

# UNIX AS POLITICAL CULTURE

When I was teaching political science to university students in Ukraine, I was sometimes asked surprising and insightful questions about what is the best form of government. When we were discussing the system of government in Canada and Britain, for example, the students were very curious about the notion of parliamentary supremacy, which is the simple notion that the legislature can pass any law it wants because it has democratic legitimacy to do so. If that is so, then how is it that Canada or Britain do not suffer from the worst sort of tyranny of the majority or rule by the mob? On the other side of the coin, how could the Soviet Union have had a constitution that looked on paper to be a perfect model for liberty, equality, and fraternity, and yet the political practice there turn out to be a horrific tyranny by a small, self-serving elite? The simple question my students were asking was: what was the difference? My answer was brief and took a lot more explanation: the difference lies in political culture.



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Thinking too much about the how-to of government is missing the real point about politics. No matter how it happens, we all want to live well, in peace with our neighbours, with few restrictions imposed on us by others, and with the means somehow available to indulge in the “pursuit of happiness” for ourselves and other people we care for. Even more than in the sphere of political life, the world of computers is overwhelmingly obsessed with how-to, and leaves the question of “why” almost unanswered. Almost no one takes the time to ask what it is we want to do, before they rush on to answer the more comfortable question of how it is we are going to do it.

What do we want to do with computers? We want to do things with information, with data, that we were doing long before computers came along — but now we want to do them faster, better, bigger, etc.. We want information to be stored, we want information to be manipulated, we want information to be transmitted over a distance, and we want information to be presented so that it is meaningful to us. If we are going to have a tool like a computer to do this for us, then it would be best if that tool is as easy to use as possible, and better than previous technologies that are also capable of doing all these things. If we had a magic box, that would be perfection.

The search for a magic box goes back to Alan Turing, and his ingenious thought experiment that became known as the Turing Machine. Alan Turing imagined putting a person in front of an opaque screen. Behind the screen is either a human being or a computer. The person in front of the screen can ask any questions, and judge the responses that he is given. Whenever it happens that that person cannot tell whether there is a computer or a human being behind the screen, then we know that the computer has achieved artificial intelligence. Although this thought experiment was devised more than half a century ago, it is still a touchstone for computer science. Even today, we know that computers are not very good at telling jokes or even as good at facial recognition as human babies, and so even the most advanced of them have not yet passed the Turing Machine test.

When Ken Thompson and Dennis Ritchie invented the Unix operating system starting in 1969, they picked the best parts of previous work to create a platform that is very good at running

different computer programs. The older term for this is “run control,” and Unix turned out to be a very flexible means to get to the heart of what we really want to do. In the end, we don’t really care about operating systems or even computers, we just want to get the job done — however that happens. Unix got out of the way, and allowed people to work with data the way they wanted to. Unix experts were accorded the title of “guru” which seemed to imbue them with the wisdom of Eastern mysticism. The terse artificial language of the operating system took on some of the quirks and half-remembered obscurities of a natural language. There was room for groan-inducing puns and even lyrical elegance in the lines of manual pages, code, and scripts. With no one in charge but a world-wide community in support, Unix developed into an identifiable sub-culture.

Unix made the political culture of modern computing. It does the basics, which is to allow programs to run, and then it goes further and rewards the efforts of a curious and knowledgeable user. Unix has become the language of universal computing, with many parallels to the way the natural language English has become the lingua franca of our modern, globalized world. Because of its layered model ideas of a kernel to handle devices and a shell to handle interaction with different programs, it opened the world to the revolutionary innovations of the microcomputer, the graphical interface and the Internet. In the 1960s, computers were large and expensive devices, kept in locked rooms at big universities, corporations, and government departments. By the 1990s the idea that computers are devices that any citizen can own and use became commonplace. If we are on the verge of a “golden age” of freedom of information in cyberspace, then it is thanks to Unix that we got here.

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