Apps, Maps and War Rooms: On the modes of existence of 'COVtech' in India

On the modes of existence of COVtech

On 24th March 2020, the Indian government announced a complete lockdown due to the COVID-19 outbreak. In the days preceding and after, they announced several initiatives that included a ban on international flights, railways and public transport, social distancing measures, mass quarantining, neighbourhood disinfection drives and fines on those who break lockdown rules. This was followed by a mode of 'technological solutionism' (Kitchin 2020) whereby federal, regional and urban governments began actively deploying smart technologies to contain and monitor the virus in citizen bodies. Contact tracing and quarantining apps were pushed into mobile phones supported by CCTV and drone surveillance, google map tracking, as well as AI, facial recognition and predictive analytics. Cities were zoned into red, orange and green areas based on infection rates and Integrated Command and Control Centres (ICCC) in 45 of the 100 smart cities were repurposed into 'COVID19 War Rooms' (Jaiswal 2020).

These multiscalar COVID19 related technologies have been loosely labelled as 'COVtech' (Ananth, 2020), which ranges from the most aggressive War room-based ubiquitous surveillance to text-based information dissemination. COVtech initiatives 'are testimony to a certain mode of functioning and compatibility that exists in fact and has been built before having been planned' (Simondon, 2017, 50). Incorporating technologies of early 20th century plague cartography within current Smart City surveillance machines, COVtech lends itself to both map-based and app-based surveillance of the virus present in human bodies. It seeks to eliminate the virus with the speed and efficiency of data flows and digital technologies supported by the infrastructures of apps, maps and war rooms. Through these technologies, territorial boundaries between home, work, leisure and travel are being disintegrated and reassembled as claims to disease surveillance. COVtech as a range

of public-sector led technologies of monitoring, management and containment of the virus lends itself to examination of what Gilbert Simondon has called 'modes of existence of technical objects' (Simondon, 2017). These modes of existence are assembled within the interfaces of digital-analogue systems that offer exchanges between visibility and invisibility, centralisation and decentralisation, regulation and indeterminacy, novelty and simulacra. The technical objects range from smartphones to drones, proprietary apps to map platforms, AI to facial recognition algorithms, CCTVs to COVID19 War rooms, and have existed earlier-in other systems of power, control and governance. Their materialisation under COVID19 forms their divergence from the previous technical objects and their concretisation for the purpose of pandemic surveillance.

In this review paper, we will examine the modes of existence of 'COVtech' during the pandemic crisis in Indian cities across apps, maps and war rooms. We do this through two key arguments – first that each mode of existence of COVtech involves the redeployment of existing machinery (from the intimate surveillance of apps in the smartphone to the GIS mapping platforms to the panoptics of the War rooms) which are assembled at intersecting scales of urban, regional and federal governance structures. Second, that while there are serious concerns about COVtech based 'surveillance creep' (Kitchin 2020), there is little understanding of the modes of existence of current technologies within translocally situated networks of civil society actors which can be mobilised to provide relief and support to vulnerable groups locked out/in Indian cities. We conclude by proposing that a progressive mode of existence of COVtech rests not with the state optics of what and where of the disease, but in addressing the who and how of its impacts.

App Harvest in the smartphone

In India there has been a public-sector led app harvest in the smartphone since the COVID19 outbreak. Although these apps are applied across different layers of governance, the smartphone remains the building block of the intimate surveillance machine of COVtech which is then scaled up.

The proprietary apps use an 'associated milieu' (Simondon 2017) of smartphone features – network connectivity, cameras, GPS locations, downloaded cookies, and user interfaces through which the intimate surveillance machine (smartphones) communicates with the state's surveillance optics (War Rooms).

These apps are connected to the long legacies of legal, institutional and policy imperatives of the state to control populations which inform their terms of service, user agreements and disclosures. Research by independent charities found that these apps violate data privacy protocols, and their contact tracing features can be used as a surveillance tool by the government (Banerjee, 2020). These apps work with closed systems but have the power to control citizens' access to a range of welfare services and mobility. One of the most controversial amongst these, the 'Aarogya Setu' app, was made mandatory by the federal state to evaluate the risk that a person has been exposed to through multiple travel histories and contacts with infected patients. Clearance through Aarogya Setu app for example is mandatory before boarding flights, yet the app has shown different risk assessments for people living under the same roof. There are reports that private shopping areas and residential colonies are using informal measures to restrict entry of people using the Aarogya Setu app. At the regional level, Telangana and Karnataka states pushed a 'Quarantine Watch' app which requires quarantined individuals to send selfies every hour of the day. Yet at a functional level, it is impossible to ascertain the accuracy of GPS tracking within a radius of 10 metres, and therefore its use in these apps is ineffective (Kitchin, 2020) Through contact tracking and quarantine surveillance, they enable tactile, mimetic and affective self-governance by citizens within structures that are buggy, opaque and extractive of private information (Datta, 2020a). In cities such as Pune, the 'Saiyam' App developed under the Smart City Mission tracks home-quarantine citizens and their movement on a real time basis using GPS tracking. Yet their data infrastructures can be infiltrated or leaked at any time such as in Delhi, where the authorities handed over 25,429 private mobile phone numbers to the Police to monitor quarantine and isolation.

Mapping the pandemic

Much of our understanding of COVID19 as a global pandemic comes from its real-time visualisations on mapping platforms. Maps scale up the optics of intimate surveillance to 'seeing' the disease as aerial surveillance. Like earlier disease cartography of Cholera or Plague in the 18th and 19th centuries (Koch, 2011; Engelmann, Henderson, & Lynteris, 2019; Evans, 2019), mapping visualises the invisible – the limits of our knowledge and potential for action during a crisis. In the digital age, when much of the mapping is conducted via machines (drones, satellites and mobile phones) maps as technological objects exist as another mode of COVtech at multiple scales. Maps automate a geographical matrix of relationships with other sets of variables of the pandemic providing a real-time relationship between 'what we see, what we think we see and what we do with what we see' (Koch, 2011, 13).

COVtech map platforms claim to present information that appears objective at first sight, yet they prioritise specific political relationships through data assemblages across scales. The offer of free GIS data and an ArcGIS Hub Coronavirus Response template from the global mapping platform ESRI and their integration with APIs (Application Programming Interface) from the Indian National Center for Disease Control (NCDC) and WHO indicate the geopolitical reach of these platforms. At a national scale, the Survey of India's 'Sahyog' platform has been customised in order to collect COVID-19-specific geospatial datasets regarding door-to door surveys by health workers, essential relief services and public awareness campaigns. In the regional states of Madhya Pradesh, Odisha, Punjab, and Jammu & Kashmir the State Spatial Data Infrastructure (SSDI) have been providing geospatial data services such as time enabled maps of infection spread for integration with related health datasets.
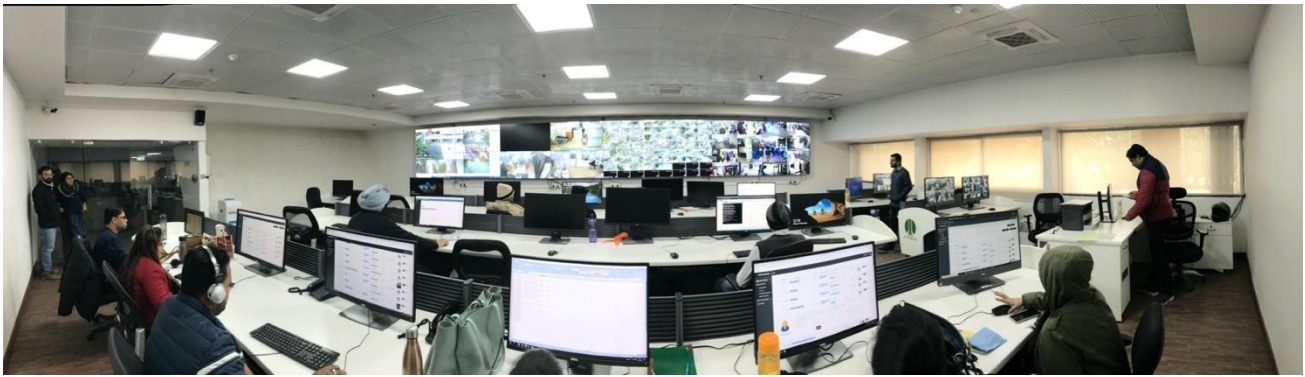
Optics of War Rooms

Figure 1: New Delhi ICCC. Photo: Ayona Datta, 2019

The repurposing of 45 Smart City ICCCs as COVID19 War Rooms scale up disease mapping to a wider and more expanded assemblage of aerial technologies. The ICCCs seek the 'convergence of functions into a structural unit, rather than one of seeking a compromise between conflicting requirements' (Simondon 2017, 28). The War Rooms do not produce new machines per se, rather consolidate and concretise a decade of preparatory work done by urban municipalities in mapping each city to make visible and give meaning to the data harvest from COVID19 related apps and maps. The ICCCs were earlier related to specific smart city technologies – traffic management, water supply or waste management among other things. The War Room organises the 'sub-ensembles' (Simondon 2017) – the screens, CCTVs, drones, GIS maps, algorithms and fulfils a specific aspect of making the pandemic visible (Dutta 2020). In their new role, the War Room becomes even more pervasive and extensive – reaching into the depths of intimate domestic life through the smartphone and scaling the bio-political body into a panoptic vision of spread and containment.

Figure 2: Infographic of Apps, Maps and War Rooms during COVID19. Prepared by Anwesha Aditi.

'Subaltern' modes of COVtech

The deployment of COVtech as a mode of surveillance has had devastating economic and social impacts on socially marginalised groups. India's 'technological solutionism' (Kitchin 2020) to infectious disease control has exacerbated the struggles of poor women, LGBTQ, minorities and migrant workers who cannot access essential online services or work from home, or report on domestic

and other forms of violence under social distancing. In the surveillant mode of COVtech, who owns a smartphone, who can download the apps, who can therefore be traced and tracked on the mapping platforms, and who is subsequently displaced by the restraints of apps and maps, reinforce the deep digital divides that had already existed in India. Class, caste, religion, gender and territory have acquired meaning and power in COVtech which was pushed into a population where only 38 percent own mobile phones and about half have access to network connectivity.

One of the key features of these apps, maps and war rooms is that they make the 'where' and 'how many' of the virus visible while an intersectional notion of 'who' gets infected and 'how it impacts' is mostly invisible and unsaid. Even as lockdown was imposed and disease maps were automated at different scales, migrant workers lost their livelihoods and accommodation (Datta, 2020b). Locked out of public spaces with severe restrictions on movement in Delhi, Mumbai, Ahmedabad and several other cities, they began to walk back to their native towns and villages sometimes undertaking journeys of over 15 days. They were often violently disciplined by the police for breaking lockdown rules, spraying them with toxic disinfectants, making them squat in the summer heat for hours and breaking social distancing norms. As a floating population, and with the absence of any central database on migrants, they were not accounted for in the real time analytics of COVID19 mapping platforms. Although the Delhi government released an integrated database of its food and shelter centres on Google maps, it was difficult to reach those in need without disaggregated data on migrants. Similarly in Mumbai, community transmission occurred in many low-income and informal settlements such as Dharavi which became hot-spots of the virus because official figures of population there were vastly undercounted and social distancing was impossible for a population that living in close quarters and surviving on daily wages.

In this vacuum of governance, civil society has stepped in to address issues of technological and infrastructural redlining as well as the knock-on effects of subsistence rupture to poor migrants and their families. In Mumbai, Delhi, Bangalore and Chennai, the mobilisation has been rapid and

dramatic through the creative use of existing technologies to provide relief and support to vulnerable groups. This 'subaltern existence of the machine' (Arnold, 2015), is found in the ways that neighbourhood organisations, labour unions, NGO's and many such collectives have redeployed everyday technologies – phone lists, neighbourhood WhatsApp groups, telegram messages, voluntary relief helplines, and curated websites in providing cooked food supplies to migrant workers. Many have scaled up their relief efforts to the city level as the scale of distress widened. WhatsApp/Telegram based coordination for procurement of commodities, deciding the menus, and ensuring supplies have been central to all these initiatives. Similarly, many voluntary helplines have served as intermediaries between the migrant workers on the road and states' digitised information systems such as Registrations for Special Trains, information on Quarantine Rules in States, generating e-passes for inter-state movement and making online cash transfers to those whom food relief could not be reached directly.

These efforts at the scale of civil society have also been critical in challenging the mode of technological solutionism through redeployment of technology for public good, sometimes in partnership with the public sector. Significant amongst these initiatives is the "Corona Safe Network", an opensource GitHub tech node comprising coders, data analysts, doctors and government officials in the regional state of Kerala. This node provides at least 20 live dashboards to the Chief Minister's office, on health and medical data, travel data, essential items and many such variables. In Bhubaneswar, a group of tech-activists developed a platform with local *kirana* (grocery/departmental) stores to enable easy delivery of essential goods to elderly and vulnerable sections in the region (Patel, 2020). A district wise data aggregating website COVIndia (Chakrabarty, 2020) was developed by tech-based students in Hyderabad, in order to make open public data available to citizens. Similarly, there is a civil society initiative collecting data on all non-COVID deaths (GN Thejesh, n.d) during the lockdown – listing road accidents, medical negligence, suicides and starvation deaths in the country. Another initiative mapped Migrant Workers'

Resistance ([“Migrant Workers’ Resistance Map”, n.d.](#)) across the lockdown, mapping instances of workers collective action for right to return to their home states or for wages during the lockdown.

Civil society and charity organisations have also challenged the ‘new normal’ of state surveillance in highlighting several conflicts of interest across state, civil society and local entrepreneurs in COVtech initiatives. This was particularly poignant in the challenges to Aarogya Setu from charity organisations, trade unions, former Supreme Court judges and Dalit rights activists civil society which pushed the federal state in making the Android version of the app ‘open source’ and ‘not mandatory’ (Patra, 2020; Tripathi, 2020) and released its code on GitHub. The government also announced the ‘Aarogya Setu Bug Bounty Programme’, acknowledging that ‘despite the best measures taken, the presence of vulnerabilities may exist’ (MyGov, 2020).

These translocal collaborations and initiatives from civil society are supported by a vibrant technological transformation since the 1990s, which has been underlined by several state initiatives around smart citizenship, entrepreneurship and digital innovation in the last few years. Digital India, StartUp India and 100 Smart Cities were all flagship programmes of a new ruling party announced in 2015, but it was the outbreak of COVID-19 that also fashioned very different pathways for ‘beneficiaries’ of these programmes. Recently more than 600 start-ups have formed a coalition called ‘Action COVID-19 Team’ to work with different stakeholders and governments against the pandemic (Shanthi, S., 2020). While several startups are working with the state’s COVtech surveillance machines, others are providing PPEs to health workers, contactless hand sanitsers or devices to monitor multiple COVID-19 patients simultaneously. The role of these start-ups have been significant in the crisis as they have ready technology and resources to respond to this crisis through digital innovation and opensource software that takes transparency, accountability and vulnerability into consideration in both public sector-led and community-led. While ‘subaltern’ may not be a definitive term to label these start-ups in India, they have played a crucial role in directing relief measures to subaltern groups.

The 'success story' of India's COVtech however, has emerged from the public sector-based relief efforts pioneered in Kerala's regional War Room (Anil 2020). This War Room became the central node for mitigating grievances of its regional citizens stranded across the country and the world, along with managing logistics of goods movement between state boundaries and as a helpline to migrant workers. Following this example, Karnataka, another regional state launched the Chief Minister's War room (PIB India, 2020) from where heat maps, hotspots and food relief were directed. These sparse but important examples turn the 'COVtech as surveillance creep' thesis on its head by suggesting alternative models for reimagining the use of technology as an emancipatory tool by the state. That this initiative comes from a regional state suggests also that COVtech is neither monolithic nor hierarchical. COVtech plays an important role in shaping differentiated socio-geographies of disease monitoring – as a machine of intimate surveillance, as the expulsion of the poor urban migrant, as public ways of 'seeing' a portable disease, and sometimes as a subaltern machine of hope. Its emancipatory potential lies in the ways that it is assembled at scale and through translocal links between community data, civil society and digital innovators. In this final mode, COVtech can begin to move beyond mere evidentiary geographies of contagion and containment into assemblages of disaggregated knowledge at multiple scales, visualising not just the invisible, but evidencing radical ways of acting upon these. As Simondon would suggest, 'what is at stake here is a conditioning of the present by the future, by that which is not yet.' (Simondon, 2017, 60).

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