Moral Responsibility for Computing Artifacts

Moral Responsibility

This definition is from the Stanford Encyclopedia of Philosophy [1]:

> When a person performs or fails to perform a morally significant action, we sometimes think that a particular kind of response is warranted. Praise and blame are perhaps the most obvious forms this reaction might take. For example, one who encounters a car accident may be regarded as worthy of praise for having saved a child from inside the burning car, or alternatively, one may be regarded as worthy of blame for not having used one's mobile phone to call for help. To regard such agents as worthy of one of these reactions is to ascribe moral responsibility to them on the basis of what they have done or left undone. (These are examples of other-directed ascriptions of responsibility. The reaction might also be self-directed, e.g., one can recognize oneself to be blameworthy). Thus, to be morally responsible for something, say an action, is to be worthy of a particular kind of reaction—praise, blame, or something akin to these—for having performed it.

For our limited purposes, we will not make statements about legal liability, concentrating instead on issues of ethical accountability. The particular kind of accountability we will discuss here will be identified using the phrase "moral responsibility" throughout.

Computing Artifacts

According to [2], an artifact is an object made or shaped by humans. We will use the phrase "computing artifact" to refer to any object that includes an executing computer program as part of the object. We intend, therefore, to include software applications running on a general purpose computer, programs burned into hardware and embedded in mechanical devices, automatically controlled robots, webbots, programs distributed across more than one machine, and many other configurations.

Socio-Technical Systems

According to [3],

> ...any single technology can be used in multiple, and sometimes unexpected, ways. But we need to add to this observation that, in each different use, the technology is embedded in a complex set of other technologies, physical surroundings, people, procedures, etc. that together make up the socio-technical system. It is only by understanding this system that we can parse out the ethical issues.

We acknowledge the importance of socio-technical systems to the issue of moral responsibility for computing artifacts. As a straightforward example, a GPS navigator is a computer artifact, but in isolation from the satellites that it uses for ascertaining a location, the object we call a navigator can not perform its function. The presence and maintenance of the satellites, the establishment of a communications protocol for communicating with those satellites, and the manufacture of the navigator artifact are all parts of a socio-technical system that includes the physical object we can purchase at a store.

The significance of socio-technical systems complicates any discussion of moral responsibility for computing artifacts. On the one hand, ignoring the socio-technical systems in which a computing

artifact is embedded is folly. On the other hand, including all relevant socio-technical systems in the discussion of moral responsibility for a specific artifact will make it impractical to assign meaningful responsibility to the humans most directly involved with that specific artifact. In order to negotiate this tension, we will first discuss moral responsibility for computing artifacts in a more focused sense, and then place this discussion into a perspective that explicitly includes socio-technical systems.

Moral Responsibility for Computing Artifacts, Part 1

The humans who design, develop, deploy a computing artifact have moral responsibility for the effects of that artifact.

Moral Responsibility for Computing Artifacts, Part 2

Humans who knowingly use a particular computing artifact have moral responsibility for that use.

Discussion

Parts 1 and 2 are necessary because of issues of intentionality. When humans design, develop and deploy computing artifacts, they do so consciously and intentionally. This intentionality is important when discussing moral responsibility. Part 1 is meant to be a straightforward acknowledgment of the moral responsibility of the humans most directly accountable for a specific computing artifact.

Humans who "use" a particular computing artifact may or may not be aware of this use. For example, the driver of a car may not have any knowledge of the computing artifacts embedded in the car. It seems to us counter-intuitive to assign moral responsibility to such use. However, when a human knowingly, intentionally, uses a particular computing artifact, that human takes on moral responsibility attached to that use. A dramatic example is when a human launches a cruise missile at an enemy target; a more mundane example is when a human searches the web for information about a prospective employee. The moral responsibility of a user includes an obligation to learn enough about the computing artifact's effect to make an informed judgment about its use.

It is not our intent to absolve the users of computing artifacts from any moral responsibility if they are willfully ignorant about artifacts or their effects. Part 2 could be misused in this way. We acknowledge this problem, but dealing with that misuse is outside of our discussion in this paper.

Applying Parts 1 and 2 to Particular Artifacts

To illustrate

ferencesRe

 [1] ANDREW ESHLEMAN. MORAL RESPONSIBILITY. *STANFORD ENCYCLOPEDIA OF PHILOSOPHY*. LATEST REVISION 18 NOV. 2009. HTTP://PLATO.STANFORD.EDU/ENTRIES/MORAL-RESPONSIBILITY/, ACCESSED 9 MARCH 2010.

[2] WIKTIONARY ENTRY FOR "ARTIFACT." HTTP://EN.WIKTIONARY.ORG/WIKI/ARTIFACT, ACCESSED 9 MARCH 2010.

[3] CHUCK HUFF. WHY A SOCIO-TECHNICAL SYSTEM?

HTTP://COMPUTINGCASES.ORG/GENERAL_TOOLS/SIA/SOCIO_TECH_SYSTEM.HTML, ACCESSED 9 MARCH 2010.