INTRODUCTORY NOTE: Jared Diamond is a professor of physiology at the UCLA School of Medicine. The following passage is adapted from his 1997 book Guns, Germs, and Steel: The Fates of Human Societies.

ACCEPTING OR REJECTING INNOVATION

Once an inventor has discovered a use for a new technology, the next step is to persuade society to adopt it. Merely having a bigger, faster, more powerful device for doing something is no guarantee of ready acceptance. Innumerable such technologies were either not adopted at all or adopted only after prolonged resistance. Notorious examples include the world's continued rejection of an efficiently designed typewriter keyboard and Britain's long reluctance to adopt electric lighting. What is it that promotes an invention's acceptance by a society?

The first and most obvious factor is relative economic advantage compared with existing technology. While wheels are very useful in modern industrial societies, that has not been so in some other societies. Some advanced Native American cultures in ancient Mexico invented wheeled vehicles with axles for use as toys, but not for transport. That seems incredible to us, until we reflect that the peoples of ancient Mexico lacked domestic animals to hitch to their wheeled vehicles, which therefore offered no advantage over human porters.

A second consideration is social value and prestige, which can override economic benefit~r lack thereof. Millions of people today buy designer jeans for double the price of equally durable generic jeans because the social cachet of the designer label counts for more than the extra cost. Similarly, Japan continues to use its horrendously cumbersome kanji writing system in preference to efficient alphabets or Japan's own efficient kana syllabary because the prestige attached to kanji is so great.

Still another factor is compatibility with vested interests. This book, like probably every other typed document you have ever read, was typed with a QW1ERTY keyboard, named for the left most six letters in its upper row. Unbelievable as it may now sound, that keyboard layout was designed in 1873 as a feat of anti-engineering. It employs a whole series of perverse tricks designed to force typists to type as slowly as possible, such as scattering the commonest letters over all keyboard rows and concentrating them on the left side, where right-handed people have to use their weaker hand. The reason behind all of those seemingly counterproductive features is that the typewriters of 1873 jammed if adjacent keys were struck in quick succession, so that manufacturers had to slow typists down. When improvements in typewriters eliminated the problem of jamming, trials in 1932 showed that an efficiently laid-out keyboard would let us double our typing speed and reduce our typing effort by 95 percent. But QWERTY keyboards were solidly entrenched by then. The vested interests of hundreds of millions of QWERTY typists, typing teachers, typewriter and computer salespeople, and manufacturers have crushed all moves toward keyboard efficiency for over 60 years.

While the story of the QWERTY keyboard may sound funny, many similar cases of resistance to change based on financial interests or settled habits have involved much heavier economic consequences. Why does Japan now dominate the world market for transistorized electronic consumer products to a degree that damages the United States balance of payments with Japan, even though transistors were invented and patented in the United States? Japan dominates the electronics market today because the Japanese company Sony bought transistor licensing rights from the American company Western Electric at a time when the American electronics consumer industry was churning out vacuum tube models and was therefore reluctant to compete with its own products. Why were British cities still using gas street lighting into the 1920s, long after cities in the United States and Germany had converted to more efficient electric street lighting? British municipal governments rejected electric street lighting because they had invested heavily in gas lighting; to protect those investments, they placed regulatory obstacles in the way of competing electric light companies.

ESSAY TOPIC

According to Diamond, what causes people to reject new technologies? To what extent do you think his ideas explain why people accept or reject innovations of all kinds—new products, new ideas, new ways of doing things? Write an essay responding to these two questions; to develop your own position, be sure to discuss specific examples. Those examples can be drawn from anything you have read— including, if you choose, "Accepting or Rejecting Innovation" itself—as well as from your observation and experience.