Contact tracing apps and solutionism

Imagine you receive a notification on your smartphone of having been near someone who was tested positively for the coronavirus. What would you be willing to do? Cancel everything, take leave, ask others to do your shopping, and stay home for two weeks (with your family, potentially in different rooms)? Or would you rather be tested first? What other information would you need: how near you were to the infected person, for how long, was it in an enclosed space or was it somebody passing by your window, how ill did the person get? And how exactly should we make such notifications possible? Do we need to permanently share our locations with authorities? Would that be proportional to the purposes of a notification system? Who collects the data and what else do they do with it?

Soon after the coronavirus pandemic hit in 2020, dozens of countries floated the idea of a smartphone app to trace people who had been in contact with Covid-19 patients. In none of the places where such an app was introduced were adoption rates anywhere near the 60% of the population (Ferretti et al, 2020) needed to make it a stand-alone solution. Causes and reasons for this lacklustre response may vary, but several studies have shown that many people fear the extent to which such an app may invade their private lives. Clearly, there is little faith in assertions that the data will not be used for other purposes.

It is curious that solutions to the coronavirus crisis were sought in smartphone apps. This reflects a peculiar perspective on (mobile) technology: regardless of the problem, here is where the solution will be found. In a broader sense this phenomenon is known as 'technological solutionism': we already have the technological solution, now we need to fit the problem with it. The term solutionism was borrowed from the world of design, architecture and urban planning, where it refers to a tendency to devise sexy, eye-catching and often simplistic solutions for complex problems before those problems have been properly analyzed (Dobbins, 2009; Morozov, 2013). What characterizes technological solutionism is an overhasty implementation of a technological 'solution' with dubious efficiency (is it proportional to the problem?) and questionable effectiveness (does it add anything of value?).

To start with the last element, the effectiveness of automated contact tracing has not been proven (Ada Lovelace Institute, 2020). While gaining time in tracing contacts is undeniably advantageous, there are several issues surrounding the demarcation of a 'contact' in automation. Critics have pointed to the limitations of the Bluetooth technology used by most such apps: estimations of distance are spotty (especially when it rains or near metal objects), walls and windows between people are ignored, as well as how they are positioned towards each other. Even the inventor of the Bluetooth protocol, Jaap Haartsen, indicated that the technology is not precise enough to make contact tracing useful, while remarking: "To expect that this can be developed within a couple of weeks doesn't do justice to our discipline" (Van der Beek, 2020). Attempts to use mobile phone data to track Ebola infections in West Africa failed because, as it turns out, phones are not people (Erikson, 2018). To rephrase that: not everyone carries a mobile phone. In fact, especially many of those labelled 'the most vulnerable' during the pandemic may not carry smartphones.

Moving on to efficiency, fast notifications are not efficient when the message is incorrect and many end up in an unnecessary quarantine. Manual contact tracing does allow for verification of real contact and making arrangements for testing. While several media reported successful implementation of an app in Singapore, the designer of the TraceTogether app, Jason Bay, stated that it was never intended to replace manual tracing. In his view, there should always be a human in the loop (Bay, 2020). Manual tracing will also be able to take differences in language and culture among the population into account (Singh, 2020). The Council of Europe (2020) in fact issued a warning about potential risks of rash technological intervention to the human rights and freedoms of minorities. Necessity and proportionality of any such measures should be carefully weighed for different segments of society, preferably by involving representatives of different groups in decision-making.

When it comes to efficiency and proportionality, circumstances matter. For instance, contact tracing apps can be more useful in cross-border circumstances where people meet mostly strangers whom they can't identify to a contact tracer than when they contract the virus somehow at the local supermarket among neighbors.

What is clear is that contact tracing apps can never be stand-alone solutions to a pandemic. This is not a message you will hear from technology companies, which thrive on the adulation of 'innovation'. We cannot blame them and there is no doubt their zeal can yield positive results. The rare collaboration between Apple and Google in quickly broadening Bluetooth affordances in smartphone operating systems for contact tracing was laudable. Particularly because they had taken into account civil society criticism on early contact tracing apps by ensuring that data would be stored decentrally on the device and by allowing for some autonomy in the choices of smartphone users.

It was all the more disappointing that several governments preferred apps that do store user data on central servers, purportedly so the data can be used for epidemiological research, but potentially also to monitor adherence to crisis measures (Criddle & Kelion, 2020). The fear of exactly such function creep keeps adoption rates of contact tracing apps low. Distrust is not a solid basis for societal cooperation.

While the Apple-Google initiative was commendable because of its limited interference in users' private lives, this could change on a whim. There is no democratic oversight on or public participation in decisions of the Big Tech custodians of essential computational infrastructures. As 'obligatory passage points' (Callon, 1984), Google and Apple decide what we can do with our smartphones, laying down the law for all of us. If anything, we need to discuss how to arbiter this arbitrariness, particularly if we are going to look for solutions to complex social problems in technology. This requires an 'on the ground' approach of cooperative responsibility, which entails meaningfully engaging all relevant stakeholders in society to address these 'problems of many hands' (Helberger, Pierson & Poell, 2018; Thompson, 1980).

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