

I Am Dissolving into Categories and Labels - Agency Affordances for Embedding and Practicing Digital Sovereignty

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**I AM DISSOLVING INTO CATEGORIES AND LABELS —
AGENCY AFFORDANCES FOR EMBEDDING AND
PRACTICING DIGITAL SOVEREIGNTY**

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ABSTRACT

While the notion of digital sovereignty is loaded with a multitude of meanings referring to various actors, values and contexts, this paper is interested in how to actualize individual digital sovereignty. We do so by introducing the concept of agency affordances, which we see as a precondition for achieving digital sovereignty. We understand this notion as the ability to exercise power *to*, as autonomy and agency for (digital) self-sovereignty, and as *power over* the infrastructural sovereignty of the privately owned automated decision-making systems (ADM) systems of digital media platforms. Building our characterization of digital sovereignty on an empirical inquiry into individuals' requirements for agency, our analysis shows that digital sovereignty consists of two distinct but interrelated elements—data sovereignty and algorithmic sovereignty. Enabling practicable digital sovereignty through agency affordances, however, will require going beyond the just technical and extending towards the wider societal (infra)structures. We outline some initial steps on how to achieve that.

1 INTRODUCTION

“I believe that intrusions into someone’s privacy affects their identity, personal development and even the process of becoming, being and remaining a person. Slowly, while working with my data I felt like I am dissolving in categories and labels.” (Respondent 10)

The notion of sovereignty is defined in Merriam-Webster (“Definition of SOVEREIGNTY” n.d.) as “unlimited power over a country” but also “supreme power” and “freedom from external control.” Looking at the synonyms section, we see the notions of “autonomy, freedom, independence, self-determination, self-governance” there. As Pohle and Thiel (2020) have pointed out, a shift is now happening; the meaning is moving away from the initial understanding of sovereignty as a condition to claim and exercise authority over a territory. While this meaning is still applicable, we can talk today about “the ability of individuals to take actions and decisions in a conscious, deliberate and independent manner.”(Pohle and Thiel 2020, p. 11). When it comes to digital sovereignty, things aren’t getting simpler. Digital sovereignty can be understood in many ways and can be used synonymously and interchangeably with related notions (e.g., data or cyber sovereignty)⁴ and by different actors (Couture and Toupin 2019). The definition of the notion of (data) sovereignty also varies in terms of the actors involved, the contexts and domains referred to, and the values ascribed to it (Hummel et al. 2021). This ranges from governments understanding digital sovereignty as “the idea that states should reassert their authority over the internet” (Pohle and Thiel 2020, p. 2) to the claims of social movements that sovereignty relates to the “technologies developed from and for civil society” (Couture and Toupin 2019), to individual sovereignty (Pohle and Thiel 2020, Hummel et al. 2021).

This paper deals with the latter meaning of the notion and touches upon the notions of user (individual) autonomy, self-determination, control, and agency. We define digital sovereignty as an individual’s ability to have control over their data and digital “life” and an ability to reject, oppose, and steer their own behavior with self-determination and autonomy, freed from external influences. This control and autonomy over one’s digital life also extends to the outputs of the data processing activities (profiling, personalization, recommendations, and automated decision-making) and implies ability and the capacity to act with autonomy, control, and self-determination based on self-reflection when facing or being subjected to these algorithmic decisions. We understand this notion as an ability to exercise power *to*—as autonomy and agency for (digital) self-determination, self-actualization, and self-sovereignty—and as a *power over* the infrastructural sovereignty of the private owned ADM

⁴ For a good overview of the notion of digital sovereignty and data sovereignty, see Pohle and Thiel (2020), Couture and Topin (2019), and Hummel et al. (2021).

systems of digital media platforms. The results of the empirical research we conducted show that digital sovereignty consists of two inter-related forms of sovereignty—what we can call *data sovereignty* and *algorithmic sovereignty*. The analysis also shows that sovereignty is closely intertwined with the notion of agency. To enable the practicing of digital sovereignty, we propose enabling sovereignty through agency affordances, understood as programmed functions and embedded features in the algorithmic systems that should enable, afford, and make the agency of individuals operational and actionable (authors, in preparation).

With this paper, we present the results from our empirical research and elaborate on the characteristics of digital sovereignty and its two elements—data and algorithmic sovereignty. We then introduce the notion of agency affordances and propose ways for their embedding in technology. We further discuss what else is needed to practice digital sovereignty.

2 METHODOLOGICAL APPROACH

Our theorizing about individuals’ digital sovereignty and its relationship with agency is the result of an empirical inquiry aiming to discover the requirements of individuals for agency when they are interacting with or subject to automated decision-making (ADM). With our research design, we aimed to obtain empirical insights from “real-life experiences.” That meant eliciting insights based on a real interaction between the participants and the ADM system of their choice and asking them to formulate their concerns and requirements after a period of interaction and reflection. To capture this, we developed a structured diary, where participants recorded the process and noted down their expectations, experiences, and needs and requirements. We opted for the diary method because it “facilitates critical knowledge, and involves reflexivity” (Fisher, 2020, p. 2), resulting in individuals gaining new knowledge about themselves but also the ADM systems. As such, this is a knowledge that would not have been accessible otherwise (ibid.). The diaries (structured in 15 questions) recorded the experiences of participants in interacting with a platform of their choice and captured their reflections on that interaction. Based on this reflective exercise, participants were able to formulate and voice their expectations, needs, and requirements regarding agency and trust. The notions of data and algorithmic sovereignty emerged from the analysis of these requirements for agency. As we will elaborate, agency—or the ability to act—is a crucial precondition for realizing and practicing digital sovereignty. Yet, agency in the context of interaction with digital media platforms must be accompanied by a few elements and conditions to be met.

3 METHODOLOGICAL SETUP

The research took place over a three-month period, October to December 2020. It included 47 participants, who were students at an international graduate program in Belgium. Participants could choose from eight platforms (Facebook, Google, Twitter, Instagram, Tinder, Spotify, Netflix, TikTok) as a platform they would like to interact with. They were provided with a template for the subject access request (SAR) (Veale 2019). The research design consisted of a multi-stage process, including the completion of a survey, the submission of an SAR, and purposeful interaction with the tools the platforms themselves offer for data collected and held about the participants (we refer to these as platform transparency tools). At the end, we were provided by each of the participants with the following outputs: filled-in diaries, lists of all the inferences/categories assigned to them by the platform of their choice, an illustration of their real identity, an illustration of the algorithmic identity assigned by the platform (their reading of), and a list of requirements for agency and for trust. The authors guided the participants for the entire duration of the process.

4 WHAT KIND OF DIGITAL SOVEREIGNTY?

Our analysis was predominantly focused on the requirements of the participants to have more agency when interacting with platforms' ADM systems. We used the diaries in their entirety to obtain a general feel, but in particular, we focused on the explicitly stated requirements for agency. In total, there were 159 unique requests by the 47 participants. Through a process of iterative and inductive coding, using the framework for thematic analysis (Braun and Clarke 2006), we extrapolated three interrelated requirements for agency: the *ability to see* (transparency), the *ability to know* (explainability), and the *ability to act*. We will describe them here briefly, because they are relevant for the consequent discussion of digital sovereignty.

The *ability to see* pertains to the requirement to be provided with information—that is, to be presented with or provided access to a variety of information. This information should provide insights into the relation of the individual to the particular system, including, among others, any actors that receive, collect, or use the data. The requests related both to *data provenance & cycle transparency* and to *information structuring and access*. These concern data origin and usage—whom their data is shared with, what is considered data, what/who is the source of the data, what data is collected, how and where is it stored, and so on—as well as requests to make the information more visible and/or information-structuring simpler and understandable.

The *ability to know* is related to the ability to engage in sense-making and understanding; it is about making things *knowable* and about being provided with the opportunities and tools to

understand and comprehend. Our data show that the most frequent request is to be able to acquire knowledge on how automated decisions are made, followed by requests for knowledge about how inferences about participants are made.

The *ability to act* concerns concrete requests related to the ability of an individual to make an autonomous and authentic decision about and for themselves and act upon it. It is related to the entwined notions of control, autonomy, and sovereignty. It concerns all the elements of the AI/ADM system—the data, the system itself, and sometimes even the business model. This *ability to act* is dependent both on the *ability to see* (information and transparency) and the *ability to know* (explainability and understanding). While the former is not enough in itself to guarantee the latter, the possibility to have information and to understand, reflect, and decide based on that, is fundamental.

In this paper we focus on this third requirement, the ability to act, because it is here that we see the visible prominence of the notion of digital sovereignty. Our analysis (Figure 1) showed that needs for *abilities to act* are predominantly related to two distinct but interrelated elements and processes: the data (cycle) and the (automated) decision-making. This corresponds to what we call *data sovereignty* and *algorithmic sovereignty*.

Requests for Ability to Act

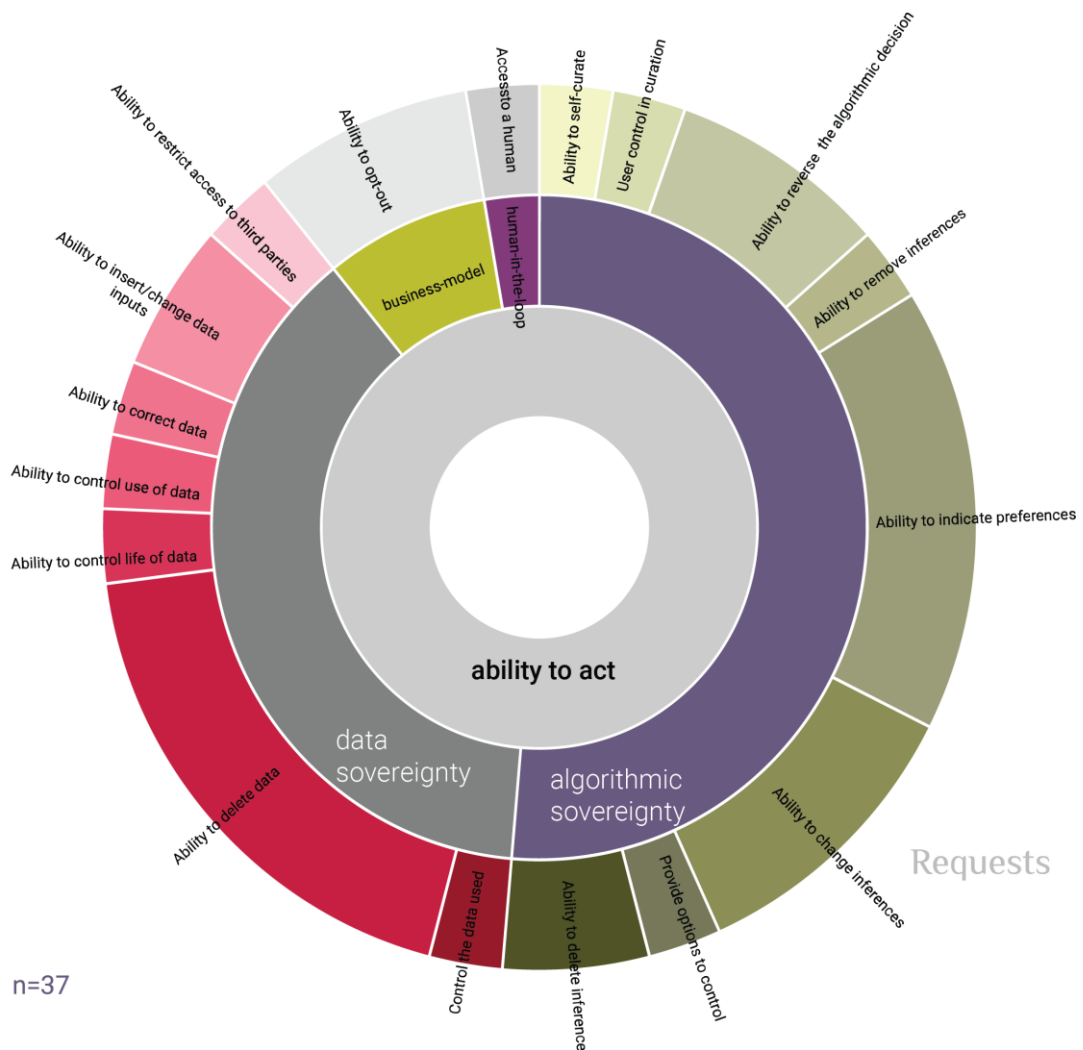


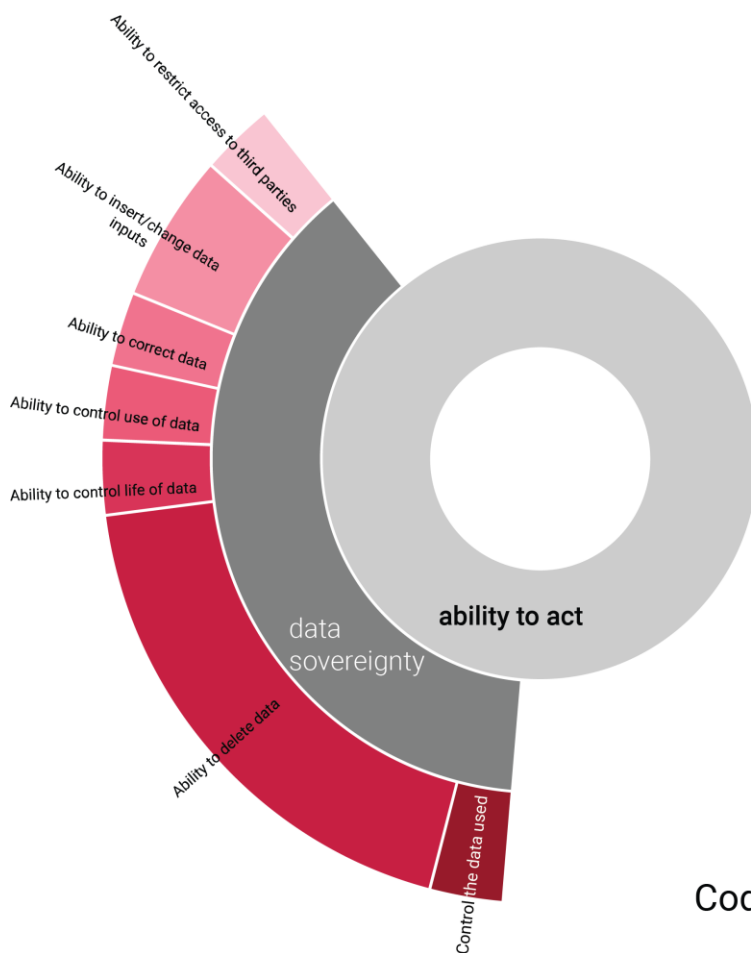
Figure 3. Requests for ability to act. The coded requests are grouped and color-coded per type of sovereignty and frequency.

4.1 DATA SOVEREIGNTY OR THE ABILITY TO ACT IN RELATION TO DATA

What our respondents’ requirements show is that they request the ability to act in relation to two distinct data processes—data provenance and the data cycle. When it comes to data provenance, they want the ability to act on what data is collected, how, and by whom. The data cycle requests pertain to the possibility to act/decide on how data is shared, with whom it is shared, what it is used for, and how it is used, in all phases of the data cycle—data design, data capture, data processing, and data usage.

As is evident from Figure 2, the ability to delete data is one of the most prominent requests—“users should be able to fully delete the trace on themselves, not just photos and their account, but also the data that was built up by the platforms themselves to then use it for profiling purposes”

(Respondent 14) as well as data shared with third parties—“... the user should be able to completely delete his page from the social network and all data that was transferred to third parties should be automatically deleted” (Respondent 31). The ability to have/retain control seems to be an almost equally important request—users wanted to have the ability to control the use and life of data once it has been collected. This encompasses the requests to be able to change, modify, delete, and opt-out.



Coded requests for Data Sovereignty

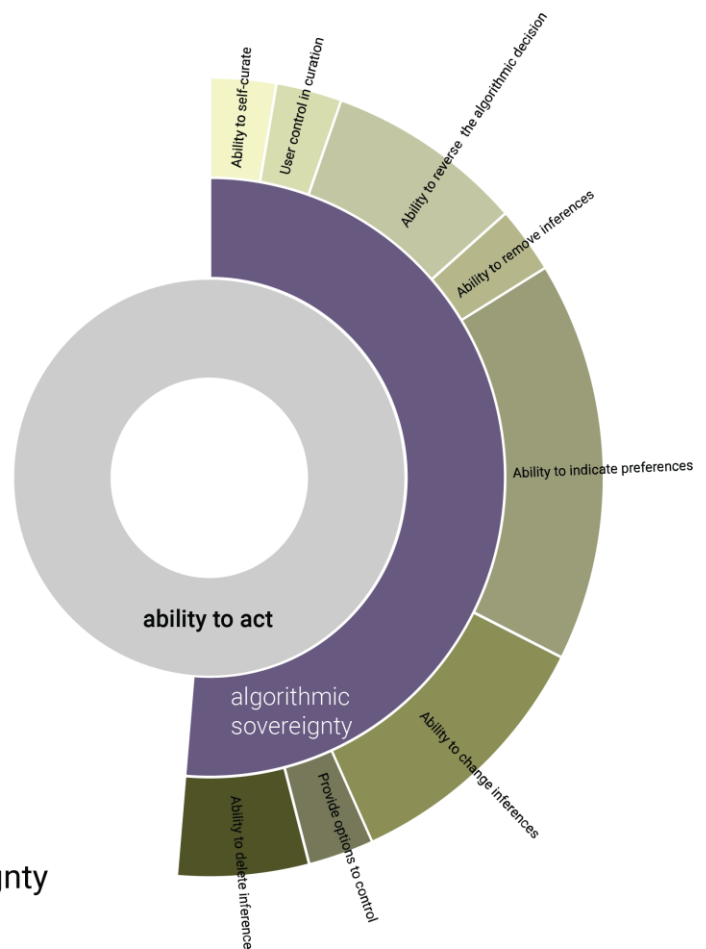
Figure 2. Requests for data sovereignty.

What we see from our respondents is a clear description of what Hummel et al. (2018, see also 2021) call data sovereignty—“meaningful control, ownership, and other claims to data or data infrastructures.” (Hummel et al. 2018, p. 12). This sovereignty is related to the ability to “steer data flows and/or to govern informational resources.” (Hummel et al. 2018, p. 10) and as such is related closely to control, power and autonomy. As is evident in the figure above, control—regarding different aspects of data collection, processing, and use—features very prominently. The ability to take control over these processes implies having *power over* datafication systems and the *power to* remedy power imbalances between users and the systems “processing” them. Being able to articulate and enforce claims of power about their data and being aware of the flow of their personal data reverses the power roles and imbalances and gives individuals the ability for reflexivity, agency, and

autonomy. This power also implies the ability to set up privacy boundaries by constraining access to data (e.g., to third parties), but also to steer and govern informational resources (an important element for data sovereignty, as outlined by Hummel et al. 2018). The element of autonomy—represented as an ability to correct and/or delete data inputs or to control the purpose for which data may be used—refers to the ability to act authentically, according to one’s wishes and needs, without interference from external parties. This autonomy, sovereignty, and authenticity implies the opportunity and ability to also challenge, oppose, and reject.

4.2 ALGORITHMIC SOVEREIGNTY OR THE ABILITY TO ACT IN RELATION TO AUTOMATED DECISION-MAKING

The requests related to decision-making are related to the outputs of the system and the ability of individuals to have an active role and agency when they are subjected to the workings of the ADM/AI systems. We refer to this type of sovereignty as *algorithmic sovereignty*. As the analysis shows, this request for sovereignty is predominantly related to the *ability to indicate preferences* and the various abilities related to the inferences. The requests to remove, change, and delete inferences are requests for more control and autonomy over the digital/algorithmic self that is used to produce algorithmic outputs. It is the ability of the user to impose their own way of seeing themselves, their algorithmic identity, and ultimately their authenticity. This is a request for authenticity, a desire to be seen as one identifies oneself. And this is, most often, the opposite of what the system, from a power perspective, ascribes to them and formulates as their interests, wishes, and needs. We can see this also from the diary entries, where respondents had to depict their own sense of identity and the algorithmic identity assigned to them by the platforms according to the inferences constructed about them. As one respondent said, the real them is a “diverse person with many different faces” but the algorithmic them is a “human taken apart into data, a snapshot in time that gets algorithmically exploited.”



Coded requests for Algorithmic Sovereignty

Figure 3. Requests for algorithmic sovereignty.

This request for authenticity is closely related to the request for self-determination, which is seen as an ability to reverse an algorithmic decision. Since most of the ADM outputs, especially in the case of social media platforms, are based on algorithmic profiling, the autonomy and sovereignty are seen as a possibility to disagree, reject, and actively change the outcomes of the algorithmic process. This is, in essence, a request to be freed from algorithmic governmentality—from the steering of subjectivities and life chances based on datafication, classifications, ranking, sorting, and predicting—and a request to be able to actively govern their own lives.

5 AGENCY AFFORDANCES FOR DIGITAL SOVEREIGNTY

To make these data and algorithmic sovereignty requests possible, we propose the notion of *agency affordances*. In conceptualizing this notion, we build on the requirements that our participants

elaborated in their diaries and the list of requirements they provided, as well as from agency theory⁵ and affordances theory⁶.

As we elaborate elsewhere (authors, in preparation), we define agency affordances as functions that are, first, *programmed* and embedded at an infrastructure level that should allow and encourage the actualization of agency. This occurs, second, through features and elements made visible and *promoted* at an interface level, coupling the possibilities for action (to act) with the ability to act. However, agency affordances are non-determining, relational, dynamic, context-dependent, situated, and come in gradations and variable forms. They should ensure the possibility and actualization of control, autonomy, authenticity, and ultimately sovereignty, leading to true (digital) empowerment of individuals. It should enable individuals to become sovereigns on their own, without external inferences steering their behavior and impacting life chances. They should ensure the possibility to both enable and enforce self-data governance needs and power for self-governance. This will help remedy power imbalances and facilitate, as much as possible, a shift from platforms as sovereigns to individuals as self-sovereign.

6 EMBEDDING PRACTICABLE DIGITAL SOVEREIGNTY

How do we acquire digital sovereignty both as *power to* and as autonomy and agency for (digital) self-determination, self-actualization, and self-sovereignty? For the individuals to be able to practice digital sovereignty, it should be enabled, as an *ability*, through the embedding of agency affordances within the technological system. These affordances should be introduced as functions at infrastructure level and as features at interface level. They should enable individuals to exercise *power over* the infrastructural sovereignty of the ADM systems of digital media platforms. This will require careful architecture and design planning when setting up these systems or when modifying them to respond to the requests for digital sovereignty. When doing so, the relevant actors should also account for the different contexts, the different individual skills, the different needs, and the different abilities to understand; in that sense, the process should be highly contextual and take into consideration the various educational, social, cultural, and similar environments and circumstances of the individuals.

However, the lived experience of actualizing and practicing digital sovereignty is not just a matter of technology and extends to encompassing the wider societal (infra)structures. That would mean enabling and securing digital sovereignty by introducing dynamics and conditions that enable

⁵ Based on the texts by the following authors: Neff and Nagy, 2016; Neff et al. 2012; Nagy and Neff 2015; Couldry 2014; Feenberg 2011; Kennedy et al. 2015; Lorusso 2021; Milan 2018.

⁶ Based on Davis and Chouinard 2017; Davis 2020; Neff and Nagy 2016; Nagy and Neff, 2015; Bucher and Halmond, 2018; Evans et al. 2017; Dahlman et al. 2021; Neff et al 2012, Hutchby, 2001.

and demand sovereignty via regulations, institutions, and organizations. This should make sure that digital sovereignty is also a *right*, “something towards which we should aim” (Hummel et al. 2021, 13) and not just an ability. The processes for setting the institutional norms for embedding agency affordances and thus securing and enforcing digital sovereignty via regulations, regulatory bodies, and (informal)institutions could range from introducing agency affordances as mandatory by law, to undertaking literacy initiatives, to introducing what Wachter and Mittelstadt (2019) suggest—introducing a new right, the *right to reasonable inferences* “by which meaningful control and choice (p. 13) over inferences and profiles are granted to data subjects.” (p. 14).

While individuals are being entangled in a net of powerful data and digital sovereigns that do not just control the entire digital infrastructure but also steer individuals’ lives and impact their life chances, the embedding of agency affordances as a way of practicing digital sovereignty might not be the easiest option. But it is a tangible way to impose “empowerment by design” (Pierson, 2022) and ultimately sovereignty by design and default.

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