

Robots and the Curse of Being

By Robin Murphy

One way to view how government regulation of robotics comes about is through the lens of the “curse of being important.” The curse refers to science that is recognized as being important to public good at the time of its emergence and thus attracts immediate governmental policy and regulation. Nuclear power and vaccine development are two examples. The curse is that, while it is reasonable and necessary for society to regulate, and even mandate adoption of, important emerging technologies, governmental processes for developing regulations are generally slow. The supposed silver lining of the curse is that technologies that are not deemed important are allowed to progress without government influence, but this may jeopardize the public in the long run. An example is workplace automation, which began transforming industry in the 1970s but, despite worker deaths, has not been subject to anything more stringent than guidelines for worker safety.

Robots, especially autonomous cars and small unmanned aerial vehicles, seem to suffer from a variant: The curse of being somewhat important. The Brookings Institute noted that regulations for testing self-driving cars vary between states and that, despite two deaths in 2018, no state has modified their regulations in response to those deaths or has mechanisms for rapidly changing rules when data challenges underlying assumptions. It seems that self-driving vehicles are important enough for legislation but not important enough for legislation that might interfere with economic development. A similar pattern has occurred with small unmanned aerial vehicles, where federal regulations are unenforced, either within the government or with the public. Thus, UAS are important enough for legislation but not important enough to actually implement.

We posit that technologies, notably nuclear power, vaccines, self-driving cars, and UAS, that use governmentally controlled infrastructures will be cursed as important, while technologies, such as computers, the Internet, factory automation, and social media, that do not use public infrastructure will escape notice. Nuclear power stemmed from weapons research and development required national security considerations. Vaccines require the public health infrastructure to distribute. UAS make use of civilian air space, but generally use sections previously been ignored by the FAA and thus are less important. Testing for self-driving cars occurs on the transportation infrastructure, but these roads may be under local, county, state, or federal control, allowing developers to shop around for the most favorable regulations. Computers were related to weapons development and the space race, but the real technological disruption was in personal computing for individuals and small businesses, which did not need public infrastructure. The Internet avoided being treated as a public utility, possibly because it emerged from a network of academic institutions which provided the core infrastructure. Factory automation is purchased by private industry and does not engage any public infrastructure. Social media makes use of the Internet, so it also escaped the curse of being important.

This interpretation suggests that i) agencies explicitly consider the potential impact of a robotic application in determining candidacy for regulations, rather than rely on an implicit criterion of whether the technology makes use of existing public infrastructure, and ii) that if regulated, regulations are applied swiftly and uniformly, and are based on, and rapidly revised by, evidence.