

Excerpts from *'Ethics for people who work in tech'* (Taylor & Francis, 2022) by Marc Steen

[From Chapter 15 'Virtues and flourishing', which discusses virtues that computer and data scientists, software developers and engineers, designers, and people in management, marketing, procurement and policy making, would need to cultivate; pages 122, 126-130.]

Practical applications

Now, how would you apply virtue ethics in your projects? Virtue ethics is not about counting pluses and minuses. It is also not about clear rules that apply universally. In virtue ethics, it depends. It depends on the specifics of the situation and on the people involved and their abilities and willingness to cultivate and exercise relevant virtues. It depends on the various conceptions that people can have of the good life, of the kind of society they want to create.

Say, you are involved in the design or application of an algorithm for a government agency. The algorithm is meant to find fraudulent behaviour of citizens. Which virtues would you need in such a project? Self-control? Courage? Justice? Humility? You can pick one or two of these virtues and create opportunities to cultivate them. You may want to say 'no' to a proposal to add some functionality that stretches the project's scope towards potential misuse. This would involve self-control and courage. Self-control in that it restricts what will be built. And courage in that it can be difficult to argue against a prevalent logic of adding functionalities. Additionally, you may want to carry out an experiment to evaluate the algorithm's fairness. You may want to look into not only the fairness of the algorithm in a narrow sense, but also into the fairness of the processes around the algorithm, for example, whether operators or citizens are able to inspect the algorithm's functioning or to correct the algorithm's output. This would involve not only justice, but also humility, for example, in being transparent about what the algorithm can and cannot do, acknowledging its limitations.

It is critical to experiment and to learn from your experiences, when you want to cultivate virtues. At first, you may feel awkward or your actions may not be entirely successful. Over time, however, you will become better in it, and your thoughts and feelings will better align with your acts. And the other way around. You may need to consciously modify your behaviour and you will probably still feel somewhat uneasy, but you will act more virtuously nevertheless.

Cultivating a virtue is a process. A person who has cultivated a virtue will have learned to express this or that virtue out of habit, in an optimal form, for appropriate reasons, and with appropriate feelings. This is the beauty of virtue ethics: it involves an aspirational mindset; it enables exercise, learning, and growth.

[...]

Relevant virtues

If, by chance, you find the vocabulary of *virtues* archaic, you can think of them as *superpowers*: the superpower to choose goals that contribute to flourishing (self-control); the superpower to be open to others and to act to improve their lot (empathy); or the superpower to engage in joint deliberation and collective action to find ways to live well together (civility).

There are many lists of relevant virtues. Here, I would like to mention a series of virtues that I would see as especially relevant for people who work in tech. My goal is to provide good enough starting points for cultivating these virtues, without claiming completeness or rigour.

People who develop new technologies need to cultivate (some of) these virtues, in order to deliver technologies that can support others ('users') to exercise the very same virtues. If you are working on an algorithm that can impact people's lives in terms of justice, for example, regarding fairness, and equality, then you will need to cultivate the virtue of justice. Similarly for the other virtues.

First, there are the four *cardinal* virtues: courage, self-control, justice, and wisdom. These date back to ancient Greece, but they are still relevant today:

- **Courage:** The ability to act rightly in the face of adversity; a disposition to perceive dangers and opportunities and navigate between these; to find an appropriate balance between fears and hopes, between cowardice and rashness. Courage may include perseverance, dedication, and commitment. Courage plays both during design, for example, in mentioning some uneasy topic, and during usage, for example, in supporting people to cope with difficulties.
- **Self-control:** The ability to steer one's desires and impulses; a disposition to choose habits and experiences that promote human flourishing. This may include temperance, discipline, and patience. As a designer or developer, you may need to exclude specific features (to combat 'feature creep'). While working on systems or products, you may need to consider how these can enable (or dampen) prospective users' abilities to exercise self-control.
- **Justice:** The ability to notice and evaluate diverse benefits and drawbacks of specific innovations or applications; and to seek just and fair distributions of these benefits and drawbacks across people and across groups (distributive justice). You will need to consider how these innovations or applications can promote (or corrode) (material and procedural) justice, fundamental rights or human rights, and wellbeing of specific individuals or groups of people.
- **Practical wisdom:** The ability to determine, for each specific situation, which virtues are needed, and to express these virtues appropriately, aiming for an appropriate *mean*. It functions as a *master virtue* that you can use to steer and modulate other virtues. It involves reflexivity, self-awareness, and self-knowledge, in order to critically reflect on practices in which you are involved and on your role and participation in these practices.

In her book *Technology and the Virtues*, Vallor identifies and discusses a series of *technomoral* virtues, which we need to cultivate in order to flourish in our current, *technosocial* world:

- **Honesty, reliability or integrity:** A disposition to respect and promote truth and to build and promote trust. This is relevant, for example, regarding fake news and political and cultural polarization. In your projects, you may need to consider how the system or product that you work on can foster (or stunt) honesty in people who use this system or product.
- **Humility:** A disposition to recognize the limits of science and technology. Humility would involve questioning what technology can and cannot do and would avoid an overreliance on *technological* innovation. It would, for example, help to bring attention to the potential of *social* innovation, as a complement or alternative to technological innovation.
- **Civility:** A disposition to seek ways to live well together with others; to promote joint deliberation and collective action towards societal goods. This is different from 'being polite'. In your work, you may want to include concerns for societal goods (or hamper) people who use it to cultivate civility.

- **Empathy and compassion:** A disposition to be concerned with others and with non-human animals, to be moved, and to take action. This may involve questioning your project's objective. You may want to reflect on the ways in which the product that you work on can aid (or stifle) people's abilities to exercise empathy and compassion.
- **Care:** A disposition to meet the needs of others; to contribute to the ameliorating of suffering. This can refer both to your role in a project and to the project's outcomes. For example, you may need to consider how the product that you work on can help (or hinder) people to care for themselves, for others, and for nature.

Vallor also discusses several *technomoral* virtues, which I chose to modify, in order to adapt them to the experiences of people who work in innovation and technology projects:

- **Perspective and curiosity:** A disposition to look at situations and appreciate the various moral elements in them; and a disposition to be open and receptive towards other people and their experiences and learning from them. This virtue is needed in organizing all sorts of meetings, both with project team members and with potential users.
- **Flexibility and creativity:** A disposition to steer and modulate one's actions, beliefs, and feelings to changing situations; and a disposition to generate ideas and combine different ideas. I like to think of curiosity and creativity as mirror images, as complementary moves: curiosity has to do with impression (going in), creativity with expression (going out).

Lastly, I would like to mention several virtues that are relevant to working in technology and innovation projects and to engaging with prospective users or other stakeholders.

- **Collaboration:** A disposition to promote and foster cooperation. This virtue is probably best expressed in combination with other virtues, for example, in *collaborative curiosity* or *collaborative creativity*, and it requires care for the people involved and for group dynamics. Collaboration plays both in the context of design and in the context of usage.
- **Empowerment:** A disposition to view the systems that you help to develop as tools to empower their users. Empowerment requires that people in design roles enable putative 'users' to participate actively in the design process. It also involves empowering 'users' to exercise virtues like self-control, empathy, and civility, when using these systems.
- **Anticipation and responsiveness:** A disposition to explore both desirable and undesirable outcomes of your project, including, for example, higher-order effects, and to respond to changes and findings during the innovation process, for example, to question earlier choices. It involves the organization of iterative processes of experimenting and learning.
- **Diversity, inclusion, and participation:** A disposition to promote diversity, for example, in a project teams' composition, to include unusual perspectives or fields expertise or to enable diverse 'users' to participate in research and development, and in application and deployment. The latter requires sharing power with them (see *Empowerment*).

[Based also on: Steen, 2021: 'Slow Innovation: The need for reflexivity', *Journal of Responsible Innovation*; Steen, Sand, Van de Poel, 2021: 'Virtue Ethics for Responsible Innovation', *Business and Professional Ethics Journal*; and Steen, 2013: 'Virtues in participatory design: Cooperation, curiosity, creativity, empowerment and reflexivity', *Science and Engineering Ethics*.]