Should Some Knowledge Be Forbidden? The Case of Cognitive Differences Research

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For centuries scientists have claimed that women are intellectually inferior to men and blacks are inferior to whites. Although these claims have been contested and corrected for centuries, they still continue to be made. Meanwhile, scientists have documented the harm done to women and blacks by the publication of such claims. Can anything be done to improve this situation? Freedom of research is universally recognized to be of first-rate importance. Yet, constraints on that freedom are also universally recognized. I consider three of these constraints and argue for tighter restrictions on race- and gender-related cognitive differences research on their basis.

1. Introduction. Freedom of research is a fundamental right of scientists and an indispensable part of the scientific enterprise. This, at least, is what is said all over the world—in covenants of the United Nations, in charters and declarations of such bodies as the European Union and the World Congress for Freedom of Scientific Research, in the constitutions of nations, and in other places as well. As a result, encroachments on scientific freedom are met with alarm: think not only of the recent heated debates concerning stem cell research but also of the widespread, sometimes passionate discussions surrounding the "politicization," "commercialization," and "militarization" of science. But how much freedom do scientists really need—or deserve?

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The very question seems anathema. And yet, all the covenants and charters and declarations that recognize the right to freedom of research at the same time recognize, whether explicitly or implicitly, other important rights that can conflict with the right to freedom of research. Asking how much freedom scientists really need or deserve thus involves asking how the conflict between the right to freedom of research and these other rights is to be resolved. Only by resolving the conflict do we gain a clear understanding of the extent and depth of scientists' right to freedom of research. Of course, the answer in some areas is already largely settled. Take the right to human dignity and the integrity of the person and the right to environmental protection. These rights are already recognized to be constraints on scientists' right to freedom of research, constraints as politically legitimate as the national and international declarations that recognize the right to freedom of scientific research in the first place. Scientists are no more free in the way they conduct their research to compromise the safety or dignity of research participants than they are to endanger the environment. But what of other rights and their possible conflict with the right to freedom of research?

2. A Case Study: The Right to Equality versus the Right to Freedom of Research. Take the right to equality between men and women and between people of different racial and ethnic groups, a right as widely recognized as the right to freedom of research. Many have warned that the enforcement of this right to equality is threatened by certain kinds of scientific research—for example, by research investigating gender- and race-linked differences in cognitive abilities, particularly biologically based differences in cognitive abilities (see, e.g., Ceci and Williams 2009; Rose 2009). A glimpse at some of the claims emerging from this research helps us to understand what lies behind the warning.

Consider the research related to gender. For centuries scientists have claimed that women are intellectually inferior to men, and for centuries the basis for such inferiority has been located in biology. In the seventeenth century women's brains were claimed to be too "cold" and "soft" to sustain rigorous thought. In the late eighteenth century the female cranial cavity was claimed to be too small to hold a powerful brain. In the late nineteenth century the exercise of women's brains was claimed to be damaging to women's reproductive health—was claimed, in fact, to shrivel women's ovaries. In the twentieth century the lesser "lateralization" (hemispheric specialization) of women's brains compared to men's was claimed to make women inferior in visuospatial skills (including mathematical skills) (Schiebinger 1989; Fausto-Sterling 1992, 2000).

And now, in the beginning of the twenty-first century, the claims continue: that women's brains are smaller than men's brains, even correcting for differences of body mass; that women's brains have less white matter; that women's

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brains have less focused cortical activity (lower "neural efficiency"); that women's brains have lower cortical processing speed (lower conduction velocity in their white matter's axons); and so on. And once again these differences are being linked to differences in intellectual capacity: that people with smaller brains have lower IQ test scores; that less focused cortical activity is associated with lower intellectual performance; that lower cortical processing speed is associated with lower working memory performance, which is correlated with lower "fluid intelligence" scores; and so on (see Hamilton 2008 for more details). At the same time, much attention now focuses on the mappings of brain activity produced by brain imaging, particularly fMRIs (functional magnetic resonance imaging), and the differences in "emotional intelligence" these disclose. But once again the "male brain," the "systemizer" brain, comes out on top—is the more scientific brain, the more innovative brain, the more leadership-oriented brain, the more potentially "elite" brain, than the "female brain," the "empathizer" brain (Karafyllis and Ulshofer 2008).

Of course, this is just a peek at the history of scientific claims regarding women's intellectual inferiority. The claims include not only these about the structure and functioning of women's brains but also ones about women's hormones, women's psychological propensities, women's genetic endowment, and women's evolutionary past—how all these are connected to intellectual inferiority; and the claims go back in history at least to Aristotle and his observation that women are literally misbegotten men, barely rational at all. And though these claims of intellectual inferiority continue to be contested and corrected, they also continue to be made, and the endless succession of claims and counterclaims both feeds on and helps to sustain the stereotype of intellectual inferiority associated with women.

Meanwhile, the effects are profound. For example, studies have documented the harm done to women and girls by the publication of scientific claims suggesting an innate female deficit in mathematics (see, e.g., Steele 1997; Spencer, Steele, and Quinn 1999; Dar-Nimrod and Heine 2006). Reports one of the researchers involved in these studies, social/personality psychologist Steven Heine of the University of British Columbia, "As our research demonstrates, just hearing about that sort of idea"—that female underachievement in mathematics is due to genetic factors rather than social factors—"is enough to negatively affect women's performance, and reproduce the stereotype that is out there" (quoted in Ceci and Williams 2010, 221). But that harm has been recognized for years. Virginia Woolf described it almost a century ago: "There was an enormous body of masculine opinion to the effect that nothing could be expected of women intellectually. Even if her father did not read out loud these opinions, any girl could read them for herself; and the reading, even in the nineteenth century, must have lowered her vitality, and told profoundly upon her work. There would always

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have been that assertion—you cannot do this, you are incapable of doing that—to protest against, to overcome" (Woolf 1929, quoted in Spencer et al. 1999, 5). Of course, much the same can be said of race-related cognitive differences research and the harm that it has caused.

Many have warned, then, that cognitive differences research threatens the enforcement of the right to equality and, hence, that scientists' freedom to pursue such research ought to be constrained by that right. But this response is far from universal (see, again, Ceci and Williams 2009; Rose 2009). Indeed, many others have warned that constraining scientists' freedom to pursue this research will cause us to lose valuable information, including all those discoveries that support rather than undermine the right to equality. And, in any case, they emphasize, constraining scientists' freedom to pursue this research is an unacceptable infringement of scientists' rights. The conflict between the right to equality and the right to freedom of research thus remains unresolved, and this despite years of debate on the subject. Under these conditions a plausible strategy might be to consider past precedents—cases in which the conflict between the right to freedom of research and other rights has been effectively resolved. Then we can try to model the resolution we seek on these other cases.

3. Past Precedents. Consider, then, three precedents that involved the right to freedom of research. The first two are relatively familiar, so discussion of them will be brief. Until the US National Institutes of Health Revitalization Act was passed in 1993, women and minority men tended to be neglected in US biomedical research—left out of clinical drug trials, left out of the definitions of diseases, left out of research agendas, their health needs largely ignored (see, e.g., Rosser 1994; Schiebinger 1999). What the Revitalization Act did was mandate the equal inclusion with white men of women and minority men in publicly funded US biomedical research and make funding contingent on that inclusion. This surely formed a constraint on scientists' freedom to design their own research programs, and it was justified by women's and minority men's right to equality—in this case their right to equality of access to health care.

Similarly, the earlier US National Research Act of 1974 mandated the formation of Institutional Review Boards to oversee all research that receives funding from what is now the Department of Health and Human Services. These review boards, themselves regulated by the Office for Human Research Protections of the Department of Health and Human Services, can reject, modify, or suspend any medical or behavioral research that fails to protect the rights and welfare (the right to life, the right to autonomy, the right to human dignity, etc.) of its human subjects (National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research 1979). So here again, scientists' right to freedom of research has been constrained

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by other rights. Can a new constraint to protect human rights, this time in the area of cognitive differences research, be modeled on these two cases?

Certainly, there are important similarities among the cases. They all rule out as unacceptable harmful kinds of scientific enquiry, and thereby they all shape the kinds of knowledge scientific enquiry can deliver, but they do not shape that knowledge in any other way. So none can be said to censor particular kinds of knowledge. The National Research Act rules out as unacceptable harmful procedures for obtaining knowledge, not particular kinds of knowledge. If other ways are found to obtain the knowledge without harming research participants, that is perfectly acceptable, regardless of the content of the knowledge in question. The Revitalization Act rules out as unacceptable harmful—exclusionary and neglectful—kinds of research agendas, though it says nothing about the content of the knowledge that is gathered with those agendas. If it turns out that one or another group is, say, more prone to disease, that is also acceptable, though, of course, unfortunate. In a similar way, a constraint on cognitive differences research would rule out as unacceptable the kinds of harmful gender and racial group comparison questions that are included in that research and, thereby, the answers to those questions that continue to be circulated, though it would do this regardless of the content of the answers—that is, regardless of whether they bespeak equality or inequality of the groups in question.

Of course, ruling such questions out is controversial. Indeed, some maintain that science should rule no questions out. But if such questions are harmful to women and minority men, then surely they should be ruled out—in just the way in which the two other harmful kinds of scientific enquiry described above have been ruled out. And if so, a resolution of the conflict between the right to freedom of research and the right to equality in the area of cognitive differences research is at hand, one modeled on our first two precedents.

At this point, you will protest. There is nothing especially harmful, you will say, about seeking to determine who is better at something, or about seeking to determine whether some are as good at something as others, or else everything from spelling bees and team sports to college entrance examinations and the Nobel Prize would be ruled out of bounds. What is problematic about cognitive differences research is not the questions asked or even the results sometimes obtained, but the prejudiced—the racist and sexist—context in which the research takes place. It is this context that makes the research disempowering. For example, whites do not typically feel demeaned or disempowered when it is reported that Asians have higher IQ scores than they. The result, in fact, seems of little consequence; IQ isn't everything. But when it is reported that whites have higher IQ scores than blacks, blacks do feel demeaned and disempowered. The difference, of course, is the racism that oppresses blacks and privileges whites. To be sure, finding out that blacks

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have lower IQ scores than whites, or that women are analytically weaker than men, could be the beginning of educational and training programs to work with the strengths and work on the weaknesses of every group to help make them the very best they can be, and even to use the special talents of each group to help the others. Finding these things out could be the beginning of innovative programs that support rather than undermine the right to equality. That this does not happen, or seldom happens, is a function of the sexism and racism of society, not the knowledge uncovered by cognitive differences research.

In short, there is nothing wrong with cognitive group differences research taken by itself. It is our society that is wrong, not the research. So why should we limit the freedom of scientists and the potentially interesting and important insights they might offer because of the shortcomings of the society in which they do their research? This is what I think you will say. And, although the argument falls short of compelling—cognitive differences research, after all, is far less benign than spelling bees, team sports, and the Nobel Prize, with their emphases on motivating hard work and rewarding achievement—still the societal context of such research is surely significant. Turn, then, to the third of my three precedents, a very new case involving the conflict between the right to freedom of research and the right to personal security (that is, the right not to be killed and not to be injured or abused—in the US Constitution, this is called the right to life). This time the case comes from synthetic genomics investigations within biomedical research.

4. The Third Precedent. In 2001, Australian researchers inadvertently produced a superstrain of mousepox, one that kills mice regardless of whether they have been vaccinated against mousepox or are naturally resistant to it. What the researchers had hoped to achieve, when they inserted the mouse IL-4 gene into the mousepox virus, was an altered virus that would provide a means of pest control by sterilizing mice. What the researchers did achieve was not only the superstrain of mousepox but very possibly also a technique for producing a superstrain of smallpox. In the wrong hands, this information could be deadly. Since there is no known treatment for smallpox—since vaccination is our only defense—having a vaccine-resistant strain of smallpox on the loose would produce havoc.

As if this weren't enough, in a second study in 2002, researchers at the State University of New York at Stony Brook stitched together strands of DNA that they had purchased via mail order, following the map of the polio virus RNA genome available on the Internet. Their technique resulted in the artificial synthesis of a "live" polio virus, one that paralyzes and kills mice. In this case, however, the researchers produced their deadly virus deliberately, "from scratch," using materials and information readily available to anyone,

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in order to demonstrate that terrorists might be able to make biological weapons without obtaining natural viruses.

In still further studies completed in 2005, researchers from the US Centers for Disease Control and Prevention, the Armed Forces Institute of Pathology, Mount Sinai School of Medicine, and the US Department of Agriculture pieced together viral fragments from hospital specimens and from the remains of a human victim dug up in Alaska to sequence the complete genome of the deadly Spanish flu virus, the virus that had killed an estimated 40–50 million people worldwide in the winter of 1918–19. They then went ahead and re-created the virus, this virus that by then no longer existed anywhere on Earth. The re-created virus, the researchers found, was just as lethal as historical records had led them to expect: all the mice that were infected died within days, and Canadian, US, and Japanese researchers found the same outcome with monkeys in 2007.

Note that all these groundbreaking studies were carried out by top researchers, and all were published in top journals—the first in the *Journal of Virology* (Jackson et al. 2001) and the others in *Science* (Cello, Paul, and Wimmer 2002; Tumpey et al. 2005) and *Nature* (Taubenberger et al. 2005; Kobasa et al. 2007). And all these studies (as well as others that might have employed similar techniques to synthesize smallpox or Ebola) were said to promise unprecedented insights into some of the most virulent diseases ever known and the kinds of drugs and vaccines that might be developed to combat them. Nonetheless, many have argued that these studies should not have been done at all, or at least they should not have been published. Regarding the 1918 Spanish flu studies, for example, biosecurity experts have warned that (to use the wording given in a special report in *Nature* in 2005) "the risk that the recreated strain might escape is so high, it is almost a certainty" (von Bubnoff 2005, 794). Others charged that publishing the full genome of the 1918 influenza virus was worse than publishing the precise design for an atomic bomb, since creating and releasing the virus from the published genetic data would be easier than building and detonating an atomic bomb from only its design, given that rare materials such as plutonium and enriched uranium would not be needed, and releasing the virus would kill many more people than detonating an atomic bomb (Kurzweil and Joy 2005). And still others called the virus "perhaps the most effective bioweapons agent now known" (von Bubnoff 2005, 795). According to these experts, in short, the present "age of terrorism" in which the studies have been conducted, as well as the ever-present possibility of human error, have turned what the Centers for Disease Control called important health research into a very bad idea.

So, the context of research can shape the value of research—in biomedical research, given its context of terrorism, no less than in psychological research, given its context of sexism and racism. The controversial biomedical

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research described above, however, unlike the controversial psychological research described previously, has produced new policy constraints on the freedom of research. In 2003, for example, a joint "statement on scientific publication and security" appeared in *Science*, *Nature*, the *Proceedings of the National Academy of Sciences*, and the journals of the American Society for Microbiology. According to this statement, editors should screen and, if necessary, request modification of or even refuse to publish manuscripts if the editors "conclude that the potential harm of publication outweighs the potential societal benefits" (Journal Editors and Authors Group 2003). In 2004, the US National Research Council issued a comprehensive report, *Biotechnology Research in an Age of Terrorism*, commonly known as the Fink report (see National Research Council 2004). This report, as well as others appearing around the same time, emphasized the need for systematic reviews of potentially harmful life sciences research before the initiation of the research and at regular intervals thereafter, way before publication is at issue. The Fink report went on to identify the kinds of study that require this especially careful oversight, and it expanded the institutional framework already in place to carry out the oversight. It emphasized, as well, the need to develop a culture of responsibility within the life sciences to support and anticipate the oversight, to be accomplished by educational programs undertaken by all the professional societies in the life sciences, by group strategies coordinated by the major societies, and by the creation and promotion of codes of ethics detailing life scientists' social responsibilities. Finally, the Fink report recommended the establishment of a National Science Advisory Board for Biosecurity to provide the necessary advice, guidance, and resources for both the scientific community and the government regarding the system of review and oversight it proposed. This board was created in 2004, and it included both leading scientists and biosecurity experts.

Is there any reason new policy constraints like these for the life sciences should not be put into effect for the social sciences—new policy constraints that include research guidelines for weighing societal harms of research against societal benefits, that include educational programs and codes of ethics designed to foster a culture of responsibility among social scientists, and that include a new National Science Advisory Board for Social Research to provide advice, guidance, and resources for both the scientific community and the government? Such a board could count among its members both leading social scientists and representatives of the public at large, such as racial, ethnic, and gender group advocates. Is there any reason new policy constraints like these should not be put into effect for the social sciences? Reflecting, again, on the two cases described above, one from the social sciences (the case of cognitive differences research) and one from the life sciences (the case of recent synthetic genomics research), two reasons might be offered to say that the cases should not be treated similarly. The first reason is that the cognitive

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differences research in question does not pose harms to society anywhere near the harms posed by the recent synthetic genomics research. Hence, there is no need for similar constraints on scientific freedom in the two cases. The second reason is that such constraints might have very different effects in the two cases, limiting scientific progress in the one case but not in the other. What can be said in response to these considerations?

To begin with, it is clear that the kinds of synthetic genomics research described previously may cause great harm to certain people—to the people who work in the laboratories in which the research is carried out, to the people who live near those laboratories in whose midst the pathogens may escape, to the people who may end up targets of terrorists' use of the published results of the research, and so on. All these people, under the old system of standards for choosing, carrying out, and publishing research, might have gotten very sick or even died as a result of the research, though the degree of likelihood for these various effects is hotly debated (see, e.g., von Bubnoff 2005 for some of the debate). As a result, special new constraints on scientific freedom were thought necessary to minimize the risks.

So, on the one hand, synthetic genomics research unconstrained may cause serious harm to various groups of people. On the other hand, cognitive differences research unconstrained, as previously stated, has already been shown to cause significant harm, though lesser harm than a serious illness, but for much longer periods than the length of an illness, to lots more people—to all the people whose self-esteem, self-efficacy, ambitions, and successes are lessened as a result of direct or indirect exposure to the research or aspects of the research (e.g., its results or even just its questions); to all the people whose self-esteem, self-efficacy, ambitions, and successes are lessened as a result of the treatment they receive from others who have been directly or indirectly exposed to the research or aspects of the research; and so on—in short, to all or most women and, in the United States at least, to most minority men and many men of color in other parts of the world. And these harms have gone on for centuries to this majority of society. Cognitive group differences research, then, arguably does pose harms to society near—perhaps even exceeding—the harms posed by the recent synthetic genomics research. If special constraints on scientific freedom are thought necessary in the one case, then why should they not be thought necessary in the other case as well?

But decisions of this kind must take into account their expected effects on science as well as society. And in the case of health research, it is claimed that the new constraints on scientific freedom will not limit scientific progress. Indeed, this was one of the desiderata built into the new policy. As the Fink report made clear, "any system of review and oversight must operate in ways that do not put the United States—and the world—at risk of losing the great potential benefits of biotechnology" (National Research Council 2004, 10). Some have gone further. They have claimed that even more

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stringent constraints than those now in place, constraints that would further restrict synthetic genomics research, will still not limit progress in health research, since, given the information already available, the controversial genomics research was not really needed (see, e.g., van Aken 2006, S12).

So, we have been assured that the new policy constraints on scientific freedom imposed on the life sciences will not limit scientific progress. But we can be equally assured that new policy constraints on scientific freedom in the social sciences will not limit scientific progress either. Indeed, we can write that into the policy, as the Fink report did. Moreover, as advocates for tighter restrictions in the life sciences have done, we can also question exactly how important to the overall goals of the social sciences race- and gender-related cognitive differences research really is, and we can also question the reasonableness of those goals that may make it important. For example, the synthetic genomics research described above has aroused great concern in the United States because of its national security implications. But surely cognitive differences research also has something akin to national security implications. After all, people of color from various national origins will soon be the majority in the United States, and women already are. As a result, the competence and productivity, indeed the flourishing, of minority populations and women are becoming central to our collective well-being. A kind of research that undermines this competence and productivity therefore also undermines our security, and goals that support such research thereby become suspect.

Of course, none of this precludes losses—to society as well as science—when scientists' freedom is constrained. New Zealand psychologist James Flynn's remarks in a recent debate in *Nature* on whether scientists should investigate cognitive group differences make this especially clear: "When you assert that a topic is not to be debated, you are foreclosing not some narrow statement of opinion on that topic, but the whole spiraling universe of discourse that it may inspire"; "I invite everyone to search the social-science literature of the past 34 years and ask whether or not they really wish that everything on the subject [of biologically based cognitive group differences], pro or con, was missing" (Flynn 2009, 146). But Flynn never considers the gains that might have occurred along with the losses had cognitive group differences research not been pursued during the past 34 years—the research that might have done far more to dismantle race- and gender-related injustice than the research to which Flynn and others contributed. Nor does Flynn consider the whole spiraling universe of discourse and benefits that might ensue if we now put a halt to cognitive group differences research. When we look at some of the newer work in child development in minority populations in the United States, how the old genetic deficit models and cultural deficit models of minority child development are being replaced by models that foreground and seek to build on minority competencies, strengths, and resourcefulness in the context of racism and poverty, or when we look at

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some of the work in feminist science studies over the past 30 years, how the old doubts whether women can make the same contributions to science as men have been replaced by studies showing the importantly different critical and constructive contributions to the sciences women have made, we get a hint of what this new discourse and these new benefits can be (for some of the newer models of minority child development, see, e.g., Garcia Coll et al. 1996; for some of the work in feminist science studies, see Kourany 2012).

5. Conclusion. The three precedents considered above—the US National Research Act of 1974, the US National Institutes of Health Revitalization Act of 1993, and the Fink report and related policy directives of 2003–4—point to a resolution of the conflict between the right to freedom of research and the right to equality, a resolution that favors the right to equality. At least this seems to be the result in the context of cognitive group differences research. But the same result should follow in other contexts in which the right to freedom of research conflicts with the right to equality—such as in the context of public health and biomedical research, where the health needs of the more affluent are privileged over the health needs of the poor (see, e.g., Hotez 2008). In fact, taken together the three precedents considered above suggest a quite general conclusion: that scientists' right to freedom of research cannot be allowed to subvert other people's rights, whether those other people are research subjects inside the research context or recipients of the effects of the research outside it. The case of cognitive group differences research, if enacted into a fourth precedent, will simply add further strength and urgency to this conclusion. It will also move science closer to the forefront of social change rather than remain holding up the rear.

REFERENCES

Ceci, Stephen, and Wendy M. Williams. 2009. "Darwin 200: Should Scientists Study Race and IQ? YES: The Scientific Truth Must Be Pursued." *Nature* 457 (7231): 788–89. http://www.nature.com/nature/journal/v457n7231/full/457788a.html

———. 2010. *The Mathematics of Sex: How Biology and Society Conspire to Limit Talented Women and Girls*. New York: Oxford University Press.

Cello, Jeronimo, Aniko V. Paul, and Eckard Wimmer. 2002. "Chemical Synthesis of Poliovirus cDNA: Generation of Infectious Virus in the Absence of Natural Template." *Science* 297: 1016–18.

Dar-Nimrod, Ilan, and Steven J. Heine. 2006. "Exposure to Scientific Theories Affects Women's Math Performance." *Science* 314 (5798): 435.

Fausto-Sterling, Anne. 1992. *Myths of Gender*. 2nd ed. New York: Basic.

———. 2000. *Sexing the Body: Gender Politics and the Construction of Sexuality*. New York: Basic.

Flynn, James. 2009. "Would You Wish the Research Undone?" *Nature* 458 (7235): 146.

Garcia Coll, Cynthia Gontran Lamberty, Renee Jenkins, Harriet Pipes McAdoo, Keith Crnic, Barbara Hanna Wasik, and Heidie Vázquez García. 1996. "An Integrative Model for the Study of Developmental Competencies in Minority Children." *Child Development* 67:1891–1914.

Hamilton, Colin. 2008. *Cognition and Sex Differences*. New York: Palgrave Macmillan.

https://doi.org/10.1086/687863 Published online by Cambridge University Press

Hotez, Peter J. 2008. "Neglected Infections of Poverty in the United States of America." *PLoS Neglected Tropical Diseases* 2 (6): 1–11. http://www.plosntds.org/article/info%3Adoi%2F10.1371%2Fjournal.pntd.0000256.

Jackson, Ronald J., et al. 2001. "Expression of Mouse Interleukin-4 by a Recombinant Ectromelia Virus Suppresses Cytolytic Lymphocyte Responses and Overcomes Genetic Resistance to Mousepox." *Journal of Virology* 75:1205–10.

Journal Editors and Authors Group. 2003. "Uncensored Exchange of Scientific Results." *Proceedings of the National Academy of Sciences* 100 (4): 1464. http://www.pnas.org/content/100/4/1464.full.pdf+html.

Karafyllis, Nicole C., and Gotlind Ulshofer. 2008. *Sexualized Brains: Scientific Modeling of Emotional Intelligence from a Cultural Perspective*. Cambridge, MA: MIT Press.

Kobasa, Darwyn, et al. 2007. "Aberrant Innate Immune Response in Lethal Infection of Macaques with the 1918 Influenza Virus." *Nature* 445 (January 18): 319–23.

Kourany, Janet. 2012. "Feminist Critiques: Harding and Longino." In *Philosophy of Science: The Key Thinkers*, ed. James Robert Brown. London: Continuum.

Kurzweil, Ray, and Bill Joy. 2005. "Recipe for Destruction." *New York Times*, October 17. http://www.nytimes.com/2005/10/17/opinion/17kurzweiljoy.html.

National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research. 1979. "The Belmont Report: Ethical Principles and Guidelines for the Protection of Human Subjects of Research." Regulations and Ethical Guidelines, National Institutes of Health. http://www.hhs.gov/ohrp/regulations-and-policy/belmont-report/.

National Research Council. 2004. *Biotechnology Research in an Age of Terrorism*. Washington, DC: National Academies.

Rose, Steven. 2009. "Darwin 200: Should Scientists Study Race and IQ? NO: Science and Society Do Not Benefit." *Nature* 457 (7231): 786–88. http://www.nature.com/nature/journal/v457/n7231/full/457786a.html.

Rosser, Sue. 1994. *Women's Health—Missing from U.S. Medicine*. Bloomington: Indiana University Press.

Schiebinger, Londa. 1989. *The Mind Has No Sex?* Cambridge, MA: Harvard University Press.

———. 1999. *Has Feminism Changed Science?* Cambridge, MA: Harvard University Press.

Spencer, Steven J., Claude M. Steele, and Diane M. Quinn. 1999. "Stereotype Threat and Women's Math Performance." *Journal of Experimental Social Psychology* 35:4–28.

Steele, Claude M. 1997. "A Threat in the Air: How Stereotypes Shape Intellectual Identity and Performance." *American Psychologist* 52 (6): 613–29.

Taubenberger, Jeffery K., Ann H. Reid, Raina M. Lourens, Ruixue Wang, Guozhong Jin, and Thomas G. Fanning. 2005. "Characterization of the 1918 Influenza Virus Polymerase Genes." *Nature* 437 (7060): 889–93.

Tumpey, Terrence M., et al. 2005. "Characterization of the Reconstructed 1918 Spanish Influenza Pandemic Virus." *Science* 310:77–80.

van Aken, Jan. 2006. "When Risk Outweighs Benefit." *EMBO [European Molecular Biology Organization] Reports* 7 (Special Issue): S10–S13. http://www.nature.com/embor/journal/v7/n1s/full/7400726.html.

von Bubnoff, Andreas. 2005. "Special Report: The 1918 Flu Virus Is Resurrected." *Nature* 437 (October 6): 794–95.

Woolf, Virginia. 1929. *A Room of One's Own*. London: Hogarth.

https://doi.org/10.1086/687863 Published online by Cambridge University Press