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## Book Review: Philosophy of Science after Feminism by Janet Kourany

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## BOOK REVIEW

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**Philosophy of Science after Feminism**, Janet A. Kourany, Oxford University Press, ISBN13: 978-0-19-973262-3, ISBN10: 0-19-973262-0

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Janet Kourany's book is a strange one: published by Oxford University Press (as a part of its Studies in Feminist Philosophy series), it is an academically oriented book, but reading it, you sense that this is not yet another theoretical monograph. For Kourany has her ax to grind, and more importantly she has a program to promote. The program is for philosophers of science and is motivated and encouraged by the amazing work done in the past few decades by feminist scientists and feminist scholars of science, technology, and society.<sup>1</sup> In the following I will try to explain why I think you might want to read the book even if you do not describe yourself as a philosopher. I must admit I have a sneaking suspicion that the author has a rather uneasy stance toward mathematics (about which I will say more below). I believe, nonetheless, that the book has much to offer to the readers of this newsletter.

The main components of the central argument of the book (or should I say manifesto?) can best be described by Kourany herself:

**1. [S]cience can be a powerful ally in the struggle for equality for women, but all too frequently has not been.** (page 12)

Kourany starts with some facts that make it undeniable that the world is still very much a male-centered, male-oriented place. Several instances of mistreatment of women across the world (including some data from developed nations) are thrown at the reader in rapid succession, and even though one who chooses to pick up this book is probably already sympathetic to the feminist stance, by the end of the first few pages there is no way to deny its significance and relevance.

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<sup>1</sup> Some of this work and books that present it have been reviewed in this *Newsletter* before.

Then she takes us on a tour de force on the role science has played in these matters. She proves with some concrete and fascinating example cases that science has the potential to aid us in our pursuit for a more just world, but also that it has too often been allied with conservative forces that aim to continue the status quo. Scientific references that go all the way up to the publication date of the book are used, for instance, to prove that scientists investigating in a supposedly objective manner why “there are cognitive differences between the sexes” are engaging in a value-laden activity. I love one of her quotes: “studying ‘sex differences’ in cognition is not a neutral activity, any more than studying ‘racial differences’ in cognition. As long as our society is sexist, racist, or biased in any other way, any claim to find group differences is likely, sooner or later, to be held up as proof of the more powerful group’s superiority.” (from Janet Shibley Hyde as quoted on page 6). In particular she skillfully argues that:

**2. [A] new and more adequate understanding of scientific objectivity [is] needed, one better equipped than the ideal of value-free science to deal with the problems of sexism and androcentrism [and other inequalitarian values].** (page 57)

Then she goes on to propose the ideal of socially responsible science (SRS) as a suitable replacement for, and an obvious improvement upon, the ideal of value-free science. For Kourany, SRS means not only that we should aim to remove all sexist, androcentrist and other antisocial values from scientific practice, but also that we should strive to replace them with morally positive socially progressive values. For we must acknowledge, according to her, that science cannot be done in vacuo, and in this specific case, in the absence of values, and in fact that removing negative stereotypes is a value-laden action on its own.

The following is her main defense against those who would oppose her proposal:

**3. [The ideal of socially responsible science] does not sacrifice science as a genuine source of knowledge but merely acknowledges that science has other goals and other responsibilities besides its epistemic ones.** (page 74)

In other words, socially responsible science is good science, not only in terms of its moral values, but also in terms of its rational, knowledge-based outcomes. Kourany is not proposing a politically correct watered-down science which cannot go anywhere; on the contrary she wants her science

to do what it does best, to create knowledge, but in a socially conscientious manner.

Next Kourany ties her argument to her main audience: philosophers of science. Her words at this point transform into a call for collective action:

**4. [T]here is a need ... to ... urge philosophers of science to criticize and even transform science rather than conform to it ... to be met by ... broadening our conception of scientific rationality to encompass the ethical aspects of science, by acknowledging the inextricable interconnections of the ethical and the epistemic.** (page 120)

Kourany provides a historical precedent for such a social awareness in philosophy of science, arguing that several members of the Vienna Circle were motivated by a deep sense of social and political urgency and progressive idealism. She advocates this proactive role for the discipline as an opportunity to change the visible irrelevance of philosophy of science to current science practice.

But this does not yet describe the full extent of Kourany's ambitions for the discipline. She intends this new, socially conscientious stance to create concrete, organic connections to scientific practice, but furthermore:

**5. With its emphasis on social values and social change and the changes in science these mandate, this new program for philosophy of science [will] catapult philosophers of science right out of academia into the political realm, working to bring about social change via the social/political/epistemic initiatives they defend.** (page 18)

Kourany supports her claims and her position with substantive evidence and provides concrete guidelines for the philosophers of science willing to take her up on her proposal. Hers is an attractive, ambitious program and seems to promise much to the discipline it addresses (philosophy of science) as well as to practitioners of science and the wider society. I was convinced at the end of the book that the kind of science she wants to create is possible and that philosophers of science can have a significant impact on the way this may come to be.

### **A mathematician's postscript**

As followers of the field are surely aware, feminist studies of science have, to this day, focused almost exclusively on social, behavioral, medical and biological sciences; Kourany's focus is on psychology, sociology, economics, political

*continued on page 10*

#### **CALL FOR NOMINATIONS:**

### **2012 M. Gweneth Humphreys Award**

The Executive Committee of the Association for Women in Mathematics has established a prize in memory of M. Gweneth Humphreys to recognize outstanding mentorship activities. This prize will be awarded annually to a mathematics teacher (female or male) who has encouraged female undergraduate students to pursue mathematical careers and/or the study of mathematics at the graduate level. The recipient will receive a cash prize and honorary plaque and will be featured in an article in the AWM newsletter. The award is open to all regardless of nationality and citizenship. Nominees must be living at the time of their nomination.

The award is named for M. Gweneth Humphreys (1911–2006). Professor Humphreys graduated with honors in mathematics from the University of British Columbia in 1932, earning the prestigious Governor General's Gold Medal at graduation. After receiving her master's degree from Smith College in 1933, Humphreys earned her Ph.D. at age 23 from the University of Chicago in 1935. She taught mathematics to women for her entire career, first at Mount St. Scholastica College, then for several years at Sophie Newcomb College, and finally for over thirty years at Randolph-Macon Woman's College. This award, funded by contributions from her former students and colleagues at Randolph-Macon Woman's College, recognizes her commitment to and her profound influence on undergraduate students of mathematics.

The nomination documents should include: a nomination cover sheet (available at [www.awm-math.org/humphreysaward.html](http://www.awm-math.org/humphreysaward.html)); a letter of nomination explaining why the nominee qualifies for the award; the nominee's vita; a list of female students mentored by the nominee during their undergraduate years, with a brief account of their post-baccalaureate mathematical careers and/or graduate study in the mathematical sciences; and supporting letters from colleagues and/or students (at least one letter from a current or former student of the candidate must be included).

Nomination materials for the Humphreys Award shall be submitted online. See the AWM website at [www.awm-math.org](http://www.awm-math.org) for nomination instructions. Nominations must be received by **April 30, 2012** and will be kept active for three years at the request of the nominator. For more information, phone (703) 934-0163, email [awm@awm-math.org](mailto:awm@awm-math.org) or visit [www.awm-math.org/humphreysaward.html](http://www.awm-math.org/humphreysaward.html).

science, archaeology, anthropology, biology, and medical science (page 76). Mathematics remains mostly unexamined territory for feminist scholars. As Suzanne Damarin says at the beginning of her 2008 essay “Toward Thinking Feminism and Mathematics Together” (*Signs, Journal of Women in Culture and Society*, Autumn 2008, Vol. 34, no. 1, pages 101–123), “[t]he boundary separating mathematics from women’s studies and feminist theory, while not as forbidding as a prison wall, is nonetheless substantial and rarely crossed.” True, mathematics education researchers have ventured into investigations of feminist approaches to the mathematics classroom, but mathematics practice on its own is not often viewed as an appropriate or welcoming environment for feminism. I think this view has to be unpacked and investigated further.

I surmise that two generally accepted features of the nature of mathematics may be the main culprits here: 1) the abstract nature of pure mathematical work (which may seem irrelevant to theorists interested mainly in social contexts and implications) and 2) the seemingly value-free nature of pure mathematics (which some may reflexively [and perhaps subconsciously] associate with the cold, the austere, the male).

Though Kourany rarely mentions mathematics in her monograph (as far as I could see, the four letter word **m-a-t-h** shows up only on pages 8, 9, 42, and 62), as a (highly opinionated) mathematician (perhaps excessively) sensitized to reading (ill-conceived) views about mathematics by non-mathematicians, I have sensed a hint of hostility toward mathematics, sprinkled in here and there. My overly sensitive nose picks up both strands of reasoning mentioned above, and together these allow her to dismiss mathematics (and its ally, philosophy of mathematics) from the table of socially conscientious science. If math and her philosophical sister have souls, they obviously have not been able to convince Kourany of this fact.

It must be clear to anyone who ever sets foot in a mathematics classroom in the role of instructor that the contexts in which we teach mathematics are certainly not free from social and moral values. (For a reminder, one might wish to check out B. Shulman, 2002, “Is there enough poison gas to kill the city?: The teaching of ethics in mathematics classes,” *The College Mathematics Journal*, Vol. 33 no. 2, pages 118–125.) It might even be obvious to many that certain teaching methods may be more welcoming than others for students from groups that are underrepresented in the STEM fields. However some might retort that

the work, the practice, of the mathematician, outside the classroom, is indeed free from societal and moral values. Is it perhaps necessary to remind such people that many mathematicians were involved in the war effort of both sides during the 1940s? Or that NSA is one of the largest employers of mathematicians today?<sup>2</sup> But those are different, some may say. And we all might have met the pure mathematician, following G. H. Hardy, proudly announcing that she is doing useless math, and that her work will never lead to anyone’s death, nor will it result in the wealthy and the powerful to become more so; yes, how about her? (Is this not a moral professional stance on its own?)

I have already gone over my word limit, so I will hold off on giving concrete examples. (Stop me one day at a conference, or shoot me an email if you’d like me to continue to pontificate). But it is clear that a significant portion of today’s mathematics community does not agree with the verdict that math is inherently independent of society and can have no (constructive) impact on social justice issues. Simply googling “mathematics and social justice” yields over 5.8 million hits (on November 17, 2011). The links will not lead to rants (or, alright, treatises) about how math does not say anything creative or positive about social justice. On the contrary. The first hit brings up <http://www.radicalmath.org>, a site for math teachers that provides them materials to incorporate social justice issues into their classroom work. I myself was a part of a most exciting AMS panel during the 2011 Joint Math Meetings, “Proving Hardy Wrong: Math Research with Social Justice Applications” (organized by Eva Curry). And there are many more threads to follow if one is interested. Paraphrasing my colleague Ami Radunskaya, there is so much out there about how math and social justice issues can interact, nobody should be able to claim ignorance about such connections.

## Coda

All that said, I would still love to meet Kourany and congratulate her on a well-written book that proposes an exciting and yet realizable plan to make the world a better place. In this highly unlikely scenario, I would probably next move on to talking with her about mathematics, until she would politely excuse herself and leave.

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<sup>2</sup>This is probably a good time to acknowledge that my mathematics research has most recently been supported by the NSF and the NSA.