

*Assemble with care — programming and facilitating meaningful human agency within data and algorithmic systems*

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**Abstract**

Our everyday lives are increasingly entangled with ubiquitous but invisible data and algorithmic systems. These systems are becoming a matter of fact of our everyday. Almost no aspect of our lives exist that has not been curated, mediated, ordered, and structured based on algorithmic systems: the news and media we consume, our potential dates, the music we listen to, the ads we see, the prices for goods and services we are offered. While this might seem innocent, the evidence is mounting daily about the potential risks and harms this algorithmic ordering of the social brings with itself. This thesis takes these algorithmic matters of fact as matters of concern. Using the notion of *algorithmic governmentality* to describe the state of *as if* agency that individuals have within the human-algorithms assemblages, this thesis aims to find the counterpoints and the counter-conducts against this governmentality to enable *meaningful human agency* as a precondition for *digital sovereignty*. To do this a number of empirical studies have been conducted. The aim of these studies is to both inquire about the requirements for agency of the individuals themselves entangled in these systems, and to investigate how they can be technically translated into technology design. As a result of these inquiries, I propose the notion of *agency affordances* understood as tools and mechanisms for *assembling* meaningful human agency by programming it via the technical infrastructures and for facilitating it via the societal structures. Borrowing from the theories of the semiotician A.J. Greimas and transposing them into the realm of the algorithmic, this thesis further develops an analytical, conceptual, and practical framework for investigating and enabling meaningful human agency. Another crucial contribution of this thesis is that it also serves as a study in research methods regarding investigating data and algorithmic systems. Adopting the approach of *thinking* and *researching with care* and trying to navigate the technical affordances of algorithmic systems that constrain our field of research, a number of approaches are developed

that propose productive *mechanisms of opening* for research. By incorporating the approaches of *critical companionship*, *critical pedagogy* and *studying up*, this thesis also maps productive avenues for an empowering participatory research.