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Tracking for COVID-19: An Experimental Method more than a «Miracle» Solution

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ABSTRACT

Tracking refers to the use of digital systems to identify or track an individual. In the context of the coronavirus pandemic, tracking, through its ability to find individuals likely to have been contaminated in order to isolate or test them, has emerged as one of the methods that can fight the spread of the virus. Tracking applications, which are listed and analysed here, were first used in Asia (China, Korea, Singapore, Taiwan) and then in the West, in France via the government application "StopCovid", giving rise to a wide-ranging debate. Memorandum 2 : overview of the studies and projects registered on…

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Tracking applications, which are listed and analysed here, were first used in Asia (China, Korea, Singapore, Taiwan) and then in the West, in France via the government application "StopCovid", giving rise to a wide-ranging debate.

The World Pandemic Research Network's database points to several issues raised by research. Four themes appear to be central to the analyses of researchers: the degree of efficiency of tracking applications; the level of acceptance of tracking by the population; the risk for the protection of personal data; the trade-offs that public authorities must make on digital technology (sovereignty and surveillance).

Effectiveness is controversial and will have to be assessed by future studies

Technological surveillance tools are increasingly used for public health purposes and telephone tracking has already been used in the context of disasters or epidemics, as this article, available on the WPRN database reminds us. Thus, the development of applications in the context of the pandemic has been driven by the enthusiasm of part of the scientific community. However, there is debate about their effectiveness and no consensus has emerged on the issue. Initial studies suggest that a large percentage of users in the population (70 or 80%) is necessary for applications to be effective.

However, no country has reached such a threshold, due to technical limitations (insufficient share of the population equipped with mobile phones or wishing to leave Bluetooth, etc.) or lack of enthusiasm of

citizens. Some medical studies also point out that such tracking could only be really useful at the beginning of an epidemic. While the results seem positive in the Korean case, it would seem hasty to draw relevant lessons for Europe, as data collection is carried out there in the framework of a very intrusive surveillance system based on the cross-referencing of geolocation, police, banking and telecommunications data, and it is difficult to isolate the contribution of tracking alone in the management of the pandemic.

So, while extensive research has focused on the technical potential of tracking to combat the pandemic, as well as its potential limitations. Studies are now needed to evaluate the effectiveness of this method with significant feedback and to propose ways to improve it.

Tracking tools seem relatively well accepted by citizens when guarantees are provided for the protection of personal data

To be effective, tracking applications must be used on a massive scale. As the coercive measure of mandatory use is not popular in Europe, a significant consent of the population is necessary. Although citizens are in favour of the applications (59% of French people said they were in favour of StopCovid when it was launched, their choice to install them depends on a large number of factors.

A large literature, mainly American and available on the WPRN database, has examined in detail the characteristics that tracking

applications must have in order to gain the greatest approval. Centralized data collection and the guarantee of private and anonymized data appear to be the priority of the majority of citizens in order to grant their consent. The status of the actor (state or private Tech actor) does not seem to have any influence.

These studies, which show the central importance of trust, give the public authorities solid arguments for developing communication campaigns aimed at citizens. Important research in behavioural social sciences has supported the application design process. Further research is now required to assess their actual level of acceptance by citizens. These studies could be of a comparative nature to analyse reactions in different cultural contexts.

A risk to be further assessed regarding the protection of personal data and the development of technological surveillance in society.

Concerns have been expressed by citizens, associations and public actors regarding the protection of personal data. The issue is central because, as this study available in WPRN points out, if citizens lose confidence in government, they may no longer follow its public health recommendations.

In France, solid technical guarantees have been put forward concerning StopCovid, notably through the pseudonymisation of data and the use of Bluetooth. However, several actors point to certain

persistent risks: the possibility of de-pseudonymising and therefore de-anonymising data after the fact, or even hacking or the possibility given to everyone to trace an individual who has tested positive.

Although health data are particularly sensitive, the risk of breaching the privacy of personal data seems less important in anti-Covid applications than in applications already massively used daily by the population. However, their presence puts the digital dependency of our societies on the political and media agenda. Indeed, these applications are part of a more global context of increased digitization of the health sector.

Many researchers are expressing their points of view and some point out the infringements on individual liberties particularly through the merging of different databases, which is likely to increase with the development of technological surveillance tools in more and more sectors.

A trend in international research in recent years has focused on the links between digital and surveillance society. In this sense and that of several recently published fora, studies could be carried out to assess citizens' perceptions of the use of technology for control or surveillance purposes.

Communities and states must carry out an exercise of proportionality between the potential of technological solutions and the protection of their

sovereignty and guarantee of the individual freedoms.

The involvement of the major Tech companies (GAFAM) in the production of these applications is very important. This article, wich can be consulted on WPRN underlines that although some studies consider that the tracking technologies proposed by the GAFAMs offer better guarantees of respect for privacy or are more efficient than those proposed by the public authorities, other studies point out the risk of infringing the sovereignty of States and communities through increased dependence on these companies and through the delegation of missions of first-rate public services to private actors. Work showing the long-term multidimensional impacts of a dependence on Tech actors, updated in the context of the pandemic, would offer interesting avenues of reflection for public authorities.

The «Smart City» has significant potential to innovate and find ways to combat the pandemic and those to come. However, many researchers urge public authorities to remain extremely cautious. The urgency of a crisis should not lead to « technological solutionism » by abandoning careful study of the consequences, including long-term consequences, of the use of surveillance tools on society. Similarly, the experimental potential of technological tools in the fight against the pandemic should not distract the attention of public authorities from the priority to be given to methods that have proved their worth: stock of masks, medical equipment and tests.

In short, the synthesis of research work suggests that applications to combat Covid should be considered as experimental methods rather than «miracle» solutions. Research in the field must be continued and more study must be made of the multiple long-term implications for

society, not just the technical aspects of implementation. The work of designing more effective applications that offer better guarantees in terms of individual liberties to obtain better consent from the population must be implemented now, with a view to a possible second wave of the pandemic.

Appendix

Several studies from the World Pandemic Research Network resource base were used to produce this note.

https://wprn.org/item/442852

Lucivero, Federica «COVID-19 and Contact Tracing Apps: Technological Fix or Social Experiment?»

This team, mainly from Oxford University, is evaluating the challenges of digital surveillance in the Covid 19 era from the perspective of Tracking applications. Its main conclusions are that the applications should not be seen as a technological solution to the pandemic, but more humbly as an experiment whose consequences and effectiveness will have to be studied in depth by independent research.

https://wprn.org/item/441552

Li, Tianshi. "Towards Human-centered COVID-19 Contact Tracing Apps.

This team of researchers from Stanford and Carnegie Universities is studying the different applications of tracking, their level of privacy, and how they are perceived by the public. The main interim findings

of their surveys (in the United States) show that the applications meeting the greatest approval are those using a centralized architecture with strong security measures and providing users with additional information on the status of the pandemic and hot spots of contamination.

https://wprn.org/item/438452

Redmiles, Elissa. "Descriptive Ethics for COVID19 Apps"

These various studies funded by Microsoft aim to assess citizens' preferences regarding applications to fight Covid. It is noted that a vast majority of citizens attach great importance to the guarantee of data privacy and are opposed to data leakage to third parties in an equivalent manner regardless of their status (companies, States, etc.).

https://wprn.org/item/444652

Naudé, Wim. "Artificial intelligence vs COVID-19: limitations, constraints and pitfalls"

This study provides an overview of the issues surrounding artificial intelligence and Covid. The author believes that the challenge lies in the delicate balance between data confidentiality and public health. According to him, these issues do not appear to be sufficiently mastered for AI to be truly effective in the fight against the pandemic.

https://wprn.org/item/456052

Noronha, Noella. "Mobile Applications for COVID-19: A Scoping Review"

The March study identifies and analyzes applications for VIDOC 19. It emphasizes that the applications are not only intended to solve this crisis, but that the dialogues between different actors in the

construction of these applications will serve as a basis for the resolution of future crises.

Other major studies and articles mentioned.

https://www.technologyreview.com/2020/05/07/1000961/launching-mittr-covid-tracing-tracker/

This MIT Technology Review database is updated on a weekly basis and lists the different Covid applications in use around the world.

https://science.sciencemag.org/content/368/6491/eabb6936

This article is one of the most cited studies suggesting the usefulness of tracking in the fight against the pandemic.

https://risques-tracage.fr/docs/risques-tracage.pdf

A study presenting a summary of the risks of tracking for non-specialists. It stresses that even an application that takes the maximum precautions will not be able to guarantee the complete anonymity of users.

https://booksandideas.net/Tracing-Apps-to-Fight-Covid-19.html

An analysis and position paper on the various issues involved in using tracking to combat Covid.

https://www.revuepolitique.fr/stopcovid-une-application-problematique-sur-le-plan-ethique-et-politique/

Viewpoint criticising the StopCovid application by accusing it simultaneously of increasing citizens' mistrust of the state and encouraging overconfidence in the digital world.

https://laviedesidees.fr/Tracages-et-fusions.html

Point of view highlighting the risk of merging databases for the purpose of managing individual and collective behaviour evoked in the context of tracing.

https://theconversation.com/donnees-de-sante-larbre-stopcovid-qui-cache-la-foret-health-data-hub-138852

A forum putting into perspective the challenges of tracking applications in the context of the digitization of health care.

https://aoc.media/opinion/2020/05/25/stopcovid-ou-larbre-qui-cache-la-foret/

A viewpoint emphasizing the development of digital surveillance, of which Covid control applications would be just one example.

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