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Social Power, Social Responsibility and Science

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Abstract

Social power depends on the specific understandings in which one would motivate others to change in the way he intends them to change. Social responsibility is associated equally with individuals or organizations as well as with ethics. The classical view states that an organization's only social responsibility is to maximize profits. Over the last few decades social responsibility has become increasingly important to the business world, in which case it is being called corporate social responsibility. In modern times scientific discoveries often lead to powerful applications which rapidly affect a society. The social power and social responsibility of scientists are closely related to their scientific competences and technological abilities. Science education is an important part of researchers' social responsibility and therefore should be an important part of social power. Ethics in science has increasingly become an important issue in the Social Power process.

"What you do doesn't matter, as long as you're the best."
– Felda Hardymon

1. Introduction

Power is fundamentally *relative*—it depends on the specific understandings, recognition of a quality in which one would motivate others to change in the way he intends them to change. French and Raven[1] and later Feldman* argue that there are six significant categories of such qualities, not excluding other minor categories. Social power is directly related to social responsibility. Responsibility is associated equally with individuals or organizations as well as with ethics. In modern times scientific discoveries often lead to powerful applications which rapidly affect a society which is ill-prepared for them. Science enables us to recognize facts which exist long before we become aware of them or can take responsibility for their implications. The practical uses to which scientific discoveries may be put are full of risks and uncertainties. Scientists are often perceived as having special power and authority. Thus, one of the most important powers today is science and technology. Long-term effects of scientific discoveries and their social power cannot accurately be foreseen, or foreseen at all.

2. Social Responsibility

Social responsibility is an idea that has been a concern to mankind for many years.[2] Over the last few decades it has become increasingly important to the business world, in

* Reward Power, Coercive Power, Referent Power, Legitimate Power, Expert Power and Informational Power

which case it is called corporate social responsibility. This has resulted in growing interaction between governments, businesses and society as a whole.

The social power of social responsibility relies on ethics which suggests that an organization or individual has an obligation to act for the benefit of society as such to maintain a balance between the economy and the ecosystem. The classical view states that an organization's only social responsibility is to maximize profits.* On the other side, there is the socioeconomic view which states that an organization's first responsibility is to maintain and improve the environment in which it conducts its operation; the second is to maximize profits.

The need for social responsibility can be supported by taking into account the need for: Public expectations, long-run profits, ethical obligation, public image, better environment, discouragement of further government regulation, balance of responsibility and power, shareholder interests, possession of resources, and superiority of prevention over cures. At the same time, one can argue against social responsibility because of the violation of profit maximization, dilution of purpose, costs, too much power, lack of skills, lack of accountability, lack of broad public support.

Social responsibility requires businesses to recognize what is right or wrong in their work and thus to seek fundamental ethical truths. Thus, responsibility has been identified in many professions, such as the one embodied in the Paramountcy principle† and the fundamental and primary ethical principles of engineering (professional engineer's code of ethics NSPE 2003). This is particularly important as their activities have effects on the safety, health or welfare of the society. Such social responsibilities of researchers arise from the fact that they are carried out in the name of society as an expression and reflection of the society's needs, interests, priorities and expected impacts. The social responsibilities of researchers often extend beyond upholding the ethical standards of society. The Uppsala Code of Ethics for Scientists‡ highlights the responsibility of scientists to refrain from and speak against weapons research and other scientific research with the potential for detrimental consequences for the environment, for present and future generations. Thus social responsibility is first and foremost a social, and therefore institutional, issue and power.

2.1. Corporate Social Responsibility

Companies have a policy of social responsibility known as Corporate Social Responsibility (CSR), exercising which they agree to follow their businesses in such a manner so as to benefit the community at large. Thus, CSR is a **vital element** for business corporations. The most focus in corporate social responsibility is with regard to the environment. Other areas that should be considered in the development of CSR programs are education and health. "Today, however, businesses must also reflect on the legal, ethical, moral and social consequences of their decisions".[3]

There are several factors which explain the growing interest in corporate social responsibility. The first is the new concerns and expectations of citizens, consumers, public

* www.ocean_lymn.com/2006/11/17/fieldmansocial

† www.scasprocedures.ukk.net/local_keywords/permamancy_prin.html

‡ www.prio.org/Publications/Publicatiion/2x=2074

authorities in the process of globalization and industrial change. One other main factor is the increasing influence of social criteria on the investment decisions of individuals and institutions, as investors or consumers. Furthermore, there is a growing concern about environmental degradation.

There has always been a contradiction between business ethics and social responsibility. Companies are often engaged in acts that cannot be called ethical. Sometimes what is good for the society may not be good for the business, or vice versa. If the society is conscious and ethical then businesses are forced to behave responsibly.

CSR in the United States has been defined much more in terms of a philanthropic model, while in the European model it is much more focused on operating the core business in a socially responsible way.

3. Social Power and Research Ethics: What is Ethics in Research & Why is it Important?

Social responsibility and responsible research conduct should be two essential sides of ethical science and therefore social power. The great task of our times is to keep society from being shaken to pieces by the progress of science and technology. Science crosses new borders, and thereby calls fundamental ethical views into question.[4] Scientific research has become more competitive and more politically controlled in recent years. This has been a source of frustration for many researchers, who believe that research has become short-sighted. Much of the emphasis in science is on professional responsibility regarding how research should be conducted. This focuses on the tension between 'good' and 'bad' uses of scientific concepts, theories and methods what is called "internal". Scientists also have "external" social responsibilities toward the larger community. In some situations in research, people disagree about the proper action for researching what are known as ethical or moral dilemmas. Independence in research would, as argued by Merton,* diminish external control and hence the distortion of scientific results. Thus, it is important to adhere to ethical norms in research. Research ethics involves the application of fundamental ethical principles where ethics is usually understood as rules for distinguishing between right and wrong. Their norms are so ubiquitous that one might regard them as simple common sense, while others might consider them as a social power more informal than laws.

Ethical considerations have traditionally been excluded from scientific discussions. This tradition might be due to the intention of the scientific community to avoid controversies which, for example, divided Europe following the Reformation. Most researchers are aware of their social responsibilities, but they disagree on how much politics should interfere with their work. In the contemporary world, it became accepted practice that **novel** research programs should include an ELSA component (Ethical, Legal and Social Aspects of Science).

Ethics in science has increasingly become an important issue in the Social Power process. However, the real problem arises from the way the scientific results are used; therefore it is not only scientists that should be concerned with ethical, legal and social aspects of science, but everybody taking decisions. There are two different ideologies when it comes to research and public utility in the scientific community:

* https://en.wikipedia.org/wiki/Robert_K._Merton

- An ideology of internal control—researchers are to judge about the public utility of their research. To make important discoveries, research must be motivated by curiosity.
- An ideology of external control—social actors such as politicians and organizations determine what research should be done and how. It might become very fashion-driven, especially concerning funding of research. Some examples might be treatment of climate change, nanotechnology, and synthetic biology.

Scientists and engineers take privileges of positive achievements in science and technology. They should, also be, at least, morally responsible for the negative consequences which result from various applications of their work. Certainly, fragmentation, ignorance and diffusion of responsibility are the reasons why scientists and engineers should not be blamed for all the evils created by their work. In particular the excuse of ignorance is acceptable for scientists involved in basic and fundamental research, while it is much weaker for those involved in applied scientific research and innovation.[5]

The social responsibility of scientists is closely related to their scientific competences and technological abilities. Rotblat, with Atiyah, wrote:[6]

- Scientists will understand the technical problems better than the average politician or citizen, and knowledge brings responsibility and power.
- Scientists have knowledge and they are responsible for how this knowledge is properly used.

The pattern of good scientific behavior, as the basis of social power, is reflected in Merton's ethos of science.[7] Merton suggested that good scientific practice should include the sharing of scientific results with others, whereby everyone, in principle, will be able to test, challenge and use scientific results, known under the acronym CUDOS (Communism, Universalism, Disinterestedness, Organized Scepticism).

It is debated whether politicians should apply a code of ethics, or whether it is a profession entirely discretionary.* Many professional associations, government agencies, and universities have imposed ethical codes, rules, and policies related to research ethics. The following is a rough and general summary of some professional ethical principles, which include: Honesty, Objectivity, Integrity, Carefulness, Openness, Respect for Intellectual Property, Confidentiality, Responsible Publication, Responsible Mentoring, Respect toward colleagues and treating them fairly, Social Responsibility, Non-Discrimination, Competence, Legality, Animal Care, Human Subjects Protection.[8]

Ethical codes are often adopted by management, not to promote a particular moral theory, but as necessities for running an organization in a complex environment. It is interesting how the CFP Board adopted only 7 principles to establish the highest principles and standards: **Integrity, Objectivity, Competence, Fairness, Confidentiality, Professionalism, and Diligence**.†

Behind the ethical codes there are codes of practice (code of professional responsibility) which are usually adopted by a profession or by a governmental or non-governmental

* Ana Maria Cetto (Ed.): Proceedings of the WCS, UNESCO, 2000, p. 482. (http://www.unesco.org/science/wcs; see under 'proceedings').
† www.CFP.net/about-cfp-board

organization to regulate that profession. Listed below are a few examples of professional codes (Society of Professional Journalists (SPJ), and Public Relations Society of America (PRSA)).

- Minimize Harm (Honesty);
- Proper Conduct (Patience);
- Show Loyalty (Faithfulness);
- Act Independently (Courage);
- Act Independently (Independent).

Many international treaties, agreements, declarations and judgements intend to regulate the ethical process of scientific research and development* that are influencing social power. For example, in his book *Hope in a Dark Time: Reflections on Humanity's Future*, David Krieger has collected a number of declarations and statements that treat different aspects of ethical dilemmas that have emerged from techno-scientific development. The declarations and statements included in Krieger's book are the following:[9]

- Universal Declaration of Human Rights (adopted by United Nations General Assembly, 1948).
- The Declaration of Global Ethics (discussed at the Parliament of the World's Religions in Chicago, 1993).
- The Earth Charter (formally launched in 1991).
- The Russell-Einstein Manifesto (the moral foundation of the Pugwash conferences).
- Appeal to End the Threat of Nuclear Weapons to Humanity and All Life (the appeal has been signed by many leaders and Nobel laureates).

One could add to the list the Groningen Manifesto[10] and the Charter of Human Responsibilities.†

The human condition has changed dramatically with the growing importance of techno-science in modern societies. These changed conditions give rise to a new ethics—an ethics for the technological age. A new imperative has emerged which **promotes the** aims of research, such as knowledge, truth, and avoidance of error (prohibitions against fabricating, falsifying,..), while, at the same time, it involves cooperative ethical standards which promote **values that are essential to collaborative work** (trust, accountability, mutual respect, and fairness).

The ethics and morals might seem the same to many. But, morals define personal character, while ethics place stress on a social system in which those morals are applied. In

* Among them the most common are: Advisory Opinion of the International Court of Justice on the legality of nuclear weapons, Biological Weapons and Toxin Convention, Convention on Biological Diversity, Cartagena Protocol on Biosafety, Comprehensive Nuclear-Test-Ban Treaty, Convention on Prohibitions or Restrictions on the Use of Certain Conventional Weapons Which May Be Deemed to Be Excessively Injurious or to Have, Indiscriminate Effects, Convention on the Prohibition of the use, stockpiling, production and transfer of antipersonnel mines and on their destruction (Mine Ban Treaty or Ottawa Convention), International Convention for the Regulation of Whaling, Montreal Protocol on Substances That Deplete the Ozone Layer, Stockholm Convention on persistent organic pollutants (POPs), Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies (The Outer Space Treaty), Treaty on the Non-Proliferation of Nuclear Weapons, United Nations Framework Convention on Climate Change (The Kyoto Protocol).

† http://www.alliance21.org/en/charte

other words, ethics means standards or codes of behavior expected by the group to which the individual belongs. Thus ethics, as a part of social power, can be differently defined for different groups. Such scientists working at universities are guided by the ethos of academic science. The Danish philosopher Hans Fink has formulated 'the ethos of the university'.* It consists of five principles:

- Close connection between research and university education,
- Freedom of research,
- Freedom of teaching,
- Self-governance,
- The unity of science.

Fink's ethos of the university especially emphasizes the CUDOS norm of disinterestedness and the principle of self-governance which addresses the quality aspect of scientific knowledge. When confronted with the ethos of academic science and existing academic institutions, scientists have a responsibility to exercise regarding the ethos of science, and not for the practices of the existing institutions.

"Every true scientist should undoubtedly muster sufficient courage and integrity to resist the temptation and the habit of conformity." – Joseph Rotblat

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Another mechanism that might help prevent unintentional consequences is to encourage science and technology to establish early warning committees[11] such as specific institutions of social power. Since scientists are best placed and have competence, they should practice early warning to alert society to the possible consequences of their work. It was the 53rd Pugwash Conference† that recommended that early warning and preventive action on emerging technologies should be established.

A good example is Joseph Rotblat who in his Nobel lecture said: "Whistleblowing should become part of the scientific ethos. The life of Albert Einstein provides an illustration of scientific whistleblowing: duty of alert (his four letters to Roosevelt, from 1939 to 1945), continuing responsibility (his last signature was for the Russell-Einstein manifesto, which thus acquired the symbolic value of a testament). Encouraged by the example of Einstein (and his readings of Albert Schweitzer, Leo Szilard, Linus Pauling, Niels Bohr), Andrei Sakharov has given a model of personal moral revaluation, unique in its amplitude and subsequent worldwide impact; in his words: Every true scientist should undoubtedly muster sufficient courage and integrity to resist the temptation and the habit of conformity."

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* Kristensen (Eds.): Universitet og videnskab, Hans Reitzels Forlag, Copenhagen, 2003, pp. 9-29. Tom Børsen Hansen, Christian Baron and Sine Zambach, 'Rapport fra Arbejdsgruppen vedr. kursus i biokemi, kemi, miljøkemi og nanoteknologis videnskabsteori', Lærergruppen for Fagets Videnskabsteori, Faculty of Science, University of Copenhagen, 2003, p. 57. (http://www.nbi.dk/~natphil/FVT).

† Science and World Affairs: Advancing Human Security – The Role of Technology and Politics, working group 5, discussing the issue of 'New Technology for Human Development and Security'

3.1. Education as a means to direct Social Power

Science education is an important part of a researcher's social responsibility and therefore should be an important part of social power. Most academic institutions require undergraduate, graduate, or postgraduate students to have some education for the responsible conduct of research, while others have also developed curricula in research ethics where they learn about responsible research conduct and other ethical concerns. Educational programs in science ethics in Europe and the US approach the topic from different directions. Both are needed for an adequate treatment.

"The social responsibilities of researchers and their social power extend beyond the ethical standards of society."

Presently, the focus of ethics education in science and engineering in the US tends to be on the individual and the responsible conduct of research, or microethics, which has been criticized as insufficient as it does not adequately recognize the larger societal context of which research is a part. In Europe, ethics education in science and engineering is grounded firmly on the macroethical approach, the concept of social responsibilities of scientists and engineers.* European institutions of higher education have adopted an overarching educational framework that highlights social responsibility.† That includes (EHEA) the expectation that *all* graduates "have the ability to gather and interpret relevant data to inform judgments that include reflection on relevant social, scientific or ethical issues" (at the bachelor's level) and "have the ability to integrate knowledge... and formulate judgments... that include reflecting on social and ethical responsibilities linked to the application of their knowledge and judgments" (at the master's level), and "communicate with their peers... and society in general about their areas of expertise" (at the doctoral level). Many would like to see more core ideas integrated into graduate education, with their mission as maximizing social power, while scientists should appreciate the global dimension of science.

The coverage of science in the media has a major role in shaping the public's perception of science and its social power. Although most scientists are reluctant to talk to the media, there is agreement that scientists contributed significantly, and that science is effectively reported in media. Media reports on science have an effect as well in helping shape the priority that schools and legislatures assign to science education. Scientists obviously have the responsibility for helping the public to understand scientific issues and therefore their power. This can be done in many ways, but all methods require that scientists communicate in clear, understandable ways, working with journalists to educate the public so that they can appreciate the significance and power of the scientific enterprise.

3.2. Misconduct and the Responsible Conduct of Research

The social responsibilities of researchers and their social power extend beyond the ethical standards of society. Although most scientists are highly ethical, misconduct occurs because of various institutional pressures, incentives, and constraints which encourage misconduct.[12] Misconduct most often results due to environmental and individual reasons. The examples of research misconduct have been: fabrication, falsification, plagiarism, sexual harassment

* www.aaas.org/news/sociaal-responsibility-and-research

† www.ehea.info

of graduate students. Misconduct represents a significant threat to the research enterprise since it could undermine public trust as well as confidence in the research process within the community (US National Academy of Sciences 1992). Misconduct often might lead to misuse of social power.

4. Conclusion

Social power of scientists has become very important and it is credited to the skill, knowledge, information or fame that it possesses in a desirable area of expertise. Scientists hold a responsibility to produce credible, transparent scientific knowledge that should not be under pressure of external interests. In producing scientific knowledge scientists are required to follow Merton's ethos of science. Scientists need to practice the limits of the ethos of science, so that they only apply them in the context of justification. While they direct and harness social power the various ethical responsibilities are not exclusively, and primarily, moral dilemmas for scientists. Certainly, scientists need to be adequately equipped through education, training and institutional support, to cope with their responsibilities and social power.

When techno-scientific advancement influences the environment, human health and social settings, it should be governed by social responsibility mechanisms; thus, techno-scientists are required to follow ethical principles recognizing their social responsibility. Practicing this, it might happen that in some situations existing ethical codes, treaties, agreements and conventions may not be sufficient, new ones may be required for handling the modern techno-scientific development in order to provide adequate social power.

Scientists and engineers are asked to reflect on existing regulation mechanisms and institutions (national, regional and international laws), and it is required that these mechanisms and institutions satisfy ethical principles, and their effects on social power. Certainly, science has much more social power than it has been given credit for.

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