

## **How America Revolutionized the World**

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Author

[Dr. Jerry Bergman, PhD](#)

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I previously wrote a column documenting that, as a result of our technological developments, America has revolutionized the world. American inventions include the record player, telegraph, telephone, electric light bulb, television, tape recorder, motion-picture projector, electrification of the nation (before this time the only source of electricity was by large, inefficient, batteries), mass production assembly line, MRI (magnetic resonance imaging), most vaccines, to list a few of hundreds of examples. Yet one of the most important inventions in the last century, if not ever, has received little fanfare.

This is the invention of the transistor by William Shockley, John Bardeen, and Walter Brattain. All three were given the most coveted honor possible, the 1956 Nobel Prize in Physics. Specifically, Shockley headed the team that made the first point-contact transistor at the Bell Telephone Laboratories in New Jersey. Shockley also invented the bipolar transistor that gave birth to the semiconductor industry in Silicon Valley. The remarkable group of scientists that Shockley recruited established the major firms, including Fairchild Semiconductor and Intel Corporation. In the mid-1960s, Shockley joined the electrical-engineering faculty at Stanford University.

About this time, Jack Kilby and Robert Noyce realized that to make a flat of transistors and then cut them into individual transistors, which then have to be wired together to make a circuit, wastes time and money. Consequently, they invented a way to manufacture microchips containing thousands of transistors

already properly connected. *This invention changed the world.* Now microchips are the core of cell phones, flat-screen TVs, smartphones, computers, space satellites, telescopes, drones, flash drives, gaming consoles, CD players, GPS, CT scanners, heart pacemakers, and in most every electronic device used today including electronic medical equipment. In every automobile are dozens of microchips, as is true in most every electrical appliance in our house.

The first computers were about the size of a house and worked poorly because the thousands of vacuum tubes required for the computer to function. If one would burn out soon after the system was turned on, the computer shut down. Now, thanks to microchips, our cell phone has more computing power than the original house-sized, vacuum-tube first-generation computer.

My interest in Shockley stems from when I received a phone call from him when I was employed as a professor at Bowling Green State University. He contacted me out of his interest in an article that I published in *The Futurist Magazine*. He later hired me to do some consulting work for him. In working with him, we talked at some length about the controversy he was involved in related to eugenics. His interest in eugenics stemmed from his acceptance of evolutionism. He realized that the central plank in the evolution-based ideological platform was “survival of the fittest” which required some life-forms to be less-fit than others. When Shockley was educated, many leading biology books taught that some humans were more-fit than others, namely Whites. Logically, other races were less-fit, namely Blacks. He accepted this view because he accepted the theory of evolution. Conversely, from our conversations, I saw absolutely no evidence that he was a racist as commonly charged.

He once mentioned that when he was in the hospital, the Black nurses there were excellent, very well-spoken, very professional and, obviously, very intelligent in explaining the medical issue he was then facing. He was an evolutionist and this was his belief. Unfortunately, he was somewhat behind the times not realizing that, after WWII and the Holocaust, Darwinists had attempted to accommodate evolution to the idea that humans are all of one blood as the Bible teaches (Acts 17:26).

I once mentioned to Shockley that I did not accept evolutionism, thus also rejected racism, because I concluded that all humans descended from our two original parents, Adam and Eve. Thus, we are all essentially brothers and sisters, and there is only one race, the human race. He evidently had enough respect for me that he just listened, and did not challenge my belief. He did imply that, if he was a

creationist, I would be correct in concluding that no “race” would be an inferior race. He, though, was convinced that human evolution was true, thus some racial differences must exist. Shockley was born in England, the home of Charles Darwin, who is the man who popularized the modern theory of evolution. Therefore, Shockley was likely exposed in detail, *as are our youth today*, to Darwin’s theory in school. If Shockley’s invention was never developed, we would still be living in the early 1950s.

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