Ethical discourse by science-in-fiction

It can be difficult to discuss ethical dilemmas in the academic environment. One way of doing it is through 'science-in-fiction'. The following 'science renga' shows how this is done with virtually total anonymity.

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"Ethical discourse through science-in-fiction" is the formal title of Medicine 256, a graduate course I have recently offered under the auspices of the Center for Biomedical Ethics of Stanford University's School of Medicine in California. Given the sudden proliferation in the United States of new courses on biomedical ethics, what is different about Medicine 256?

Scientists operate within a tribal culture, the rules, mores and idiosyncrasies of which are generally acquired through intellectual osmosis in a mentor–disciple relationship. Scientific 'street smarts' are absorbed by observing the mentor's self-interested concerns with publication practices and priorities, the order of the authors, the choice of journal, the striving for academic tenure, grantsmanship and even the Nobel prize. On their own, disciples discover the 'glass ceiling' for women in a male-dominated enterprise, the inherent collegiality of scientific research, and also the *Schadenfreude* generated by brutal competition. Most of these issues are related to the desire for personal recognition and even financial rewards, and each is coloured by ethical nuances.

An effective medium for illuminating such topics is the rarely used literary genre of 'science-in-fiction' (not to be confused with science fiction), in which all aspects of scientific behaviour and scientific facts are described accurately and plausibly. By disguising them in the cloak of fiction, science-in-fiction allows the illustration and dicussion of ethical dilemmas that are frequently not raised for reasons of discretion, embarrassment, or fear of retribution.

As an experiment in using science-in-fiction as a didactic tool, I asked 14 graduate students and postdoctoral professionals from 12 different departments at Stanford to compose a short story of up to 10 pages, dealing with the ethical issues associated with relevant behavioural practices in science or medicine.

After I had discussed each with its author and it had been subsequently revised, the stories were distributed among all participants without the authors being identified, to allow unrestricted discourse. The rest of the course was made up of some in-depth and heated discussions of the ethical or behavioural problems raised by the stories.

As well as creating a forum for open discussion and debate, the course also addressed the question of how scientists might communicate better with their colleagues and the general public. This led to an attempt to use the Japanese form of renga (linked verse in which stanzas are composed by two or more poets in alternating sequence, often as a form of competition) to create a short story dealing with a scientific ethical dilemma. Each paragraph was composed by a different student who did not know the identity of any previous author. Each student then added a fifteenth paragraph to the 14-paragraph 'science renga', generating 14 new endings. The 'winner' was selected by closed ballot and lightly edited for length. Although it bears the names of all authors — a feature common among scientific papers but virtually unheard in literary publication — none knows who contributed which segment.

Japanese renga bears a resemblance to the process of scientific co-authorship, as it has collegial and competitive aspects, but our experiment is a 'purer' collaboration because each author is associated with the whole enterprise but no identifiable individual component. Further similarity to a scientific paper was pursued by one of the participants, E. Weber Hoen, who composed an abstract of the original 14-paragraph 'science renga' in the form of a 14-line sonnet called "Old goat".

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For further discussion of science-in-fiction see http://www.djerassi.com

"Old Goat" by E. Weber Hoen

Old goat, the kid who challenged you is dead
and the rain has clapped its hands of the affair.
And yet, your horny crown is filled with dread,
and your face exaggerates the weight of hair.
Suspicious of the genius in the stones,
you make a science of your steps, and climb,
negotiating past those ghostly bones,
which keep from you their insights into time.
It is height you desire, and with that, truth,
to shake your beard on an eternal view,
as if from there you might behold your youth.
The rain, though, has you blind. Below, like you,
the young conspire in fear against their king.
Goat, you are old. You have not learned a thing.

MARK DOBSON

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