It's not just your TV listening in to your conversation

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Samsung's new Smart TV's could be listening to every word you say. Credit: Flickr/SamsungTomorrow, CC BY-NC-SA

Be careful what you say in front of your new television, following reports that Samsung's new Smart TVs are now being programmed to listen to every word you say and send it over the internet to a third party cloud service.

The news was originally reported by the The Daily Beast but soon spread far and wide, with some making comparisons to George Orwell's novel 1984, which depicted a nightmarish world of a state listening into its citizens.

Given Samsung's reputation for sometimes shady practices, there was notably some concern. But how much should we really be worried?

After all, the idea of computers listening to your speech is not a new concept – in both fact and fiction.

Back in the 1970s, the producers of Star Trek decided that one of the preferred communication mechanisms for computers in the future (the original show was set in the 23rd century) would be for people to simply say "computer" and then make a natural language enquiry about the state of the ship or the location of the Klingons.

The computer would dutifully respond giving Captain Kirk or some other crew member all the information they required. The computer was listening and ready to respond at all times and no one seemed concerned about privacy. It all seemed to work perfectly well, except when the Enterprise crew travelled back in time, of course.

Talk to the technology

In the real world, voice recognition and phrase detection systems have existed for some time, going all the way back to the original Dragon Dictate software for the PC in the 1990s (and now available for Macs), and the Mac Dictate software on the equivalent Mac platforms.

The latest smartphones have also started to integrate this concept of voice activation with Apple introducing "Hey Siri" in its latest operating system update (iOS 8).

Google also has the "OK Google" feature for both their Android smartphones and its Google Glass headset (if ever Google Glass makes a comeback).

With both these features, the smartphone begins to act just like the computer in Star Trek, listening all the time for a certain phrase and then responding back when it hears you address it.

Try it for yourself. On your iPhone, find "Hey Siri" in the settings and turn it on, then shout "Hey Siri" from across the room to ask a question; it's amazing to set a timer or check the weather hands free! Similarly, on your Android device open the Google search and say "Ok Google" and then speak your request.

So, given that these features have existed for a while, why are people now becoming concerned about technology listening in to what they say?

It's all about privacy and the cloud.

All your data are belong to us

This issue arises because of a key difference between those early phrase detection systems and today's implementations.

In those early systems, before the invention of the modern internet, all of the voice processing was done locally, on the machine that was listening to your voice. No data about what you said was transmitted over a network.

But, in recent years, voice recognition systems have changed. To deal with the limited processing power present in smartphones (and TVs), and to increase voice recognition accuracy, many voice recognition systems now record what you have said. They then upload this to a server in the cloud for analysis, before returning the result to your smartphone for action.

Those with an iPhone will have noticed this due to the fact that Siri

cannot take your commands when you are not on the internet, even if the request is a local one (like setting a timer).

While this does increase accuracy and saves your phone's processor, it also means that any request you make is being sent over the cloud, possibly to a third party organisation.

Combined with the ability of devices to listen all the time, this may cause some people to worry that the machines are keeping track of everything we say.

With the integration of this listening technology into more devices over time (such as the upcoming Google and Apple smartwatches, as well as recent deals to improve voice recognition in cars), there could potentially be a machine in many places listening to your conversations.

So, what to do?

Stop talking so loudly, the Internet might hear

Currently, just like the issue with Facebook Messenger last year – when some users were worried about what information the new app would tap into on their devices – it comes down to privacy policies.

Based on the above, it's reasonable to assume that many devices will now be listening, so it's worth checking the privacy policies of the various organisations involved to make sure they have stringent controls on the way that your data is shared and stored.

In the case of Samsung, the company has made it clear that the data in question is encrypted and is only used to interpret your commands as issued to the television.

Google and Apple have similar privacy policies as well. So far all these organisations' machines that are listening are bound in what they can do with the data.

It's worth noting though that all these privacy policies are subject to change at any time. Until we have global policies that deal with the privacy of our data and how it is used, it is possible that in the future anything you say could be used in a different way than you originally thought.

So, perhaps for now, it's worth watching what you say in front of your TV … and your smartphone … and also your new smartwatch.

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