



# Unintended consequences

Lesson code: IK5G-D3QB-9VTB-4

ADVANCED

## 1 Warm-up

Study the term below:

*trickle-down economics*: the idea that tax breaks or other economic benefits provided to businesses and upper income levels will inevitably benefit poorer members of society by improving the economy as a whole.

Is trickle-down economics a good idea?

## 2 Key vocabulary

What do you think the underlined words and phrases mean? In pairs, match them to their correct meaning below:

1. The blogger was constantly under government surveillance — he had to be careful about his actions.
2. In some countries of the world, it is dangerous to express dissent in public.
3. On the whole, I was happy with my new job. But a few problems still nag in the back of my mind.
4. If you want to reduce your footprint, you can start by using public transport more often.
5. Public funding for the project is starting to dwindle. We will have to finance it ourselves.
6. It's difficult for new companies to enter the mobile technology market — the barriers to entry are extremely high.

- a. become gradually less
- b. close observation, especially of a suspected spy or criminal
- c. concern (me)
- d. express opinions that are different from the official viewpoint
- e. obstacles that make it difficult to enter a given market
- f. produce fewer greenhouse gases from activities and help the environment

## 3 Before you watch

You are going to watch Jon Gosier talk about how new technology can make things actually worse for some people. What do you think he is going to say?



#### 4 What do you remember?

Choose the best answer for each question.

1. What did Jon's technological solution allow the Ugandan people to do in 2010?
  - a. get fit
  - b. shop online
  - c. avoid government surveillance
2. What are the unintended bad consequences of medical apps and virtual currencies?
  - a. The technology can fail.
  - b. Not everyone has access to the technology.
  - c. They can damage the environment.
3. What did the Philadelphia public library do to stay modern and relevant?
  - a. digitized a number of books
  - b. included more books
  - c. offered free access to the internet
4. What allowed investors to buy up plots of land in East Africa after the land ownership rights were put online?
  - a. They had connections within the government.
  - b. They had access to the technologies and the connectivity that makes it possible.
  - c. The local people were able to contact the investors.
5. What does Jon want entrepreneurs to do?
  - a. Think about the unintended consequences of the things that they make.
  - b. Do a lot of market research.
  - c. Visit Africa and observe how people are using technology.

#### 5 Words in the video

Look at the transcript of the talk. Find a word or phrase which means ...

1. related to human welfare (*adj., P1*) \_\_\_\_\_
2. the good results that come from something (*plural noun, P3*) \_\_\_\_\_
3. things that can be worn (*plural noun, P5*) \_\_\_\_\_
4. a source of great worry (*noun, P5*) \_\_\_\_\_
5. an agent legally authorized to act on behalf of another party (*two-word noun, P6*) \_\_\_\_\_
6. related to the existence of someone or something (*adj., P7*) \_\_\_\_\_
7. moved quickly and dramatically (*phrasal verb, P8*) \_\_\_\_\_
8. the ability to produce a desired or intended result (*noun, P9*) \_\_\_\_\_



## 6 Collocations

Match the adjectives and nouns to form collocations from the talk.

- |                   |              |
|-------------------|--------------|
| 1. humanitarian   | agent        |
| 2. government     | crisis       |
| 3. oppressive     | library      |
| 4. a proxy        | problems     |
| 5. an existential | regimes      |
| 6. a cloud-based  | surveillance |

Now make a sentence for each phrase.

## 7 Talking point

Discuss any of the questions below.

1. What do you think of Jon's talk? Do you share his concerns?
2. Do you think everybody will have access to modern technology in the future?
3. What do you think of digital currencies like Bitcoin? Do you think paper-based currencies will become obsolete in the future?
4. Can you think of any other unintended consequences of technological development?



**3 Before you watch**

- 1 (0:12)** As a software developer and technologist, I've worked on a number of civic technology projects over the years. Civic tech is sometimes referred to as tech for good, using technology to solve humanitarian problems.
- 2 (0:26)** This is in 2010 in Uganda, working on a solution that allowed local populations to avoid government surveillance on their mobile phones for expressing dissent. That same technology was deployed later in North Africa for similar purposes to help activists stay connected when governments were deliberately shutting off connectivity as a means of population control.
- 3 (0:50)** But over the years, as I have thought about these technologies and the things that I work on, a question kind of nags in the back of my mind, which is, what if we're wrong about the virtues of technology, and if it sometimes actively hurts the communities that we're intending to help? The tech industry around the world tends to operate under similar assumptions that if we build great things, it will positively affect everyone. Eventually, these innovations will get out and find everyone. But that's not always the case. I like to call this blind championing of technology "trickle-down techonomics," to borrow a phrase. (Laughter) We tend to think that if we design things for the select few, eventually those technologies will reach everyone, and that's not always the case. Technology and innovation behaves a lot like wealth and capital. They tend to consolidate in the hands of the few, and sometimes they find their way out into the hands of the many.
- 4 (1:47)** And so most of you aren't tackling oppressive regimes on the weekends, so I wanted to think of a few examples that might be a little bit more relatable.
- 5 (1:56)** In the world of wearables and smartphones and apps, there's a big movement to track people's personal health with applications that track the number of calories that you burn or whether you're sitting too much or walking enough. These technologies make patient intake in medical facilities much more efficient, and in turn, these medical facilities are starting to expect these types of efficiencies. As these digital tools find their way into medical rooms, and they become digitally ready, what happens to the digitally invisible? What does the medical experience look like for someone who doesn't have the \$400 phone or watch tracking their every movement? Do they now become a burden on the medical system? Is their experience changed?
- 6 (2:45)** In the world of finance, Bitcoin and crypto-currencies are revolutionizing the way we move money around the world, but the challenge with these technologies is the barrier to entry is incredibly high, right? You need access to the same phones, devices, connectivity, and even where you don't, where you can find a proxy agent, usually they require a certain amount of capital to participate. And so the question that I ask myself is, what happens to the last community using paper notes when the rest of the world moves to digital currency?
- 7 (3:19)** Another example from my hometown in Philadelphia: I recently went to the public library there, and they are facing an existential crisis. Public funding is dwindling, they have to reduce their footprint to stay open and stay relevant, and so one of the ways they're going about this is digitizing a number of the books and moving them to the cloud. This is great for most kids. Right? You can check out books from home, you can research on the way to school or from school, but these are really two big assumptions, that one, you have access at home, and two, that you have access to a mobile phone, and in Philadelphia, many kids do not. So what does their education experience look like in the wake of a completely cloud-based library, what used to be considered such a basic part of education? How do they stay competitive?



- 8 (4:08)** A final example from across the world in East Africa: there's been a huge movement to digitize land ownership rights, for a number of reasons. Migrant communities, older generations dying off, and ultimately poor record-keeping have led to conflicts over who owns what. And so there was a big movement to put all this information online, to track all the ownership of these plots of land, put them in the cloud, and give them to the communities. But actually, the unintended consequence of this has been that venture capitalists, investors, real estate developers, have swooped in and they've begun buying up these plots of land right out from under these communities, because they have access to the technologies and the connectivity that makes that possible.
- 9 (4:57)** So that's the common thread that connects these examples, the unintended consequences of the tools and the technologies that we make. As engineers, as technologists, we sometimes prefer efficiency over efficacy. We think more about doing things than the outcomes of what we are doing. This needs to change. We have a responsibility to think about the outcomes of the technologies we build, especially as they increasingly control the world in which we live. In the late '90s, there was a big push for ethics in the world of investment and banking. I think in 2014, we're long overdue for a similar movement in the area of tech and technology.
- 10 (5:37)** So, I just encourage you, as you are all thinking about the next big thing, as entrepreneurs, as CEOs, as engineers, as makers, that you think about the unintended consequences of the things that you're building, because the real innovation is in finding ways to include everyone.



## 2 Key vocabulary

1. b      2. d      3. c      4. f      5. a      6. e

## 3 Before you watch

*Brainstorm ideas from the students and then play the whole video.*

## 4 What do you remember?

*Play the video again if necessary. Pause where appropriate to allow students to write down the answers.*

1. c      2. b      3. a      4. b      5. a

## 5 Words in the video

*Hand out a copy of the transcript to the students.*

- |                 |                  |                |
|-----------------|------------------|----------------|
| 1. humanitarian | 2. virtues       | 3. wearables   |
| 4. burden       | 5. a proxy agent | 6. existential |
| 7. swooped in   | 8. efficacy      |                |

## 6 Collocations

1. humanitarian - problems
2. government - surveillance
3. oppressive - regimes
4. a proxy - agent
5. an existential - crisis
6. a cloud-based - library

