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Rhetoricians on Human Remaking and the Project of Genomics

Celeste M. Condit

Over the previous two decades, rhetoricians came to grips with the transition of genetics to genomics by employing rigorous analyses of public discourse, analysis characterized by respect for diverse audiences, attention to precisely what is said, and the historicity of texts. In so doing, they provided helpful models for addressing a new wave of genomics that may threaten to change “genomic medicine” from the curing of disease into the remaking of human beings and the earth’s biosphere. Their work can be read as supporting and illustrating an integrative model of biological and discursive codes as opposed to the hierarchization of mind over body, or the reverse. The inauguration of *Rhetoric of Health & Medicine* creates a valuable locus for building upon such work, ready to address the new wave of genomics and the on-going challenge of being social creatures who remake ourselves and others.

Keywords: molecularization, new materialism, CRISPR, mind/body dualism

By the early 21st century, “genomics” was the focal point of contemporary biological and medical research, although the direct effects of genomics on healthcare were small. The indirect effects were increasing, primarily through improvements in the knowledge of biological systems, and had hardly generated the widely useful drugs and treatments that their promoters had been promising for at least two decades.

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This underperformance of predictions also characterized the discourses of the opponents of genetics. Although social critics had fearfully hyped the coming horrors of the “geneticization” of public discourse, for the most part the populace had assimilated some vague version of genomics into the pot-pourri of other discourses that clamored about them, including religion, personal liberation, gospel of wealth, family devotion, and football nation. In negotiating their health and forming their identities, people tended to select bits from this discordant repertoire to serve the desires of their various moments, rather than adopting any one discourse in a full-blown form.

The failure of genetics, and its amped-up offspring, genomics, to live up to either the glowing or frightening predictions was at least in part based on the bad science on which the promises of this early version of medical genetics were based. Such promises presumed that highly common disease-causing alleles for frequently occurring diseases existed, a proposition that lacked presumption given the way in which evolution was known to work and the fairly substantial preexisting evidence about the distributional character of human genes. The errancy of the quest for highly common disease-alleles was fully confirmed in what was sometimes called the “GWAS” (genome-wide association study) round of genetic research.

Science and technology, however, constantly change. In the twenty-teens, a new technology—CRISPR—came on the scene that seems to provide a more feasible tool for transforming the science fiction hopes and fears into abiding realities. CRISPR appears to allow the insertion of genetic changes in living humans and embryos with enough precision to encourage the reconstitution of medical genetics as the remaking of the existing range and species trajectories of biological bodies. The redefining of medicine from the curing of disease to the manipulation of the human form had already been inaugurated by endeavors such as plastic surgery, the reshaping of corneas by lasers, and Ritalin for enhancing school performance. This tells us that the redeployment of medicine from healing to improving was not originally grounded in molecular visions, but in the mind-body division in which the mind imagines itself as an essence that is disconnected from and the master in control of a passive body. Nonetheless, the degree to which molecular science and technologies expand the power of such an illusory mind makes pressing renewed thoughtful investigation and discussion.

The inauguration of a journal focused on *Rhetoric of Health & Medicine* (RHM) creates a precious locus for efforts to puzzle out—and potentially influence—such scientifically, socially, and humanly pregnant themes. As

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one participant in these trajectories across the past three decades, I was graciously invited to reflect upon my own work and that of other rhetoricians who have addressed genetics/genomics. Given the potentially significant change in the available technologies, I will be trying to use this space not merely to reflect on the past, but to encourage the vigorous deployment of the kinds of rhetorical studies that have been productive in the past era as theoretical, methodological, and pragmatic resources for the coming, more demanding challenges.

My account presumes two kinds of commitments. I presume that the political goal is to encourage the ability of fractured national and global publics to steer between two black holes—resisting the vortex on the one side requires reducing our social overinvestment in genomics research and discrediting air-brushed visions of the physiologically based remaking of ourselves and the biosphere. Simultaneously, however, on the other side we should avoid the pull of the untenable and harmful claims that there is no influence on our bodies from a biochemical heritage. The latter vortex, however appealing it may seem in response to the former, is part of the mind/body dualism that fuels the model of genetic medicine as an essential mind's remaking of an inessential body.

At the theoretical level, I presume that such a combinatorial political trajectory is required by an onto-epistemology that reflexively describes ourselves as symbol-using animals rather than as minds, original sinners, or blank slates, and by a view of discourse as action (a theory elaborated by Condit, 2018). I begin this recounting/projection with my own motivations and research efforts, situating that work within the most common line of work about genetics—the study of metaphors—before taking a necessarily quick and highly partial tour of some of the many dimensions of these rich questions that have been tackled by rhetoricians (disciplinarily defined).

My “Disciplined Reaction”

In 1995, when I published my first essay about genetics in a communication journal, I was not particularly respectful about existing studies of the public discourse of genetics, almost all of which were published by people outside the academic field of rhetorical studies (which I define as located in the disciplines of English and Communication Studies). (Biologist) Ruth Hubbard and Elijah Wald's *Exploding the Gene Myth* (1994), (sociologist) Dorothy Nelkin and (historian) Susan Lindee's *The DNA Mystique* (1995),

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and (feminist biochemist) Patrician Spallone's *Generation Games*, among others, struck me as guilty of political and intellectual sins at least equal to those of the geneticists and science reporters they accused of self-interested, overly simplistic, and overly dramatic claims. I had been trained by rhetorical scholars such as Michael Leff, Michael McGee, and Michael Osborne to look at *exactly* which words were used in public discourse and how they were related to each other from *theoretically* grounded frames. I had been alerted by rhetorical scholars such as Martha Solomon Watson and Philip Wander to consider how different *audiences* might take up any particular set of words. And, I had learned from scholars such as Karlyn Kohrs Campbell and Bruce Gronbeck to take into account the *historicity* of discourse. Consequently, I found inadequate those descriptions of what public rhetorics "meant" or "did" that arose from cherry-picking dramatic quotations, from projecting a stupid public passively waiting to have demonic genetic theories stamped upon them, or from positing a "one drop rule," that is, the assumption that any appearance of a suspect word polluted an entire discourse as "neoliberal" or "discriminatory" or "essentializing," or whatever the ideological enemy might be.

Not only did I find it ironic that the anti-genetics tomes were as reductionist and essentializing about language and social structure as they accused the geneticists of being about people and their bodies, I also believed that an advocacy battle between "genetics will give us miracle cures" vs. "genetics will turn us into Nazis" offered little illumination about who *we* are and how we might want to come to be. For, although the dualists on both sides of the "genetics wonderful/genetics evil" divide seemed to agree that humans can and should remake ourselves, albeit with different tools, both seemed to think that *who* we should be was self-evident. Neither seemed to consider that our being and the making of our being are mutually self-constituting processes that might best prosper via constructive efforts arising from rigorous, open-minded explanatory forays and critical (collective/self) reflection. I am pleased to argue that, by contrast, the yield of such rigorous, explanatory, and constructive products within the fields of academic rhetoric has been unusually high, even though the number of efforts has to date been relatively modest (perhaps because the task of learning enough genetics to avoid saying foolish things constitutes a high barrier). However, what I now better appreciate—after a twenty-year multi-disciplinary sojourn—is that the contributions of the sociologists, the

ideologues, and the renegade biologists, like the contributions of the biologists themselves, are nonetheless valuable for our explorations. Although those who issue “wake-up calls” about new technologies may not have the discursive tools to give us the necessary richness for deep reflections on our being, they are crucial to stimulating these discussions. I hereby affirm both the importance of discipline-ed work and spaces for and the value of supradisciplinary engagement.

Addressing Determinism and Racism

Having found the early anti-genetics scholars to offer serious concerns but deficient in their support of those concerns, I began my research by trying to explore to what degree their central claim was correct: did the promotion of the scientific discourse of genetics mean that the American populace was coming to see the most important facets of our being and experience—not only our physical and mental health, but our identities, social status, our race and class and gender—as predetermined by the inexorable march of chemical units?

At face value, the anti-geneticists’ concern was not entirely ungrounded. There were certainly people in the scientific, educational, and public spheres who used genetics to essentialize group identities in order to promote racism and racist agendas (I won’t give added presence to their names here, but if you need evidence, see Ramsey, Achter, & Condit, 2001). On the other hand, John P. Jackson, Jr. and David J. Depew (2017) recently explained how as early as the nineteen-fifties and sixties, the “modern synthesis” of evolutionary science and molecular genetics had come to be based in a different theory of genetics than that employed by the classification-oriented racists. The probabilistic, distributional, processual view of genes that emerged with that scientific synthesis undermined—on scientific grounds—the intellectual and political regressives’ claim that scientific findings in genetic research bolstered static, gene-based identities, or any ability to define discrete and stable races. The new research instead showed that all human populations—however you parsed them—were defined by genetic variability that exceeded whatever criterion one might use to lump the group together. Because the anti-geneticists ignored these scientific developments, the positive value of their rhetorics for challenging the conservatives’ visions entailed the high cost of cementing the political regressives’ claim that science

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was on the racists' side. Moreover, the anti-geneticists' argument presumed that an ignorant public would merely absorb the racists' genetics discourse lock, stock, and barrel.

Over the next decade, rhetorical scholars drew on what I perceive to be the strengths of disciplined rhetorical study—the incorporation of historical perspectives, respect for the diversity of audiences, and theoretical and critical precision about language and other semiotic processes. Research teams in which I was involved used those criteria to conduct many kinds of studies, the upshot of which showed that during the two decades surrounding the turn of the century, neither the mass media nor the American populace were simply dupes of the right-wing spin on genetics. Neither the American press nor the populace accepted the regressives' claims that genetics proved that humans were unchangeable, deterministic products of the beads on a string that they envisioned as genes. Rather, in spite of loud exceptions, popular media most often described genes as playing partial roles, along with environment or upbringing, crediting both nature and nurture as the makers of human being (Condit, Ofulue, & Sheedy, 1998; for histories of earlier periods, see Condit, 1999; Hasian, 1996). Similarly, in focus groups of people from multiple ethnicities and income levels, we heard that race was a complex concept, in which genetics played a role in distributing skin, hair, and eye color, but in which upbringing, social values, and stereotypes played at least as large a role in producing race and racism (Condit, Parrott, & Harris, 2002; Condit et al., 2004). While the combining of “race” and “genes” in health messages could create presence for racism (Condit & Bates, 2005; Lynch et al., 2008), people were therefore simultaneously wary of the use of race-based medicine (Bevan et al., 2003). Although there were variations, and some people were consistent ideologues on one side or the other, most people deployed “genetics” talk and “nurture” or “environment” talk in strategically driven rather than ideologically consistent ways (Condit, 2011; Condit et al., 2009; Keeley, Wright, & Condit, 2009).

This is not to say that most rhetorical scholars would or should endorse the views articulated about genetics in the press or by the populace. Religion, nature, and family-based nurture all get at least as prominent space in most people's accounts as does culture, and people's visions of nature has had a longstanding role that subsumes molecular genetics. Moreover, at the theoretical level, the evidence does not support the theory that the public appearance of one discourse erases others—even others that might be taken as opposed to it. Rather, members of the populace seem to be industrious

bricoleurs who deploy any discourse made available through any channel (no matter how apparently contradictory) to achieve varying objectives. Much of this evidence has arisen from rhetoricians' study of metaphors.

Metaphors and Genes

Twentieth-century theories emphasized that metaphors were not merely stylistic embellishments but were ways of thinking. Although that was an advance over classical theories, those late modern studies were framed within theories of ideology that viewed language as a coherent and systematic network of related meanings. Within such theories, the use of a metaphor had a specific and identifiable meaning. Critics could therefore spot a metaphor and identify its meaning and therefore project its effects, consequences, and exclusions.

Work with my students suggested that theories of language as action, which treated metaphor (and all language) as multipotent, dynamic phenomena whose effectivities arise from their interactions in shifting relays, better accounted for the work that metaphors about genetics might do. In a multi-methodological study, we showed the varied ways in which people interpreted the "recipe" and "blueprint" metaphors for genetics (Condit et al., 2002). Different contexts encouraged highlighting varying potentials, and positionality mattered too. Unlike social critics and architects, laypeople were quite willing to see a blueprint as a kind of rough plan that got altered as the process of building engaged the material world and demanded revisions. It turned out that people were likely to call up dark potentials in the recipe metaphor and to deploy open potentials in the blueprint metaphor, in contrast to what the social critics had insisted were the overdetermined effects of those metaphors. Findings like this raise the bar for studies of metaphor and other tropes. This does not demand that critics always employ audience studies, but it necessitates a rigorous exploration of the range of potentials embedded in any given metaphor and some theoretically grounded thoughtfulness about how those potentials might interact with intertextual or material factors (an approach illustrated by Ceccarelli, 2004; Nelson, Yu, & Ceccarelli, 2015).

Some rhetorical scholars have taken up that challenge in a bold fashion. John Lynch (2008), Kelly Pender (2018), and Marita Gronnvoll and Jamie Landau (2010) all responded to the conclusion of Bruno Latour (2004) and Brian Massumi (2002), among others, that the old meaning-based version

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of critique has “run out of steam” and that more attention to “matters of concern” is needed. These rhetoricians have engaged what we might call the “constructionizing turn” in rhetorical studies. Constructionizing is a neologism that marks the acceptance of the responsibility to propose *better* rhetorics (and not merely novel ones). Constructionizing seeks to build on symbolic constructionist theories, but it suggests that debunking, critiquing, and deconstructing need to be accompanied by novel imagining because humans are obligatory social creatures who must, at least some of the time, achieve cooperation about action through symbolic means (if they are not to live always and fully at war). As Latour and Massumi suggested, building nonviolent modes of social interaction requires more than showing the flaws of regnant symbolic models; it requires creative making that also takes into account the nonhuman materials of which we are made and within which we are embedded. However, another piece needs to be added to these urgings. Although novelty is valuable (as illustrated about genetics by Richard Doyle, 1997), because decisions must be made, novelty is not enough; any old gathering will not do. Reflective judgment on our own imaginings is also required, and this can only be done through discursive deliberation. Thus, constructionizing involves the creativity to offer what one projects might have the potential to expand the rhetorical repertoires *not merely for the sheer sake of expansion as art or play, but as a reflected-upon participation in the making of better options available in a way that has social appeal*. This making of better rhetorics does not require discourses that are perfect, best for all situations, all-encompassing, or better forever; it merely requires a temporarily reflective judgment about what is likely to be better (for a while) than what is circulating now, given a specified set of social goals and the projected deficiencies of the existing rhetorics.

Thus, John Lynch (2008) described the way in which genealogical or geographical images and metaphors tended to provide the substance of popular genetics communication. He offered that “migration” provides a richer metaphor, because it recognizes both the genealogical and geographical substances, and its dynamism is not only scientifically correct but also re-establishes the fluid character of genetic inheritance. Where Lynch began his analysis in mass mediated discourse, Gronnvoll and Landau (2010) began theirs in lay discourse produced by low-income African-Americans and whites in interviews. Gronnvoll and Landau found that in talk about genes, members of the public metaphorized genes most often as virus or disease, but also as fires, bombs, and gambling (a “roll of the dice”). To

promote metaphors that had promising alternative potentials, these rhetoricians explored the productivities available in metaphorizing genes as bands or as dances, images that highlight the interactive, dynamic, and creative elements in gene-environment or gene-behavior interactions (research that was later partially verified with audience studies). In more recent work, Kelly Pender (2018) offers an even more ambitious and theoretically advanced charter to expand deliberative options related to cancer genetics.

There is even more surprise-filled work to be done with metaphors as the affective turn has begun to sensitize us to the emotive dynamics of metaphors rather than treating them merely as ideational vehicles. For example, in trying to create messages for publics that would enhance the strength of their perception of gene-environment interactivity, my research group made a serendipitous discovery (Condit, 2009). Metaphors such as “sky-rocket” and “snowball” generated intense emotional responses that could not appropriately be treated with the flat equivalence implied by prior theories that understood metaphors as ideas or as a structure of semiotic units rather than as enmeshed with bodily codes. Some metaphors provoked an intensity of response that seemed disproportionate on any rational calculus, and these had specific effects on the intended actions of the participants, as well as on the uptake of what one might call the ideational content of the metaphor’s tenor. If one does not attend to the affective dimensions of a metaphor, one may clearly miss substantive dimensions of a rhetoric (this theory is developed in Condit, 2018).

Pause for Meta-Theoretical Reflectio

Before moving to the next set of studies, I want to pause and step out of the flow of particulars to reflect on what these kinds of studies about genetics discourse mean for rhetorical studies and for framing what it might mean to be a symbolizing-animal. The studies contribute to and are produced by a “humanist plus” vision of rhetoric. The theory has a humanistic component, because it incorporates the Enlightenment’s assumption that human beings are ourselves a primary shaper of our social lives. We are not merely the pitiful subjects of an angry or gentle God. The “plus” fundamentally modifies the Enlightenment view, however, by incorporating post-structuralist, sociological, and biological insights about the fragmented, socially shaped, physiologically embodied inputs to “human.” Thus, the humanist plus vision

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is not of a proud, autonomous, fully self-conscious chooser of “his” own being. Per being (to borrow Marge Piercy’s gender-neutral pronoun)—our being—is instead shaped by multiple different inputs, all material but all different in form and influence. Our partially shifting and shiftable being arises from the collusions and collisions among those disparate forms of input. Recognizing the constant interaction and mutual remaking of such multiple inputs through deep and shallow time provides an alternative to the mind-body dualism that constantly rearticulates the public and academic battle over whether one should privilege, as essence, the mind (typically from the humanities) or the body (typically from the biologists and their allies).

Usually, the social constellations that emerge from the interactions among different material forms can be treated as theoretically predictable in broad outline because they are constituted through material densities in inertia-bearing trajectories. Nonetheless, these constellations may sometimes undergo surprising deviations and explosions. Unlike pure anti-humanist perspectives, however—whether emanating from neo-Marxism, post-structuralism, or reductive biology—this humanist plus vision retains enough of a localized-if-fractured human agent (individual *and* collective) to recognize the embodied sharing of discourse as our one feeble lever for getting a bit of a handle on all these inputs. That is, if we have any hope to transcend the status of puppets of social discourse-in-action-with-biological-scripts, it is because language enables us 1) to recognize these inputs, 2) imagine, 3) choose from, and 4) drive toward alternative futures. Deliberation is how we might choose among these futures, and research enables us to better anticipate which visions we might expect to be realizable, and what kind of tools might best get us there.

On this account, the contemporary demands on rhetorical scholars have become perhaps even greater than those described by Cicero’s Crassus—who congealed the observation that the good rhetor must strive to know everything. Today, this means we should not merely dismiss or demonize biology—we should seek to grasp its likely inputs into the social order if we are to respond to them deliberately. We should not merely dismiss psychology in favor of sociology—we must grasp the likely inputs on social discourse of time-shaped human minds in order to productively counter or amplify their proclivities. And so on, across the disciplines. Such a Herculean intellectual task is possible because it is not, as in Cicero’s vision, an accomplishment for each of us to achieve individually, but rather one gained by

collectively accounting for the many inputs to being human as a conglomeration of overlapping and cumulating practices.

Rigorous Scholarly Dialogue

The process for harvesting and digesting this breadth, and its value, can be illustrated in the dialogue about genetics enacted in a pair of studies by Robert Brookey (2002) and John Lynch (2009). In detailed analysis of work on the so-called “gay gene,” Brookey carefully, rigorously, and insightfully advanced our reflections on the social portraits of homosexuality and heterosexuality as either chosen or genetically determined. As Brookey noted, some opponents to heteronormativity (including biological scientists) found potential political utility in research showing links between sexual orientation and genetic heritages. These links seemed to provide a forceful reply to those who sought to stage interventions to convert people from being gay. The potential findings also resonated with some gay and lesbian people’s sense that they were born homosexual. But Brookey pointed out that research on the gay gene was associated with problematic assumptions about the inherent and unchangeable nature of male and female sex/gender that had other troubling political implications. He asked us to consider why the stasis of the question was “Are people gay by choice or protoplasm?” instead of questioning how one could argue to exclude or discriminate against some persons in any of the activities of the human community, regardless of the inputs to their being.

I know from personal communication that John Lynch respected these contributions. However, as someone deeply interested in understanding the rhetorical interactions of science and society and well versed in the genetics, Lynch thought that Brookey’s (2002) analysis could be enhanced by attending more deeply to some of the implications of increasingly material understandings of rhetoric and increasingly discursively sensitive understandings of bodies. Lynch (2009) noted that Brookey’s focus on the endgame of political guidance did not attend to the ways in which the different sizes, histories, and functions of the X and Y chromosomes might lead geneticists to look for behavioral genes on the X chromosome where they were far more likely to be. The scientific rationale might fit (unfortunately well) with the public rhetoric of “blame the mother,” but it was an independent and differently sourced input. Ignoring the particular material sources of that input flattened the interplays between scientific articles and

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popularizations of science in Brookey's analysis. Lynch's analysis encourages reading strategies that enable (more) politics to emerge from what/how/when/where people are saying precisely what they are saying. This interchange illustrates the power of dialogue to enhance our most heartfelt political goals through our best scholarly strategies for rigorous listening. The interchange between Kelly Happe's (2016) work on *The Material Gene* and Kelly Pender's (2018) research seeking to stimulate topoi for "healthier" discussions of cancer genetics likewise illustrates the value of disciplined dialogues about rhetorics.

Respecting the Populace

Other studies of genetics have highlighted the value of rigorous listening—even to voices we are predisposed not to want to hear—in treating audiences as active agents not inferior to ourselves. For example, in analyzing the "stasis" of the argument over "Direct to Consumer" genetic testing, Zoltan Majdik (2009) took his own experience not as superior to other consumers and target audience members, but as typical of them. In doing so, he offered not a quick political accolade for one side of the argument and a passionate denunciation of the other, but a sensitivity to the ways in which the dynamics of governance (democracy *and* protection from power) and scientific expertise (knowledge *and* power) intersect to preclude passionately one-dimensional answers to how we should responsibly engage choices about who controls the deployment of genetic medicine: Individuals? Experts? Governments? Each has potential benefits and perils. Rather than simply picking one of these as a preferred demon to castigate, how can we formulate a better rhetoric that reformulates the relationships of these sources for socially situating our engagements with the codes of the body?

Similarly, studies of communities to whom we are predisposed to be sympathetic also have enabled rhetorical scholars to examine how members of the populace actively and creatively, if self-interestedly, deploy genetics not as a master discourse, but through a multilectic approach. Both Bryna Siegel Finer (2016) and Kelly Pender (2012) analyzed discourse of women who know or suspect that they are in a lineage that carries heightened risk for breast cancer due specifically to versions of genes dubbed BRCA1 and BRCA2. Finer's study highlights the functions of the discourse and especially of social media for women. Pender's analysis highlights the way in which discourses do not function in oppositional terms for members of

publics. Where well-schooled ideologues and academics may treat determinism and opportunity as incompatible and opposed tokens of full-blown ideologies, the participants in the FORCE forum strategically deployed these terms in tandem.

More to Do

Other research has begun to take on the institutional dimensions of these rhetorics (Turner, 2005; Condit, 2004, 2007) and issues related to fictionalization (Burg, 2010), and, of course, the internal rhetorics of the underlying science (e.g., Ceccarelli, 2001; Lyne & Howe, 1992). These and other works for which the present space is inadequate to treat (my apologies, dear colleagues whose voices I have not managed to include) at least illustrate the rich findings that arise from rigorous rhetorical study that takes seriously the topics and perspectives raised by genetics/genomics and by the uses to which the populace tends to put such discourses. Informed by experience with how people are deploying rhetoric, such studies can contribute something additional to our legitimate concerns—even fears—about genetics.

For the science has changed, and the social may be changing as well (e.g., Chow-White & Green, 2013). It seems well worth worrying about whether CRISPR technologies may not be your garden-variety social problem. The mid-twenty-first century may bring—perhaps by our collective choice interacting with some of our/their collective profit—an epochal shift in the human and the ecosystem. If the enthusiasts of CRISPR technologies for modifying genetics are even three-quarters correct about what this technology can do, then genetic medicine may alter the human genome, while the broader technology replaces thousands of kinds of microbes, plants, and animals with hundreds of kinds of new creations.

What should or will we decide, or at least, allow to happen? The combination of biological and rhetorical knowledge indicates that, on this issue, “we” can only mean the global populace, because biological beings inevitably travel, so local or national rules cannot constrain the technology’s impact (and somewhat global “we’s” have already begun to make proposals about these developments; Wolpe et al., 2017). Such a “we” might decide with the anti-geneticists that this technology and all its products should simply be banned. Enforcement of such bans cannot be perfect (the rich of the world will make their children as they wish to make them, the bioterrorists will make their weapons as they wish to make them, now that the knowledge

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to do so exists). But that is weak reason to conclude against a ban; we ban murder even though some murders will still occur. A ban seeks to limit a behavior as much as socially possible and also creates a normative social statement—we will not be the kinds of creatures who physiologically remake ourselves and other beings.

But, you can already see problems in such a statement.

We have always been the kind of creatures that change ourselves and other beings. In her radically anti-molecularist, but also thoughtful and caring, analysis, Barbara Biesecker (2017) touted Jean-Luc Nancy's definition of humans as the being that self-transcends. Biesecker shared Nancy's celebration of this "excess of man over himself" (p. 426, as cited in Nancy, p. 11) as "worth infinitely more than any measurable evaluation" (p. 426, as cited Nancy, p. 16). I share the view that humans are creatures who—sometimes gloriously and sometimes hideously—remake ourselves. So, if there is a basis for resisting the remaking ourselves and the world using CRISPR technologies, it does not lie in resistance to remaking per se.

Perhaps, then we might place the cordons solely around our biological selves. Only social remaking allowed! But, such a wish ignores the ways in which the biological and the social are unavoidably intertwined. Consider breast cancer as an exemplar. The anti-geneticists may be right; breast cancer may be more often caused by environmental toxins than it is by BRCA1/2, and therefore the prevalence of breast cancer in the population would be more greatly reduced by non-genetic technologies than by genetic medicine in the old-fashioned sense. Even if so, there are unacceptable costs to denying the existence and effects of the BRCA1/2 genes—a denial I have heard some anti-geneticists articulate, and which seems grounded in our wish that we could accomplish everything through the realm of a social uncontaminated by the imperatives of the body. The denial of the existence and effects of the dynamic complex that we, for utility's sake, simplify as the BRCA genes is unacceptable because it inflicts a material harm on those women who carry such cancer-predisposing alleles (with all their great embedded complexity). Death from breast cancer and treatments for breast cancer have material costs for such women, which Pender (2018) shows should, by both reason and care, be treated as greater than the costs of responding to information that one has risk-predisposing alleles. The costs to these people, although they are a minority, cannot and should not be denied by insisting on theories that, for apparent political convenience, deny the existence of codes of the body that are anything other than the

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product of discursive codes. These women's pain and risk should not be treated as exceptional, but as exemplary. For each of us is partially subject to the ways in which the codes of our diverse bodies inflict pain or guide our pleasures. Social discourse can ameliorate or reshape those pains and pleasures, but it cannot simply erase the movement of those codes by denying their existence or their operation at the molecular, organ, organismic, or speciating levels.

So, where does that leave us? There is a great deal of work to be done to understand sufficiently what might constitute shareable, realizable, humane-and-biosensitive discourses about the codes of the body, the words we might better share, and how those two entwine in the public discourses, policies, and institutions we should construct for our near futures. Those who (e)congregate through the processes enacted by *The Rhetoric of Health & Medicine* have worthy challenges ahead.

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