

RI101x - 7.4 - Applying Value Sensitive Design - Part 3

Welcome

The main question we will discuss in this web lecture is:

How can we embody values in design?

In the previous lecture we looked at the method of value-sensitive design.

In this lecture, we will look into more detail how this approach can help to embody values in technical design.

Why is this important?

The challenge we are confronted with is the following.

On the one hand, we have values we hold dear as individuals and as society; values such as: safety, sustainability, justice, privacy, human well-being In the past, such values were mainly achieved through human behaviour and institutions like the law, and government policies. Increasingly, we live in a technological world in which technologies too shape how we live.

Next to the world of values, we have the world of technologies: the internet, smart phones...

The challenge we are confronted with is how to see to it that these technologies reflect and embody the values we hold dear. We thus need to make a translation from the world of values and ideas to the world of technology and materiality. A translation that is hard to make as these worlds have been very much separated in the past.

We will discuss three issues that are relevant for dealing with this challenge.

First, can technology embody values?

Second, what values to include in design?

And how to deal with value pluralism?

Third, how to translate values into design requirements?

Let us start with the first question: can technology embody values?

With respect to this question, three positions can be distinguished.

Instrumentalism, Substantivism, and the interactionist position.

Instrumentalism states that technology is value-free because it is only an instrument in the hands of human beings.

Whether a technology serves or obstructs a certain value only depends on how it is used.

A bread knife can be used to cut bread but also to kill someone. Instrumentalism is for example expressed in the slogan of the American Rifle association

“Guns don’t kill people, people kill people.” However, it is much easier to kill someone with a gun than without a gun; and when a burglar breaks into your house, you will probably behave differently with a gun at hand than without.

Substantivism says that technology itself is value-laden and that humans have no influence on that. It has, for example, been stated that technology embodies values like efficiency, or that technology leads to environmental degradation or to a lack of authenticity or human interaction.

A problem with this position is that it overlooks the influence that people could have both by using and designing technology.

The position we will defend here is therefore an interactionist position.

It holds that value is created and embedded in the interaction between human and technologies, both in how technology are used and designed. In the remainder we will mainly look at the design part.

Let us now look at the second question: what values to include in design?

A first thing to note is that a whole range of values may be important in design, and that we may derive from a number of sources like:

the design brief (that states the motivation of project), designers (and their professional communities), users and stakeholders, laws and government policies, technical codes and standards, and codes of ethics and other moral concerns.

Listing all these values does, however, not tell us what values to include because that is a normative question!

A question about what we should do. Answering this question is complicated by what we will call value pluralism.

There is a plurality of values and people can reasonably disagree about what values are most important.

Obviously, value pluralism makes it harder to decide what values to include in design.

Still, it does not make it impossible for a number of reasons.

First, despite value pluralism there will often be agreement on some values that need to be integrated in the design of a technology.

Second, value pluralism often means that people disagree about what values are most important but they may still agree on what values are relevant to take into account.

For example, you may disagree whether safety or sustainability is most important in the design of a technology, but most people would agree that both safety and sustainability should somehow be incorporated in design of for example a car.

Third, it may sometimes be possible to design technologies in such a way that they respect different values of different groups and stakeholders.

When it comes to the question which values are most important, philosophers often make a distinction between instrumental values and intrinsic values. Instrumental values are values that are important for the sake of something else. Money is, for example, often seen as instrumentally valuable because it helps us to attain other important goals and values in life. Intrinsic values are values that are important for their own sake, and not to attain something else.

Typical values are human well-being, justice, beauty, honesty and truth.

Let us now turn for the third question for this web lecture: how to translate values into design requirements?

For answering this question, we will make use of a values hierarchy.

A values hierarchy consist of three layers: values, norms and design requirements.

This is an example of a values hierarchy.

It is based on a European directive for the design and production of battery cages for laying hens.

The directive was meant to guarantee the value of animal welfare in the design of battery cages. You can see how this value is translated in several norms, like that chickens should have enough living space. These norms are translated into more specific design requirements, like that there should be at least 450 cm² floor area per hen.

In the case, the values hierarchy is reconstructed on basis of a European law, but one can also make a values hierarchy oneself. Here is another example.

The following is an attempt to make a values hierarchy for biofuels.

Biofuels are based on relatively recent lifeless or living biological material. They have been introduced to deal with expected shortage of fossil fuels, and to reduce emissions of greenhouse gases.

They have, however met with fierce criticism for their environmental effects, and for their effects on food production and food prices.

Organizations like the Nuffield Council on Bioethics, have in response formulated ethical principles that biofuels should meet to be ethically acceptable.

This figure is an attempt to organize all such concerns into a values hierarchy.

At the top, one finds the value of sustainability, which is supposed to be a main value behind the development of biofuels. This value is broken down in three more specific values that are important in the light of sustainability,

namely intergenerational justice, care for nature and intragenerational justice. With each of these values, a number of norms is associated.

Let us look at the example of intergenerational justice.

Three norms are associated with this value, namely the need to sustain the availability of fuels, to reduce greenhouse gas emissions and to avoid an increase in other environmental problems. Each norm is in turn translated into a number of more specific design requirements.

For example, the norm that fuels should be available means that such fuels should be effective, renewable, reliable, and should have a competitive price.

Another example is the norm that biofuels should avoid an increase in food prices, which means that they should be non-edible, and not compete for agricultural land and other inputs.

There are currently no biofuels that meet all these requirements.

Most current biofuels are of the so-called first or second generation which means that they are edible or compete for land with food. However, so-called third generation biofuels are now developed that allegedly solve these issues.

Returning to the values hierarchy, these can be constructed top down, starting with a certain value like animal welfare or sustainability. One can then specify this value going down in the hierarchy. They can also be constructed bottom up, starting with given design requirements; the question to be asked then is: for what ultimate goal are these requirements strived for?

An important question is whether a specification of a value in a values hierarchy is adequate. The question that can be asked here is: Does meeting lower level norms count as an instance of meeting higher level norm or value?

Let us look again at the example of animal welfare and battery cages.

The question is whether meeting these design requirements is enough to attain animal welfare.

I think many people would doubt that. Indeed, the European Union has since changed its laws and formulated more strict design requirements that effectively forbid the battery cage.

So now, let me summarize the main points we have covered. Our main question was how to embody values in design. We defended an interactionist position on values and technology, and discussed value pluralism. Finally, we presented the values hierarchy as a means to translate values into design requirements.

Thank for your attention.