



# Digital Contact Tracing against COVID-19

## How to build trust?

# THE FUTURE SOCIETY AT A GLANCE

## About Us

An independent, non-profit **global think-and-do tank** with the mission to advance the responsible adoption of Artificial Intelligence (AI) for the benefit of humanity.

## Activities



Policy research and advocacy on the impact, ethics and governance of AI



Advisory services for international organizations, governments, and private actors



Education and leadership development programs for AI & digital transformation



Design, development and organization of seminars, summits, and collective intelligence workshops

## Founded

September 2014 at Harvard Kennedy School, incorporated as an independent 501(c)(3) non profit in 2016.

## Achievements

**6,000**

senior decision-makers engaged

**24,500**

citizens engaged

**>200**

students taught

**>40**

institutional partners

**>100**

countries reached

## Key Partners



HARVARD Kennedy School  
JOHN F. KENNEDY SCHOOL OF GOVERNMENT



SciencesPo



THE WORLD BANK



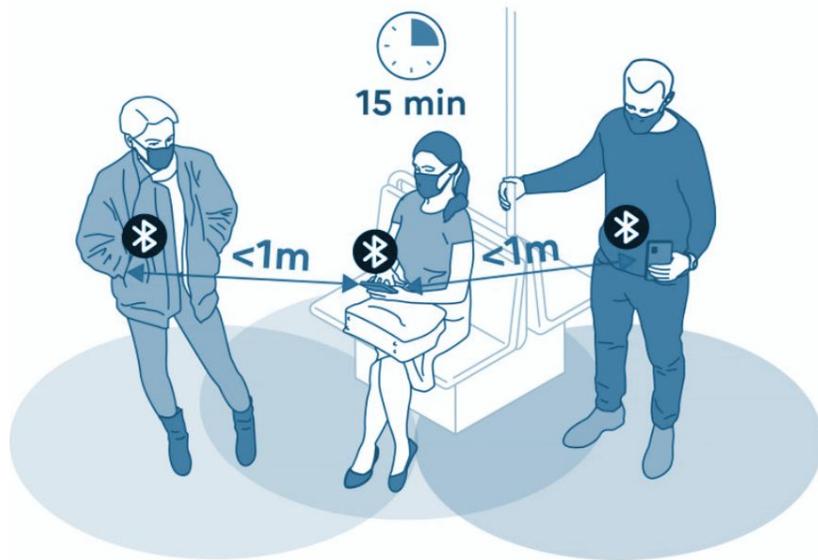
Mila

# GLOBAL CONTEXT



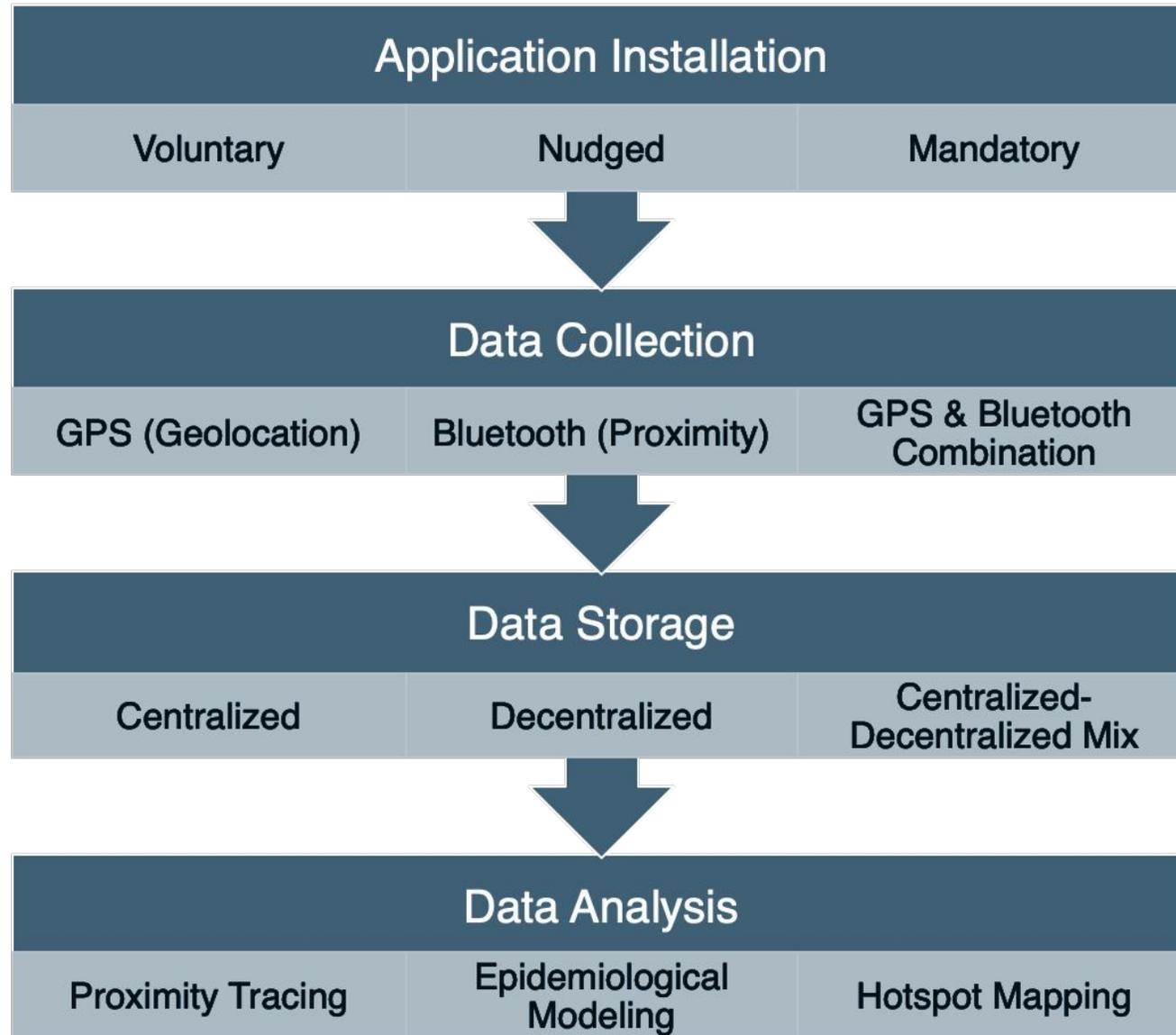
- Unprecedented health crisis, raising complex social, economical and ethical tradeoffs
- As number of infections and deaths continue to rise globally, several governments first response has been strict social distancing rules coupled with partial to total lockdowns
- Lockdowns have a direct socio-economic cost and indirect mental health one
- To avoid these costs, several countries have explored a combination of healthcare and technological tools to mitigate the spread of the virus

# DIGITAL CONTACT TRACING

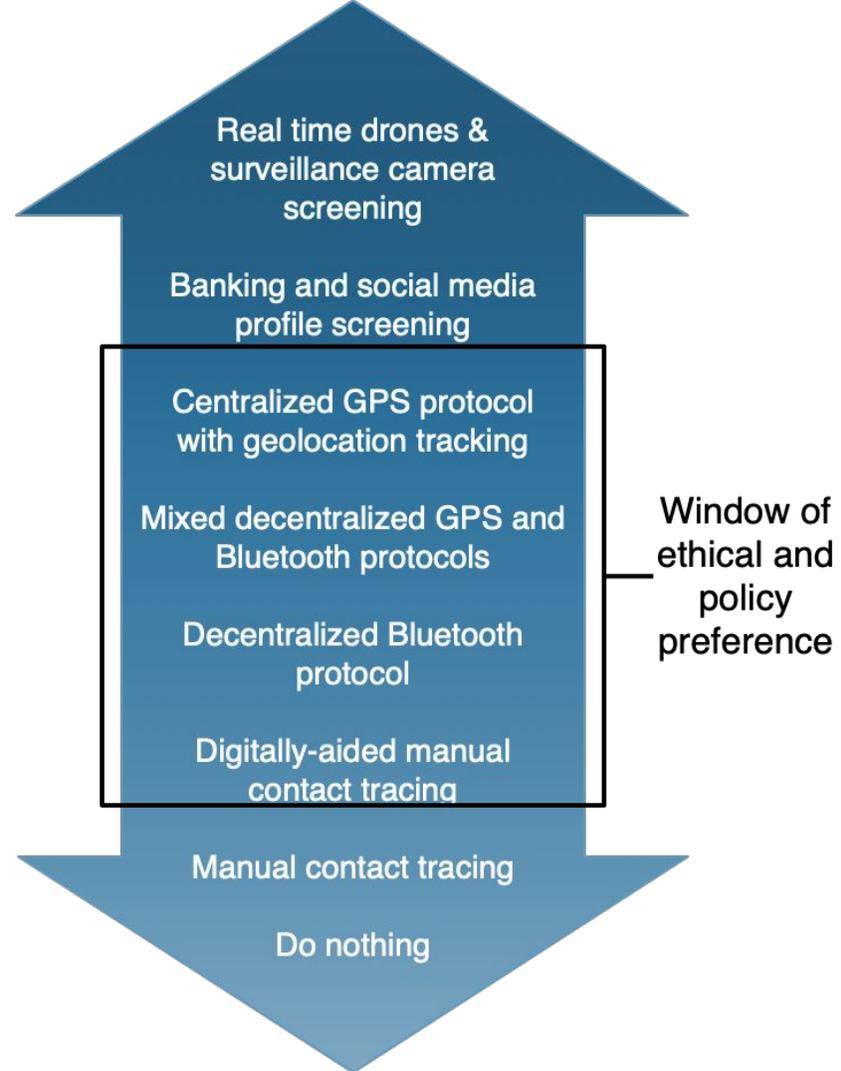


- "Contact Tracing" describes a variety of techniques used to identify people who may have come into contact with a positively diagnosed individual, and take appropriate action to inform, isolate, and treat those contacts
- Manual Contact Tracing deployed in the past to successfully mitigate epidemics such as tuberculosis, HIV, and Ebola
- In the case of COVID-19, Digital Contact Tracing considered as a quicker, more targeted mitigation technique
- Currently, 80 contact tracing applications available in 50 countries - several deployed without informed consent and appropriate democratic processes

# Digital Contact Tracing Technical Features



**Most Privacy-Invasive**



**Least Privacy-Invasive**

# ETHICAL CHALLENGES



PRIVACY & DATA PROTECTION



STIGMA & DISCRIMINATION



ACCESSIBILITY



TRUST

## Quadro de princípios éticos

<b>Objetivo e desempenho</b>	O objetivo dos aplicativos precisa ser claro, compreensível dentro do contexto mais amplo, mensurável e passível de auditoria independente.
<b>Voluntariedade e reversibilidade</b>	Os indivíduos devem ter o direito de escolher se desejam instalar ou não os aplicativos conforme seu livre-arbítrio, sem consequências negativas em caso de recusa. Os usuários devem ser capazes de desativar os aplicativos temporária ou permanentemente a qualquer momento, sem que os dados pessoais ou as informações de proximidade remanescentes sejam armazenados pelos desenvolvedores das aplicações ou por terceiros.
<b>Privacidade by Design</b>	Os aplicativos de rastreamento de contatos devem alcançar os níveis mais altos de proteção de privacidade. O armazenamento dos dados deve ser seguro e pseudonimizado.
<b>Uso mínimo de dados e tecnologias</b>	A coleta de dados deve ser proporcional, justificada e ter uma data de validade definida. Apenas os dados minimamente necessários para cumprir com o objetivo dos aplicativos devem ser usados e armazenados.
<b>Transparência e verificabilidade</b>	O código-fonte completo dos aplicativos e os protocolos de rastreamento centrais devem ser de livre acesso e reprodução, sem restrição para auditorias.
<b>Não discriminação e não estigmatização</b>	Desenvolvedores de aplicativos e formuladores de políticas públicas devem garantir que os aplicativos de rastreamento de contatos não estigmatizem nem discriminem pessoas que testaram positivo para COVID-19 ou seus familiares, categorias de trabalhadores, bairros ou aqueles que não desejam usar as aplicações.
<b>Acessibilidade</b>	Deve-se reconhecer que aplicativos de <i>smartphone</i> e conexão à Internet não são acessíveis a toda a população. Alguns cidadãos podem não ter <i>smartphones</i> , e pessoas com deficiência, idosas ou sem amplo conhecimento sobre tecnologia talvez não consigam usar as aplicações. É preciso desenvolver soluções complementares e alternativas para assegurar a acessibilidade.
<b>Aviso e consentimento informado</b>	Informações sobre os objetivos, os recursos dos aplicativos e os dados coletados devem ser claramente apresentadas aos usuários. O consentimento informado e explícito deve ser um pré-requisito para as aplicações. Devem ser evitados padrões de <i>dark design</i> , ou desenho oculto (por exemplo, incômodos incentivos via notificações <i>push</i> , aplicativos pré-instalados em <i>smartphones</i> e ocultação de recursos para desativá-los ou removê-los).
<b>Prestação de contas</b>	Aplicativos de rastreamento de contatos devem ser avaliados continuamente, fiscalizados por entidades independentes e legítimas nas quais o público confie. Todas as partes interessadas envolvidas no desenho e na implementação dos aplicativos devem prestar contas de acordo com um claro arcabouço legal de responsabilidades e penalidades.

## 5.3 Criteria Assessment

### I. Performance, Purpose, and Effectiveness

- Was the contact tracing application designed within a broader public health strategy (e.g., available masks, compliance with social distancing measures and self-isolation, etc.)? What were the other public health measures taken?
- Is there a mission statement or white paper defining the purpose of the application?
- Is the purpose of the application expressly limited? Limitations can be provided by legislation, oversight, or other accountability measures.
- Is there an ‘exit strategy’ for the application in case it has filled its purpose or lacked effectiveness to achieve its purpose

### II. Voluntariness and reversibility

- Is the application entirely voluntary?
- Do additional features on the application incentivize or nudge users to sign up, and are these services available elsewhere? (e.g., self monitor symptoms, find stores with available mask supplies, etc.)
- Do existing users have the option to temporarily or permanently delete the application, along with all their user information?

### III. Privacy by design

- Were privacy factors considered when designing the application, including the data collection and the data storage protocols?
- If applications are developed using more intrusive GPS schemes, are additional steps taken to protect user data such as pseudonymization?
- Is the data shared with any third parties? Is this clearly indicated in the terms of reference and can users opt-out?

### IV. Minimal use of data and technology

- What type of location data is collected? What type of health data is collected? What other data is collected?
- Is the use of data by the contact tracing application justified by the application’s mission statement, and coherent with the gravity of the health crisis?
- What kind of analyses are conducted in addition to contact tracing? Are transparent with the users, and consistent with the application’s mission statement?
- How long is data stored for?

### V. Transparency and verifiability

- Are the conditions of data collection, storage, and destruction clear to users?
- Is the application’s design, objectives, and use understandable by users? The application’s mission statement should be provided in concise, clear and unambiguous language<sup>64</sup>.
- Is the application open source? Is source code available on a platform that supports comments and feedback?

### VI. Non-discrimination and non-stigmatization

- Has special attention been given to the possible inferences people could draw from the data and from how the application communicates on it?
- Could the application encourage discrimination against any categories of social workers (for example, emerging social identities such as food delivery and car sharing drivers)?
- Could the applications encourage discrimination against any specific neighborhoods (for example, zones identified as a cluster)?
- Is the application also used for passporting (for example, to enable people to claim benefits or to return to work)?

### VII. Accessibility

- Has the application deployment accounted for the limited digital access of certain population groups (for example, the disabled, elderly, or less tech-savvy)?
- Have there been any specific measures introduced to mitigate this accessibility gap?
- Are the services provided by the application available otherwise?

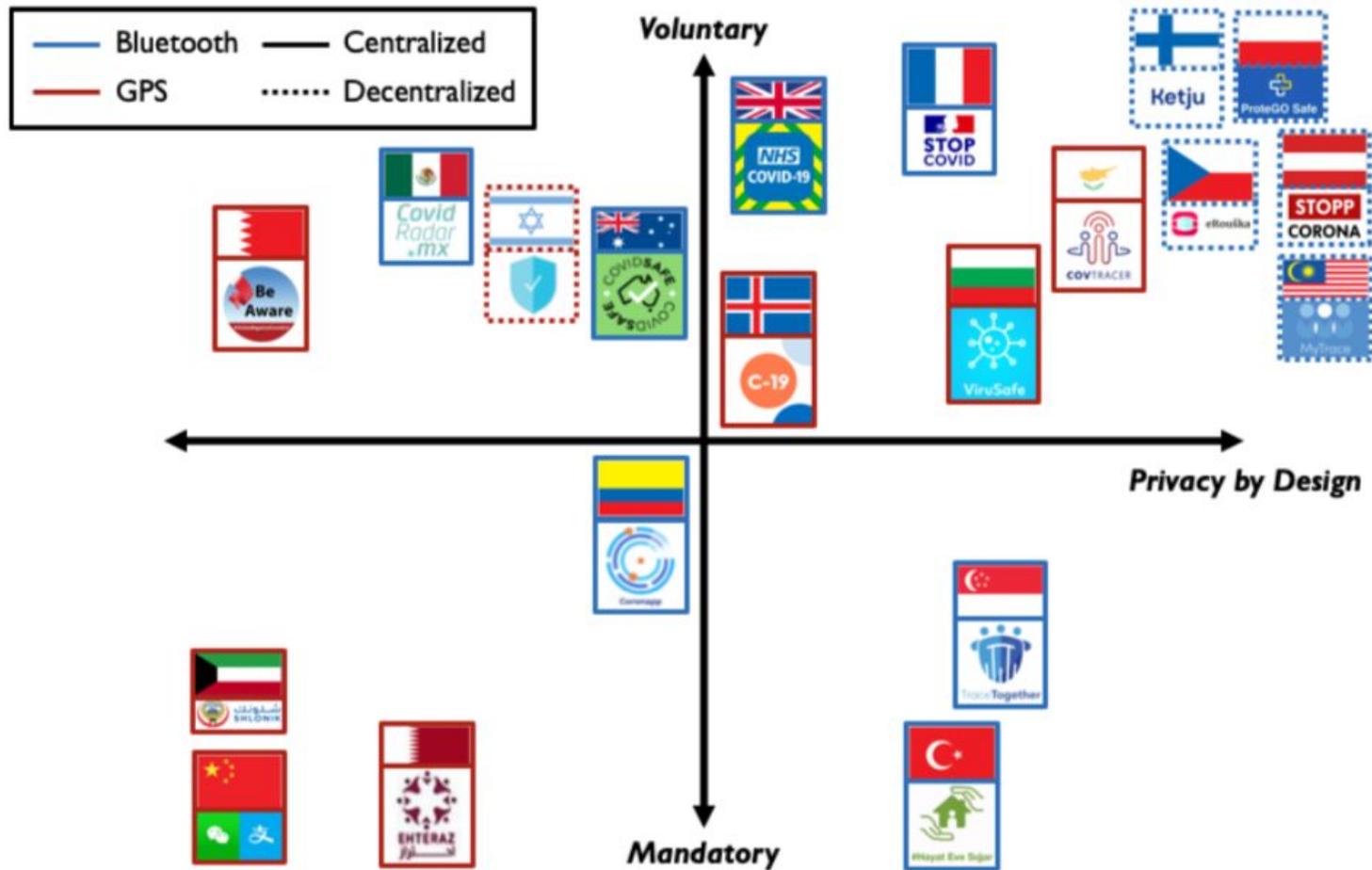
### VII. Notice and informed consent

- Are users asked for their consent at setup?
- Are there any dark patterns in how the application works? Dark patterns can include nudges via push notifications, by-default installation of the application on smartphones, hidden features to deactivate or remove the application, etc.

### IX. Accountability

- Are there independent assessments and oversights? Can the public place their full trust in these organizations?
- How was the general public involved in the design and deployment of the application?
- Are application developers held accountable both internally and externally? Is the general public involved in this? The WHO’s definition of contact tracing accountability includes

# CONSTANT MONITORING & EVALUATION





**Thanks!**

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**THE  
FUTURE  
SOCIETY**



**THE AI INITIATIVE**