

The Spectre of Frankenstein--Hopes & Fears of Genome Editing

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A spectre is haunting the field of biotechnology—the spectre of Frankenstein. For almost two centuries, the image of Frankenstein created by an English young woman in her debut fictional work. An arrogant scientist who dares to create a live monster from human body parts has shaped the hopes and the fears we have ever harbored about science. The fears seem to always get the upper hand, though more often than not disguised as thoughtful warnings. Since the 1970s, the very beginning of the era of biotechnology, recombinant DNA technology has been subject to censorship for reasons sometimes phrased in no less hypes than those in Hollywood sci-fi movies. A voluntary moratorium on relevant research was called for and then guidelines for research were institutionalized. This has been considered as a good example of responsible science.

Recently, a powerful new technique known as CRISPR to edit genomes arouses similar concerns, and once again a “voluntary moratorium” is proposed on the germline editing. A paper from a Chinese team reporting their results using CRISPR to manipulate non-viable embryos obtained from fertility clinics seems to have triggered it.

I argue that the concern about the danger of germline editing seems overstated, and I would take advantage of this opportunity to address a relevant but neglected issue about responsible science. The current image of responsible science, *Do no harm*, is very Hippocratic in spirit. Thus when in doubt a decent scientist is supposed to side with the fear. But biotechnology has become a business since the decade before the new millennium. To raise funds, scientists have to come up with visions laced with hypes. A responsible scientist should not only be concerned with the danger caused by the science he (or she) practices but also with the hyped statements in his (or her) fund raising prospectus.