

# **How platformization affords the growth of alt-science: on the COVID-19 ‘early treatment’ ecosystem in Brazil**

## **Introduction**

Brazil is among the few countries where the so-called ‘early treatment’ (*tratamento precoce*) for COVID-19 achieved widespread acceptance among medical doctors and the general public. This term describes not one fixed medical protocol, but a spectrum of low cost, widely available pharmaceutical substances that have been prescribed and consumed during the pandemic. Most were subjected to preliminary studies for efficacy against COVID-19, but none reached consensus in the global scientific community. Nonetheless, in Brazil, a sprawling online ecosystem of ‘scientific expertise’ developed around them and escalated across the country, reaching deep into the narratives and practices of the medical class, patients and their families, local administrators and politicians, and media pundits.

This article aims at shedding light on the social efficacy of early treatment (thenceforth, ET) in Brazil from an ethnographic perspective focused on the enabling role platform infrastructures played in its widespread acceptance. The few accounts available thus far concern chloroquine/hydroxychloroquine (thenceforth, CQ/HCQ), and privilege high profile actors such as politicians and medical organizations. Campinas (2020) suggested that the relaxation of scientific standards during the pandemic allowed for the political weaponization of CQ/HCQ. Casarões and Magalhães (2020) detailed their appropriation by the medical populism of presidents Bolsonaro, Trump and other far right leaders. While these are indeed key dimensions of the phenomenon, online ethnography unveiled a much more complex and multi-layered scenario. One of us began following ET networks in late 2020, as they unfolded from anti-lockdown protests in several Brazilian cities. From there, a sprawling ecosystem was disclosed, self-organized around influencers, channels and groups on multiple platforms, from social media to messaging apps and spurious websites.

We argue that it was through this spontaneous, bottom-up ecosystem that Bolsonaro’s narratives about the ET gained capillarity and traction. Particularly important, and poorly understood, has been the role of refracted publics (Abidin, 2021) that run below the radar (Artieri, Brilli and Zurovac, 2021) of the mainstream internet, making up a systemic, even if unintended, underside of platformization. In what follows, we suggest some of the ways in which anti-structural affordances of the contemporary Internet (Gray, Bounegru and Venturini, 2020) enabled the growth of the ET ecosystem not by outright dismissing mainstream science and its

associated sanitary policies, but by cutting through both, surreptitiously infiltrating the digital cracks opened up by the pandemic state of emergency and its reckless management by the federal government.

Like Lee et al. (2021) argued for anti-maskers in the U.S., ET advocates are not straightforward science denialists, and neither do they use ‘science in order to corroborate a previous belief system’ (Monari, Santos and Sacramento, 2020, 8). We side with Casarões and Magalhães (2020) in looking at the ET ecosystem through an analogy with the political alt-right, as an ‘alt-science’ that emerges from the margins of mainstream science by taking advantage of voids opened up by political-scientific states of exception. As such, it thrives on, while also helping further, mainstream science and politics’ incapacity to reach far-fetched and stable consensus. Here we underscore how digital platforms have been key enablers of this process, and describe some of the ways in which they have afforded the proliferation of ET discourses and practices on a fold not just between medical science and populist politics (Casarões and Magalhães, 2020; Monari, Santos and Sacramento, 2020), but between these and a range of bottom-up, digitally-mediated forms of entrepreneurialism and patient activism (Lupton, 2014; Petersen, Schermuly and Anderson, 2018). Following Chun (2011, 2016), Mirowski (2019) and others, we identify increasing infrastructural convergences between platformization and neoliberalization, and suggest their role in sustaining resonances (Connolly, 2005) across the neoliberal-conservative force field (Brown, 2019).

The first section traces the origins of ET protocols in a context of health care system collapse early on during the pandemic, which opened up a liminal state of scientific exception. It suggests how the alt-science of ET thrived on platforms’ temporality of permanent crisis (Chun, 2011, 2016), giving rise to a fractal, personalized form of shock doctrine (Klein, 2010) where no alternative was envisaged once mainstream science and its associated policies of social distancing came to be regarded as false, uncertain, or impossible. The second and third sections describe how ET advocates strategically carved an online influence niche on the uncanny fold (Gray, Bounegru and Venturini, 2020) between mainstream networked publics (boyd, 2011) and refracted publics (Abidin, 2021), by both contesting and mimicking mainstream science. Finally, the last section turns to how the ET ecosystem spread beyond the medical class by taking advantage of participatory and mimetic affordances leading to context collapse (boyd, 2011) between lay patients and expert doctors. Alt-science is thus understood as a bottom-up kind of neoliberal fast policy (Peck, Theodore and Brenner, 2012) that replicates through infrastructures of entrepreneurialism, networking and monetization already available in online environments.

Through these means, private agents – from businessmen to local politicians, from health insurance companies to digital influencers – came to fill in the void opened up by government inaction and undecidability (Abreu, 2019), pushing for the ET as a viable, replicable and personalizable alternative for addressing the pandemic state of crisis.

## **Crisis and collapse**

The ET ecosystem in Brazil is not a bounded field, but a multilayered and changing environment. It evolved from early efforts to champion the antimalarial drugs CQ/HCQ as standard treatment for COVID-19, in the aftermath of observational studies suggesting reduction of viral load (Gould and Norris, 2021). The proposal gained further traction upon president Trump's endorsement of it in May 2020, in which he was promptly followed by his Brazilian counterpart (Casarões and Magalhães, 2020). While Trump's support for CQ/HCQ eventually waned, in Brazil it expanded, through the addition of yet other substances to the mix: most typically, an antibiotic (azithromycin), antiparasitic (ivermectin), zinc, Vitamin C, and Vitamin D. These drugs became key building blocks for medical 'protocols' applied in doctors' offices across the country, especially from the private sector. What became popularly known as the 'COVID kit' was distributed locally by health insurance companies and municipal administrations, and became the object of direct exchange and self-medication among patients.

This section explores how the invention and spread of ET protocols and their supporting network were triggered and rendered possible by a state of scientific exception. While expected given the novelty of the Sars-Cov-2 virus (Campinas, 2020), a liminal state of undecidability was exacerbated and lengthened in Brazil given the lack of a federal plan for fighting the pandemic in a comprehensive, planned and articulated manner. Digital media and its anti-structural affordances allowed the ET ecosystem to quickly fill in this scientific-political sovereignty void. In particular, we suggest that platforms' personalization of crisis (Chun, 2011) laid the ground for ET to operate as a fractal form of shock doctrine (Klein, 2010). It gained micro-sociological traction as mainstream science and its associated policies of social isolation came to be regarded, by both rulers and the populace, as false, uncertain, or impossible. While president Bolsonaro was quick to seize the opportunity to herald the ET as a promptly available, market-based alternative for addressing the pandemic crisis without the need for economically and politically costly lockdown measures (Monari, Santos and Sacramento, 2020), we argue that its growth occurred mostly organically, through online means.

Prevent Senior, a private insurance plan from São Paulo specialized in elders, was the first health care provider to be hit hard by the new coronavirus, brought to Brazil by wealthy international tourists. The company made immediate ‘compassionate use’ of CQ/HCQ in its hospitals, including for treating its CEO’s mother: ‘There is hope’, he declared at the time. It started a clinical study on March 26, but did not receive ethical clearance until almost a month later. By then, preliminary results claiming that a protocol of CQ/HCQ plus azithromycin had cut hospital admissions by half had already been released to the press. The National Health Committee suspended the study on grounds of ethical misconduct, and Prevent Senior gave it up claiming that their promising research effort had been ‘banned due to all the turmoil’. As media attention waned however, the plan maintained the protocol, whose efficacy was retrospectively ‘confirmed’ by its CEO. ‘This protocol saved the patients and the company’, he declared in an interview in June 2020. ‘Back in March, 80% of our mechanical ventilators were occupied. Today, it’s down to 50%. It’s enough evidence that the protocol works.’ What he failed to mention is that, at that moment, the overall death curve had already begun to flatten in São Paulo.

But the real push for ET came a few weeks later, when the public and private healthcare systems in the city of Belém, in the Amazon region, went into full collapse in early May. A group of doctors, mostly from the private sector, advised with dr. Roberto Zeballos, experienced immunologist from an elite private hospital in São Paulo, to design a protocol for ‘hospitalization outside the hospital’. What they called the ‘collapse protocol’ enabled doctors to assist the growing number of patients who were being turned down from Belém’s packed hospitals and Intensive Care Units. The original protocol included one corticoid, two antibiotics, and one anti-coagulant, some of which were being tested globally in in vitro and observational studies. Additionally, Zeballos established procedures for patients with early symptoms aimed at preventing the disease progression: CQ/HCQ, ivermectin, zinc, and vitamin D. Most private doctors in Belém embraced these protocols. Local health care plans and municipal agents distributed ‘COVID kits’ directly to patients and clients - a practice which, later on, would be replicated in other cities all the way to the Brazilian South.

As sanitary conditions improved in late May, the ‘Belém miracle’ was attributed to the protocol and to the newfound ‘heroic’ partnership between medical doctors, health insurance companies, and some public agents. Evidence for efficacy included, besides the flattened curve itself, a growing number of doctors bearing witness to exceptionally high cure rates among their patients. These individual experiences were instantly shared with peers through messaging apps,

live streamings and videoconferences, prompting emerging knowledge practices based on anecdotal evidence, personal testimonies, and observational ‘studies’ drawing inferences from cohorts of patients with little or no systematic procedures for randomization, blinding or control of variables. These followed, instead, a logic of audit (Strathern, 2000) whereby individual doctors produced their own performance metrics by gathering data on ‘auditable’ patients - those whose improvement could be documentally tracked through exams and prescriptions. These would often yield positive counts hovering close to 100%, possibly including some kind of confirmation bias given the lack of systematic procedures for making sure all unsuccessful cases were tracked.

Moreover, in the absence of randomized, controlled procedures for sorting out casualties, negative outcomes resulting in death or the ET drugs’ adverse effects were commonly attributed to the disease itself, patient comorbidities, or protocol misapplication. Conversely, positive outcomes were always attributed to the protocol, rather than to antibodies, genetics, or other factors that may lead to cure - which is, by far, the most likely outcome in all COVID-19 infections anyway. During interviews, one of the authors found that claims such as ‘I treated X patients, and of these, very few required hospitalization’ were typical among doctors and public agents who sought to legitimize the ET as local policy or generalizable medical practice. These outcomes were shared and disseminated online as evidence that the protocol must work because it already had - and not because these drugs’ causal effects were statistically sorted out from other possibilities (Latour and Woolgar, 2013).

Just as observational studies are considered to better reflect ‘real life’ situations, medical doctors’ first-hand knowledge at the frontline was regarded as more appropriate for understanding and treating COVID-19 than the cold, abstract models of global scientific elites centered on Randomized Controlled Trials (RCTs), epidemiology, and the World Health Organization. What the pandemic state of exception in Brazil brought about, however, was ‘real life’ experimentation at a national scale. In one of Bolsonaro’s weekly Facebook live-streamings, whose YouTube version was taken down on the grounds of COVID misinformation, the president compared ET drugs with the transfusion of coconut water in lieu of blood during World War II: ‘If they were to wait for scientific confirmation, how many would have died?’, he claimed, adding that, if later on ET is shown to have no effects, at least they tried something. However, rather than being a one-off, desperate measure taken during open warfare, the ET experiment proceeded during the entire pandemic by taking the Brazilian population as a ‘total test environment’ (Marres and Stark, 2020).

ET protocols therefore turned from a measure of exception during a state of collapse into standard medical procedure for avoiding hospitalization across the board: a ‘new normal’ to be embraced and applied as universal rule. It was stabilized into a replicable form - a specific prescription and posology, coupled with a three-stage model for monitoring disease development - sold as an integral answer to the pandemic crisis at large. Its popularization happened mostly online, as doctors turned influencers assembled a virtual network around the movement ‘Doctors for Life’. It grew quickly to encompass social media profiles, channels and live streamings on Instagram, Facebook and YouTube, Zoom meetings, powerpoint presentations, PDF documents, large WhatsApp groups, ‘exclusive’ online courses held on video conference platforms. Talks and discussions among medical doctors were made available for the lay public in simpler and more easily replicable formats: short texts, videos cuts, diagrams and graphs turned into memes went viral on social media and peer-to-peer messaging on more agile and capillary apps such as WhatsApp. Influencer-doctors were invited for interviews in TV shows and journalistic YouTube channels (mostly on the political right), making ‘the protocol’ known across the country. As will be detailed in the upcoming sections, participatory digital media afforded partnerships between this core network of influencer-doctors and expert-patients who became themselves digital apostles for the ET.

The ET ecosystem therefore thrived on the state of scientific exception opened up by the pandemic (Campinas, 2020) and radicalized by Bolsonaro’s undecidability (Abreu, 2019). Rather than being overcome, such liminal state came to structure people’s everyday perceptions of pandemic problems, their causes and solutions. In particular, the ET helped turn the tide against sanitary measures prescribed by the ‘globalist’ scientific mainstream such as social isolation and lockdown, which many in Brazil saw as excessively interventionist, ineffective, unfeasible, or prejudicial to ‘the economy’. The protocol afforded precarious workers and small entrepreneurs the mobility necessary to get on with their lives - which in practice meant to go back to work.

The general population’s acceptance of solutions sold as promising in moments of catastrophe and vulnerability is analogous to what Naomi Klein (2010) famously called shock doctrine. Rather than being pursued by top-down policies, however, in this case such solutions - which, as will be seen below, also have a distinctively neoliberal tinge - were replicated spontaneously across the Internet’s fractal topology. Our suggestion is that this kind of ‘non-linear’ shock doctrine is afforded by the platforms’ active production of states of ‘present shock’ (Rushkoff, 2012) through a temporality of permanent crisis. By this Chun (2016) means

an endless flow of events that continuously interpellate users' attentional habits by demanding immediate action, even if it is just one click or one share.

During the pandemic, the ET ecosystem expanded through the fast-tracked relaying of the 'latest information' on COVID-19 and on ways to prevent and treat it to more and more people. Since ET protocols, as will be seen shortly, were not bounded by a particular content, updates and news about the disease and its therapeutic possibilities were always forthcoming. As importantly, these were often accompanied by triggers prompting users to act quickly in order to spread the ET word against the grain of mainstream media politicization and censorship. These tended to follow general patterns of internet use in Brazil, including prompts to share as widely as possible, follow back, and register in channels: "Read! Share! Join the channel! Let's save lives!". As Chun (2011) put it: in new media, 'what is real is what unfolds in real time' (96).

As the ecosystem grew beyond doctors, newfound ET influencers came up with less complicated and technical versions of medical protocols. These included simple images showcasing general guidelines, prescribed doses and disease development graphs, tailored for widespread circulation and consumption on WhatsApp. Patient groups on the messaging app became welcoming sites for conveying personal experiences and asking for advice, thus nurturing a sense of shared identity. New members were often prompted by group descriptions to post personal testimonies in order to 'show the treatment's power'. Through such digital means, lay people as well as doctors came to play a pastoral function (Foucault, 1982) of providing caring advice for patients that could not find it elsewhere, in the mainstream media or the scientific establishment. In contrast with the latter's cold, abstract and impossible recommendations, the ET ecosystem offered personalized care, feasible practical guidelines, hope and a sense of taking back control. It also opened up new niches for a broad range of entrepreneurial subjects eager to turn crisis into opportunity.

### **Alt-science as refracted publics**

Like in Bolsonaro's 2018 election (Author), WhatsApp, the most popular messaging app in Brazil, quickly became the capillary tip of a sprawling, multi-layered digital ecosystem that grew fast during the pandemic. Early ET groups were formed by doctors and patients with varying levels of expertise on COVID-19 and its treatment, who used these media to build community, exchange information, and keep the overall ecosystem energized. Common users

then relayed the content shared in these groups to smaller, more private groups, and individual peer-to-peer interactions. This ran in parallel with a lively ecosystem of influencers and live streamings on social media platforms popular in the country, notably Instagram and YouTube. Here, the poll of actors diversified further to journalists, politicians, public health agents, and natural health, wellness and other lifestyle influencers.

As the network grew, content became more heterogeneous and targeted to specific audiences, while at the same time maintaining a shared, self-similar underlying form: the doctor-patient relationship which lies at the core of ET social efficacy. This fractal form of individuation, where subjects are both unitary and multiple (Lury and Day, 2019), is also found in other anti-establishment mass movements that thrive online, such as the QAnon conspiracy theory or Bolsonaro's digital populism (Author). And also like the latter, the ET community is bound together by opposition to a hostile outside world, encapsulated in the mainstream media which, according to their most conspiratorial narratives, is bought off by big pharma, purposefully hides the truth and persecutes them unfairly.

Despite being ostensibly present in most mainstream platforms in Brazil, ET influencers and their networks operate on a fold between the latter and more opaque online environments. This section suggests that this ecosystem followed a dynamic akin to what Abidin (2021) called refracted publics. Building on boyd's foundational notion of networked publics (boyd, 2011), Abidin outlined a recent shift towards more nuanced digital practices that 'balance hyper-visibility and under-visibility to avoid over-exposure in some areas and redirect audience interest to others' (2021, 1). In refracted publics, influencers and users draw on platform affordances in order to strategically control exposure and effectiveness both within and against mainstream networked publics, operating a delicate balance between protected privacy and broad visibility.

Indeed, the ET ecosystem was built both tangentially with, and in opposition against, mainstream publics centered on established science. Users and influencers managed this interface through strategies and controls for alternating between public and private domains (Abidin, 2021). Thus, for instance, membership in influencer-doctors' websites and WhatsApp groups sometimes required a copy of the prospective member's registration in the Federal Medical Council. Other forms of gatekeeping were more subtle, involving linguistic management. Searchability for instance was deflected by deploying a range of neighboring terms, such as *inicial*, *imediato* or *preventivo* in place of *precoce* (early), and *atendimento*, *abordagem* or *acolhimento* instead of *tratamento* (treatment). Group and profile names were

themselves often ambiguous: the main movement formed around the Belém protocol was called ‘Doctors for Life’ (also the name of anti-abortion groups), and managed supposedly neutral social media profiles such as ‘Brazil overcoming COVID’ or information channels sharing news and updates about the disease.

This strategy allows influencers not only to operate below the radar of platforms’ ‘censorship’ and mainstream media ‘persecution’, but to keep equiprobability (Latour and Woolgar, 2013) high enough so that plausible deniability (Hodgers, 2020) always remains an option. After coming under media fire for defending ET in early 2021, for instance, the Ministry of Health began to deploy the more ambiguous term *atendimento* (like in a doctor’s appointment) instead of *treatment*. Sometimes, specific codes were deployed to avoid platform sanctions, such as ‘bee sting’ instead of ‘vaccine’. Like in radical populism and conspiracy theories, claims to censorship and manipulation by ‘the system’ was often part of these influencers’ branding, as in ‘This live [streaming] will tell you the truths about COVID-19 that they don’t want you to know’. ‘They’ and other empty signifiers of the enemy (Laclau, 2005) were left vague so that their content may be differentially appropriated by users (Author). Also like in populism, group members and admins were always in the lookout for ‘infiltrated’ external agents, acting quick to sideline inconvenient or divergent individuals.

Like in other refracted publics, this hostile outside world is counteracted by an internal structure of ‘silosociality’, where ‘intended visibility of content is intensely communal and localized’ (Abidin, 2021, 3; Artieri, Brilli and Zurovac, 2021). These digital environments are safe spaces for the champions of ET, who can freely express views that are likely to be controversial elsewhere. Indeed, the claim to freedom of both doctors and patients is, along with care, the main positive value weaving together this ecosystem. It became explicit in Doctors for Life’s slogan ‘In defense of doctors’ autonomy and the patient’s right to choose’. This claim also undergirded the Federal Medical Council’s hands-off approach to the matter, which refused to ban these drugs on the grounds of respecting ‘doctor autonomy’ (and, indirectly, protection from legal indictment). Ambiguity and undecidability were also part of Bolsonaro’s broader strategy for avoiding responsabilization for the pandemic’s calamitous effects. He outsourced both ‘positive’ responsibility - to ET medical doctors, patients and their families - and ‘negative’ responsabilization - to state governors and mayors imposing social isolation measures, and to the Federal Supreme Court who cleared them to do it.

Silosociality resulted in an internal atmosphere of cooperation, whereby influencer-doctors would follow each other and encourage mutual growth, guided by the motto

‘treatment advocate strengthens treatment advocate’. Champions of different protocols shared ‘lives’ and other communicational spaces with no perceived contradiction between them. Like in online conspiracy theories, their relationship was less of competition or mutual checks than of addition (Rushkoff, 2013). As a result, the list of possible drugs and combinations just kept growing. Influencer-doctors claimed that no option was off the table: ‘we must fight COVID with all weapons at hand’. In alt-science, therefore, there is little room for the corrective feedback loops that lie at the core of normal science, whereby peers critique and offer counter-evidence to each others’ studies, putting them to the test of falsifiability (Popper, 2002).

Silosociality and protected spaces were also at play in how new patients are captured (Seaver, 2019) at the networks’ peripheries. Like other refracted publics, the ET ecosystem avoided searchability (boyd, 2011) while promoting discoverability, whereby ‘content is unknowable until chanced upon’ (Abidin, 2021, 4). Users would often ‘chance upon’ ET content through their trusted networks on social media or personal contacts on WhatsApp, where they are already prone to relations of trust. Influencer-doctors and expert-patients further reinforced this bias by embracing a commitment to always be cooperative, welcoming all questions and demands from new patients regardless of their origin and the difficulty of their problems and symptoms. This informal ‘general protocol’ of care (*acolhimento*) was a chief way by which the ET community differentiated itself from the mainstream medical approach to COVID-19, which, according to them, left patients unattended, alone, and afraid.

### **Uncanny infrastructures and reverse mimesis**

Alt-science’s oppositional relationship towards the scientific mainstream includes a paradoxical kind of co-dependence that may, on occasion, take on more explicitly weaponized forms (Abidin, 2021). While many in the community would claim to be non-partisan, the way ET thrived on anti-establishment affects was a key locus of resonances (Connolly, 2005) with the conservative-neoliberal right in Brazil. These became evident, for instance, in ET influencers’ tactics for deflecting back accusations that were strikingly similar to the kind of ‘reverse mimesis’ (Author) found among Bolsonaroists and associated conspiracy theories. This manifests what Gray, Bounegru and Venturini (2020) call ‘the infrastructural uncanny’, or ‘the unsettling

effects and ambiguities' (323) that emerge on a fold between user behavior and platform dynamics for metrifying engagement, ranking content, and monetizing attention.

The hashtag *#BolsonaroGenocida* is exemplary of the uncanny effects wrought by tactics of reverse mimesis. As the death toll soared in early 2021, 'genocide' became a watchword for those pressing for Congressional investigation of the federal government's ineffective policies, including its support for ET drugs. ET influencers promptly hacked the hashtag in order to accuse the other side of practicing genocide by claiming that, had the media and 'the left' not sabotaged efforts to expand the treatment, the death toll in the country would have been much smaller. Such reversals also appeared in claims that it is the vaccines that were poorly tested and not to be trusted, and that it is the mainstream media that politicized the pandemic while they had 'true' science on their side. Some even suggested that the universal adoption of the ET could make up for vaccination, by allowing the Brazilian population to reach herd immunity unharmed.

But resonances between alt-science and alt-right need not be that openly political. They also appear in how, like Bolsonaro's anti-establishment populism grew on the heels of a longstanding political-legal crisis (Nobre, 2020) and disinformation thrives on the crisis of trust in legacy media (Gray, Bounegru and Venturini, 2020), the ET ecosystem prospered on the digital cracks of the pandemic state of scientific exception. In all cases, the relation is not of outright denial of science, democracy or the media, but of parasitic occupation from their margins (Nobre, 2020; Peck, Theodore and Brenner, 2012). Its advocates were not straightforward science denialists, as external critics often put it. Rather, they sought to legitimize guidelines and protocols on technical-scientific grounds, claiming support in international platforms and networks that emerged during the pandemic around specific drugs, such as <https://c19hcq.com/> and <https://ivmmeta.com/>. These are commonly referenced in viral messages on WhatsApp and elsewhere that follow a characteristic style of the 'popular' Internet in Brazil:

The Ivermectin Randomized is out! There it is, the efficacy and scientific confirmation the famous Scientific Pappers (sic). <https://ivmmeta.com/> FOR THOSE WHO WANTED 'SCIENCE' THERE IT IS 🙌👉 90% efficacy in prophylaxis 80% in early treatment 50% in late treatment.

These websites seem to be ‘Doppelgängers’ (Gray, Bounegru and Venturini, 2020) of meta-analysis platforms that are widely questioned by the scientific mainstream. Yet, they are widely referenced in the ecosystem as trusted repositories of technical evidence for ivermectin and other ET drugs’ efficacy and safety. Like predatory journals and publishers, these websites mimic the aesthetics, jargon and other authoritative signs of mainstream science (Lee et al., 2021). They do so however in a somewhat baroque manner, bolstering their quantitative appeal through what seems like a ‘firehosing’ of graphs, tables, equations, indexes, and bibliographic references. Following a previous trend in the digitalization of pharmaceutical experimentation (Lupton, 2014), the methods underlying most such studies will often stray from mainstream science’s golden standard: well-designed, large scale RCTs. But the claims made on their behalf in WhatsApp and social media seem to be enough evidence of international scientific excellence. Brazilians by and large do trust science – like anti-maskers in the U.S. (Lee et al., 2021), it is that empty signifier that ET advocates seek to unsettle and dispute.

Studies supporting the ET community’s claims were taken from the preprint servers that mushroomed during the pandemic. Platforms such as medrxiv.org assembled hundreds of thousands of papers from around the world, including by Brazilian influencer-doctors, in all stages of testing, from in vitro studies to RCTs. Most such preprints will never make it to peer-reviewed journals, therefore failing to loop back onto the broader scientific community for confirmation and replicability (Gould and Norris, 2021). This did not prevent their ‘data’ from being channeled to the medical and lay public as innovative options for fighting COVID-19, adding to an ever-growing spectrum of treatment possibilities: antivirals, anti-coagulants, antibiotics, anti-inflammatory, hormones, steroids.

The international networks that helped feed the ET pipeline in Brazil were, in general, poorly responsive to the global scientific mainstream, forming, rather, a parallel scientific community carrying out its own reviews, meta-analyses, and conferences. One such global hubs was the British Ivermectin Recommendation Development (BIRD), whose February 2021 meeting found wide repercussion in Brazil: ‘European doctors call for immediate use of ivermectin as a response to COVID-19!’ Its recommendation followed the aesthetics and structure of other documents in the scientific field, but the devil is in the details. The ‘scientific’ Consultative Panel, included for instance a Ian Clayton, British writer and radialist, and Gez Medinger, whose Twitter profile read: ‘Pre-Covid, film producer and director. Now an investigative science journalist travelling down the rabbit hole of Long Covid’.

Finally, digital media were key to assembling not only such networks, but their alternative knowledge practices. The BIRD website ([bird-group.org](http://bird-group.org)) reported that the panel's methods involved using 'electronic survey links' for assessing 'different decision-making criteria' and inviting the public to 'make judgements on the evidence as part of a public participation and involvement initiative.' These digitally-mediated, crowdsourced ways of assembling publics, collective criteria and evidence (Lupton, 2014) manifest a kind of 'participationism' (Gerbaudo, 2019) that is consistent with the ET community's basic organizational form, coupling the virtualization of medical work with the imparting of expert authority to chosen lay people initiated in the 'arts' of ET by doctors holding such exclusive knowledge. Alt-science therefore advances its own, digitally-mediated version of participatory knowledge where, as the upcoming section will detail, activist patients not only offer social validation but may become experts in their own right (Petersen, Schermuly and Anderson, 2019).

### **The protocol as fast policy**

The previous sections indicated capillarity as a key transversal trait of the ET ecosystem, centered on a doctor-patient relationship based on values of care and freedom. Different from mainstream science's 'ivory tower' expertise, the alt-science of ET could be translated into elementary forms shared horizontally with other health professionals and even lay people. The latter included, most remarkably, agents from the private sector, regarded as less bureaucratic and more agile for creating and disseminating innovations: individual patients anxious to go back to work and/or to 'save' family and friends from infection; businessmen who could not afford to keep their employees at home; health insurance companies interested in offering alternatives to their clients in lieu of hospitalization; entrepreneurs eager to turn crisis into opportunity through drug sales, telemedicine, master classes, YouTube channels, Instagram profiles and other attention niches in high demand during the pandemic. The federal government and some local administrators were also happy to be relieved from pressure to implement unpopular social isolation measures, and from the responsibility to lead the fight against the pandemic beyond 'naturally' reaching herd immunity. Given its flexible and kaleidoscopic character, ET protocols could be adjusted to multiple and changing local contexts, moving fast across multiple contexts.

This section looks at digital media's role in the process whereby ET took root locally across Brazil as a spontaneous, bottom-up kind of neoliberal 'fast policy' (Peck, Theodore and Brenner, 2012). This term describes 'neoliberal practice "in the wild"', concerned with

‘experimentation at the cusp of crisis’ (278). Fast policy operates in ‘the vacuum of persistent regulatory failure’—or, as we put it, states of exception—by appropriating ‘promising local models’ which are then ‘variously seeded, scaled up, and stylized for emulation’ (279) across jurisdictions. Rather than being implemented through top-down policies based on expert-led planification and assessment (Mirowski, 2019), such ‘conspicuously fast-moving “silver bullet” models’ are ‘constituted with/through the networks—of advocates, intermediaries, emulators, and critics—that form around them’ (Peck, Theodore and Brenner, 2012, 280), .

Although Bolsonaro did become ET drugs’ chief poster boy (Casarões and Magalhães, 2021), the protocols emerged locally and spread horizontally. In the absence of coordinated sanitary policy, doctors from multiple medical specialties strived to render their own practice systematic by experimenting with slightly different interpretations of disease development stages and preferred or available drugs. After the Belém network, dozens of other ET experiences emerged from North to South, from federal universities to health insurance facilities. The names of individual doctors or cities became associated with moving models of ‘best practice’: Belém, Porto Feliz, the dr. Coimbra protocol based on Vitamin D, the dr. Dickson protocol based on ivermectin. Together, doctors and patients succeeded in lobbying locally for ET-based policies. Local and regional insurance plans began to distribute ‘COVID kits’ directly to their clients, and municipal health offices, some of which came to be headed by ET influencer-doctors, built their own COVID-19 ‘reference centers’ for treating patients in all stages of infection, and even preemptively.

The ET also became an accountability tool for municipal administrations, which began to conduct their own ‘studies’ and deploy outcomes as PR. Thus, the city of Sorocaba launched a social media campaign to announce that ‘a preliminary study found that early treatment has 99% efficacy’. In fact, the ‘study’ consisted in municipal agents calling 123 patients who received the treatment through the local public system, resulting in 122 individuals ‘cured at home’. After being blasted by the mainstream and social media, the city switched the term from ‘study’ to ‘data collection’, and increased numeric accuracy: ‘Of the patients who were monitored for covid-19 symptoms and received early treatment in Sorocaba, 99.19% were cured and 0.81% died’. However, the procedures and results were never withdrawn or changed.

Rather than being imposed from the top down, these local innovations responded to bottom-up pressure from patients, who acquired the habit of demanding and even imposing ET drugs on local health professionals and administrators. Through YouTube videos and Instagram feeds, they became increasingly empowered and acquainted with the technical jargon of

protocols: substance names and effects, their ideal measures in the body, prescribed dosages, and how to acquire and take them. Adherence to the treatment happened first online, and became a matter of client choice in an open and de-regulated medical market. Faced with a refusal to prescribe ET drugs, one could always find online recommendations for other doctors, or even get the prescriptions directly.

These patients were also key to spreading the ET gospel horizontally, by producing or sharing personal testimonies in smartphone videos relayed on social media and messaging apps. These first-hand accounts of COVID-19 and the ET reproduce the kind of storytelling that is highly efficacious in participatory social media and its underlying ‘i-pistemologies’ (Van Zoonen, 2012). Lay people learned and replicated ‘the protocol’ also by means of such narratives, which typically followed the pace of the three-stage model of disease development (infectious, pulmonary, and hyper-inflammatory) until a happy ending. Such patient testimonies may mingle, in a non-contradictory way, pharmaceutical and enchanted kinds of causalities (Comaroff and Comaroff, 2000; Ward and Voas, 2011) such as God’s will, positive thinking and avoidance of negative media, self-knowledge, or a healthily cultivated immune system. Just like the efficacy of the Bolsonaro campaign stemmed from his followers’ active engagement (Author), the ET became popular by the hands of patients.

Testimonial storytelling is not the only resonance between this ecosystem and Christian, especially evangelical, spiritualities. One of the authors witnessed an entire family become apostles of the ET. As one family member recounts:

With the treatment, it was different from the outset. Dr. João welcomed us at the institute saying we could remove the masks. He also took off his mask in order to speak to the families, and said he would not get infected because he had already taken the ‘COVID kit’. He requested multiple tests, closely monitored the entire family, the results, and checked on us on WhatsApp. One of the families’ results came back negative, and they believed it was the doctor who saved them.

After being ‘saved’, they went on to convert others. These former patients shared with the researcher the following conversation on WhatsApp, whereby they convinced other relatives to join the treatment:

*Expert-patient:* Look... X and I were taking Dr. João's cocktail. Those with COVID should take it for 5 days. If the test is negative, only one day.

*Convert:* All right, so I want this. I'm out of medicine now.

*Expert-patient:* I'll send you what's in it [screen prints of Dr. João's drug prescription).

*Convert:* I've taken ivermectin. The others, they must be compounded?

*Expert-patient:* Look. [The cocktail] eliminated the virus very quickly from X's body. If you took ivermectin there's no problem. You'll just take an extra dose. Dr. João explained that early administration is meant to smooth out the virus' impact, in case you get infected. If you want it, just come by my place. Let me know when you're coming and we'll leave it by the sidewalk. Bring a plastic bag to avoid contact with the surfaces we touched. We'll do our best to prevent infection.

Backed by the authority of medical prescriptions, the expert-patient feels entitled to prescribe the medication himself, and to bring more people into the community. In this example, the patients do not deny scientific knowledge, but follow simple sanitary norms, however misguided, so as to avoid infection. Early treatment is a kaleidoscopic configuration that affords points of contact with multiple configurations, including mainstream science. Like the alt-right, conspiratorialities and other contemporary movements with which it resonates (Ward and Voas, 2011), alt-science emerges at a crossroads between new and old identity segments that are algorithmically rearranged and redistributed by the platforms to form emerging assemblages (Lury and Day, 2019).

Finally, as these examples also show, the ET ecosystem takes full advantage of participatory and mimetic affordances in the data-driven attention economy. As a bottom-up fast policy, the protocol replicated horizontally through emulation, as common users copied and scaled up not just digital objects - prescriptions and guidelines - but, most importantly, the core doctor-patient relationship of trust and care. Mimetic and participatory replication works because

it takes on not just an affective form, but a practical one. To be more precise, it often takes on an elementary, 'If/then' algorithmic form: if such and such symptoms appear, or if such and such count comes up in the blood test, then you take such and such drug dose. The federal government even released a pilot app, TrateCov, which converted patients' symptoms and medical histories into drug recommendations - which was denounced and taken down for consistently leading to ET outputs.

These patterns suggest, once again, resonances between the ET ecosystem and the alternative right, regardless of whether or not individual doctors or patients openly support Bolsonaro - even if that seemed to be most often the case. Like algorithmically-mediated forms of populism (Maly, 2020; Gerbaudo, 2019), the ET ecosystem builds on participatory social media's circular loops, affording the fractal replication of its basic unit - the doctor-patient relation - across its sprawling ecosystem. As the previous section noted, this relationship is built on trust, but of a different kind than the one underlying conventional expert systems. Key to its efficacy is the experience of disintermediation that user-based social media affords, which, as Van Zoonen (2012) claims, leads to an integration of all cognitive work around individuals. Disintermediation furthers the collapsing of contexts (boyd, 2011) between lay and expert knowledge in the hybrid figures of the influencer-doctor and the expert-patient (Petersen, Schermuly and Anderson, 2019), both emerging as collaborating subjects of alt-science.

### **Concluding remarks: neoliberal-digital resonances**

Like other iterations of pandemic skepticism (Lee et al., 2021), the alt-science of early treatment emerged from the fringes of mainstream expert systems and proliferated on the Internet's poorly regulated milieu by taking advantage of platforms' existing affordances. Our analysis of the ET ecosystem suggests however, that science skepticism is not the only analytical angle for framing this complex phenomenon. Much of ET knowledge practices in fact reflect ongoing tendencies in the double process of neoliberalization and digitalization of patient activism, medical research, and pharmaceutical commodification strategies in the age of big data (Lupton, 2014; Petersen, Schermuly and Anderson, 2019). This process is not limited to the medical field, but bears striking similarities with how the contemporary literature on

neoliberalism describes its emergent rationalities and practices at large (Comaroff and Comaroff, 2000; Connolly, 2005; Rose, 2006; Klein, 2010; Peck, Theodore and Brenner, 2012; Chun, 2011; 2016; Brown, 2019; Mirowski, 2019). We would like to conclude by suggesting that resonances between alt-science, radical right populism, conspiratorialities and other anti-establishment, digitally efficacious movements manifest a deeper infrastructural convergence between neoliberalization and digitalization that deserves further transdisciplinary attention.

In new media studies, Wendy Chun has perhaps gone the farthest in laying out such dovetailing of neoliberal and digital infrastructures. She argued that both unfold on a networked spatiality animated by a temporality of permanent crisis, where individuals must continuously update themselves in a competitive milieu just in order ‘to remain the same’ (Chun, 2016). Like the Hayekian understanding of the market as privileged information processor whose ultimate truth remains inaccessible to individuals until it is performatively enacted (Mirowski, 2019), commoditized software is ‘secured from user interventions and understanding’ (Chun, 2011, 92). Yet, both markets and software afford individuals ‘a taste of real time empowerment and agency’, evincing ‘(the illusion of) mythical and mystical sovereign subjects who weld together norm with reality, word with action.’ At the same time, this experience of self-sovereignty is constantly undermined ‘by catching and exhausting us in an endlessly repeating series of responses’ or crises (92). The neoliberal dialectics of safety-crisis, order-disorder therein produced (Chun, 2011; Comaroff and Comaroff, 2004) sustains a paradoxical state of permanent exception that, we suggest, is the wider background against which the social efficacy of ET alt-science can be best understood.

Drawing on Agamben and Derrida, Chun contends that crises and the states of exception they sustain call for ‘extraordinary responses, moments of undecidability’ (2011, 99). As such, they undo liberal democracy’s separation of executive, legislative and judicial branches, authorizing a ‘norm “without any reference to reality”’ (100) that closely resembles Kuhn’s description of moments of paradigm crisis in science (Kuhn, 2012). In the ET ecosystem, such welding of (suspended) law and decision meet in the autonomy of medical doctors over how and with what to experiment. It is then fractally replicated to patient-experts and other interest groups who are drawn into the ecosystem for different reasons. Algorithms play a part by making automated decisions where human agency – including, in the Brazilian case, that of the sovereign himself (Abreu, 2019) – is bound by undecidability. As such, they help realign individuals’ sense of safety, truth and order lost on the face of emergency: “If... then...”.

In this sense, the social efficacy of early treatment during the political-scientific state of exception lies in how it dialectically responds to the full spectrum of contemporary neoliberal paradoxes. It warrants mobility and a sense of freedom in a context of precarity where immobility (lockdown) would mean economic decay and death. It affords safe spaces for community and reciprocity protected from external competition and antagonism. It offers bottom-up adaptability and decentralization where planned and coordinated public policy is lacking. It liberates individual forms of entrepreneurial innovation, evidence production, and self-auditing where collective regulations are suspended or unenforceable. It affords the empowerment and agency of individuals against a threat that they cannot trust 'the system' to fight, where the alternative would be to sit at home helpless and afraid, following authoritarian orders from unrepresentative politicians and pundits. No wonder, then, that private actors – medical doctors, health insurance plans, businesspersons, precarious workers, small entrepreneurs, digital influencers – were at the forefront of the ET movement in Brazil.

Platform infrastructures did not create the ET ecosystem in any linear causal sense. But they afforded its growth by occupying voids that, although previously in place, were enhanced by the pandemic state of exception and by digitalization itself: internet data voids, regulatory and public investment voids wrought by recent neoliberal reforms, unexplored market niches, the president's undecidability and medical populism. Above all, they afforded the emergence of ET as a spontaneous, bottom-up 'crisis-induced, crisis-inducing form' (Peck, Theodore and Brenner, 2012, 268) of market-driven restructuring, wherein converge other cogs of the neoliberal-conservative machine (Connolly, 2005; Comaroff and Comaroff, 2000, 2004; Brown, 2019). Our effort here was to show how platform infrastructures play a key part in oiling that machine - most likely with the kind of snake oil that is also characteristic of a neoliberal configuration obsessed with lifting market regulations that, as Foucault (2008) pointed out, were originally erected in order to prevent fraud.

## **References**

Abidin C (2021) From ‘networked publics’ to ‘refracted publics’: a companion framework for researching ‘below the radar’ studies. *Social Media + Society*. Epub ahead of print 21 January 2021. DOI: [10.1177/2056305120984458](https://doi.org/10.1177/2056305120984458).

Abreu MJ (2019) Before anything, above all: no decision. In: *The Immanent Frame*. Available at: <https://tif.ssrc.org/2019/04/09/before-anything-above-all-no-decision/> (accessed 14 May 2021).

Artieri G, Brilli S and Zurovac E (2021) Below the radar: private groups, locked platforms, and ephemeral content—Introduction to the Special Issue. *Social Media + Society*. Epub ahead of print 19 January 2021. DOI: [10.1177/2056305121988930](https://doi.org/10.1177/2056305121988930).

boyd d (2011) Social network sites as networked publics: affordances, dynamics, and implications. In: Papacharissi, Z (ed) *A Networked Self: Identity, Community, and Culture on Social Network Sites*. New York: Routledge, pp. 39–58.

Brown W (2019) *In the Ruins of Neoliberalism: The Rise of Antidemocratic Politics in the West*. New York: Columbia University Press.

Campinas M (2020) Standards and urgency in times of pandemics: hydroxychloroquine as a pharmaceutical and political artefact. In: *Somatosphere*. Available at: <http://somatosphere.net/2020/standards-urgency-hydroxychloroquine-political-artefact.html/> (accessed 14 May 2021).

Casarões G and Magalhães D (2021) The hydroxychloroquine alliance: how far-right leaders and alt-science preachers came together to promote a miracle drug. *Revista de Administração Pública* 55(1): 197–214.

Chun W (2011) Crisis, crisis, crisis, or sovereignty and networks. *Theory, Culture & Society* 28(6): 91–112.

Chun W (2016) *Updating to Remain the Same: Habitual New Media*. Cambridge, MA: The MIT Press.

Comaroff J and Comaroff J (2000) Millennial capitalism: first thoughts on a second coming. *Public Culture* 12(2): 291–343.

Comaroff J and Comaroff J (2004) Criminal obsessions, after Foucault: postcoloniality, policing, and the metaphysics of disorder. *Critical Inquiry* 30(4): 800–824.

Connolly W (2005) The evangelical-capitalist resonance machine *Political Theory* 33(6): 869–86.

Foucault M (1982) The subject and power. *Critical Inquiry* 8: 777–795.

Foucault M (2008) *The Birth of Biopolitics: Lectures at the Collège de France, 1978-1979*. London: Palgrave.

Gerbaudo P (2019) *The Digital Party: Political Organisation and Online Democracy*. London: Pluto Press.

Gould S and Norris S (2021) Contested effects and chaotic policies: the 2020 story of (hydroxy) chloroquine for treating COVID-19. *Cochrane Database of Systematic Reviews* 2021, Issue 1. Art. No.: ED000151.

Gray J, Bounegru L and Venturini T (2020) ‘Fake news’ as infrastructural uncanny. *New Media & Society* 22(2): 317–41.

Hodges A (2020) Plausible deniability. In: McIntosh J and Mendoza-Denton N (eds) *Language in the Trump Era: Scandals and Emergencies*. Cambridge: Cambridge University Press, pp. 137–49.

Klein N (2007) *The Shock Doctrine: The Rise of Disaster Capitalism*. Toronto: Knopf.

Kuhn T (2012) *The Structure of Scientific Revolutions*. Chicago: University of Chicago Press.

Laclau E (2007) *On Populist Reason*. New York: Verso.

Latour B and Woolgar S (2013) *Laboratory Life: The Construction of Scientific Facts*. Princeton: Princeton University Press.

Lee C, Yang T, Inchoco G, Jones G and Satyanarayan A (2021) Viral visualizations: how coronavirus skeptics use orthodox data practices to promote unorthodox science online. *Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems*, May, 1–18

Lury C and Day S (2019) Algorithmic personalization as a mode of individuation. *Theory, Culture & Society* 36(2): 17–37.

- Maly I (2019) New right metapolitics and the algorithmic activism of Schild & Vrienden. *Social Media + Society* 5(2): 1–15.
- Marres N and Stark D (2020) Put to the test: for a new sociology of testing. *The British Journal of Sociology* 71(3): 423–43.
- Mirowski P (2019) Hell is truth seen too late. *Boundary 2* 46(1): 1–53.
- Monari AC, Santos A and Sacramento I (2020) COVID-19 and (Hydroxy)Chloroquine: A Dispute over Scientific Truth during Bolsonaro's Weekly Facebook Live Streams." *Journal of Science Communication* 19(7): 1–17.
- Nobre, M (2021) The global uprising of populist conservatism and the case of Brazil. In: Klaus-Gerd G (ed) *Ideologies in World Politics*. New York: Springer, pp. 157–78.
- Peck J, Theodore N and Brenner N (2012) Neoliberalism resurgent? Market rule after the Great Recession. *South Atlantic Quarterly* 111(2): 265–88.
- Petersen A, Schermuly AC and Anderson A (2019) The shifting politics of patient activism: from bio-sociality to bio-digital citizenship. *Health* 23(4): 478–494.
- Popper K (2002) *The Logic of Scientific Discovery*. New York: Routledge.
- Rose N (2006) *The Politics of Life Itself: Biomedicine, Power, and Subjectivity in the Twenty-First Century*. Princeton: Princeton University Press.
- Rushkoff D (2013) *Present Shock: When Everything Happens Now*. London: Current.
- Seaver N (2019) Captivating algorithms: recommender systems as traps. *Journal of Material Culture* 24(4): 421–36.
- Strathern M (2000) *Audit Cultures: Anthropological Studies in Accountability, Ethics, and the Academy*. Londres: Routledge.
- Van Zoonen L (2012) I-pistemology: changing truth claims in popular and political culture. *European Journal of Communication* 27(1): 56–67.
- Ward C and Voas D (2011) The emergence of conspirituality. *Journal of Contemporary Religion* 26(1): 103–21.

