The Road (Not) Taken: Israel, COVID-19 and the SHABAC

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2020 saw a global pandemic which entailed an urge to address it on a state level to stop the virus spread, to lower contagion and death rates, or putting it simple, to save people's lives. As the outbreak of COVID-19 was a global event, we can analyze states' reactions, means and techniques adopted to handle this epidemiological crisis. Given the back-then (March 2020) absence of a vaccine or a cure, countries turned to non-medical solutions such as infected persons' isolation, COVID-19 positive quarantines, lockdowns, curfews, social distancing rules, and meticulous hygiene measures. Technology played an important role in the attempts to follow, shorten and minimize chains of infection through Contact Tracing Technologies (hence – CTT), which raises issues of tracked society (Konig *et.al,* 2020), and state surveillance (Eck & Hatz, 2020).

Each country dealt with the pandemic differently.[1] Countries differed in terms of the type of technologies they have developed and operated; the way they have framed and regulated CTTs, the way their citizens had reacted and behaved, given the technology operated (e.g. Ken-Dror Feldman *et.al,* 2020; Saw *et.al,* 2021), and the overall success of the technology in the battle to halt, as much as possible, the spread of the epidemic (Toch, 2020). Several studies have already analyzed the complexities of state surveillance, civil liberties, and the public health during the COVID-19 pandemic (e.g., French & Monahan, 2020; Kitchin, 2020; Ram & Gray, 2020).

In this context Israel is a very interesting country to study as it was the only democracy who employed her secret service (General Security Service, hence *SHABAC*) – normally oriented at intelligence operations and thwarting terrorism – to technologically track and monitor corona patients (Amit *et.al,* 2020; Schwartz-Altshuler & Aridor-Hershkovitz, 2020b). Hence, it had already received scholarly attention (Amit *et.al,* 2020; Cahane, 2021; Ken-Dror Feldman & Gross, 2020; Ken-Dror Feldman *et.al,* 2020; Marciano & Yadlin, 2021; Shpiro, 2021; Toch, 2020).

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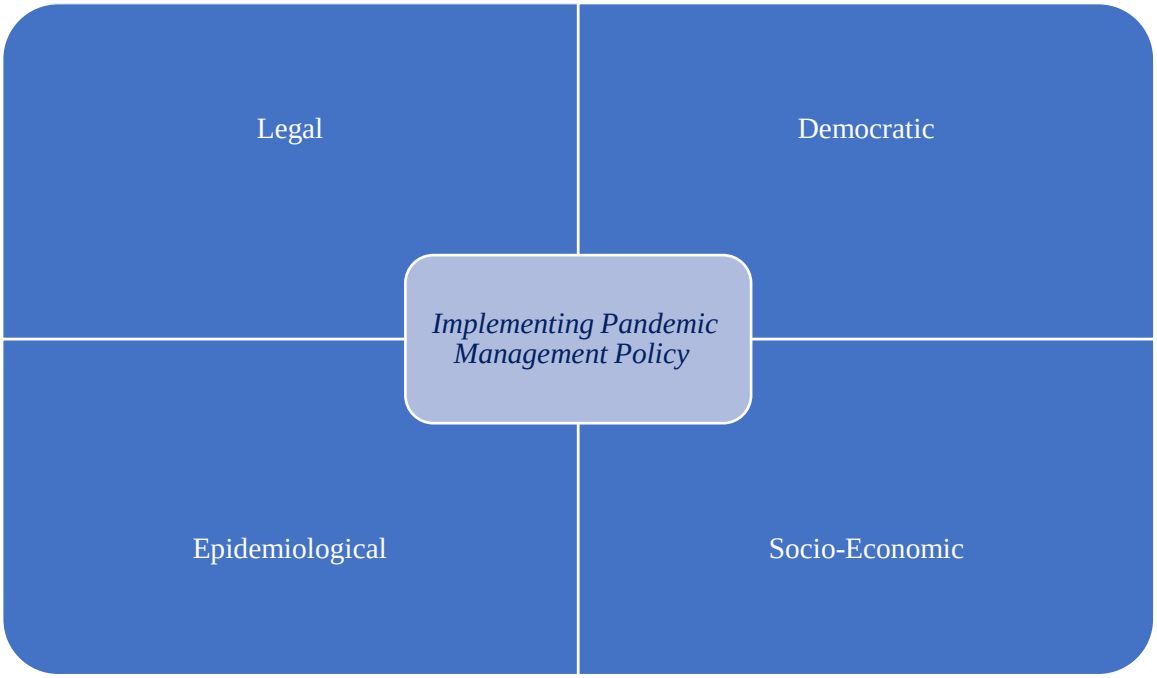
[1]. See for example Privacy International project – Tracking the global responses to COVID-19, https://privacyinternational.org/examples/tracking-global-response-covid-19 and MIT Technology Review COVID Tracing Tracker https://www.technologyreview.com/2020/12/16/1014878/covid-tracing-tracker/ (both updated only during 2020)

Ostensibly, the SHABAC's CTT's technological capabilities were supposed to flatten the pandemic expansion curve and thereby, at least in the state's level, elevate democratic and legal caveats. However, there is a broad agreement amongst scholars, jurists, and official bodies that this measure has failed to serve as an effective tool in the battle against COVID-19 (e.g., Albin *et.al,* 2021; Toch, 2020; State Comptroller, 2020; State Comptroller, 2021).

This study aims to analyze the Israeli case study and the archelogy of this failure through a multi-faceted matrix. The study will start by portraying the background of a global health crisis, state surveillance concept and contact tracing technologies. It will then move forward to describe the specific circumstances of the Israeli case, focusing on the seemingly dual pathways solution chosen by the Israeli government to cope with the corona – The involuntary *Tool* operated by the *SHABAC* and the voluntary *HAMAGEN* app. Hereinafter, the study will analyze the failure of the Israeli strategy based on the considerations - consequences matrix while referring to four different fields: legal, democratic, socio-economic, and epidemiological. Consequently, the study will recommend a few principles worthwhile considering while developing a pandemic management policy, which may be applicable worldwide.

CTTs Implementation - Considerations / Consequences Matrix



General Background

The SARS-CoV-2 (Severe Acute Respiratory Syndrome Corona Virus 2) the virus that caused the corona virus disease 2019, more commonly known as COVID-19 or Corona was first identified on human cases in a food market in Wuhan, China on 31 December 2019 (Moore & Henderson, 2021; Page, Hinshaw & McKay, 2021). The World Health Organization (WHO) declared the COVID-19 as a 'Public Health Emergency of International Concern' (PHEIC) on January 30, 2020,[2] and as a pandemic on March 11, 2020.[3] Due to the global pandemic tracking suddenly appeared to be a matter of life and death. To contain the spread of infections, governments, health ministries and experts worldwide had experimented with tracking technology (Konig *et.al,* 2020).

Modern societies are regarded as surveillance societies not only during pandemic. These are characterized by "increased investments in…techniques to systematically…collect, store and use information" (Boersma *et.al,* 2014, 1). Although the practice of gathering information about objects, individuals and their behavior is as old as humanity itself (Lauer, 2012; Boersma *et.al,* 2014); COVID-19 has added elements of higher stakes and increased urgency to the equation (Konig *et.al,* 2020; Eck & Hatz, 2020). The pandemic has prompted within weeks, a global rise in state surveillance. According to *OneZero* project as of May 22, 2020, 35 countries have deployed surveillance measures (Gershgorn, 2020). 22 of them are full democracies (Eck & Hatz, 2020). 'State Surveillance' is defined by Eck & Hatz (2020) as

> "The monitoring, collecting, and/ or processing of personal data by government. This can include the monitoring of online activity, location tracking via Bluetooth or Global Positioning System (GPS), tracking financial transactions, video surveillance, facial scans, and the collection of biometric data. The kinds of information states have the capacity to collect and connect is vast, precise and often private in nature." (Eck & Hatz, 2020, 604).

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[2]. World Health Organization (30 January 2020). Statement on the second meeting of the International Health Regulations (2005) Emergency Committee regarding the outbreak of novel coronavirus (2019-nCoV). https://www.who.int/news/item/30-01-2020-statement-on-the-second-meeting-of-the-international-health-regulations-(2005)-emergency-committee-regarding-the-outbreak-of-novel-coronavirus-(2019-ncov)

[3]. World Health Organization (11 March 2020). WHO Director-General's opening remarks at the media briefing on COVID-19 - 11 March 2020. https://www.who.int/director-general/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19---11-march-2020

State surveillance' power, reach and capacity are enormously increased using ICTs (Lyon, 2007; Marx, 2015). Cahane & Shany (2020) maintain that as online surveillance is meant to collect digital information from electronic communications networks, retain, process, and analyze it, it yields very detailed and richer intelligence about targets of surveillance than ever before (Cahane & Shany, 2020).

Contact Tracing Technologies (CTTs)

Contact tracing has been previously used to prevent the spread of epidemical diseases such as Ebola and Tuberculosis. The vast use of smartphones and the widespread nature of the Corona virus have led to an unprecedented effort to design and deploy CTTs albeit their effectiveness is contested (Toch, 2020).

The reproductive number, namely R, indicates the potential for transmission and refers to the mean number of individuals directly infected by *an infectious case* through the total infectious period, when introduced to a susceptible population. When the R rate is higher than 1 the disease becomes an epidemic. When R equals 1, it becomes an endemic. The infection will disappear when the R rate is lower than 1. Thereby, when the R rate is higher than 1, control measures are necessary to control the epidemic.

Epidemiological studies have shown that CTTs has the potential to keep epidemics under control if positive cases' contacts are isolated quickly enough (Hellewell *et.al,* 2020; Keeling, Hollingsworth & Read, 2020). High CTTs adoption rates combined with isolation and quarantining can lower the R, thereby effectively controlling the epidemic (Hinch *et.al,* 2020; Ferretti *et.al,* 2020) though some analyses indicate rather low levels of impact (Servick, 2020).

Birnhack & Zar (2020) devise legal action principles for the design of CTTs. They refer to four main binaries while reviewing prevalent CTTs:

1. ***The Method of contact tracing*** – CTTs based on *location data* are based on GPS (Global Positioning System) data. These constantly collect information from cellular companies and identify phones' locations using cellular antenna triangulation. CTTs which are based on *proximity data* are based on BLE (Bluetooth Low Energy) or QR (Quick Response) code.
2. ***The System's overall structure*** - centralized or distributed. In a *centralized* CTT system, the data is collected and stored on the operator's servers whereas in a *decentralized* CTT system the data remain in the internal memory of each and every cellular device and are provided to the health authorities only upon receiving consent from the users, in case of COVID-19 positive diagnosis.

3. ***The Identity of the CTT operator*** – Whenever the app's operator is the state itself or one of her bodies, the operator is considered a public one while a private company would render the operator as a private one.
4. ***Voluntary or compulsory participation*** - Most CTTs rely on voluntary participation, by which individuals need to download and install an app on their phones (BLE or QR based). Yet, some countries, such as South Korea, Taiwan and Israel have employed involuntary CTT designs (Schwartz-Altshuler & Aridor-Hershkovitz, 2020a). these rely on cellular traces (GPS) from mobile carriers to track contacts. Other CTTs, such as the Chinese *Tencent* app, which regulates access to public areas, are used in ways that make installation practically mandatory (Schwartz-Altshuler & Aridor-Hershkovitz, 2020a; Toch, 2020).

Israel's Dual CTTs Route

The Tool

On January 24, 2020, Israeli Ministry of Health (hence MOH) published its first press release concerning the Coronavirus: "Avoid non-essential travel to Wuhan, China."[4] Less than two months later, on March 17, 2020, a cooperation with the General Security Service (Israeli internal intelligence organization, hence - the SHABAC) was announced by PM Netanyahu as part of a series of sweeping measures to step the outbreak.

Israel has been under a "state of emergency", since 1948. This prolonged situation, which has no parallel in any other Western country, grants the government the legal prerogative to enact regulations at any time "for the defense of the State, public security and the maintenance of supplies and essential services."[5] These emergency regulations can be used not only to regulate issues that are generally covered by laws, but also to override existing Knesset legislation, with the exclusion of Basic Laws (Ben-Ari & Elran, 2020).

With the outbreak of the COVID-19 pandemic, and in order to give a quick response to the situation the government enacted emergency regulations[6], which authorized the SHABAC to assist the MOH in tracing the chains of infection (Ken-Dror Feldman & Gross, 2020). Initially, and due to the use of the Basic Law: The Government's section 39(a), the government's decision had bypassed the usual required oversight of a special parliamentary subcommittee

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4. Israel Ministry of Health (24 January 2020). Coronavirus: Avoid non-essential travel to Wuhan, China. https://www.gov.il/en/departments/news/1_24012020

5. Basic Law: The Government, Section 39(a)

6. The Emergency Regulations (authorization of the general security service to facilitate the national effort to reduce the spread of the new COVID-19 virus), 2020.

as it was taken before a new legislature was sworn in, following a third election round in less than a year (Ken-Dror Feldman & Gross, 2020; Cahane, 2021).

Netanyahu had acknowledged that the technology had never been used before on civilians and would involve a certain degree of violation of privacy. But, he said, the unprecedented health threat posed by the virus justified its use. "These means will help us greatly in locating the ill and thus stopping the spread of the virus." (AP, 2020).

However, it was then revealed that the SHABAC has been relying on an already two decades operating system, simply known as the *Tool* (Bergman & Schwarztuch, 2020). The monitoring scheme, of a location base nature, is based on a geolocation tracking technology and a review of credit card data. The *Tool* collects data, on every person who uses telecom services in Israel, from cellular providers and phone companies. This data includes the device's location, cell, and antenna zone to which it is connected, voice calls and text messages that were sent or received, as well as browsing history (Schwartz-Altshuler & Aridor-Hershkovitz, 2020a). This data has only been used under a court order (Bergman & Schwarztuch, 2020).

Notwithstanding, as part of the emergency regulations, the SHABAC could receive information from any relevant communication operator, process it and transfer the list of individuals that should be quarantined to the MOH. The monitoring technology, supposedly gives a far more precise history of an infected person's movements before they were diagnosed and identify people who might have been exposed. Those at risk of being infected, would then be ordered by a text message to enter a 14-day period of self-quarantine.

The use of the information by the MOH was restricted to certain uses and users. Both bodies were to write a procedure for handling the data including its consequent removal (Ken-Dror Feldman & Gross, 2020).

the head of the SHABAC Nadav Argaman said that his agency received Cabinet approval overnight to start deploying its counter-terrorism tech measures to help curb the spread of the coronavirus in Israel. While explicitly referring to the abnormalities of the situation, by which using the agency's capabilities on sick Israeli citizens deviates from the organization typical operations against Palestinian militants, he maintained that the goal was still in line with its overall mission of "saving lives." (AP, 2020) Argaman had stated that there would be stringent oversight to maintain individual privacy and that operatives would only use their findings to warn those that may be exposed to the virus - rather than enforcing any government-mandated quarantine.

> "The other state bodies don't have the necessary technological means to aid this effort….I am well aware of the sensitivity of this matter and therefore have instructed that only a very limited number of agents will be handling this and the information will not be saved in the Shin Bet database." (AP, 2020)

Taking this measure, Israel became the only democratic country in the world to use its secret service to track its own citizens' actions, albeit the worthy cause of preventing pandemic expansion (Schwartz-Altshuler & Aridor-Hershkovitz, 2020a; Ken-Dror Feldman & Gross, 2020).

The issue of oversight and parliamentary controls has been debated on several occasions. Furthermore, in March 2020, three petitions, referring to the lack of parliamentary supervision, to the intelligence monitoring of the entire population as well as to the secrecy of the procedure, were filed to the High Court of Justice (HCJ).

In an interim order the HCJ decided that it would be impossible to do any use of the SHABAC's given authorities in the lack of parliamentary supervision (*Ben Meir et, al. v. The Prime Minister*, Interim Order, 19.03.2020).

After the third elections' round, a temporary foreign affairs and defense committee was established with a subcommittee for the SHABAC's issues, and upon introducing restraining amendments, approved the government's request to authorize the government resolution no. 4950, as long as it routinely monitors the information provided to the MOH; and provided that the government seeks alternatives or explain why there is no alternative (Ken-Dror Feldman & Gross, 2020; Cahane, 2021).

On April 2020, the HCJ had referred to the issues of privacy violation, the legal framework needed to render such a monitoring scheme and the proportionality of this step (Shpiro, 2020); despite the reference to the severe infringement of privacy the scheme had imposed on citizens, the decision had legitimized the use of *the tool* and stated that as the unexpected event of the pandemic poses a harsh and immediate threat to the public health, it falls within the legal framework of the General Service Law (Sections 7(a), 7(b)(6)), although in an extraordinary way (Shpiro, 2020; Ken-Dror Feldman & Gross, 2020; *Ben Meir et, al. v. The Prime Minister*, Final Decision, 26.04.2020). Albeit, it had indicated that the use of such an 'invasive measure' requires primary legislation rather than regulations (Ben Meir *et, al.* v. The Prime Minister, Final Decision, 26.04.2020). Thereupon, on July 1st, 2020, the Knesset passed into law a bill – *The General Security Service Accreditation to Assist in the National Effort to Reduce the Spread*

of the New Corona Virus (Temporary Order), 2020,[7] authorizing the SHABAC to use smartphone data and other sensitive information to track Israelis who contract the coronavirus and those they are in contact with. The legislation enacted for a limited period, allowed the MOH to use the SHABAC's tracking data, as long as there are over 200 new COVID-19 infections a day. It granted the MOH with access to the data for a period of 14 days. Furthermore, the SHABAC's authorities assigned by the government, should have been renewed intermittently, every 21 days, only as long as the pandemic continues to expand and when there are no other solutions available. The government's decisions were supervised by the foreign affairs and defense committee who could have revoked them within a 5-day period.[8]

HAMAGEN App

Simultaneously, the MOH had launched on March 2020 a smartphone application entitled *HAMAGEN* (The Shield), to help limiting the pandemic spread. The application was developed in Israel, especially for the MOH. Its core principle is the value of mutual responsibility. Accordingly, it is written in an open-sourced code and was available to download on both Apple and Android app-stores (Winer, 2020). The app cross-checks the GPS history of smartphones with historical geographic data of patients from the MOH. All the information on the user's movements is stored only locally, on his smartphone. The data are kept updated by the ministry with the epidemiological data of known COVID-19 cases and are sent to the smartphone unilaterally for the purpose of cross-reference, to alleviate privacy concerns.

Although the app was not widely promoted in the media, an estimate of 1.5 million people have downloaded it (Friedson, 2020). Nonetheless, users had expressed skepticism regarding the app's utility after receiving false positives (Sokol, 2020) and questioned the ministry's claim that it would allow them to "stop the spread of the disease and protect those closest to us" (Sokol & Staff, 2020). As a result, and due to its many flaws, 400,000 users who had already installed the app, had uninstalled it (Friedson, 2020), thereby making it useless as an effective alternative to the SHABAC's geo-tracking.

By July, the MOH announced an improved new version of its contact tracing app - *HAMAGEN* 2.0,[9] with new set of features - although without the Google/Apple COVID-19

7. https://www.nevo.co.il/law_html/law01/502_316.htm (Heb).
8. https://www.nevo.co.il/law_html/law01/502_316.htm (Heb).
9. https://govextra.gov.il/ministry-of-health/hamagen-app/download-en/

exposure notification API (Toch, 2020) - resulting in better accuracy.[10] According to the ministry, *HAMAGEN* 2.0's use of Bluetooth and GPS technologies allow phones with the installed app to identify each other, making them significantly less error-prone. The new version enabled users diagnosed with COVID-19 to voluntarily share their location data in order to assist MOH's epidemiological investigations. By contrast to the SHABAC's state surveillance of all Israeli citizens, the civilian *HAMAGEN* 2.0 application is an opt-in program, which was initially based on *privacy by design* principles (Birnhack & Zar, 2020), meant to preserve people's private data while adhering to the social responsibility needed to stop a pandemic.

It seems the dual path has only narrowed the possibility of a shift from the non-voluntary *Tool* to the less invasive opt-in *HAMAGEN* application as the government's actions signified a reluctance to do so.

On October 12, 2020, the parliamentary committee for foreign and security affairs has approved for the fifth time, the ongoing surveillance of the SHABAC (Goichman, 2020), despite the organization's explicit resentment from this measure (Harel & Lis, 2020), on Israeli civilians.

During the committee's discussion, its chair MK Tzvika Houser had referred to *HAMAGEN 2.0.*'s failure to serve as a reasonable alternative. Starting July 2020, the supposedly improved version, was downloaded only by 70,000 Israeli residents from which 38,000 have uninstalled it within days, making it redundant as only a scarce group of 30,000 people in a 9 million citizens' state having this app on their smartphones. Houser hinted that the MOH had practically discarded the app (Goichman, 2020).

Remarkably, by the end of October 2020, two governmental official bodies have recommended ceasing the *Tool* malpractice. The Privacy Protection Authority (PPA) official stand was to stop the use of the geolocation tracking by the secret service or at least narrow it to the minimum needed (Ice, 2020). Furthermore, the annual state's comptroller report, has referred to the SHABAC's geolocation track as inaccurate and thereby unnecessary whereas only 3.5% of those who were forced to enter quarantine due to the geo-tracking were indeed COVID-19 confirmed cases (Druckman, 2020; State Comptroller, 2020).

Despite reports, data and figures displaying the inefficiency of the *Tool*, the government was not willing to relinquish its surveillance scheme.

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10. *Ibid.*

Figures dating February 2021, have shown an ongoing decrease in the tracking system efficiency as only 14% of those tested to be Corona positive were identified by it (Binyamin, 2021, February 17).

A year since its problematic implementation, on March 2021, Israel's supreme court, sitting as the High Court of Justice (HCJ) in the case of *The Association of Civil Rights in Israel et.al, v. The Knesset et. al,* (hence – *ACRI* decision) has banned the government from the ubiquitous use of smartphones tracking to locate Corona virus carriers, declaring it a non-proportional measure that severely infringes civil liberties (Lubell, 2021).

Eventually, on March 29, 2021, the parliamentary committee of foreign affairs and defense had for the first time refused to approve the government's demand to continue the cellular tracking and consequently halted the track (Binyamin, 2021, March 29). Although some of the committee members have always opposed the surveillance, this time chair Houser did not settle for a few days' extension, giving the government an opportunity to rearrange, but rather discontinued it. Formally, it was in the government's power to re-demand it, albeit she didn't.

Clearly the *ACRI* decision, a few weeks earlier, denouncing the cellular tracking, had an impact on the state's ability to continue this practice. If it wasn't for the judicial decision, it was probably much more difficult, if not impossible, to put an end to the surveillance system despite its multi-flawed nature.

On July 6th, 2021, *The General Security Service Accreditation to Assist in the National Effort to Reduce the Spread of the New Corona Virus (Temporary Order),* 2020 has permanently expired (Binyamin, 2021, July 8), obliterating this practice at least for the time being.

It seems that taking a dual route, while neglecting to pursue a governmental public awareness campaign to the voluntary designated app, had only perplexed the citizens who were not able to efficiently differentiate between the *Tool* and *HAMGEN* (Ken-Dror Feldman *et. al,* 2020), thereby undermining any possibility of moving from a mass state-surveillance non voluntary CTT scheme to a privacy-preserving voluntary CTT scheme. Remarks by the MOH representatives at a Knesset hearing had indicated that there was never a real intention of the state to trust the app rather than as an auxiliary measure while relying mainly on the centralized SHABAC's surveillance *Tool* (Schwartz-Altshuler & Aridor-Hershkovitz, 2020a).

One should mention, though very briefly, as it is out of this paper's scope, the high prestige and public trust attained by the Israeli internal (SHABAC) and external (Mossad) secret services. As opposed to European countries and even the United States in which

state's operations, by the intelligence community, especially while referring to a civil crisis, would have been accepted by the public suspiciously and negatively or at least in an ambivalent manner, Israeli intelligence community still gained high public trust within the corona crisis (Israeli & Pines, 2021, Shpiro, 2021, Marciano & Yadlin, 2021).

In Israel, '*the secret services realm*' is a realm that has the trademark and the full guarantee of trust, legitimacy, and credibility (Lebel & Hatuka, 2016), whereas '*the civil service realm*' does not enjoy the same level of public trust and credibility. Citizens will prefer receiving services which have the credibility trademark of a renowned community than those initiated and practiced by the equivalent civil service community, although the latter community's services may be far more better (Lebel, 2014). Thereby, under the circumstances, HAMAGEN app could not have gained sufficient public trust to enable a relinquishment of the SHABAC's tool despite all of its flaws

Upon presenting the case study generally, I will now address the detailed considerations-consequences matrix of the Israeli COVID-19 CTT implemented policy on each of the following fields: legal, democratic, socio-economic, and epidemiological. Doing this will enable a better understanding of the reasons by which the chosen route to tackle pandemics failed to succeed

Legal Considerations

1. ***An inherent and nonproportional infringement of the right to privacy*** - The first drawback of this measure is the non-proportional breach of citizens' right to privacy as the secret service tracks them to their everyday routines and whereabouts. In the *ACRI* decision, the HCJ held that the sweeping use of GSS surveillance violates the right to privacy (Albin *et.al,* 2021). Haber and Fokshner describe a multi-layered privacy breach, by the state authorities, during the corona crisis, which expands beyond the mere cellular geo-tracking we are focusing on. They offer a taxonomy of privacy breaches whether during the multiple stages of the infection chain or as an integral part of the day-to-day routine of life aside the pandemic which exemplifies the depth of these infringements (Haber & Fokshner, 2021).
2. ***A harm to the freedom of movement*** – national lockdowns had included occasionally changed severe restrictions on freedom of movement within Israel. In its strictest form it included prohibition of any exit out of one's home for more than 100 meters. This

prohibition had several exceptions to it such as the purchase of medicines or food, participation in demonstrations, prayers, and more, including a basket clause covering other essential needs (Albin *et.al,* 2021). Albeit, coercing unlawful quarantines on people due to errors in identifying the real infected people on account of the centralized CTT weaknesses (Toch, 2020), serves as another layer of the human right to free movement's violation. Furthermore, as lockdowns referred to the entire population, these unlawful quarantines were a result of miscalculation errors as the *Tool* was not as accurate and useful as it was claimed to be.

3. ***Unlawful data accumulation*** - Citizens' personal data is being accumulated by the government, without their consent and with no transparency. As previously mentioned, the *Tool* was continuously and regularly accumulating and storing the communications data and other personal information of the entire population of the country within the intention of using the information to prevent terrorism or subversion. However, the use of this broad data had led to cyber-attacks and security breaches in which citizens' health data has been exposed (Bar-Zik, 2020). In other incidents data were transferred to third parties (Aharoni, 2021).
4. ***Inter-authorities' data leakage*** - As SHABAC's geolocation data accumulation was not subjected to judicial review; no one would have known what would have happened to the data and what will it be eventually used for. In October 2020, the government had promoted a bill that will enable the police to have an unlimited access to Corona patients' information and data including tracking data for the purpose of criminal investigations (Breiner & Lis, 2020).
5. ***Slippery slope*** – surveillance tends to remain even after the crisis is over. The *SHABAC's* extreme and undemocratic tracing means grant the Prime Minister an enormous power to control and spy on citizens –at any given point in time -, to learn about the past, to obtain private and intimate information on an unprecedented scale. Once the guiding principle that the *SHABAC* does not activate its tools in civilian areas has been broken, the path to becoming a tracked society has shortened. The abnormal will become the norm (*ACRI* decision). Additionally, without proper supervision, the *Tool* might be used to follow political rivals, sources of news reports and so on. Therefore, it might be a slippery slope and a real danger to democracy (Ken-Dror Feldman & Gross, 2020)
6. ***Almost no separation of powers*** – initially, as mentioned earlier, there was no parliamentary oversight of the government's decision to adopt emergency legislation.

The parliamentary oversight added later on, was rather active and did not automatically approve all of government's decisions. Moreover, HCJ's decisions had accompanied the various procedures. Hence, the legislative and judiciary authorities were still supervising the government's decisions and balancing them during a state of health emergency. Checks and balances are more important during times of crisis, when separation of powers is more fragile and put to the test (Ken-Dror Feldman & Gross, 2020)

7. ***Inconsistency with the GDPR*** – Using a compulsory monitoring scheme using the *Tool* indicated a severe harm to privacy. Thereby, there was a genuine risk that the Israeli law will be referred to as inconsistent with the EU standards according to the GDPR directive. In their writings, Schwartz-Altshuler & Aridor-Hershkovitz, relate to the real possibility that the *Tool* could have provided a basis for the European Union not to renew its recognition of the adherence of Israeli law to its privacy protection regulations (Schwartz-Altshuler & Aridor-Hershkovitz, 2020a). A compliance which enables commerce relations with the EU states.

Democratic Considerations

1. ***Digital Dystopia*** – The state collects personal data on all its citizens. Not only that the use of the *Tool* as a CTT constitutes a violation of privacy of unprecedented proportions. It collects information on citizens who are not suspected of any wrongdoing and on a collective basis. In the *Ben-Meir* decision Chief justice Esther Hayut entitled this practice "a step that might cause any democracy proponent to lose sleep over." (*Ben Meir et, al. v. The Prime Minister*, Final Decision, 26.04.2020)

   On the *ACRI* decision judge Solberg had underestimated state surveillance by comparing the SHABAC's practice with the digital monopolies' practices of data accumulation

   "My friend refers to the SHABAC is the '*Big Brother* who knows what you have done the last summer'. Well, Google is also a *Big Brother*, so are telecom companies and social networks. This is a numerous children family and the SHABAC is not the rebellious child of the family" (*ACRI* decision).

   This comparison fails to refer to the fact that digital monopolies accumulate data for commercial reasons whereas state surveillance purpose is to police and control its citizens. State surveillance allows the detection of the dissent and the extraction of intelligence which enables the targeted application of repression (Gohdes, 2019). It is

a method of identifying individuals, ordering society, and ensuring discipline (Marx, 2015; Lyon, 2007; Eck & Hatz, 2020)

2. ***Latent protest*** – people bought dumb phones so that CTTs cannot track them and their whereabouts (Leshem, 2020). Others, intentionally, went out of their homes without their smart phones, especially when going to demonstrations (Yablounko, 2020). From the state perspective, it diminishes the *Tool's* effectivity while trying to monitor citizens' whereabouts to combat pandemic spread. However, from the citizens' perspective this was a rational decision to make as it was revealed that the police crossed referenced SHABAC's geolocation data as well as their communication data to identify and track down some of the protest's leaders. Privacy concerns and an erosion of trust have led people to engage in insurgent behaviors and eventually lowered contact tracing technology effectivity (Toch, 2020).
3. ***An ongoing gradual reduction in the public's trust*** in the government and governmental authorities. Another long-lasting outcome of this malpractice is the growing mistrust of the people in their governance resulting in lower public inclination to follow pandemic instructions. Furthermore, the sheer number of acknowledged errors lead to mistrust in the *Tool* accuracy and specificity as well as lack of engagement and even resentment among citizens (Toch, 2020). Indeed, a July 2020 survey by Tamar Hermann and Or Anabi from the Israel Democracy Institute, demonstrates a dramatic decline in public trust in the bodies managing the crisis. The survey states that there was a very sharp decline in the degree of trust regarding their handling of the Coronavirus issue, both regarding the Prime Minister and Minister of Health and regarding the professional medical and economic functions in the government. Trust in the professional functions slumped from 59% in mid-June to 40.5% in mid-July (Hermann & Anabi, 2020)
4. ***Permanent surveillance*** – This practice is an exemplar for an officially established state surveillance on its citizens. It is not by chance that Israel was the only democracy that had used its secret service to spy on its citizens, although COVID-19 is a global pandemic. Not only that this practice has a chilling effect of a virtual panopticon on citizens, as it fundamentally changes the balances and checks in a democratic society. It is uncertain to assume that such damage to the system of government is reversible. (Eck & Hatz, 2020). In the *ACRI decision* judge Anat Baron had warned from this chilling effect exclaiming that "SHABAC's monitoring… conveys a harsh message according to which all Israeli residents and citizens are under constant surveillance, as

if they were characters in George Orwell's book 1984…. the presumption is that they will refrain from acting freely under the regime's constant open eyes."

5. ***Harm to the prestige of the SHABAC*** as an espionage body due to the exposure of its capabilities, and of the flaws of its tools. Shpiro (2021) maintains the Israeli Intelligence community had played an important role in key aspects of the health crisis management as well as bolstering public morale and confidence. However, Shpiro numerates four disadvantages to the mobilization of intelligence community during the pandemic. namely, the exposure of its capabilities and vulnerabilities; the neglect of other fields of security operations; the chances of harm to the legitimacy of the intelligence community as well as possible erosion of the public confidence and a higher risk of politicization of the intelligence institution (Shpiro, 2021).
6. The *Tool's* usage as a CTT serves as a ***dangerous precedent for the use of overly intrusive tools for purposes other than counterterrorism*** (Schwartz-Altshuler & Aridor-Hershkovitz, 2020b). Furthermore, adhering this practice has set the foundation stones to state' surveillance tools through applications which are not necessarily public health concerned. As Judge Melcer had warned in the *ACRI* decision, the use of such tools is addictive and encourages the creation of additional harmful practices. (*ACRI* decision).

Socio-Economic Considerations

1. ***Economic harm*** - as elaborated above, data have shown that this measure is not as accurate as expected. The inaccurate geo tracking resulting in an unjustified or even falsified self-quarantine commands for hundreds of thousands of people had harmed them financially in an unlawful manner (as they cannot go to work and sometimes lose their jobs because of that), socially and mentally (by isolating them and depriving them of any human encounters) and thereby it had unproportionally violated their freedom of occupation as well as their freedom of movement.
2. ***Working days loss***. Many are required to enter quarantine in vain while the appeals mechanism is ineffective and / or irrelevant. Initially, there was no appealing mechanism to appeal the quarantine order. When it was finally set a few days later, the MOH hotline was overwhelmed by phone calls (Toch, 2020; Linder, 2020). According to data provided to the Knesset Foreign Affairs and Defense Committee, about 86% of the 34,000 Israelis who turned to the Health Ministry hotline after receiving a text message between July 2, 2020, and July 15, 2020 instructing them to

enter quarantine, appealed the decision. Among those, 58% received an affirmative reply and ended their quarantine. Only 18% received an unequivocal reply that they must remain in isolation, while the others were transferred to other representatives or have yet to receive a decision about their situation (Lis, 2020).

A report has shown that within a time period of two and a half months almost million Israeli citizens (978,000) were forced to enter quarantine due to SHABAC's tracking; other figures speak of almost 1.2 million, half of which (572,443) due to SHABAC's geolocation track. According to the latest MOH update during the months July – September 2020, following SHABAC's geo-tracking, 645,000 text messages were sent by the state to Israeli citizens ordering them to enter home-quarantine. Upon appealing procedure, only half remained in quarantine. Additionally, only 13.5% of them were proved to be COVID-19 confirmed cases. These figures mean that the success rate of this unprecedented tracking tool in locating infection cases, breaking infection chains, and limiting pandemic spread is rather poor.

Epidemiological Considerations

1. ***Complete technological inefficiency*** – Stanley and Granick (2020) raise the question of CTTs effectivity to even begin with. Schwartz-Altshuler and Aridor-Hershkovitz, argue that the use of GPS data instead of Bluetooth Low Energy (BLE) signals difficulties in estimating the proximity of cellphones and the imprecision of GPS inside closed spaces and tall buildings (Schwartz-Altshuler & Aridor-Hershkovitz, 2020a). Indeed, regarding the Israeli case study, data reported show only marginal identification rates. As mentioned earlier, the annual state's comptroller report, has indicated the SHABAC's geolocation track as inaccurate and thereby unnecessary whereas only 3.5% of those who were forced to enter quarantine due to the geo-tracking were indeed COVID-19 confirmed cases. In contrast, in a standard epidemiological investigation performed through the questioning of the infected individual, out of the contacts that went into isolation 24% were Covid-19 patients.[11]
2. ***Hundreds of thousands of people enter false quarantine*** whereas the real infected individuals are not necessarily identified. Schwartz-Altshuler & Aridor-Hershkovitz,

[11]. Office of the State Comptroller and Ombudsman (25.10.2020). The 71 annual audit report. Jerusalem; Druckman, Y. (26.10.2020). Comptroller report: SHABAC's geolocation has failed its mission; epidemiological investigations are more efficient. Ynet, https://www.ynet.co.il/news/article/S1pipyEdv

(2020a) maintain that due to the drawbacks of GPS technology, there is a real chance of high proportion of false-positives, such as among hospital staff, closed spaces working and shopping areas and people living together. In the first deployment week, almost 71,000 people have received text messages from MOH notifying them that due to proximate contact with a COVID-19 positive individual they must enter quarantine; approximately 70,000 people were solely identified by the SHABAC (Toch 2020; Schwartz-Altshuler & Aridor-Hershkovitz, 2020a). The *Tool* unnecessarily sent into quarantine 3-8 times as many people than epidemiological investigations (Toch, 2020).

3. ***Automatic idolization of technology*** (CTT as a magic solution) – There was no attempt to increase the number of human investigators. The system of epidemiological investigations suffers from an acute shortage of personnel. Israel lagged other countries confronting the pandemic both in the number of investigators and the speed (State Comptroller, 2021). The government did not act as required to strengthen and enhance the human investigation system.

Setting pandemic management public policy

All considerations-consequences discussed can serve as caveats and exemplars while planning a public policy concerning state's pandemic management scheme. Our recommendations are as such:

1. A state must manage the pandemic in light of the principle of proportionality, at all times. In the *ACRI decision* Judge Daphna Barak-Erez stated "Combating Corona, in the name of the basic right to life must not blind our eyes from seeing all other human rights".
2. Thereby, a state must choose the less harming CTT. When Choosing the CTT which harms the citizens as minimal as possible, a good strategy will be to design a voluntary option which is based on privacy by design principles (Birnhack & Zar, 2020)
3. One of the lessons learned from the Israeli case study is that the Israeli government hardly invested any efforts in promoting the voluntary optional *HAMAGEN* app, which in practice prevented it from ever becoming a real alternative to the compulsory *Tool*. Hence, a state should stick to one technology, preferably voluntary and decentralized, promote, explain, and publish its method of operation and its advantages through public campaigns via mass and social media to encourage broad adoption amongst citizens.

4. Giving full ongoing detailed report on the data that the state holds, to maintain high rates of public trust as well as to increase the public's collaboration with the instructions.
5. Setting organized periodical procedures to justify data accumulation. These will raise the government's decisions' transparency thereby lessening erosion of public trust, while minimizing citizens' insurgent behaviors.
6. Implementing judicial review on the government's decisions and actions will maintain authorities' separation of powers and enable public deliberation and criticism.
7. Designating authorized officials to handle data and specific permissions as to minimize data leakage and privacy breach.
8. Studying cost- effective analysis – predicted improvement vis a vis predicted harm.

Although the coronavirus health crisis called for extreme measures which limit human and citizen rights worldwide, these measures should not be taken unproportionally. Looking into the Israeli case study we had encountered harsh negative outcomes which did not necessarily stand in line with the desired policy nor with the desired results, epidemiologically speaking, and left us with the conclusion that in the cost-effective test this measure was not worthwhile taking, in the first place. As the Israeli case presents a situation in which the harm caused by SHABAC's geo tracking supposedly used to lower morbidity rate of COVID-19 was greater than its benefit, it can serve as an ex-post and a caveat for future crises.

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