

Dolly, Cloning, and the Public Misunderstanding of Science: A Challenge for Us All

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It has become a commonplace to observe that the people of the world will soon be divided into two classes—the technologically literate and everyone else. While such a situation certainly has unfortunate economic effects—for everyone else—how much worse it would be if we made a slight alteration in our description. How much worse it would be if the vast majority of people were possessed of too little information to allow them to make informed decisions about their own lives, health, and genetic inheritance. Unfortunately, this is the reality. And as scientific advances rocket far ahead of both our bemused journalistic establishment and our limping regulatory apparatus, the reality becomes ever more pernicious.

Because the gap between those with good information and those without it is widening, the vast majority of the public is utterly dependent on the media for its knowledge of science. And of bioethics. This is a dual responsibility that the media is simply not equipped to take on board. Both because it has its own

agenda—selling newspapers and magazines, or gaining higher television ratings—and to a lesser degree because even given the best will in the world coverage tends to emerge as provocative sound bites. These are frequently articulated as agonizing choices between polarized and equally unsavory options. Careful, reasoned scientific description and serious moral analysis are both rather thin on the ground.

The goals of this special section are far-reaching and perhaps inordinately ambitious. But first, and foremost, the aim here is to present the facts—and to do so in the context of science as it is practiced, not as it is imagined by a public steeped in the metaphors and imagery of science fiction. Most people do not know any scientists. As Lewis Wolpert has noted, scientists rarely ever appear as characters in television soap operas,¹ surely a reflection of their ignominious status. Or at least of their irrelevancy. Who would write their dialogue? And who would care to listen to it? For most of us, scientists are alien beings. And that is both sad and dangerous.

People who are true moral agents must hold a full measure of their fate in their own hands. But how can they make appropriate and authentic choices when they do not possess the relevant and accurate information required to do so? How can they evaluate the information they are given when they see science as beyond them, and scientists

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as caricatures—the remote, God-like generators of unfulfillable hopes and unreasoned fears and distrust?

In 1996, soon after the cloning of Megan and Morag—Dolly’s companions from birth—was announced to the world, Dr. Ian Wilmut received a letter from the blind father of three small children. “Please,” he implored, “please, clone me a new pair of eyes!” Such unrealistic hopes have more than met their match in the fears felt by many about armies of drones, organ farms, and thieves who are able to make off with one’s genetic inheritance merely by snatching away one’s hairbrush! Or vacuuming up little bits of sloughed-off skin.

Cloning and genetic modification must not remain the exclusive concern of scholars, committees, and the politically powerful—the sort of people who are often described by the British, with a delightful sense of irony, as “the great and the good.” Biomedical advances and the moral difficulties that they engender are everybody’s business. Education is required and it cannot start too early. A friend from Oxford told me recently that his nine-year-old daughter’s class was visited by the father of another little girl—a father who happened to be a geneticist. And that he was able to get through to the children, to provoke their interest, their excitement, and their questions.

Surely, better efforts can be made to fuel the curiosity of children and adolescents before it is extinguished. If we do not make such efforts, the next generation will be left ignorant—and impotent—in the face of the biomedical revolution.

We are most fortunate, in this special section, to have secured the participation of Dolly’s creators—four scientists from The Roslin Institute and PPL Therapeutics—who have graciously consented to ponder and seriously address a great many interview questions that were put to them in the course of their very busy lives.

We are fortunate as well to have the opportunity to present a fascinating range of papers written by British, continental European, and American authors from fields as diverse as molecular biology, philosophy, sociology, law, theology, and journalism. Also in these pages are two opinions of the European Union’s Group of Advisers on the Ethical Implications of Biotechnology (on cloning and on transgenic animals) with commentaries by the opinions’ rapporteurs. Ours is a very important topic, and we have endeavored to do it justice.

Note

1. Wolpert L, Richards A. *A Passion for Science*. London: Oxford University Press, 1988:2.