the Google memo that I discussed at the beginning of this essay, “prenatal testosterone” was the scientific foundation for the Google engineer’s theories of biological difference. In revealing how deeply embedded such patterns have become in our everyday lives, rhetorical research also identifies openings and gaps where it is possible to introduce twists and turns and mutations. Although this might not mean we can escape the old patterns, it can help us find new ways to live with them, and it can reorient our approach to diversity initiatives in the private and public sectors.

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