The Ethical Responsibilities of Scientists

Science has come a long way in the last century; computers, cars and atomic power are just a few things that we take for granted which were only conceived within the last hundred years or so. The advancement of mankind does not show any signs of slowing, and with scientific advancement comes great power, and it has been said that with great power comes great responsibility.

But what responsibilities does science, a practice which is based on knowledge ('science' comes from the Latin word 'scientia', which means 'knowledge'), actually carry with itself?

We can look at some other professions and analyse what their 'responsibilities' are fairly easily: doctors have a responsibility to their patients to cure illness; lawyers have a responsibility to defend their client and uphold the law of the land; fire-fighters have a responsibility to fight fires; and so on. But it is not as easy to come up with an objective answer to the question 'what responsibilities do scientists have?'

'Science', in essence, is the practice of acquiring knowledge through research. It could be argued that scientific research is the pursuit of truth, and it would therefore seem that accuracy in research is a very important factor of science. Out of this rises the idea that scientists have a responsibility to the rest of the scientific community to uphold honesty and integrity within their own research; for otherwise, the knowledge acquired may not be accurate, and this would certainly not help the pursuit of truth, but rather hinder it.

We can then further this idea to ask whether this responsibility applies only to each scientist individually, or whether there is also a responsibility to ensure that others are upholding the integrity of the scientific community. If every scientist observed and obeyed the rule that honesty and integrity must be upheld above all, there would not necessarily be a need for others to then question the results produced. However, honesty does not implicitly lead to accuracy; simple experimental error and anomalous results are just two factors which could compromise the accuracy of research. Therefore it could be argued that scientists also have a responsibility to ensure that any conclusions drawn from a set of results can be replicated by others. Not only would this confirm the accuracy of the research, but would also reassure the honesty and integrity of the research.

These ideas that I have discussed so far fall under the category of internal ethics within the scientific profession; they govern the interactions between members of the community. We may also consider external ethics; that is those which concern the relationship between scientists and society. It could be said that scientists are responsible for any implications their research may have on society, however this is not necessarily true. Could it be said that the people involved with the Manhattan Project are directly responsible for weapons of mass destruction? So much blame would probably not befall a small group of scientists innocently researching nuclear power.

Even if it were true that the researchers shoulder all the responsibility for any implications of their findings on society, it is still not necessarily fair to
blame them; seemingly innocent research could lead to new technology which has a devastating effect on the world. One can never predict the future, so it is virtually impossible to judge whether research is ethical or not (based on derived technology in the future) before the research has been undertaken.

However, this should not be confused with the ethics involved in experimental methods. Generally, it is believed that all research should avoid causing any harm, and, if this is impossible, then the research would generally be reviewed and possibly even terminated. However, there are cases where it is believed that the ends justify the means; that is, the implications of the findings are expected to be so important that it is necessary to cause harm (for example, animal testing) to obtain them. The problem with this is that the judging of research yet to be undertaken is highly subjective. Most people have an innate judge of 'right' and 'wrong', and although most people agree on the extremes in both cases, these themselves will vary greatly from person to person.

When we consider this, one can question whether or not it is right to judge whether or not the ends of an experiment will justify the means or not; somewhat of a paradox. Since there can always be argument over whether or not something is ethical, is it right for certain bodies to be able to govern over whether or not research should be allowed to be undertaken? Assuming that the world should live by your own personal moral code could be seen as arrogance – there is no concrete 'right' or 'wrong', so should we be concerned about anyone’s moral code outside our own? Of course, your own moral code may dictate how much other people's point of view affect your actions, but I digress.

It is difficult to comment on the ethical implications of scientific research as a whole, since it is unlikely to find two cases that are similar, let alone identical. However, it is of my belief that scientific research is almost always justified; it is human nature to have a thirst for knowledge and understanding, and we should never attempt to place a limit on this. I also feel that it should be down to the politicians to judge what constitutes ethical use of findings, for if they are running our society, they should be able to best judge what is good for it.