Online Ethics Center
FOR ENGINEERING AND SCIENCE

Selected Issues in Depth - Genetics, Ethics & Policy

Description

Unit 1 includes a number of introductory videos looking at genetics, ethics and policy.

Body

Our introductory "Selected Issues in Depth" section focuses on two different areas. First, Dr Eric Lindquist, Director of the Public Policy Research Center at Boise State University, discusses some of the key public policy issues raised by new technologies such as genomic research. Here's a link to his website at Boise State. And second, Dr Wendy Jepson, Professor in the Geography Department at Texas A&M University, introduces some ideas about the "biotechnology economy" - here's a link to her website: https://wendyjepson.net/.

First, then, Dr Lindquist discusses how public policy - including public policy about new technologies such as genomics - is made. He introduces what's called the "stages model" of public policy - a model that, while to some degree contested, is still widely used. On this model, public policy develops in a series of stages: defining what a problem is and "framing" an issue; the formation of policy with respect to the issue, which leads to the construction of legislation; the adoption of the policy/legislation; the implementation of the legislation and, ideally, the evaluation of the legislation:

Dr Lindquist now moves on to discuss the question of "issue framing" which, he argues, is highly strategic. Scientists, among others, are in this regard political actors, framing the issues they work on in ways most likely to promote their own success (for instance in terms of getting grants). What's best for scientists, though, as Dr Lindquist points out, is not necessarily what's best for other people; from other perspectives, what counts as "effective public policy" may be understood very differently.

One of the problems that faces public policy-making, especially in the context of cutting edge scientific research such as genomics, is how to deal with uncertainty in terms of the risks that research and implementation of technology pose. Politicians may seek very low levels of risk that can't easily be guaranteed:

Another important issue in the policy process is what Dr Lindquist calls the "knowledge deficit". Those who've worked on a particular scientific problem for a long time, he suggests, often think that if only elected representatives and the general public were better educated about the problem, they would understand its importance. But, Dr Lindquist suggests, arguments based on the idea that others have a knowledge deficit may be misunderstanding the problem - perhaps it's the scientists who have a "knowledge deficit" about the policy process!

In this last clip, Dr Linquist explores some ideas about the constraints on scientific activity, and the place for regulation. What is going too far? How much freedom should scientists have that falls outside the boundaries of public policy?

Our second speaker here, Dr Wendy Jepson, takes a rather different (and somewhat controversial!) perspective on the development of public policy about science, including genomics. She locates the recent development of scientific research in the contect of what she calls a "neoliberal" framework, understood as a form of governance and a relationship between state and society. In particular, Dr Jepson emphasizes what she describes as the "marketization" of society and deregulation. This, she is going to go on and argue, was important for the development of the "biotechnology economy."

Dr Jepson now moves on to use this "neoliberal" framework to analyse the biotechnology economy, into which genomic research, she argues, fits. She argues that the bioeconomy is based on privatization and patents, and the importance of market value (rather than some of the other values we explored in the background information above); one effect of the neoliberal context in her view is the "privatization of knowledge".

Related to this privatization of knowledge, Dr Jepson argues, is the rise of patenting as highly significant for genomic research:

Next, Dr Jepson broaches a topic that's particularly important throughout this course: something that we'll return to time and again. That's what we mean by "nature". As Dr Jepson points out, the idea of "nature" is highly complex; people mean very different things by their use of the term; and our uses of the term are deeply embedded in a social, value- and power-laden context:

Before ending this section, there's a final idea we'd like to introduce that might come in useful for thinking about many of the debates in genomics and genetics: the idea of "wicked problems". This expression was formalized in 1973 by Horst Rittell and Melvin Webber to describe particularly complex problems that for various reasons are extremely difficult or impossible to resolve - they may be closely interlinked with other problems, require large numbers of people to change beliefs or practices, 'solutions' depend on how the problems are framed and so on. Classic kinds of wicked problems include problems in healthcare, the environment, and social policy - and of course, genomics is bound up in all these areas, and can be seen both as a technological solution to a wicked problem, and (by other people or through other lenses) seen as presenting a wicked problem itself. Take, for instance, the nexus of issues around human population increase, the food supply and GM crops. Dr Sonny Ramaswany, Director of the USDA's National Institute of Food and Agriculture says in this brief clip below that he considers the greatest wicked problem facing us to be human population:

If population is the problem, then could GM crops, with their potential for increased yields, be the solution? Dr Jepson, in the clip below, argues that while some biotech companies may see GM crops as a solution to the problem of increased population

demand for food, they are mistaken. The provision of a technological solution shows, she suggests, that they fail to appreciate the complexity - the wickedness, as it were - of the interlocking problems presented by population, development, international economic regimes, and so on:

Continue to Introduction to Case Studies in the Course

Resource Type

Instructor Materials

Topics

Governance
Intellectual Property and Patents

Discipline(s)

Life and Environmental Sciences
Genetics and Genomics