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MAPPING AS GOVERNANCE IN AN AGE OF AUTONOMIC COMPUTING

Technology, virtuality and utopia¹

Antoinette Rouvroy

Introduction: mapping and governing the virtual

Objects and technology do have a complicated relation to society. As Langdon Winner (1986, 19) writes,

the machines, structures, and systems of modern material culture can be accurately judged not only for their contributions to efficiency and productivity and their positive and negative environmental side effects, but also for the ways in which they can embody specific forms of power and authority.

'Autonomic computing' per se is difficult to circumscribe as an object for theoretical inquiry. IBM, which first coined the term, explicitly acknowledges that the definition of autonomic computing is likely to change 'as contributing technologies mature'. It nevertheless lists eight defining characteristics and presents the vision of 'computer systems that regulate themselves much in the same way our autonomic nervous system regulates and protects our bodies'. The eight defining principles of autonomic computing IBM lists include: self-knowledge (the system must somehow know itself and be able to identify its own components); autonomic and dynamic self-reconfiguration and adjustment; constant optimization of its own working, self-prevention and reparation of malfunctioning caused by internal or external events; detection of and protection from attacks against the system's security and integrity; and context awareness and autonomic adaptation of itself or

¹ This chapter is drawing upon some material originally published as 'Governmentality in an Age of Autonomic Computing: Technology, Virtuality and Utopia' in Antoinette Rouvroy and Mireille Hildebrandt (eds), *Autonomic Computing and the Transformations of Human Agency: Philosophers of Law Meet Philosophers of Technology* (Abingdon: Routledge, 2009).

even the environment to the circumstances. An autonomic computing system will anticipate the optimized resources needed while keeping its complexity hidden. It must marshal IT resources to shrink the gap between the business or personal goals of the user and the IT implementation necessary to achieve those goals – without involving the user in that implementation (IBM Research).

As of today, autonomic computing is nothing more than a 'vision', which is not (or not yet) embodied in any specific 'artefact', scenario or application that would give rise to actual practices from which to start our study. As a 'vision', or a 'paradigm shift', autonomic computing is aimed at facilitating and enhancing the functioning of a wide variety of information systems, going from the traditional laptop to the most complex computer-sensors networks one may imagine being involved in futuristic scenarios of ambient intelligence. The prospective stance one is unavoidably caught in does not allow for any clear view of the future. Nevertheless, assessing how our notions of gesture and agency, subjectivity and identity mutate in the presence of real-time, dynamically varying media managed by autonomic computing therefore becomes crucial. Katherine Hayles rightly observes that,

[e]mbedded within this flow of data, human behaviour is increasingly integrated with the technological nonconscious through somatic responses, haptic feedback, gestural interactions, and a wide variety of other cognitive activities that are habitual and repetitive and that therefore fall below the threshold of conscious awareness. Mediating between these habits and the intelligent machines that entrain them are layers of code. Code, then, acts as both linguistic and nonlinguistic human behaviour.

(Hayles, 2006, 140)

My departure point is not a contemplation of how human subjects actively interact with autonomic computing systems (there are currently no actual instances where this happens except in laboratory, experimental conditions where prototypes are being developed), but how human subjects are taken as objects of observation, classification and forward-looking evaluation by such autonomic systems, and what the consequences may be of the 'production' of such statistically based knowledge (Gandy, 2008). In other words, I wish to reflect on how these autonomic machines map, translate or transcribe the physical world, its inhabitants, their trajectories, behaviours, actions, choices, preferences and attitudes, etc. Because (as everyone knows) there is no neutral map or transcript of the 'real', I wish to identify the underlying 'bias' governing the regime of visibility and of intelligibility implemented in this way.

Autonomic computing as governance

The questions I am concerned with are the following: what are the specificities of the new modes of intelligibility of the 'real' or of the new rationality that such mapping technologies enable? What 'axial principles' (Alford and Friedland, 1985, 165) does autonomic computing serve? The 'political' question is thus:

what is the kind of power that the new regimes of visibility and intelligibility accompanying the deployment of such technologies are aimed and capable of bringing forward? To what type of governmental rationality are these artefacts instrumental? And, finally, what impacts would the deployment of such artefacts have on the processes of subjectivation, and on the collective capacity to invent new political and social ways of life?

My approach to mapping as a mode of governance is very much influenced by Foucauldian scholarship and 'governmentality studies' (Foucault, 2007, 144).² I wish to consider the impact of autonomic computing (embedded in systems of ubiquitous computing and ambient intelligence) through the transformations of knowledge and of the modalities of power (and resistance) that such technological developments implement. The issues I am concerned with relate to the 'regimes of truth' (in a Foucauldian sense, Foucault, 1980, 93),³ the categorizations and (sometimes performative) predictions these systems are capable of establishing, maintaining and propagating in their manifold fields of application, ranging from security to entertainment to marketing and health management. Because these 'truth regimes' result from technological (rather than human) observation, detection, classification and forward-looking (and thus predictive rather than purely descriptive) evaluation processes, individuals – diversely apprehended through the prism of profiles built on numbers and data – will not retain much power over their recognition, interpellation and classification by and within these new systems.⁴

2 Foucault states: 'What I would really like to undertake is something that I would call a history of "governmentality". By this word "governmentality" I mean three things. First, by 'governmentality' I understand the ensemble formed by institutions, procedures, analyses and reflections, calculations, and tactics that allow the exercise of this very specific, albeit very complex, power that has the population as its target, political economy as its major form of knowledge, and apparatuses of security as its essential technical instrument. Second, by "governmentality" I understand the tendency, the line of force, that for a long time, and throughout the West, has constantly led towards the pre-eminence over all other types of power – sovereignty, discipline, and so on – of the type of power that we can call "government" and which has led to the development of a series of specific governmental apparatuses (appareils) on the one hand, [and, on the other] to the development of a series of knowledges (savoirs). Finally, by "governmentality" I think we should understand the process, or rather, the result of the process by which the state of justice of the Middle Ages became the administrative state in the fifteenth and sixteenth centuries and was gradually 'governmentalized' (2007, 144).

3 'My problem (...) is this: (...) what type of power is susceptible of producing discourses of truth that in a society such as ours are endowed with such potent effects? What I mean is this: in a society such as ours (...) there are manifold relations of power which permeate, characterize and constitute the social body, and these relations of power cannot themselves be established, consolidated, nor implemented without the production, accumulation, circulation and functioning of a discourse... We are subject to the production of truth through power and we cannot exercise power except through the production of truth' (Foucault, 1980, 93).

4 'Our capacity to reflect upon ourselves, to tell the truth about ourselves, is correspondingly limited by what the discourse, the regime, cannot allow into speakability' (Butler, 2005, 121).

Fragmented as they will be into a myriad of 'correlatable' data and aggregated with others with whom they do not share anything more than the simple fact of having exhibited similarly correlated biographical, behavioural, or other elements, the profiled individual will not necessarily be able to contest or resist the autonomic assignation of profiles and the practical consequences ensuing in terms of access to places, opportunities, and benefits.

Through the lens of representations thrown off by these practices, individuals, once understood as moral or rational actors, are increasingly understood as locations in actuarial tables of variations. This shift from moral agent to actuarial subject marks a change in the way power is exercised on individuals by the state and other large organizations (...). The effects can be discerned on the way we understand ourselves, our communities, and our capacity for moral judgment and political action.

(Simon, 1988, 772)

What I am concerned with is precisely the relation between how, on the one hand, in a 'world of autonomic computing', the technical process of mapping the physical world and its inhabitants makes them visible and meaningful, enables states of affairs to be seen and evaluated and enables evidence to be produced and presented; and, on the other hand, new practices of 'government' emerge, whereby:

'[G]overnment' [does] not refer only to political structures or to the management of states; rather, it [designates] the way in which the conduct of individuals or groups might be directed. (...) It [does] not only cover the legitimately constituted forms of political or economic subjection but also modes of action, more or less considered or calculated, which [are] designed to act upon the possibilities of action of other people. To govern in this sense is to structure the possible field of action of others.

(Foucault, 1982, 790)

I thus refer to governmentality in a Foucauldian sense as the 'conduct of conduct' (Foucault, 1991), identifying how new mapping regimes of visibility and intelligibility impact on how we conduct ourselves, how we attempt to conduct others, and how others attempt to control our conduct. On Judith Butler's account, governmentality

is broadly understood as a mode of power concerned with the maintenance and control of bodies and persons, the production and regulation of persons and populations, and the circulation of goods insofar as they maintain and restrict the life of the population. Governmentality operates through policies and departments, through managerial and bureaucratic institutions, through the law, when the law is understood as 'a set of tactics,' and through forms of state power, although not exclusively.

(2004, 52)

'Governmental rationality' is 'a way or system of thinking about the nature of the practice of government (who can govern; what governing is; what or who is governed), capable of making some form of that activity thinkable and practicable both to its practitioners and to those upon whom it was practiced' (Gordon, 1991, 3). At a time where the next step in the development of our information society may be a turn towards autonomic computing, I believe that borrowing from the 'governmentalist' perspective may be highly suggestive and helpful to assess why, and, above all, at what price mapping the world through autonomic detection, classification and forward-looking evaluation will gradually assist or even replace human observation.

Towards a statistical (or actuarial) mapping of the 'real'

What is real – if something like that can ever be supposed to exist in itself – does not matter; what matters is what is taken as real and in modernity what is taken as real is statistically recorded.

(Skouteris, 2004, 15)

We are familiar with the benefits that ubiquitous and autonomous computing, multimodal observation, ambient intelligence and other new mapping technologies are purported to bring, making our lives safer, easier, more efficient and enjoyable as we increasingly colonize the physical world through digital technology. Their celebrated capacity to detect, sort, evaluate and, most importantly, predict our desires and preferences, needs and propensities and also customize and adjust deliveries, services and offers to our individual profile, as if digital networks knew us better than we know ourselves, is held to spare us time and discomfort. We are told that new powers of computation will enable the authorities to target more accurately and objectively the individuals whose trajectories and attitudes put them at a higher than average probability of committing a criminal offence or being involved in some way or another in a terrorist attack. These new processes and practices are said to allow more selective security screenings and leave the 'good guys' in peace, rendering counter-terrorism policies less obtrusive to citizens' everyday life. Unobtrusively, governance will be mapped so as to render your environment responsive to your unique personality (yes, you are unique, and the system will reassure you on that point) while eliminating most frictions with the unexpected, unpleasant, time-consuming, tiresome aspects of choices or routine security checks.

In order to perform their tasks as intelligent interfaces or smart mediators (and, possibly, agents) between human users and the humanly untameable complexity of the global digital and physical universe and to deliver their individualized, dynamic functionalities, the new information infrastructures map, 'translate' or 'transcript' the physical space and its inhabitants (that's us) into constantly evolving sets of data points. The optimal functioning of this mode of statistical intelligibility presupposes the non-selective collection of as much data as possible, a priori independent of any

specific finality. At odds with the modern ambitions of deductive rationality – linking observed phenomena (that is, phenomena previously selected, on explicit or implicit criteria of interest, as objects for observation and analysis) correlated to their effects – the rise of autonomic computing attests to a broader epistemic shift. The new 'perceptual regime' appears to follow an inductive (rather than deductive) logic. Indifferent to the causes of phenomena, it functions on a purely statistical observation of correlations (untainted by any underlying logic) between data captured in an absolutely non-selective manner in a variety of heterogeneous contexts.

This translation and processing of reality reduced to data points and rendered predictable – in a data-rich environment such as ours, 'anything can be predicted' and 'crunching numbers' is 'the new way to be smart', Ian Ayres (2007) suggests – appears reassuring at different levels. It appears reassuring especially at a time where 'narratives' have become more than ever suspicious due to the experienced difficulty, in a multicultural, globalized society, to find common languages and emotional harmony with our fellow human beings. Rather than understanding the biographical trajectory and exotic world-view of their foreign neighbour just moving in next-door, Mister and Miss Anybody are interested in knowing in advance what risk the newcomer represents for their safety and tranquillity.

At the political level, the turn towards autonomic computing and a statistical mapping of the 'real', for its orientation towards prediction, is a gesture that is both encouraged by and reinforcing a governmental rationality whose central figure is contingency and where prediction and avoidance of danger and conflict has replaced the identification and remediation of its causes (Ullman and Wade, 1996).⁵ Globalization seems to have ended the time – if there has ever been such a time – when governments could act towards an identifiable common good or protect themselves and their constituencies against identifiable and locatable enemies. How indeed could such a common good, or a 'common enemy' (to speak in Schmittian terms), be identified in a global society such as ours, characterized above all by its cultural, economic, linguistic, religious fragmentation, by the palpable intensification of morally indefensible disparities in terms of health, wealth, and spending of scarce resources, and by intensifying complexity and feedback loops,

5 Ullman and Wade identify, as challenges to traditional military approaches, (1) the changing nature of the domestic and international environments; (2) the complex nature of resolving inter- and intra-state conflict that falls outside conventional war, including peacekeeping, and countering terrorism, crime, and the use of weapons of mass destruction; (3) resource constraints; (4) defense infrastructure and technical industrial bases raised on a large, continuous infusion of funding now facing a future of austerity; and (5) the vast uncertainties of the so-called social, economic and information revolutions that could check or counter many of the nation's assumptions as well as public support currently underwriting defense. These listed challenges thus inspire the need to extend the field of military operations beyond the battlefield, to the totality of social reality: 'It is clear that these so-called grey areas involving non-traditional Operations Other Than War (OOTW) and law enforcement tasks are growing and pose difficult problems and challenges to American military forces, especially when and where the use of force may be inappropriate or simply may not work.'

making threats both intangible and ubiquitous, distributed and constantly moving within the very fabric of the globalized networked society?

Political, ecological and economic instability are the hallmarks of our 'risk society'. We live in politics where the ubiquitous figures of contingency and risk have come to take the central space formerly (ideally) occupied by the figure of the common good, or utopia, and where the prevention of insecurity, rather than the pursuit of any collectively identified common good, has become the most important role of governments. At a time when individuals are governed and socialized through 'fear', it is little surprising that a new mapping imaginary has emerged: that autonomic computing, allowing for the complex operations of data-mining and precise and dynamic profiling, will render the world and its inhabitants predictable. This imaginary provides the ideological background for enthusiastic support for any technology promising to help taming the chaos (Žižek, 2008). The ubiquitous threat of virtual danger acts as a powerful incentive to eradicate pre-emptively whatever, in the human being, remains uncertain, virtual, or potential (Massumi, 2010).

Epistemologically, I would suggest that this is the backdrop to what Slavoj Žižek has identified as a shift from a modern rationality to a post-modern rationality, that is, the gradual replacement of 'transparency', allowing the understanding of profound mechanisms behind appearances, ('transparency' as such was the privileged mode of modernity) by 'simulacra', the presentation of an impenetrable, but convivial surface. Ironically, according to the IBM vision of autonomic computing, the system will be 'transparent' not in the modern sense that it will allow the user to understand the deep mechanisms on which it functions, but in the sense of a total invisibility and imperceptibility of these mechanisms.

Such a 'post-modern' rationality fits our 'post-modern' governmentality. In the field of security, what disappears is the need to understand, explain and address the (too complex to grasp and address) causes of feared dangers. In the field of marketing, the logic relieves all actors from the burden of reflecting on the possible discontinuities between (technologically persuaded) consumers' demands and their actual needs. The mobile, constantly reorganizing and readjusting images of the 'real', highly relevant for private and public bureaucratic purposes, appear evaluated increasingly according to the criteria of flexibility, speed and relevance, and decreasingly according to the criteria of truth, objectivity and justice. Isn't this the sign that, in the passionate pursuit of an imaginary of absolute predictability of events and persons, we are building simulacra, which, according to Baudrillard, are nothing but a 'copy without original' or a 'representation hiding the absence of reality (hyper-reality)'?

The need for critical appraisal of statistical (or actuarial) mapping

By comparison with human observation, technologically intermediated observation may appear more 'objective': it appears to attest to a victory of rational analysis over deceptive human sensorial perceptions. Involving multimodal observation,

these systems detect phenomena as they surface in physical and digital spaces, and privilege information ensuing from observation of, for example, the human body (making meaningful 'data' from previously unnoticed (involuntary and unvolunteered) bodily movements, or attitudinal and physiological changes). This assumption follows the logic that, unlike subjective human reasoning and judgement, objective human bodies do not lie.⁶ The question is thus the following: when individuals are subjected to the mapping 'gaze' of multimodal observation dispositives, functioning through autonomic computing, and when forward-looking statistical evaluation and classification becomes the privileged vector of governmentality, aren't individuals deprived of occasions and, in the long run, their capability to form and implement moral judgments and develop their normative reflexivity?

The same danger, of 'depoliticization' and 'demoralization', is clear in the new forms of 'technological paternalism', which are present in any technology designed for the purpose of enforcing a certain 'regularity' of behaviours or of rendering practically impossible certain behaviours attitudes or actions that were previously 'simply' forbidden by morality or law (Spiekermann and Pallas, 2006). These pre-emptive, and therefore ontopolitical dispositives, in so far as they succeed in their regulative and normative tasks, simply bypass conscious acceptance or contestation of the norms they enforce and are at odds with an agonistic conception of politics (Castle, 1998), or, as Foucault would have it, with the possibility of politics at all, if, as he argued: 'nothing is political, everything is politicisable, everything can become political. Politics is nothing more nor less than that which arises with resistance to governmentality, the first uprising, the first confrontation' (Foucault, 2007, 390). The possibility, the potentiality, of dissent, contestation and insurrection demarcates power from violence, force or domination. Power, that which allows some to drive the conduct of others, the 'conduct of conduct', always presupposes the possibility, for the individuals and groups targeted, of counter-conducts. The possibility of counter-conducts is what is threatened whenever power (or, one could say, domination) arises at a pre-emptive, pre-conscious stage.

Besides this important aspect, one may also note that the postulated reliability and impartiality of 'autonomically produced predictions' is vulnerable for a series of reasons identified by Oscar Gandy as:

- the possible inaccuracy of data used, or invalidity of models or routines;
- the fact that these are correlations-based systems possibly relying on categorical variables rather than causal inquiry;

6 This is very much in line with the statements of Robert Boyle (doyen of the Royal Society's experimental philosophers who established the scientific credibility of laboratory objects at the expense of the untrustworthy humans), quoted in Shapin and Shaffer, 1985 and Shaffer, 1992, 328: 'inanimate bodies ... are not capable of prepossessions, or giving us partial information', while 'vulgar men may be influenced by predispositions, and so many circumstances, that they may easily give occasion to mistakes. So, an inanimate body's deeds could function as signs of some other state of affairs in a way that stories of vulgar humans could not.'

- the fact that these systems may produce 'rational' (factually non-biased) but 'unfair' results (further victimizing already vulnerable groups, in contradiction with common views of justice or fairness);
- the 'lack of ground truths' to evaluate the validity of detection mechanisms aimed at preventing certain behaviours from happening (in a security scenario), or to detect users' preferences and consumption propensities (in a marketing scenario) as, by hypothesis, these detection systems also impact on the material or cognitive preconditions of actions. (*Gandy, 2008; Rouvroy, 2008*)

When, in marketing or entertainment scenarios, profiling systems are embedded in 'ambient intelligent' systems aimed at complying with users' unexpressed needs or preferences, no ground truth exists either to measure the performance or the accuracy of profiling: these systems indeed influence needs and preferences, according to the logic of 'dynamic nominalism' exposed by Ian Hacking (2007), which will be considered a little later. In a security scenario, the criminal action, that targeted persons are evaluated at be at a greater risk of committing, will not happen (the detection system can thus not be 'tested'). If the validity of the profiling will therefore never be verified; it is truly impossible to say whether the system catches too many false positives. When detection systems are used to 'incapacitate' potential criminal or terrorists – that is, to impact on the preconditions of actions, disallowing certain actions through incapacitating those actors profiled as most susceptible to commit them, so that some actions are not performed at all – the number of false positives (of those identified by the system as potential criminals who would never commit a crime) is truly incalculable.

Thomas Hammarberg, Commissioner for Human Rights of the Council of Europe, has acknowledged the lack of accuracy or reliability of this type of profiling:

We are rapidly becoming a 'Surveillance Society'. This is partly the result of general technical and societal developments, but these trends are strongly reinforced by measures taken in the fight against terrorism. In the context of the fight against terrorism, this means individuals are at risk of being targeted for being suspected 'extremists' or for being suspected of being 'opposed to our constitutional legal order', even if they have not (yet) committed any criminal (let alone terrorist) offence. 'Targets' of this kind are moreover increasingly selected through computer 'profiles'. Even if some may be caught, there will always be relatively large numbers of 'false negatives' – real terrorists who are not identified as such, and unacceptably high numbers of 'false positives': large numbers of innocent people who are subjected to surveillance, harassment, discrimination, arrest – or worse. Freedom is being given up without gaining security.

(*Hammarberg, 2008*)

Moreover, the type of knowledge so produced is in no way 'objective' in the sense one has long been used to speak of the objectivity of scientific knowledge. The information systems embedded in ambient intelligent systems are not intended to observe the unique complexity of each human being but to sort individuals into a variety of heterogeneous categories for the purpose of predicting their willingness or need to buy specified commodities, to make claims on health and disability insurance, the danger they represent for themselves or for others, or other propensities that marketers, insurers, law enforcement officials and many others may find useful to know and to manage. Nikolas Rose summarized the phenomenon in these words:

reduction of complexity by numbers can be neither ideologically nor theoretically innocent: hence the social enters the statistical through the 'interests' of those who undertake this task. The processes of simplification embody the expectations and beliefs of the responsible technicians and officials. The discretion that they inevitably exercise is dissimulated by their claim that their expertise, whilst indispensable, is 'merely technical'.

(*Rose, 1999, 204*)

These classifications, made on the basis of statistical correlations, have a feedback looping effect. Ian Hacking conceptualises this in terms of 'dynamic nominalism': when people are taken as objects of scientific or bureaucratic inquiries for a variety of purposes (from controlling them to helping them, organizing them or keeping them away from places), such classifications affect the people classified, and these effects on people, in turn, change the classification (Hacking, 2007) in ways that are contingent on the type of categorisations and applications of the system (which is difficult to predict in advance). This results in the reinforcement and the 'viral propagation' of norms, of the criteria of normality and desirability against which individuals are being evaluated, with rewards for compliance and sanctions for the others.

Norms have always had a viral character. As Georges Canguilhem explained, the specificity of an object or fact said to be 'normal' by reference to either external or internal norms raises the possibility that it becomes taken as a reference for objects awaiting their characterization (Canguilhem, 1943, 181). This viral character is only amplified by the intensification of profiling and the ensuing phenomena of anticipative conformity, self-censorship or preference falsification. This process of amplification has important effects when meaning can be ascribed to even the most trivial and fugitive image, sound or movement transpiring from actions, following a governmental rationality fitted to a world in which unpredictability and spontaneity are decreasingly tolerated (driven by both the conception of the ubiquitous threat of the virtual danger and the wish to adapt consumers to what the market has to offer rather than to adapt market offers to the genuine needs and preferences of consumers). The process of mapping as governance thus provides almost irresistible incentives to eradicate what, in the human subject, remains uncertain,

potential or inactual. The actualization of such an imaginary of a world liberated from contingency and unpredictability comes at a high price, as (or so I wish to argue) the potential and the inactual are the modalities of individual and social existence which, through the conjugated powers of virtuality and utopia, provide the 'natural' preserves for individualization (or the flourishing of singularity) and social change.

Technology, virtuality, utopia

Notwithstanding the unresolved(able) conceptual disagreements about its exact meaning, the 'virtual' has to do with the capacity human beings have to think and act by reference to something unfitted to the language and structure of the actual society, despite the inescapable fact that, as subjects, they are shaped by this actual language and structure. Disentangling the notion of the 'virtual' from contemporary fallacies, it is important to insist, with Gilles Deleuze, Felix Guattari and others, that the 'virtual' does possess a full reality, as virtual, and should not therefore be opposed, as it often is today, to the 'real':

We opposed the virtual and the real: although it could not have been more precise before now, this terminology must be corrected. The virtual is opposed not to the real but to the actual. The virtual is fully real in so far as it is virtual. Exactly what Proust said of states of resonance must be said of the virtual: 'Real without being actual, ideal without being abstract'; and symbolic without being fictional. Indeed, the virtual must be defined as strictly a part of the object— as though the object had one part of itself in the virtual into which it plunged as though into an objective dimension.

(Deleuze and Guattari, 2014, 208–9)

The virtual is as real as anything one can touch, except that it is not 'actual': it is a (potentially infinite) bundle of possibilities, living an existence which is parallel to the actual world of things and matters. Virtuality, or our virtual dimension, has to do with the capacity we have to suspend any definition of ourselves, our capacity to 'think of ourselves beyond ourselves' in a cultivation of ecstasies or self-transcendence, self-overcoming or self-deconstruction (Scott, 1992, 106–7). Virtuality refers to the kind of contingency and unpredictability in the form towards which individual personality may flourish. The 'virtual' layer of a person's self, or whatever name one wishes to give to that fundamentally, and essentially, indefinable 'blind spot' that a 'subject' always consists of for himself, and which, one may argue, the right to privacy contributes to safeguard, can arguably only be exercised in 'spaces' or 'territories' either mental or physical, which are not already saturated by meaning.

Mapping as a way of substituting or adding technological detection, classification, and forward-looking evaluation to human observation and judgement appears as a way of bypassing ordinary biases and prejudices. However, subjective

judgements, selective choices and emotional biases are all essential elements of the human cognitive process, allowing individuals, unable to cope with the totality and complexity of the world they live in, to prioritize certain (visual, sensorial, aural) information and to ignore or forget a sufficient amount of the rest so as to be able to keep reflecting and acting, which would be just impossible if they were constantly overwhelmed by information.

The fact that some things are forgotten and others are remembered is what gives human history its meaningfulness. This filtering of the 'real' through human memory and historical inscription is how humans transmit normative evaluations from one generation to the next. Individual and collective human memory are of course not objective, but that lack of objectivity has proved absolutely necessary for the functioning of individuals and the organization of societies. What all this suggests is that an intensive replacement of human observation, evaluation and prediction by autonomic processes might well deprive us, in part at least, of our ability to make normative judgements and, more fundamentally even, set new norms.

Jean Baudrillard, posited a contemporary strategy of 'seduction' making individuals disappear into 'ever more sophisticated methods of biological and molecular control and retrieval of bodies', where 'the destiny of signs (...) is to be torn from their destination, deviated, displaced, diverted, recuperated, seduced'. 'Everywhere', he continued, 'one seeks to produce meaning, to make the world signify. We are not, however, in danger of lacking meaning; quite the contrary, we are gorged with meaning and it is killing us' (Baudrillard, 1988). To become saturated with 'meaning' is problematic for human subjectivity because it narrows and, in fact, removes the space for alternative or virtual processes of self-becoming.

Autonomically produced mapping profiles rely on digital, rather than human, memory and therefore benefit from digital memories' virtually unlimited storage capacity in which, by default, everything is recorded, even the most trivial events, our most trivial, conscious or even unconscious gestures, and nothing is ever forgotten. As a result, the construction of profiles, of the 'digital image' of individuals, is, from the perspective of the later, a heteronomous construct at odds with what, from an individual's point-of-view, counts as explanation, as agency, as causality, and at odds with how the individual could give an autobiographical account of himself as a being 'always over time', never fully comprised in the present, whose virtualities are never completely actualized, as a being who is in process of becoming rather than a fixed and totally knowable substance.

The possibilities for the self-construction of a meaningful world, and of alternatives to the present, become increasingly constrained. Whenever (if ever) these detection, classification and forward-looking evaluation technologies – functioning on the basis of massive interpersonal effects – become pervasive, ubiquitous and 'transparent' in the sense given by IBM to 'transparency' ('The system will perform its tasks and adapt to a user's needs without dragging the user into the intricacies of its workings'), with a network of sensors deployed everywhere in our daily public and private environments, the vision becomes clearly frightening. However, projecting ourselves in such a dystopian picture allows us, p to identify what we are not

ready to pay for living in a technologically tamed universe. Here we can at least pose a normative judgment. Against this dystopian projection, one may venture on to the intimidating battlefield of values.

In a letter to Karl Jaspers, in which Hannah Arendt confessed herself to be uncertain, she wrote:

What radical evil is I don't know, but it seems to me it somehow has to do with the following phenomenon: making human beings as human beings superfluous – not using them as means, that does not infringe upon their humanity but merely upon their dignity of human beings, but rendering them superfluous despite their quality of being human. This happens as soon as unpredictability – which, in human beings, is the equivalent of spontaneity – is eliminated.

(Arendt, 1993, 166)

I usually feel rather uncomfortable with the concept of human dignity, but this passage from Arendt allows us to bypass the difficulty. If I understand her correctly, the idea is that when one infringes upon the dignity of a human being, using him as a means rather than as an end in itself (following the famous Kantian formulation), one does not necessarily infringe upon his humanity. Infringing upon a being's humanity supposes the elimination of that being's unpredictability or spontaneity. It seems to me that this insistence on unpredictability and spontaneity as essential elements of what makes a being human is extremely important. It is anyway highly relevant for what I wish to say about the 'virtual' as an essential dimension of human beings: that 'virtuality' – as unpredictability, as spontaneity – appears as the essential core of what deserves the protection of the law not only, or even not necessarily, because failing to protect the unpredictability or spontaneity would infringe upon human dignity, but because it would directly infringe upon humanity itself, upon that which identifies beings as humans.

The 'virtual' layer was, similarly identified by Gilles Deleuze as one of the inherent characteristics of human beings. I understand this as implying the fact, that for the human, being is never being fully comprised in the present but is always a process of becoming 'over time':

In any case, the relation between the actual and the virtual is not that which one can establish between two actuals. The actuals imply already constituted individuals, and determinacies by ordinary points; whereas the relation between the actual and the virtual shape an individuation in action or a singularization by remarkable points to be determined in each case.

(Deleuze, 1996, 185)

This has much to do with what Michel Foucault called the process of subjectivation: the path through which individuals become subjects, a tension between the two poles constituted by on the one hand the self that I am, which I never

completely possess – dependent as I am upon interactions with others, on my capacity to give others an account of myself (Butler, 2005) or to be interpellated by others (Althusser, 1971) – and on the other hand the self I might, I may, I wish to become in the future and which I cannot know in advance.

This unpredictability of human individuals, their spontaneity, is not merely worth preserving because of its contribution to making us human, it is also a necessary precondition for the vitality of society as a whole, which must remain open to changing its own basic rules and structures whenever these become too far removed from the ideal of justice people are able to imagine. Virtuality is to the individual human being what utopias are to societies. They are preserves for the 'flourishing of individual personality' and for fundamental changes in our social existence. This articulation between virtuality and utopia appears, in a subtle form, in Frederic Jameson's writings:

Utopian form is itself a representational mediation on radical difference, radical otherness, and on the systemic nature of social totality, to the point where one cannot imagine any fundamental change in our social existence which has not first thrown off Utopian visions like so many sparks from a comet. The fundamental dynamic of any Utopian politics (or of any political Utopianism) will therefore always lie in the dialectic of Identity and Difference, to the degree to which such a politics aims at imagining, and sometimes even at realizing, a system radically different from this one.

(Jameson, 2005, xii)

Autonomic computing, as a mapping vision, is an ideological imaginary. Together with the increasingly 'intelligent' and 'autonomic' systems it is aimed to reinforce, it crystallizes the dominant technological, economical and political projections or worldviews of our contemporary moment, but the specific representational regime it implements makes it more difficult for individuals and groups to dissent. Mapping technologies blurring the separation between the 'physical' and the 'digital' on the one hand, and between the 'actual' and the 'virtual' on the other hand, unavoidably reconfigure human experience, setting new governmental regimes of visibility and intelligibility and, as a consequence, impacting on the terms through which one should think of power relations in society (Foucault, 1990; Curtis, 2002).

Conclusion

The hypothesis forwarded in this chapter was that the virtual dimension of individual human personality, which is constitutive of subjectivity itself, is incompatible with the actualization – through technological or other means – of a depoliticized, statistical governmental rationality indifferent to the causes of phenomena and chiefly oriented towards the annihilation of contingency. Mapping as a form of governance through autonomic computation was therefore problematized on the basis that the eradication of virtuality (or subjectivity) is incompatible with the

emergence of utopias. Utopias have a crucial role to play in sustaining the vitality of democratic politics, either under the form of deliberative democracy or of agonistic pluralism (a reformulation which may be particularly tempting as it implies the key thesis that, far from jeopardizing democracy, agonistic confrontation is in fact its very condition of existence) (Mouffe, 2000).

Thinking beyond oneself, individually, and beyond current societal configurations, collectively, are the indispensable reflexive capabilities that enable individual self-determination and constitutional self-government. Governing through mapping in a digital age, as in this consideration of autonomic computing – just as other technological artefacts – is therefore problematic to the extent that it may decrease rather than enhance these capabilities. Thus, the key problem is not that of technology per se but rather the governmental (or bureaucratic) rationality it is meant and able to serve. Choosing which technological evolution we wish to emerge in our life world cannot be done without first having chosen which governmental rationality one wishes to have ruling our society. The debates must identify what the central figure of that governmental rationality should be. Currently, the focus on contingency and risk minimization has overshadowed other political goals.

Identifying the available options for preserving or fostering the virtual dimension of human subjects and the utopian creativity of human societies require that we transcend our primary (over-)reactions vis-à-vis technology: no sustainable solution will emerge from either the demonization or the uncritical endorsement of technology. A more promising path proceeds through the meticulous identification and scrutiny of the specific governmental rationalities (or forms of governmentality) (Lemke, 2000) technological systems may further sustain and the careful targeting of resistances and struggles against such governmental rationalities whenever their implementation – through technology or other means – may drive us towards a situation incompatible with the flourishing of virtuality and utopia.

Given the ubiquitous character of technology and the propensity of technology to shape the contexts and conditions of human experience and action, to reconfigure and restructure human interactions and the patterns of private and public spaces, involvement is needed with technology, whether one likes it or not. The building of an informational infrastructure allowing for the flourishing of human virtualities, even when these virtualities may give rise to radically new and unexpected individual and societal forms of existence, is a matter of public interest and should result from intensified interactions between humanities scholars, computer scientists, governmental and industrial stakeholders, and citizens. New modalities and forms of societal dialogue and new mechanisms of participation must be (re)invented, which would allow for the representation of all stakeholders, even those whose voices are usually weaker than the voices of the majority: there is no other way to render our lifeworld – be it depicted as the ‘information society’ or the ‘surveillance society’ – humanely sustainable.

At the individual level, subjectivation (understood as the affirmation of singularity and resistance against subjection, or against attunement to the dominant

scripts and norms) of profiled and predicted individuals may take the form of an engagement with technology. Engagements with technology, whereby the subject, from a mere passive object of detection, observation, classification and forward-looking evaluation by technological systems, becomes an active subject and regains agency, may take various forms, including reconfigured experiences of techno-physical embodiment, of subjective reappropriations, re-finalizations and displacements of technological artefacts by individuals reclaiming, in a radical manner and against the profiling machinery, their status of subjects and authors of their own biographies (Velleman, 2005), reclaiming both the authority and responsibility to produce meaning and assign symbolic values, of which they can give an account, to the variety of objects – including their own body – they are presented with or themselves create.

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8

MAPPING WITHOUT THE WORLD AND THE POVERTY OF DIGITAL HUMANITARIANS

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Introduction

Maps divide nations and peoples artificially. They convert hybrid identities into homogeneous nation states. They reduce complex social institutions to uncanny symbols. They alter coastlines, aggrandize lands and distort buildings. They are the product of a long and contingent process of (mis)calculating and (mis)managing data. They are ideologically driven and disavow provinces, peoples and conflicts. 'Maps are authoritarian images', wrote J. B. Harley (1989, 13), and he linked maps to colonizers, monarchs, rulers, bureaucrats and the maintenance of the status quo. At least since the 1970s in geography and since the 1990s in international relations (IR), critical scholars have exposed the inextricable relation between maps and power and undermined the assumption that maps represent territories (Wood, 2010). They have noted the impossibility of representing an outside reality without generating remainders; they have depicted maps as power assets that generate political and social consequences. And yet, despite the fact that critical scholars have annulled the authority of all maps, by deconstructing them and revealing their necessary affinities with power, digital maps have mushroomed.

Today, maps have gained popularity. We zoom in and print routes from Google Maps, travel with GPS or carry smartphones that guide us along a real-time route from one location to the next. In the field of humanitarian action, digital maps have been introduced – alongside other digital technologies and intelligent processes like Big Data analysis, robotic devices, autonomic computing, or crowd-sourcing – to guide international agencies for relief efforts. For the common man, the question is: if maps are false representations of the world and deceitful, as theorists have suggested, how could explorers have navigated oceans and travelled to distant hinterlands? Or more recently: how could Laura Decker, a thirteen-year-old sailor, complete a solo circumnavigation of the globe? Comparably, for the