

Three things digital ethics can learn from medical ethics

Ethical codes, ethics committees, and respect for autonomy have been key to the development of medical ethics — elements that digital ethics would be advised to emulate.

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The past decade has been rife with data misuse, hacks, and corporate wrongdoing. As people have become more aware of the ways in which tech companies abuse their power, a ‘teclash’ has ensued, combined with calls for more ethics^{1,2}. But efforts to respond to this demand have been fraught with hollow promises, oversights, and mistakes³ that have attracted further criticism against both tech companies and the professed limits of ethics. It is perhaps no surprise that the first experiments in digital ethics have misfired; the discipline is relatively new, and most of the endeavours behind digital ethics have been made by computer engineers, lawyers, journalists, or businesspeople with little or no background in ethics⁴. Given this context, and in order to suggest a way forward for digital ethics, it is helpful to look to another field within practical ethics that has a longer history — medical ethics.

Medical and digital ethics

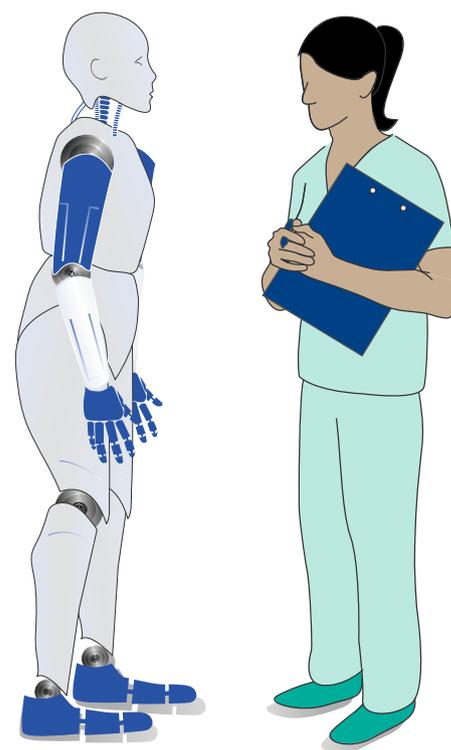
Ethical concerns have never been foreign to medicine. It is, after all, a field that deals directly with matters of life and death. Hippocrates, often considered the father of medicine in Western culture, urged physicians to do no harm. The discipline of medical ethics, however, did not fully develop until the 1970s. For most of history, physicians were left on their own to decide what it means to do no harm, without any training or institutional support to help them avoid mistakes.

Two factors contributed to the development of medical ethics. First, medical scandals highlighted the need to establish ethical standards and regulation. In 1972, for example, *The New York Times* revealed that subjects with syphilis had gone untreated for four decades as part of the Tuskegee Syphilis Experiment, despite treatment being available, and without the knowledge or consent of subjects⁵. Second, the development of technology confronted doctors with new ethical challenges they did not know how to resolve. The mechanical ventilator, for instance, forced a rethink of

the concept of death and the development of the ethics of organ transplantation: doctors were now faced with warm, heart-beating bodies whose brains were no longer working but whose organs could be procured for transplantation⁶. In short, there were practical demands that needed to be met, and it was clear that dealing with ethical dilemmas should not be solely the job of healthcare professionals, whose expertise is in keeping people healthy, as opposed to resolving ethical conundrums.

The analogy between digital ethics and medical ethics is quite close. Much like Hippocrates, Google, a company that can be considered to be one of the founders of the digital age, famously introduced the motto ‘Don’t be evil’ as its fundamental code of conduct. Given that almost no one thinks of themselves as evil, or even capable of being evil, the dictum is hardly helpful in aiding engineers, programmers, and data scientists to identify and resolve ethical problems. Like medicine in the 1970s, digital technology companies have been the protagonists of serious controversies in the past couple of years. As more people are becoming aware that they are being affected by unethical digital practices, the need for ethical standards is becoming more apparent. Likewise, with the development of technology related to the collection, analysis, and use of personal data, as well as the design of new apps, platforms, and tools such as autonomous cars, we are confronted with new ethical dilemmas that engineers, programmers, and data analysts are not especially suited or trained to resolve.

The analogy between medical and digital ethics is not perfect, however. The digital context is much more political than the medical one, as well as more dominated by private forces, and it will have to develop its own ethical practices. Despite the differences, there are three elements that have been vital for the success of medical ethics, which digital ethics would be advised to emulate: the development of ethical codes, the use of ethics committees, and respect for personal autonomy.



Ethical codes

Ethical codes are necessary to establish benchmarks for good practices. The digital world is in urgent need of codes analogous to the Nuremberg Code, the Declaration of Geneva, the Belmont Report, and the Declaration of Helsinki, which have shaped medical and research policies around the world despite them not being legally binding.

Some might think that laws such as the European General Data Protection Regulation (GDPR) should be enough. But the GDPR only addresses issues related to personal data. It says nothing, for example, about how to programme ethical decisions in autonomous cars, or about ethical dilemmas of future technologies. Furthermore, laws are narrow in scope, as they should be; they establish minimal requirements of behaviour for social institutions to function well. Ethics goes

beyond that — it identifies moral issues, reflects on the kind of society we want to live in based on ideas of what a good life looks like, and makes recommendations accordingly. Laws allow us to have orderly interactions with one another within a framework of basic fairness. Ethics allows us to strive towards ways of life that will be most conducive to our own and others' wellbeing.

Some companies such as Google have issued principles for their future work in artificial intelligence (AI)⁷. While efforts from companies to think through ethical issues and make public commitments are desirable, and a step in the right direction, businesses are driven by private interests that can get in the way of impartiality. Companies can be too vague in formulating their principles, they can change their code of conduct as they see fit, sometimes surreptitiously, and the principles proposed may not be the result of an appropriate process of consultation and agreement between relevant parties.

For a digital ethics code to carry enough moral weight to have an industry-wide impact, the principles proposed must be the product of deliberation of a legitimate, independent, and neutral body that is inclusive and diverse, and above all, has the public interest as its principal concern.

In 2016, the European Data Protection Supervisor announced an Ethics Advisory Group that was to “consider the wider ethical implication of how personal data is conceived and used” in an effort to lead the conversation on ethics in the digital age. While it was hoped that the result would be guidelines or recommendations for better digital practices⁸, the report ended up being a series of reflections about “socio-cultural shifts” that were only vaguely related to ethics and avoided attempting to “define the rights and wrongs of navigating the digital ecosystem”⁹. From the point of view of the success path of medical ethics, the report was a missed opportunity.

A more successful attempt has been the recent European Commission's Ethics Guidelines for Trustworthy Artificial Intelligence¹⁰. The guidelines, however, have been criticized for being “lukewarm, short-sighted and deliberately vague”, mostly due to the lack of professional ethicists on the high-level expert group on AI, and an overabundance of industry representatives who managed to water down what were supposed to be “red lines”¹¹. For international ethical codes to have moral authority, they have to be shaped by actors who can represent the public good — not by the private interests of industry.

A common objection against ethics is that it only amounts to self-regulation¹² and that it is nothing beyond the expression of good wishes; in short, that ethics does not have teeth. But ethical codes can and do have teeth, even when they are not legally binding. If a code achieves sufficient legitimacy and recognition, it can be expected to be respected by all professionals. Penalties for the breach of the ethics code can include suspension and possible expulsion from the profession. If a doctor has a sexual relationship with a patient, for example, they can lose their licence. The analogy between medical and digital ethics points towards a need to professionalize tech jobs to hold them to high standards¹³. If doctors, lawyers, and architects require a licence to work, there is no reason not to have equally high standards for computer scientists and engineers — particularly given how much influence they have over our lives through their structuring of our digital world. The Association for Computing Machinery's Code of Ethics and Professional Conduct is a good start, but more needs to be done for a code to be adopted worldwide and across industry in a way that compels computing professionals and institutions to adhere to it¹⁴.

Ethics committees

Before the 1970s, there were virtually no ethics committees in hospitals¹⁵. Today, it is hard to find a hospital without one. Similarly, every technology company should have an ethics committee.

Ethics committees have at least three roles to play. The first is education¹⁶. It is the responsibility of ethics committees to keep up with the latest relevant information that will allow them both to make good ethical decisions, and to educate the staff around them in best practices. Ethics committees also engage in community outreach, both to achieve familiarity with the community's concerns, and to share with the community the essentials of ethical practices.

The second role of ethics committees is policy formation and review¹⁶. Ethics committees apply international guidelines to design ethical internal policies that are specific to the institution they work at.

The third role of ethics committees is to provide ethical consultation¹⁶. Any stakeholder, from programmers to executives, as well as users and clients, should be able to turn to such a committee if they have ethical concerns. Ethics committees consider moral problems on a case-by-case basis. To resolve issues, they take into consideration international guidelines, their own policies, previous experiences, and the best interests of all

stakeholders (particularly those of the most vulnerable), among other elements. Ethics committees are there to make sure people's rights are respected (the right to autonomy, among others), to help resolve value conflicts, and to assess whether a particular technology is worth being developed and deployed. No tech project should go out into the world without having been assessed by a team of qualified people with a view to bettering society and avoiding negative consequences. Ethics committees should also follow-up on projects after they have been launched to make sure there are no moral problems that had not been foreseen.

Ethics committees should reflect diversity and inclusion. As a minimum, they should be composed of someone who can understand technology at a deep level and explain it to others (a programmer, engineer, or computer scientist), a practical ethicist, a lawyer, an expert on risk assessment (possibly a statistician), and at least one lay member of the public (possibly from an interested non-governmental organization). Ethical dilemmas around digital technology have a tendency to have more social and political implications than medical dilemmas, which is why it might also be important to include sociologists and political scientists.

Ethics committees can help ethics have teeth by, on the one hand, having the power to block grossly unethical projects from going forward (similar to ethics committees at universities), and on the other hand, by putting more responsibility on the shoulders of those who decide to act against the recommendation of a committee in less clear-cut cases, in consultations, or in follow-up assessments of a project. For example, a doctor can act against the recommendation of her hospital's ethics committee, but if things go wrong, that doctor is likely to face more consequences (possibly even legal consequences) than if she had acted in accordance with the ethical recommendation.

Ethics committees need to be relatively independent of the company they work for. Their jobs must be guaranteed, regardless of their ethical views or recommendations. In addition to having local ethics committees, it would also be desirable to have higher-level ethics committees that can be publicly funded and can oversee lower-level committees, as well as take charge of the most difficult cases.

Respect for autonomy

For digital projects to be ethical, they must respect the autonomy of individuals. Autonomy is the capacity to act in accordance with reason in a way that

responds to one's own motives¹⁷. Being autonomous means being able to choose our values for ourselves and live accordingly.

One of the most important ethical changes in the history of medicine is the transition from paternalism to respect for people's autonomy. The first edition of the Code of Medical Ethics of the American Medical Association, adopted in 1847, stated¹⁸: "The obedience of a patient to the prescriptions of his physician should be prompt and implicit. He should never permit his own crude opinions as to their fitness, to influence his attention to them." In contrast, the latest edition states¹⁹ that patients have a right "to make decisions about the care the physician recommends and to have those decisions respected. A patient who has decision-making capacity may accept or refuse any recommended medical intervention."

Patients should have the right to refuse treatment, among other reasons, because medical decisions are not only scientific or technical, but also value-laden. A patient who prefers to forego a painful treatment in order to enjoy a shorter, but more pleasant life, is not irrational or medically mistaken. In identical clinical scenarios, two patients may rationally and reasonably choose different treatments because their values are different.

Similarly, technological decisions are not only about facts (for example, about what is more efficient), but also about the kind of life we want and the kind of society we strive to build. The beginning of the digital age has been plagued by impositions, with technology companies often including a disclaimer in their terms and conditions that "they can unilaterally change their terms of service agreement without any notice of changes to the users"²⁰. Changes towards more respect for autonomy, however, can already be seen. With the implementation of the GDPR in Europe, for instance, tech companies are being urged to accept that people may prefer services that are less efficient or possess less functionality if that means they get to keep their privacy.

One of the ways in which technology has failed to respect autonomy is through the use of persuasive technologies. Digital

technologies that are designed to chronically distract us not only jeopardize our attention, but also our will, both individually and collectively²¹. Technologies that constantly hijack our attention threaten the resources we need to exercise our autonomy.

If one were to ask people about their goals in life, most people would likely mention things such as "spending more time with family" — not many people would suggest "spending more time on Facebook". Yet most people do not accomplish their goals — we get distracted²¹. Collectively, we might want to have a more just and equal society, but here too, it is unclear whether technology companies are doing much to help us achieve those aims. Technology companies should be on our side, helping us attain our goals as individuals and societies — not theirs.

Outlook

Ethics can play an important role in developing and implementing technology in a way that better contributes to peoples' rights and wellbeing. That ethics is important, however, does not deny the equally important task of legislation. To complement ethics, one proposal that appears promising is that of implementing fiduciary duties for people and institutions handling personal data²². Just like doctors owe their loyalty to their patients, tech companies should owe their loyalty to their users. Our data should never be used against us, and a person's welfare should take precedence over economic interests. Legislation, however, will always be limited. Ethics needs to step up to fill in the blanks, take care of the unexpected, and help digital tech think through the possible consequences of innovations.

For these tasks, the digital world would do well to look to the successful path of medical ethics, in which the development of ethical codes, the implementation of ethics committees, and showing respect for people's autonomy played a vital role. Unethical practices breed distrust, resentment, and unnecessary conflict. Digital tools are already powerful enough that their misuse can cause great harm, and their hegemony is only going to grow in the following decades.

Ordinary citizens are fast becoming the slaves of digital technologies, rather than their masters. Better digital ethics is urgently needed to reverse this trend. □

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References

1. Botsman, R. Dawn of the techlash. *The Guardian* (11 February 2018); <https://go.nature.com/2YroGnu>
2. Smith, E. The techlash against Amazon, Facebook and Google—and what they can do. *The Economist* (20 January 2018); <https://go.nature.com/2K41ZAA>
3. Statt, N. Google dissolves AI ethics board just one week after forming it. *The Verge* (4 April 2019); <https://go.nature.com/2Zg727k>
4. Mahieu, R., van Eck, N. J., van Putten, D. & van den Hoven, J. *Ethics Inf. Technol.* **20**, 175–187 (2018).
5. Heller, J. Syphilis victims in U.S. study went untreated for 40 years. *The New York Times* (26 July 1972); <https://go.nature.com/2JVjcbE>
6. Harvard Ad Hoc Committee *JAMA* **205**, 337–340 (1968).
7. Pichai, S. AI at Google: our principles. *Google* (7 June 2018); <https://go.nature.com/2LjvzhY>
8. Powles, J. & Véliz, C. How Europe is fighting to change tech companies' 'wrecking ball' ethics. *The Guardian* (30 January 2016); <https://go.nature.com/2Omhh9b>
9. Ethics Advisory Group *Towards a Digital Ethics* (European Data Protection Supervisor, 2018); <https://go.nature.com/2K4B9Iz>
10. *Ethics Guidelines for Trustworthy AI* (European Commission, 8 April 2019); <https://go.nature.com/2K6HWB1>
11. Metzinger, T. Ethics washing made in Europe. *Der Tagesspiegel* (8 April 2019); <https://go.nature.com/2Y9pcuQ>
12. Whittaker, M. et al. *AI Now Report 2018* (AI Now Institute, 2018); https://ainowinstitute.org/AI_Now_2018_Report.pdf
13. Schneier, B. *Click Here to Kill Everybody: Security and Survival in a Hyper-Connected World* (W. W. Norton & Company, 2018).
14. *ACM Code of Ethics and Professional Conduct* (ACM, 2018); <https://www.acm.org/code-of-ethics>
15. Aulisio, M. P. *AMA J. Ethics* **18**, 546–553 (2016).
16. Aulisio, M. P. & Arnold, R. M. *Chest* **134**, 417–424 (2008).
17. Christman, J. Autonomy in moral and political philosophy. In *The Stanford Encyclopedia of Philosophy* Spring 2018 edn (ed. Zalta, E. N.) (Stanford Univ., 2018); <https://go.nature.com/2Yt0WmP>
18. *Code of Ethics of the American Medical Association* (T. K. and P. G. Collins, 1848); <https://go.nature.com/2Y8vBX4>
19. *Patient Rights: Code of Medical Ethics Opinion 1.1.3* (American Medical Association, 2016); <https://go.nature.com/2K4TYyb>
20. Koepke, L. "We can change these terms at anytime": the detritus of terms of service agreements. *Medium* (18 January 2015); <https://go.nature.com/2OijzBi>
21. Williams, J. *Stand Out of Our Light: Freedom and Resistance in the Attention Economy* (Cambridge Univ. Press, 2018).
22. Balkin, J. M. *UC Davis Law Rev.* **49**, 1183–1234 (2016).

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