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# Resistance in the data-driven society

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**Keywords:** Infrastructure, Agency, Datafication, Resistance, Tactics

**Abstract:** Individuals and groups increasingly seek to resist the harms and risks of a data-driven society. This essay explores the possibility of individual and collective resistance vis-à-vis datafication, drawing on examples from across the globe. It shows how infrastructure, political agency, and tactics have changed in response to datafication. It reviews six resistance tactics, distinguishing between “defensive resistance” and “productive resistance”: self-defence, subversion, avoidance, literacy, counter-imagination, and advocacy campaigning. Investigating them offers insights on the ability of social actors to contribute to innovation in mobilising practices amidst intrusive surveillance.

# Introduction

In the 1930s, Mahatma Gandhi led nonviolent resistance in India, refusing to cooperate with the colonial system. Between 1943 and 1945, the Italian resistance movement carried out disruptive actions against the fascist regime in the country. In 1955, African American activist Rosa Parks defied bus segregation in the US by refusing to give up her seat to a white passenger. In the 1980s, South African activists and hackers built an autonomous encrypted communication network to coordinate resistance against the apartheid system. Since the mid-1990s, the indigenous Zapatista Army of National Liberation in

Chiapas (Mexico) has used both on-the-ground and online resistance tactics to combat injustice and dispossession. These examples share a common thread: individuals and groups historically engaged in resistance to challenge structural conditions of injustice and inequality, such as laws, state authority, and other forms of power perceived as unjust. Resistance has a long-standing tradition, spanning different regions and periods, united by the drive to confront and dismantle oppression. However, how are resistance practices adapting and evolving in today's increasingly data-driven and digitalised society?

Resistance refers to intentional actions taken in opposition to someone or something, arising from a refusal to conform to social norms or accept the status quo (or changes to it). It can vary in both the visibility of the act itself and the degree of intent or consciousness behind it (Hollander & Einwohner, 2004).

The datafication of our societies – the process by which various aspects of human life are converted into data, which are then traded and analysed to generate meaning and value (Mejias & Couldry, 2019) – has introduced new concerns, calling for fresh strategies of resistance that address the unique risks and harms of data-driven societies, such as biometric surveillance (Andrejevic & Selwyn, 2022). Exposing blanket mass surveillance by the U.S. National Security Agency and its siblings worldwide, the Snowden leaks (2013-2016) have marked a point of no return in surveillance policy and its perception by the citizenry (Hintz & Brown, 2017). In 2014, the uproar at Facebook’s strict implementation of its real-name policy, which required users to indicate their legal name when registering an account, forced the company to accommodate the requests of vulnerable communities in fear of using their legal name online, such as transgender and gender variant users (Haimson & Hoffmann, 2016). In 2019, Hong Kong protesters mobilising against a proposed extradition bill took down the “smart lampposts” dotting the city, feared to harbour facial recognition software identifying them as activists (Binder, 2019). These examples expose how datafication has multiplied the occasions of resistance – and the reasons to do so. Campaigns and awareness-raising initiatives have multiplied. Resistance, however, may appear more complicated to organise, less effective, hardly visible, and potentially futile given the diffuse nature of the structures and practices it targets.

This essay takes an interdisciplinary perspective to explore the possibility of individual and collective resistance in the data-driven society, drawing examples from around the world. It is structured in three parts. The first section offers a historical overview of the evolution of resistance. The second examines three key transformations in resistance within a data-driven society: infrastructure, political agency, and tactics. The third section focuses on six effective resistance tactics for addressing the challenges of datafication: self-defence, subversion, avoidance, literacy, counter-imagination, and advocacy campaigning. This essay argues that the progressive digitalisation and datafication of society, coupled with the rise of intelligent systems (or artificial intelligence, henceforth AI), have fundamentally reshaped the possibilities for resistance. However, analysing the discontents of datafication provides valuable insights into how social actors more broadly can innovate resistance practices.

## 1. From the cotton fields to the web: resistance tactics in context

Resistance is as old as power abuse, or, to say it according to Foucault, “where there is power there is resistance” (1976/1978, p. 95). The “action repertoire” (Tilly, 1981) of resistant actors is diverse, ranging from sabotaging work tools, staging collective slowdowns, and simulating illness of enslaved Africans on American soil, to contemporary forms of cultural resistance where the digital is both tool and object of resistance. Resistance tactics can be violent or non-violent, overt or concealed, practised individually or collectively. To understand resistance in context with respect to the variety of tactics available to protesters, I draw on examples from the last century to the present day.

Gandhi and his followers in the Indian Independence Movement (1930s-1940s) headed large protests against the colonial rulers, but also fought unjust laws in court (Gandhi was attorney-at-law), and staged large-scale boycotts of British goods, such as salt (Nojeim, 2004). The world-famous *Diary of Anne Frank* (1947), published after 15-year-old Jew Anne died in the concentration camp of Bergen-Belsen in 1945, is testimony to the silent resistance of many Dutch citizens against the Nazi rule: they actively hid, protected, and fed Jewish dwellers after deportation intensified in 1942. French and Italian partisans, among others, embraced violent guerrilla tactics to oppose the occupiers, sabotaging tanks, attacking and killing Hitler's and Mussolini's forces, and blowing up infrastructure such as bridges to slow down the advance of the enemy (Cooke, 1997). Guerrilla tactics also characterised the resistance in the 20th century African Independence Movements, which contributed to ending colonial rule in Algeria, Madagascar, and Mozambique among others (see Chaliand, 1982). On the contrary, the Tibetan resistance movement, protesting Chinese domination, still today embraces tactics as diverse as protest and self-immolation (Makley, 2015). The 2010-2012 Arab Spring, a series of pro-democracy uprisings that swept through the Middle East and North Africa led to regime change by means of largely peaceful tactics, supported also by social media use (Gerbaudo, 2012). Today, environmental activists advocate for climate action blocking traffic and motorways, staging school strikes, damaging artworks, and deliberately seeking to be arrested (Sorce & Dumitrica, 2023).

Resistance as a multifaceted socio-political and cultural phenomenon has been of concern to several scholarly fields, including sociology and political science, cultural studies, post-/decolonial studies, gender and queer studies, and media studies. A cursory literature review reveals the diversity of available tactics and their central features.

Sociologists and political scientists see resistance as a central element in the repertoire of "contentious politics" (Tilly & Tarrow, 2007), that is to say it is one of the options available to social actors to provoke change. Because "resistance and rebellion are costly" (Tilly, 1991, p. 594), resources available to movements (e.g. financial support, social capital, organisational networks) matter for resistance to be effective, as does the dynamic interaction with the political environment ("political opportunities") (McAdam et al., 1996). Actors are known to develop new tactics in response to the changing political environment (see Wang & Soule, 2016). But resistance is not limited to overt and organised action. Scott's writings on "everyday forms of resistance" (1985) emphasise how the marginalised engage in subtle, hidden, and creative ways of resisting oppression – the so-called "hidden transcripts" (Scott, 199o), whose performative nature contributes to the renegotiation of power relations.

Cultural studies have examined the role of cultural forms of resistance, including (youth) subcultures and countercultures, in fighting back mainstream values and fostering the acceptance of alternative identities and lifestyles (e.g. Hall & Jefferson, 1976). Hall's work on cultural identity, hegemony, and encoding and decoding media messages points to ways in which people resist dominant discourses: the “margin of understanding” allows individuals to reclaim their own interpretations (Hall, 1973). De Certeau’s notion of “tactics” (1984) exposed how ordinary people enact creative resistance to dominant structures by momentarily seizing spaces of autonomy in often defensive and opportunistic ways.

Within gender and queer studies, resistance foregrounds the role of the personal and the everyday in resisting societal norms and oppressive structures. Deconstructing the role of language in perpetuating repression, Butler (1990) exposed how everyday actions and performances of individuals contribute to challenge normative gender identities. Exploring the intersectionality of gender, race, and capitalism as a flywheel of oppression, bell hooks (1994) laid bare how resistance can be embodied through self-love, education, and transformative feminist praxis. Esteban Muñoz’s notion of “disidentifications” (1999) explored how marginalised individuals resist dominant cultural norms; in her view, resistance consists in the practice of envisioning alternative futures.

The notion of resistance is central to both postcolonial and decolonial studies, whose scholars are concerned with understanding and challenging the legacy of colonialism. The focus is on the agency of colonised and oppressed peoples pushing back against the systems of control, ideologies, and cultural erasure that stemmed from colonial rule (Bhambra, 2007). These communities actively seek to decenter Western predominant views by practising “epistemic disobedience” (Mignolo, 2009). “Subaltern knowledges” (Mignolo, 2000) emerge and thrive within “territories of difference”: sites of resistance where the marginalised challenge the homogenising forces of modernity by asserting their own knowledge systems, identity, and forms of governance (Escobar, 2008).

From a communication and media studies perspective, scholars have looked at how media contribute to disseminating resistance narratives and alternative frames, shaping public discourse and mobilising support (e.g. Meikle, 2002; Hackett & Carroll, 2006). The explosion of digital resistance – the employment of digital channels and devices (e.g. camcorders, social media, smartphones…) to fuel resistance and support protesters but also the emergence of digitally-native resistant coalitions such as Anonymous – has resulted in the burgeoning literature on hacking (e.g. Maxigas, 2012; Coleman, 2013; Toupin, 2016), hacktivism (Jordan, 2002; Milan, 2015), and digital resistance and digital activism more in general (see, among others, Karatzogianni & Michaelides, 2009; Fuchs, 2014; Treré, 2019). Resistance through the digital includes both (sub)cultural elements and tech-based ways of evading control; the literature stresses the role of the infrastructure in shaping tactics, possibilities, and outcomes.

## 2. The evolution of resistance practices in a data-driven society

How have resistance practices evolved in response to datafication? Three key changes define the evolution of resistance amidst datafication, focusing on infrastructure, political agency, and tactics. The three dimensions pertain to the areas where the effects of datafication are most strongly felt. The infrastructural dimension relates to the shifting structural conditions of power and inequality, which have been reshaped by the advent of the data-driven society. Meanwhile, the changes in political agency and tactics highlight the evolving roles and strategies of social actors in this new landscape.

Infrastructure concerns the overall structural conditions under which resistance unfolds today. These include, e.g. a digitalised and datafied public sphere, whereby public discourse unfolds in countless platforms and supports where algorithms tailor content according to individual preferences and behaviours. Infrastructure has an impact on how resistant actors reach out to like-minded individuals and the public. On the one hand, occasions to connect to bystanders have multiplied, having removed the bottleneck of traditional media outlets (Ryan, 1991). On the other hand, messages proliferate, audiences are more diffused than ever, and digital commitment does not always translate into embodied action, undermining the sustainability of resistance itself (Dencik & Leistert, 2015). Moveover, as the example from Hong Kong demonstrates, intrusive surveillance technologies in public spaces, such as facial recognition cameras, pose additional risks to individuals participating in acts of resistance.

Political agency refers to the ability of social actors to engage with, and react to, the context in which they are embedded so that they are able to change their relation to it (Milan, 2018, p. 512). It is rooted in the process of “making sense of the world so as to act within it” (Couldry, 2014, p. 891). These interpretative processes allow people, individually and in interaction with one another, to take action engaging in resistance. But today interpretative processes are deeply affected by the algorithmic ecosystem that mediates interpersonal interactions and worldviews and forms of “biopower” (Foucault, 2004/2008) that hinder identities (Cheney-Lippold, 2011) – with a variably detrimental effect on people’s autonomy, exposure to diverse perspectives, and decision-making abilities (Susser et al., 2019).

Finally, tactics have evolved too, from the foot dragging techniques of enslaved Africans to the attempt to rescue from deletion of precious environmental data threatened by the Trump administration (Vera et al., 2018). The main innovation concerns the incorporation of digital and datafied elements. For instance, activists engaging in feminist affective resistance exploit platform features to make their social media feed “work for them” (Schoettler, 2023). As social movement studies literature illustrates, the repertoire of contention continuously expands to adapt to the current socio-technical context, while including constant elements, too. Tactical innovation is flexible, creative, and incremental (see Taylor & Van Dyke, 2004).

The changes in infrastructural conditions, political agency, and tactics reviewed above expose how today resistant actors have become “datafied”. In other words, any type of contentious action, regardless of the area of concern, evolves *vis-à-vis* the totalising effects of datafication (Milan & Beraldo, 2024). As a result, to understand resistance in the data-driven society we ought to consider the socio-technical, systemic effects of data and data infrastructure on action dynamics, and how people resist datafication itself, in the assumption that this less visible yet cross-cutting repertoire helps to chart the future of resistance more in general. For this reason, what follows focuses on resistance *to* datafication, although it is still largely the domain of expert communities (Dencik et al., 2016).

## 3. Defensive and productive resistance to a data-driven society

What tactics empower individuals and collectives to resist the oppressive dynamics of datafication? This section reviews six tactics that have emerged as a response to data-driven surveillance, data exploitation, and privacy erosion, namely self-defence, subversion, avoidance, literacy, counter-imagination, and advocacy campaigning. These tactics are not mutually exclusive, and often are implemented in combination. They include instances of both mundane, everyday resistance – non-coordinated, apparently invisible, and often not spectacular at all – and “full blown” resistance, when resistant acts are the result of coordination and designed to become visible; both approaches harbour political intent. In broad strokes, the six tactics can be grouped in two macro-categories, accounting respectively for defensive resistance and “productive resistance” (Ettlinger, 2018).

The first group, that accounts for *defensive resistance*, enacts resistance by addressing the socio-technical infrastructure of datafication, that is they take the technological dimension as main point of reference, including turning it into a tool of resistance itself.

## #1 Self-defence

Self-defence refers to the adoption of software tools to bypass surveillance, state snooping, and the data exploitation perpetrated by tech companies, but includes also a variety of behavioural techniques of neutralising surveillance such as masking or blocking (Marx, 2003). For example, to sidestep government censorship or repression in countries where freedom of expression is under threat, such as Russia, human rights defenders use encrypted messaging apps to communicate safely and virtual private networks (VPNs) to find and share information (Ermoshina & Musiani, 2022). The operating system *Qubes* empowers users to improve the security of their data by “compartmentalizing” one’s digital life (Kazansky & Milan, 2021). Self-defence can be ascribed to the rubric of “reactive data activism” (Milan & van der Velden, 2016), whereby individuals and groups react to the threats to civil and human rights that derive from corporations and governments by means of technical solutions. It is also associated with the notion of “anticipatory data practices”, which highlight the future-oriented nature of tactics offering “a heuristic for action amidst the persistent uncertainties of life with data” (Kazansky, 2021): activists seek to “play ahead”, pre-empting harms. The rubric also includes “quiet”, seemingly invisible individual practices that do not require coordination with others. These practices are politically motivated, yet often habitual and only partly conscious, such as browsing anonymously or turning off your phone's geolocation feature. These everyday practices of self-defence are adopted by subjects who have little ability to change the system, but that want to contribute to undermining power without revealing themselves (Vinthagen & Johansson, 2013).

## #2 Subversion

Subversion is aimed at destabilising the dynamics and structures of the data-driven society. It embraces a broad spectrum of tactics that go from guerrilla methods like sabotage to foot-dragging techniques of disruption such as polluting data collection to “put sand in the machine”, which signal refusal to comply. Examples of the former are Hong Kong pro-democracy protesters taking down lampposts but also forms of intentional disobedience like whistleblowing (leaking confidential information to expose unethical practices by powerful entities), oriented to deliberately breaking the rules of a system (Di Salvo, 2019). *Go Rando*, a web browser extension, is an example of the latter: it obfuscates a user’s feelings on Facebook, introducing noise in user profiling (Milioni & Papa, 2022). Similarly, consumers may swap loyalty cards to muddle the records of supermarket purchases. This approach is known as “data obfuscation”, a tactic combining “informational resistance, disobedience, protest or even covert sabotage” and “a form of redress in the absence of any other protection and defence, and one which disproportionately aids the weak against the strong” (Brunton & Nissenbaum, 2013, p. 171). In-between guerrilla and procrastination techniques, we find coordinated attempts at exploiting the features of a system in view of disturbing its functioning, like when individual users simultaneously flood social media hashtags or images to change the dominant narrative or expose their outrage. The 2018 #DeleteFacebook campaign is a case in point: platform users exploited its popularity mechanisms as a “backlash to the dominant model of platform capitalism” (Mills, 2021, p. 852).

## #3 Avoidance

This form of defensive resistance includes a variety of tactics, ranging from escape to non-cooperation to promoting self-sufficiency. While this rubric covers a broad spectrum of strategies, they all share a common goal: “rejecting digital life or parts thereof” (Ettlinger, 2018, p. 5) to avoid the harmful effects of datafication on personal and social life. Under the “escape” category, examples include boycotts and economic resistance, such as refusing to buy products or services considered intrusive (e.g. smartphones), or avoiding purchases from certain companies. Digital disconnection is also an increasingly popular practice whereby individuals decide to abandon (social media) platforms as a form of political resistance (Kaun & Treré, 2018). The project “web 2.0 suicide machine” supports users to “delete all your energy sucking social-networking profiles, kill your fake virtual friends, and completely do away with your Web2.0 alterego” (http://suicidemachine.org; see also Milioni & Papa, 2022, n.p.). There are also both digital and analog attempts to resist the consequences of datafied technologies, such as profiling and identification (or “non-cooperation”). Movement-operated internet servers refused to comply with the European Data Retention Directive (2006/24) and did not retain their users’ data traffic information (Hintz & Milan, 2009). And privacy-concerned individuals may hide their face while walking past a facial recognition camera, which is perceived as defying their ability to be anonymous in public space. Although not coordinated, these mundane, everyday acts of resistance are nonetheless carried out with political intent (Madison & Klang, 2019). Finally, the creation of alternative platforms and forms of governance (“self-sufficiency and autonomy”), and their self-sufficient user communities, also offers a way out of data-sucking infrastructure (Lovink & Rasch, 2013; Lynch, 2020; Couture & Toupin, 2019).

The three tactics discussed next are rooted in forms of cultural resistance and target the symbolic aspects of a data-driven society, such as social norms, values, and perceptions. They fall under the macro category of *productive resistance*, whereby “digital subjects may act critically on their freedom to challenge digital norms by making use of the affordances of the digital environment to produce *new* elements that serve their needs" (Ettlinger, 2018, p. 2; emphasis added). In Ettlinger's work, productive resistance is described as being in contrast to resistance through avoidance, disruption, and obfuscation. Its significance lies both in its potential to influence the mechanisms of digital governance and in the agency it embodies, which is viewed as "an end in itself" (2018, p. 1-2).

## #4 Literacy

Alongside tech-based forms of resistance, cultural and artistic resistance has a role to play in fostering norm and system change. Literacy is one such tactic that intervenes at the symbolic level. It is a broad category that subsumes efforts at teaching and learning how to protect individual liberties and retain a certain degree of opacity in times of data-driven surveillance (Fotopoulou, 2020). Popular examples of literacy and self-education initiatives include the so-called "Cryptoparties", also known as "Privacy Cafés", whereby experts teach low-skill users personal privacy practices, including how to defend the privacy of their communications (Monsees, 2020). Digital rights organisations globally provide their stakeholders with technological guidance and off-the-shelf tools for digital self-protection to improve "data-driven resilience" (Kazansky, 2023). They seek to make "specialized" technological information accessible so as to resonate with the experiences of their target audiences ("cultural information framing") (Daskal, 2018). Importantly, literacy efforts are closely tied to community building, which involves creating supportive networks of mutual aid and protection that often endure beyond isolated events,like a single training event. Furthermore, the literacy rubric includes coordinated efforts at countering the negative effects of datafied media, such as misinformation or propaganda, by debunking false narratives and promoting awareness and critical thinking. For example, during the Covid-19 crisis, Brazilian data activists sought to produce "alternative" evidence about the pandemic by gathering and making available data, countering governmental narratives denying the severity of the virus (Füssy, 2021).

## #5 Counter-imagination

Counter-imagination is a form of narrative intervention that seeks to create alternative narratives that challenge dominant discourses and/or to flip the perspective on problematic aspects of datafication (Kazansky & Milan, 2021). Counter-imaginaries are a way for people to make sense of datafication and respond to its harms and risks. They present "different ways of thinking about what algorithms are and do", which affect how people use these systems (Bucher, 2017, p. 32). They are continuously renegotiated, in interaction with technological development and societal understanding (Kazansky & Milan, 2021). The Brazilian project *Chupadados* reversed the narrative around “data-hungry” period tracking apps, marketed as a tool of women’s empowerment, exposing how they merely reproduce “the same old capitalist and patriarchal discourses to create new ways of making use of our bodies and sexuality to sell us products and poor ideas about ourselves” (Felizi & Varon, n.d.). The creative project *CV Dazzle* mobilised fashion, including make-up and hairdos, as camouflage to counter face-detection technology (see Cerella, 2019). Projects of this kind, however, have been criticised for promoting an“aestheticization of resistance premised on individual avoidance rather than meaningful challenge to the violent and discriminatory logics of surveillance societies” (Monahan, 2015, p. 159). Finally, forms of defensive resistance are themselves also subjects of discursive struggles: encryption, for example, has been most often associated with negative conceptions of internet freedom, as “freedom from” the state, excluding other possible, positive meanings (Hellegren, 2017).

## #6 Advocacy campaigning

The last tactics of productive resistance reviewed here is a classic of mobilisations across latitude. It involves the concerted effort to resist the harms and risks of the data-driven society by asking for better rules and laws, or for the suspensions of industry and/or state practices considered detrimental to civil society. Simultaneously, advocacy campaigning informs bystanders about risks and challenges and mobilises them to create a critical mass supporting the demands. Advocacy campaigning might also include efforts at documenting and archiving evidence of injustices to mobilise it for action; legal strategies such as strategic litigation, using a paradigmatic case to challenge unjust laws or practices; and alliance-building to generate solidarity and form coalition with other affected groups. Finally, advocacy campaigning can be local, national, or transnational, or combine some of these levels of interventions. For example, the *Reclaim Your Face* campaign (2020-...) mobilises across the European Union to demand a ban for facial recognition technology in public space. It presents the technology as “dehumanizing” and counts on national chapters as well. Similarly, the campaign *Ban the Scan*, promoted by the human rights organisation Amnesty International, advocates for the suspension of the use of facial recognition in policing because it is discriminatory and threatens the right to protest. It calls on vendors to stop the provision of these technologies to law enforcement. The website documents the effects of this technology (“Stories”) and offers a toolkit to resist surveillance at a street protest.

## Conclusion

Resistance is a key means of mobilising for social transformation, and it is evolving under the pressures of an increasingly data-driven society. This essay has explored how resistance practices are tackling the risks and harms of datafication, where human rights such as privacy are jeopardised and inequality augmented by, among others, biometric surveillance. While showcasing people's response to the advance of a data-driven society, the tactics reviewed here also expose the ability of social actors to contribute to tactical innovation to meet the challenges of an ecosystem in rapid transformation. In other words, looking at resistance *to* datafication allows us to understand how resistance broadly understood might evolve in the future, if it is to survive the test of time.

What does the future hold? We can identify two fundamental risks and two key challenges. The first risk lies in the growing complexity of digital technologies, such as artificial intelligence (AI) applications, which increasingly shape social governance. Their widespread adoption, virtual invisibility in the urban space, and inaccessibility, even to experts, make grassroots resistance more difficult. The second risk is the likely impracticality of certain defensive resistance tactics, such as escapist approaches, due to the growing reliance on smartphone apps for accessing essential services like welfare and identity verification, rendering these strategies increasingly unsustainable.

The two challenges centre on the expertise needed to resist the harms of a data-driven society and the ability to confront complexity in the matters of concern – which risk jeopardising in particular the defensive resistance tactics described above . First, the level of technical knowledge – whether perceived or real – required for self-defence and similar tactics may discourage most users from engaging in any form of resistance. Second, activists must find ways to effectively "translate" technical and specialised issues into accessible language and actions to combat the prevailing "surveillance realism" (Dencik, 2018) that dominates globally. This is where productive forms of resistance could play a crucial role.

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