

2. Review the headlines on the current NYTimes.com "Technology" section (<http://www.nytimes.com/pages/technology/index.html>). Make two lists: one of five to ten technologies listed and a second of the socio-cultural and economic issues being written about in relation to these technologies. Based on these lists, write your own definition of technology. Working with two or three of your classmates, compare and contrast the definitions each of you have developed. Then, discuss how these definitions relate to several issues discussed in Schatzberg's essay.
3. In the course of one day, make a note of every time you either use or hear the word *technology*, keeping track of when, where, and in what context the word comes up. Analyze the data you've collected. In what ways are the uses of this word similar or different? Is it possible to place the different uses of the word into categories? What might these be? Spend ten minutes free writing about your findings. Then, write a one-page analysis of the different uses and categories associated with this word.

Sarah Murray

"Transition: Technology Puts Power in the Hands of Many"

Sarah Murray is a writer and journalist whose work focuses on sustainable development and the relationships among business, society, and the environment. Her articles cover a range of topics, including environmental sustainability, technology, and international development. You can access and read more of her articles on her website, <http://sarahmurray.info/journalism/>. In this essay, Murray reviews the findings of several recent surveys of "Millennials," or the generation born since 1980, to discuss the ways in which technology relates to this generation's current perspectives on social relations and economics.

In what ways have the use of online tools and smart devices affected your own social, professional, and economic outlook?

Few "millennials"—or the generation aged between 18 and 33—can remember a time when technology has not been a fundamental part of their lives. Not only does it answer their questions, but, through social media, it also gives them the ability to alter the way in which they are perceived by their peers and the greater world around them. Online tools and smart devices have empowered the generation born since 1980 in a way few previous technologies have done.

"Technology has played a huge role in how they're different from the generation that came before them," says Jean Case, chief executive of the Case Foundation, which she and her husband Steve Case, AOL's co-founder, created in 1997.

This generation sees technology as leveling the playing field. In the FT-Telefónica Global Millennials Survey of 18- to 30-year olds almost 70 per cent of respondents said "technology creates more opportunities for all" as opposed to "a select few."

This belief has brought tremendous confidence to the world's first generation of digital natives, despite facing the worst economic outlook since the great depression.

"We have all these incredible gadgets that connect us to the world," says Paul Taylor, executive vice-president of the Pew Research Centre and director of its Social & Demographic Trends project. "But for them, it's the wallpaper of their lives and it allows them to place themselves at the centre of the universe."

With a Facebook page or a Twitter presence, millennials can broadcast their views, ideas and creative output globally—and potentially find an audience of millions. "That is enormously empowering," says Mr. Taylor. "That, as much as anything, contributes to their confidence."

While technology might help them feel at the centre of the universe, its ability to connect millennials to other communities across the world has also created in many a desire to help solve big global problems. "They're idealists and their level of engagement with the things they care about is extraordinary," says Ms. Case. She cites research the foundation conducted revealing that millennials want to do more than simply give to causes they care about. Some 44 per cent wanted to know how their donations were used and 41 per cent, when giving, also wanted to know about volunteer opportunities.

"This is a different level of engagement from young people than we've traditionally seen," she says.

Again, technology is playing a role. Supporting this philanthropic impulse are non-profit websites that match charities with volunteers or allow donors to track small donations and receive feedback from recipients. Meanwhile, the sense of how millennials can contribute as individuals is increasing as traditional ways of working are eroded and technology replaces not just manual labour but also intellectual capital.

10 "Artificial intelligence, algorithms and the web mean that all the repetitive jobs are going away," says Bill Drayton, founder of Ashoka, the social entrepreneurship organization. "The new value is in contributing to change." Millennials' belief in their ability to effect change varies across the world. The Telefónica survey found Latin Americans had the strongest sense that they could make a difference globally, at 62 per cent, compared with 40 per cent of all respondents.

This belief increases when considering their own environment, with 62 per cent of all surveyed saying they could make a difference locally.

What this highlights is a shift in the way leadership is viewed. Millennials' trust in traditional institutions and leaders is declining. More than half the respondents did not think governments reflected their beliefs and values. Instead, they put more faith in the wisdom of the crowd, accessed via social media. Millennials trust each other and turn to their peers when they have questions to answer. "There's a two-way connection and anyone can talk to anyone in the world," says Mr. Taylor.

Yet the confidence and connectivity that technology has brought this generation can also be accompanied by stresses and doubts.

"The old model of organisation, where a few people choreograph what everyone else does is failing and instead you have fluid, open architecture with synapses running in every direction," says Mr. Drayton. This means that, to survive and thrive, millennials believe they must rely less on institutions and more on themselves and their peers.

15 One thing that may help millennials navigate this new fluid, open environment is that, as a 2010 Pew Research Centre study revealed, they are more receptive to change than older generations.

The study, which polled millennials in the US, found them more tolerant of immigrants than their elders, with almost 6-in-10 saying that immigrants strengthened the country.

While religious extremism is on the rise among young people in certain communities, many are more religiously tolerant than their elders, with

76 per cent of those polled by Telefónica saying they were open to religions and beliefs outside their own.

Mr. Taylor sees this particularly at work among US millennials, among whom attitudes to interracial marriage and sexual identity are changing rapidly. "In the US, one thing that's notable is their acceptance of diversity," he says. "There's a lot of social change that's connected to this generation."

Of course, for the millions of young people without jobs, any tolerance, openness and confidence in their ability to effect change is tempered by the grim prospect of being unable to make the transition from school to the workplace or to afford to buy a home or eventually retire.

Given the growing gaps in employment prospects and wealth levels among young people worldwide, differences in attitude between the haves and have-nots are likely to increase, too.

However, given the millennials' desire to help solve problems, they may well play a prominent role in building a more stable economy and an equitable society.

Ms Case is optimistic. "These people will change the world, and they have opportunities to do that," she says. "We have a segment being left behind. But I'm hoping that the generation with the opportunities will pay attention to their peers without."

What the youth have to say:

Nicholas Davies, 23, Student Official, United Kingdom

"While recession has had a huge effect on the number and range of jobs available to graduates, that is no reason to be pessimistic about the future. I will always strive for my ideal future, and persistence will get me there one day." 25

Pablo Rodríguez Sánchez, 27, Communications Co-ordinator, Mexico

"Our generation today faces a void: our governments have failed us; companies have failed us too. We have a crisis of credibility towards institutions. We have come to realise we are the protagonists of the 21st century. Our generation is starting to wake up and create the solutions of our own problems."

Oghenefego Isikwenu, 29, Consultant, Kenya

"My future will be much better than that of my parents' generation thanks to better education. An innovative group of young Africans are actively involved in making a positive impact in their fields. But security is a big concern. With unemployment increasing more young people have no option but to go into crime."

30 Dana Sobh, 19, Student, Lebanon

"The future seems a little intimidating. You can't tell whether the actions of today are leading to success or destruction. I'm constantly haunted by thoughts such as 'Did I choose the right career path?' However, the economic climate might get better by the time I graduate."

Analyze

1. Write a one-paragraph summary of Murray's article.
2. What is Murray's argument? What claims does she use to support her thesis?
3. One key finding that Murray reports is that "This generation sees technology as leveling the playing field." What does she include as being part of this "leveling"? From your perspective, is leveling one of the effects technology has had in society? Why or why not?
4. Take another look at the end of the article, where Murray includes quotes from youth around the world. What do you notice about these? What are some common threads that run through them? If you were to add your own quotation to this list, what would you say?

Explore

1. Murray proposes that "Online tools and smart devices have empowered the generation born since 1980 in a way few previous technologies have done." Write one page reflecting on whether and how this has been your experience. Then, write one page considering whether, based on this reflection, you agree with Murray.

2. One of the reports referenced in the article is the FT-Telefónica Global Millennials Survey (<http://survey.telefonica.com/survey-findings/>). You can read this and other surveys related to the article, including "The Social Side of the Internet" (<http://casefoundation.org/topic/social-media/publications?page=1>) on the Internet. Locate one of these surveys or reports. Summarize what you've read and then compare that to Murray's claims based on the same study. Is your reading of this survey or study the same as Murray's or different? Write a short essay reflecting those similarities and differences.
3. Research one of the following devices—telegraph, telephone, or radio—and the effects it had on young people when it came into common use. Write a letter to Murray explaining your findings and how she might incorporate this historical perspective into a future article.

Leo Marx "Technology: The Emergence of a Hazardous Concept"

Leo Marx is Senior Lecturer and Kenan Professor of American Cultural History Emeritus in the Massachusetts Institute of Technology's Program in Science, Technology, and Society (STS). His work, which has been foundational to the field of STS worldwide, examines the relationship between technology and culture in nineteenth- and twentieth-century America. He is the author of *The Machine in the Garden: Technology and the Pastoral Ideal in America* (1964); *The Pilot and the Passenger: Essays on Literature, Technology, and Culture in America* (1988); editor (with Merritt Roe Smith) of *Does Technology Drive History? The Dilemma of Technological Determinism* (1994); and editor (with Bruce Mazlish) of *Progress: Fact or Illusion?* (1996). In this excerpt from a longer essay, Marx reviews the history of the term *technology* and its meanings in contemporary culture and society.

✦ Have you ever thought of technology as hazardous? Why or why not?