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Techno-solutionism and the standard human in the making of the COVID-19 pandemic

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Abstract

Quantification is particularly seductive in times of global uncertainty. Not surprisingly, numbers, indicators, categorizations, and comparisons are central to governmental and popular response to the COVID-19 pandemic. This essay draws insights from critical data studies, sociology of quantification and decolonial thinking, with occasional excursion into the biomedical domain, to investigate the role and social consequences of counting broadly defined as a way of knowing about the virus. It takes a critical look at two domains of human activity that play a central role in the fight against the virus outbreak, namely medical sciences and technological innovation. It analyzes their efforts to craft solutions for their user base and explores the unwanted social costs of these operations. The essay argues that the over-reliance of biomedical research on “whiteness” for lab testing and the techno-solutionism of the consumer infrastructure devised to curb the social costs of the pandemic are rooted in a distorted idea of a “standard human” based on a partial and exclusive vision of society and its components, which tends to overlook alterity and inequality. It contends that to design our way out of the pandemic, we ought to make space for distinct ways of being and knowing, acknowledging plurality and thinking in terms of social relations, alterity, and interdependence.

Keywords

COVID-19, calculation, whiteness, contact tracing, decolonial, pluriverse

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Numbers, indicators and comparisons have always been central to the “making of worlds” (Escobar, 2018). It is not only about a population getting to know itself and its environment: numbers speak to the reflexive capabilities of a community. They are also warranted a sort of “mechanical objectivity” (Porter, 1995) that positions the exercise of quantification above other forms of knowing and feeling. In fact, counting broadly defined has the power to “change our relations to what we value and alter how we invest in things and people” (Espeland and Stevens, 1998: 319). It also represents a form of “cultural work” for its ability to bring into existence social realities by describing them (Merry, 2016: 75).

Not surprisingly, the COVID-19 crisis has installed quantification at the core of the governmental and popular response to the virus. Quantification is remarkably

“seductive” (Merry, 2016) in times of global uncertainty like a pandemic. It “organizes and simplifies knowledge, facilitating decision making in the absence of more detailed, contextual information” (2016: 1). For this reason, it is often elevated to a mode of governance of complexity. Since the early days of the pandemic, governments have regularly reported on the progression of infections, testing, and the occupancy of intensive care units. Media have narrated the spread of the virus relying on these figures. Numbers and graphs

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turned “mere spectacle” (Aula, 2020) have prompted individuals and companies to donate to emergency relief to the benefit of areas and groups portrayed in the official records. However, if “[t]o classify is human,” it is also “ordinarily invisible” (Bowker and Star, 2000: 1–2) and its dynamics hardly ever questioned. Notwithstanding the central role of counting in the making of the COVID-19 pandemic, rarely have we asked how the “conditions of production influence the kinds of knowledge” quantification produces (Davis et al., 2012: 4). Despite the growing societal distrust in the veracity of numbers and the increasing lack of confidence in the validity of the deployed tech solutions, the “social processes surround[ing] the creation and use” of numbers and categorizations are seldom made visible (2012: 4). And only recently have scholars exposed the social costs of this type of “certainty” (Taylor, 2020)—yet its effects are not only very concrete but nearly inescapable (Foucault, 1977).

This intervention investigates *the role and social consequences of counting as a way of knowing about the virus*. To this end, it draws insights from three scholarly fields, namely critical data studies, the sociology of quantification and decolonial thinking, with occasional excursions into the biomedical domain. Here, calculation (in the text also referred to as counting or quantification) indicates indistinctively two instances of knowing, namely the quantitative (“numbers, counting, and the mathematization of the subject”) and the qualitative (“ranking, ordering, organizing, and measuring”, including our way of “thinking” and representing numbers and relating to them) (Crampton and Elden, 2006: 681). Both approaches are generative of realities and narratives of the virus that might shape people’s behavior as well as public policy.

Specifically, this essay sheds light on two problems in the incipient “regimes of measurement” (Espeland and Stevens, 2008: 402) and data generation about the virus. The first problem emerges in the medical domain where, among others, experimental subjects are still disproportionately white and male. The second problem becomes visible in the consumer technology designed to curb the outbreak, such as “contact tracing” mobile applications. Both instances are indicative of an exclusive exercise of classification and counting that tends to overlook alterity and inequality. Examining how we “get to know” COVID-19 through these cases, this essay argues that the calculation exercises we have grown accustomed to with the pandemic often come with unwanted social costs. Looking at the software automatizing calculation, this essay questions also the ongoing efforts to “process alterity” (Pelizza, 2020) and govern the pandemic by digital infrastructure (see DeNardis and Musiani, 2016).

In what follows, I briefly present and situate these two problems with respect to the literature and explain what they have in common. I then explore closely each problem, illustrating how it contributes to create a “one-size-fits-all” citizen with the potential aftereffect of furthering injustice and discrimination. Finally, inspired by decolonial thinking, I reflect on the need to embrace a plural conception of citizens and their communities.

Conjecturing the “standard human”

Thinking interdisciplinarity through the lens of critical data studies prompts us to approach data and data production about the pandemic by exploring their context-specific nature and questioning their purported neutrality. It warns us against the temptation to universalize knowledge acquired through data (Milan and Treré, 2019). Sociology of quantification has exposed how calculation contributes to the social construction of a problem and justifies the associated governance response (Desrosières, 2003). It has uncovered how numbers contribute to disciplining political subjects (Foucault, 2007) and how counting and categorizing can even represent an act of violence in itself (Boris, 2014). We are reminded that numbers are “never simply abstractions, but always have specific material-semiotic properties” (Gerlitz and Lury, 2014: 174), and so has the exercise of creating classifications. On the footsteps of these scholars, we can take a critical look at two domains of human activity that play a central role in the fight against the virus outbreak: medical sciences and technological innovation, analyzing their efforts to craft solutions for their user base.

Medical sciences have historically manifested a tendency to rely on a “standard” experimental subject that hardly allows for exploring the role of variables such as gender, ethnicity, race, or low income as potential determinants of illness and cure. This might have severe consequences in a pandemic as “global” as COVID-19. Without venturing into an unwarranted critique of medical sciences for which this author is not qualified, this essay explores what the reluctance to incorporate “the other” in disease research and prevention might mean for our ability to know about the virus.

The second problem is found in the socio-technical infrastructure devised to curb the social and economic costs of the virus, such as contact tracing apps. Launched in many countries in both hemispheres in the attempt to monitor disease diffusion amongst the population, they discipline people but also feed COVID-19 statistics and diffusion models. They hide a drawback that might not be immediately apparent to most potential users: when designing these products,

policymakers and app creators have only a certain type of user in mind—suitably digital literate and sufficiently wealthy to own a state-of-the-art smartphone.

These two problems point to known deficiencies in techno-solutionist approaches (Morozov, 2013). They are further intensified in times of fast-tracked decision-making typical of an emergency situation like a pandemic (Calhoun, 2010). They expose the increasing dependence on a digital “problem-solving infrastructure” designed to “overtake governance” that typically deflects attention from systemic failures (Dow Schüll, n.d.: 1). While the two might seem disconnected from each other, they both embody the drive to “construct a standard human” (Epstein, 2009: 36) based on a limited and exclusive vision of society and its components. This narrow conception of “one sort of person” is mobilized as a “stand-in for all humanity”, with any assumption or finding “extrapolate[d] to other sorts” of people and communities (Epstein, 2010: 64).

I argue that this phenomenon is the consequence of the failure of the datafied society as a broad socio-technical phenomenon to integrate “other” nonstandard ways of knowing and being-in-the-world in its infrastructure, dynamics and governance. And COVID-19—effectively the first pandemic of the datafied society (Milan and Di Salvo, 2020)—has contributed to expose this multilayered problem. By way of example, the author and her partner, who manifested COVID-19 symptoms while on a European trip, failed to get tested because the database used locally for patient identification only allowed for a certain type of national tax identification number. Little could doctors and nurses to “bend” the system to include “nonstandard” patients.

Next section explores how categorization is generally created in the medical domain and what problems it may generate.

Flawed categorizations and biased datasets

Indicators are quantifiable features adopted as supporting evidence for describing the health of a given social group. The “indicator culture” (Merry, 2016: 9) has gained traction during the pandemic as a mode of governance of uncertainty. Examples include the reproduction number (R), a “now-totemic” metric of the pandemic that “has leapt from the pages of academic journals into regular discussions by politicians and newspapers, framed as a number that will shape everyone’s lives” (Adam, 2020). But the exercise of “translating social life into commensurable categories so that different events become instances of the same thing” (Merry, 2016: 27) might become dangerous

when it encounters existing forms of inequality and vulnerability. For example, undocumented migrants who do not have access to health care might simply not feature in the national COVID-19 counting, which excludes them from any mitigation strategy (Milan et al., 2020). Quantification and categorization might contribute to perpetuate existing blind spots of the governance system instead of helping to lessen their consequences. The way race and ethnicity as well as social factors have been historically incorporated in biomedical research is a working example of this problem, which shows how indicators can be screwed if we look only in one direction.

Like most life sciences, in epidemiology and pharmacogenetics (i.e. the study of the genetic basis of how people respond to drugs) “knowledge about the few”—i.e., the standard human—“must be generalized to the many” (Epstein, 2009: 37). However, adult white men are “overrepresented as research subjects while women, people of color, children, and the elderly underrepresented” (2009: 37). The identification of medical solutions is thus based on the “inclusion of white/Caucasians in studies and the exclusion of other ethnic groups” (Tutton, 2007: 559). This bias originates in the “assumption that a Black person could be thought of as being White” (Muntaner, 1999: 121). Similar implicit biases seem to concern not only clinical studies, but also health care (Chapman et al., 2013), despite the sector has slowly recognized that inequality is an important social determinant of health and is connected with racism, migration status, nationality, indigenous (aboriginal) status (Bhopal, 2015). This is worrisome as COVID-19 disproportionately affects vulnerable groups such as minorities, migrants and low-income communities. In the US, Black communities, historically in a vulnerable position, are affected by the disease much more than their surrounding communities (Laurencin and McClinton, 2020). Ninety-five percent of the 150 million migrant workers worldwide reside in areas severely hit by COVID-19, yet most have trouble accessing health services in their host countries (Liem et al., 2020). And Africa alone maintains 25% of the global disease burden even in ordinary times (Crisp, 2011).

Although discussing the origins of this multifaceted problem is out of the scope of this essay, the narrow understanding of the experimental population at the expenses of racialized subjects points to a larger systemic failure. On the one hand, the biomedical domain has long hesitated to integrate (critical) social theory (Tutton, 2007) centering ethnicity and social inequality. This has been linked to the “lack of *social* theory development, due mainly to the reluctance of epidemiologists to think about social mechanisms (e.g., racial exploitation) [...] and to adopt a social concept of

race in epidemiology” (Muntaner, 1999: 121–123, original italics). It seemingly fails to consider “how noneconomic as well as economic aspects of racial discrimination are embodied and harm health across the lifecourse” (Krieger, 2000: 211). The field would use methods that are not adequate for “testing social factors” (Muntaner, 1999: 121), with the associated variables being too complex to test (VanderWeele, 2019). On the other hand, however, this problem might equally expose the failure of critical theorists of race and inequality to speak to scholars in the medical sciences, to, e.g., foreground issues of social justice in access to medical care.

Another potentially ill manifestation of the indicator culture is found in the digital infrastructure adopted to monitor the spread of the virus, like inclusion criteria in epidemiological datasets. The above-mentioned inability of this author to get tested for COVID-19 for not being able to “fit in” the patient dataset is a case in point. While it is early for a full-fledged comparative study of the “governance by infrastructure” of this pandemic, in her analysis of eligibility criteria to testing, Pelizza anticipates that data collection techniques “have a major role in producing COVID-19 data that render contagion rates invisible among migrants and other minorities” (2020: 2).

Next, we turn our attention to a specific consumer infrastructure that contributes to make counting possible in the pandemic. As we shall see, the shortcoming earlier described is mirrored in the infrastructure of data production mobilized to fight COVID-19.

Designing for the wealthy

The response to COVID-19 is oversupplied with risk-reduction technical solutions, including thermal cameras and facial recognition tech, predictive analytics, contact tracing apps, and even the vague formulated “immunity passports” attesting that a person was infected and is now allegedly immune (Phelan, 2020). As usual, the devil is in the details. In the quest for silver-bullet solutions, developers and policymakers tend to forget that by “designing tools we are designing ways of living” (Winograd and Flores, 1986: xi). By virtue of their materiality awash with socio-cultural consequences, these artifacts enable or ban social behavior, assign persons to pre-defined categories, unite or create separations. In other words, they frame, structure and impose specific kinds of communities and relationality and even the type of humans that are allowed to be or occupy a certain space at a given time. They remake sociality, interaction, and ultimately social life—well beyond the virus.

Contact tracing apps have secured a central place in governmental strategies of risk mitigation, with nearly

every country on earth having developed or adopted one. Examples include TraceTogether in Singapore, Aarogya Setu in India, CoronaMelder in the Netherlands, Immuni in Italy (see, e.g., Sandvik, 2020). They are expected to help restart economies waiting for a vaccine to become available. They translate into practice the idea of “calculating” the pandemic, as they seek to quantify and model virus diffusion across the social networks of individuals, evaluating the risk associated with each person and their surroundings.

What kind of idea of the user is “hardwired” in these apps? I contend that it is a limited, exclusionary version of the “standard human” that is grounded on Silicon Valley-inspired “myths”, with three properties. First, the users evoked by these apps are sufficiently wealthy to own a recent device. For instance, the German Corona-Warn-App only works with the most up-to-date operating systems, which cannot be installed in older phone models (e.g. iPhone 6 or prior); Huawei phones are also excluded as unable to run Google Play Services (*The Local*, 2020). Second, users must be sufficiently digitally literate, which possibly excludes the elderly and those not mastering the local language. Third, and more subtly, these apps rely on the voluntary cooperation of users in the best “co-production” or “designing for participation” tradition (O’Reilly, 2011: 14)—a popular mantra of the “smart city” brand, among others. For this mechanism to work, users must trust state institutions. But so far in Western Europe, these apps have been welcomed with low adoption rates owing to the many security bugs, a diffused mistrust in centralized data management, and a general lack of clarity concerning functioning and purposes (see also Bigo, 2020).

These calculative solutions are potentially discriminatory. On the one hand, they might leave out communities at the margins who are in most need of protection but may not own a smartphone. The 1.4 million migrant workers in Singapore, for instance, have been severely hit by the pandemic but they can hardly afford a smartphone; their over-crowded dormitories render the app design unfit for the challenge, as nearly everyone is exposed to the virus (Zastrow, 2020). The ability to display a recent negative test no older than a given period of time, typically ranging from 48 h to two weeks, is another working example of this potential discrimination. In many countries testing is not free of charge or is only accessible with symptoms. Only if individuals obtain such certification they are exempt from physical restrictions and able to go back to work or circulate freely—despite the many historical examples of the discriminatory impact of immunoprivilege (Phelan, 2020). The prescriptive nature of apps and certificates, too, has unwanted consequences.

Adoption is seldom binding but the failure to abide typically has real-world consequences. For instance, does failing to install a given app exclude one from the polity by, e.g., precluding participation to economic activities? These fixes might end up allowing (and disallowing) belonging to a community, albeit temporarily, ultimately impinging on key identity dynamics.

Finally, it is worth noting that the adoption of these solutions largely relies on “expert” input in the form of “task forces” often parted from any mechanism of democratic accountability, where hand-picked science and innovation are put at the service of the dominant narrative, rather than contextualizing or questioning it.

What counting for the “pluriverse”? Lessons from decolonial thinking

In emergency times, the regimes of measurement and knowing illustrated here might be welcome because of their ability, factual or imagined, to “provide knowledge of a complex and murky world” (Espeland and Stevens, 1998: 319). They make counting—thus knowing—possible, reducing uncertainty. Counting, however, alters the terms under which we make sense of our reality. It has symbolic power but also concrete social and material effects.

With its dependence on the numerical representation of COVID-19, the pandemic has exposed one of the central paradoxes of counting as a world-making activity. Although numbers *per se* do not claim neutrality, truth, or scientific authority, they contribute to create realities, communities, policies and public concern. Design in the broad sense—including of categories for virus testing and apps to curb the contagion—is central to world-making. It can be viewed as an “ontological instrument that is able to transform the social and cultural reality, and model human experience, subjectivity and environment” (Tlostanova, 2017: 51). As such, it has the power to define how we conceive identity, community, and social relationships (also) during a pandemic. But our society keeps designing primarily for the standard human, taking into account only a handful of mainstream and generally “Western” ways of living, including access to resources, universalizing both the understanding of risk and the proposed solutions. Because calculation is not only a “technology of knowledge creation” (Merry, 2016: 27) but also a measure of care (Milan and Treré, 2020), the construction of a distorted and partial standard human might have consequences for the life and death of people. A careful consideration of alterity and multiplicity should be central in any policies and services of need-assessment, priority setting and risk mitigation in the COVID-19 pandemic, with the virus that seems to

hit the hardest precisely individuals and communities marginalized on account of their race, ethnicity, migratory status, and poverty. But how can we design to include also “others”?

This is where decolonial thinking comes in handy. Decolonial scholars remind us of the importance of thinking from and at the margins of the world system to expose the persistence of colonial relationships and worldviews in today’s society (Maldonado-Torres, 2004; Rojas, 2016). They encourage us to scrutinize in at least three directions the narrow processes of calculation described here. First, questioning the primacy of the Euro/Western-centric episteme (Mignolo, 2011), situating and decentering predominant ways of being and knowing (Castro-Gómez and Grosfoguel, 2007). Second, interrogating the power dynamics, especially the “coloniality of power” (Quijano, 2007), enshrined in most knowledge production processes, including those presented in this contribution. Third, questioning the racialized relations that survive in today’s digital “problem-solving infrastructure” in forms of, e.g., algorithmic racism (Ali, 2016).

Decolonial design, then, encourages to go one step further to translate these principles into working infrastructure. Design, writes Colombian-American anthropologist Arturo Escobar (2007) adopting a broad definition that ranges from software development to urban planning, is a *conversation about possibilities*. It has repercussions for what types of relationalities are “thinkable” and possible when real people access resources, including the new COVID-19-related regimes of measurement. Inspired to the Zapatista cosmogony, Escobar invites us to take the “pluriverse” as a point of reference in deconstructing the design of a society and its governance, and by extension technology design. The pluriverse is a world where many worlds fit—the opposite of a definite, exclusive *universe* (cf. Mignolo, 2007: 45). It offers “a tool for reimagining and reconstructing local worlds” (Escobar, 2018: 4). Antithetical to the pluriverse are, as this intervention claims, uniformity, one-way solutionism, and the inability to think in terms of wider social relations, alterity and interdependence—as often seen in the policy responses to the virus outbreak.

To design our way out of the COVID-19 emergency, we ought to think in terms of diversity and social relations, of flows and interdependence—rather than border closures, oppressive social control, exclusionary datasets, or apps catering solely to the majority. At the bare minimum, such an approach catering to the pluriverse includes three key operations. We should start from an inclusive, open exchange about the diverse identities, values and needs identified in a given community, which forms the basis for exploring how to nurture the “local worlds” (Escobar, 2018) that survive

in the turbulence of the pandemic and often at the margins of the mainstream. If there is always more than one way of seeing the world and living in it, nurturing these local worlds starts from “creat[ing] spaces for the recognition of ‘ways of being’—previously ignored and devalued—which are key to the design of a new more sustainable world order” (Barcham, 2018: 1). Second, we should give voice to distinct identities and perspectives on the world, making room and creating mechanisms to listen to alterity and multiplicity in the collective quest for inclusive risk mitigation strategies. Finally, we may want to cultivate alternative solutions developed locally and with actual citizen participation, able to foster trust, inclusion and social justice. These solutions, including technology-based ones, might then serve “other” needs such as the possibility to knit relationships of solidarity, care and mutual help and the creation of a nurturing community in times of emergency. They may ultimately help to recreate social ties at various levels, challenging “who counts as a citizen” (Harvey, 2015) and as a human being during a pandemic and beyond.

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