Seeing and Thinking Borders

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Introduction

The title of this chapter, *seeing and thinking borders*, can be read in three different ways. It might refer to, firstly, the obvious fact that I try to adequately *see and think borders* - to subject processes of bordering and their contingent results to critical scrutiny. Or, secondly, the title might indicate that the acts of *seeing and thinking* themselves *border* - that perception and cognition are crucial elements in processes of bordering. Here, the role of cultural expressions in the habitualising and de-habitualising of contingent regimes of in/exclusion can be investigated. Thirdly, the title might mean that, today, borders increasingly start to see and think on their own - they become *seeing and thinking borders.* This part will focus on dynamic and responsive technological systems that afford new forms of categorization and classification at the various nodes of contemporary dis-located and networked borderscapes. Finally, I will bring these somewhat divergent meanings back together again and suggest a trajectory for future research that critically scrutinizes the role of culture and technology in processes and practices of bordering.

Thinking Borders: States, Processes, Practices

In the last decades border studies have developed from a sub-discipline of political science and historiography that predominantly directed attention to state borders into

an interdisciplinary field that approaches borders from a variety of different vantage points. As a result of this, state-based advances are supplemented by frameworks that aim at assessing possible impacts of everyday practices, culture and aesthetics, media representations and technologies, or political economy. Within this paradigm, borders become conceivable as complex and constantly emerging frames that predispose reproductive performances, rather than as static dividing lines between reified units (Brambilla, 2014; Parker & Vaughan-Williams, 2012; Rumford, 2012; Perkins and Rumford, 2013; Côte-Boucher, Infantino, and Salter, 2014). In this chapter, I will align to such a processual understanding of the term and outline some analytical and theoretical tools that can facilitate a 'multiperspectival study of borders' (Rumford, 2012, p. 887) with particular emphasis on the role of cultural expressions and technology.

Borders are intimately connected to the formation and constant reformation of contingent order(s). Van Houtum, Kramsch and Zierhofer (2005) coin the term b/orders to account for this condition. According to them, b/orders are temporary, partial and situated effects of framed socio-cultural practices that sediment into physical entities and tacitly predispose reproductive social performances. The mutually constitutive relationship between borders, orders and the performances they invite, has been termed bordering by for instance van Houtum & Naerssen (2002). As Perkins & Rumford (2013) have shown, in border studies increasing attention is paid to the contribution of everyday practices to such processes of bordering that lead to a 'vernacularisation' (p. 270) of borders and border research beyond a reductive focus on the state, and that make borders conceivable as not only limits and obstacles, but also resources that facilitate contact and enable orientation in ambiguous socio-political and cultural terrains.

In the theoretical lineage outlined above, processes of bordering are not confined to the specific institutionalized dividing lines between sovereign nation states (the state border proper with it its regimes of control and surveillance), but are conceived as increasingly dispersed, dis-located and folded into established territorial units. As such, border research increasingly directs attention to the complex, dynamic and constantly shifting socio-cultural, economic as well as political borderscapes where contemporary bordering processes take place across various scales from state-driven top-down politics to mundane practices conducted at the level of everyday life (Rajaram and Grundy-Warr, 2007; Brambilla, 2014; Côté-Boucher, Infantino, and Salter, 2014).

Dis-located processes of bordering in contingent socio-political and techno-cultural terrains create dynamic configurations that activate and temporarily reify various orders. The present chapter will outline analytical and theoretical frameworks that allow for an assessment of the roles of culture and technology in the formation and reformation of regimes of in/exclusion at the increasingly ubiquitous and ephemeral contemporary borderscape. The second and third of the three different meanings conveyed by the title of this chapter - *seeing* and *thinking borders* - will serve as a structural template for this endeavour.

Bordering Culture: Perception, Cognition and Aesthetics

The present section outlines a theoretical and methodological framework that allows for a productive analysis of the ways through which form and content of cultural expressions interact and interfere with perception, cognition and agency. As such, I address the possible role of an aesthetic sphere in the formation, negotiation and possible subversion of received ways of seeing and thinking that among other things also impact upon practices and regimes of contemporary bordering.

The following considerations are based on an extended understanding of aesthetics. Following Welsch's (1997) thought, I posit a movement of aesthetic thinking away from focus on high art and toward an inclusion of popular culture, design and constructivist notions of knowledge formation. In this respect an aesthetic dimension of borders implies their sensibility within everyday life-worlds. To properly fulfil their functions, borders have to be accessible to the senses. Practices of sensing, again, are predisposed by established, yet contingent, perceptual and cognitive schemata and frames. An analysis of cultural expressions, both 'high' and 'low', can alert to the processes through which these schemata and frames are formed, reified, negotiated and subverted. Bordering, as such, emerges as an aesthetically and culturally infused socio-political practice (Schimanski and Wolfe, 2013).

Arguing from the vantage point of cognitive sociology, Zerubavel (1997) has shown that the social and material world is not only experienced through individual bodies and sensual apparatuses, but that perception and cognition are coloured by a multiplicity of backgrounds and contexts. Particular sets of shared conventions and schemata impact upon the way we see things and how we process and respond to this sensual information. As such, in framing individuals' perception and cognition, 'thought communities' Zerubavel, 1997, p. 9) influence social practices that performatively feed back into the very frames predisposing these activities in the first place. Zerubavel terms the collective frames for perception, cognition and agency 'social mindscapes' (p. 8) and argues that they constitute a bridge between individual subjectivities and a contingent physical world.

Zerubavel's framework still leaves the question of how mindscapes form individual subjectivities unaccounted for. The field of cultural psychology, however, can provide a viable terminology that enables a better understanding of the processes through which

individual subjects are formed in, and their actions predisposed by, preceding collective structures, and how these subjects might potentially challenge and subvert these structures in and through everyday practice. According to Kirschner (2010), intersubjective cognitive schemata, scripts and frames partake significantly in the formation of what she terms 'socio-cultural subjectivities' (p. 771). In this view, individual persons and their socio-cultural surrounds are 'constitutively intertwined' (Kirschner & Martin, 2012, p. 4) and co-evolve in and through constant exchange. The individual human agents actively producing and reproducing social orders in and through their day-to-day practices appear predisposed by a contingent cultural sphere. What Kirschner and Martin assert on general terms also retains validity in relation to cultures of in/exclusion forming contemporary borders and their contingent regimes. In placing subject-formation at an intermediate level, cultural psychology reasserts the intrinsic significance of culture, society and other collective units for the formation and negotiation of individual subjectivity and enables an understanding of individual agency as limited by contingent constraining frames.

Laclau and Mouffe's (2001) discourse theory makes it possible to connect advances in cognitive sociology and cultural psychology to a terminology that enables an understanding of individual agency, affect, materiality and cultural form within overarching discursive frames. Laclau and Mouffe (2001) disconnect discourse from semiotics and language and open for an inclusion of the material world, the body and individual agency. This is achieved through a post-foundationalist reading of their work that puts particular emphasis on the concepts of contingency, indeterminacy and overdetermination (Marchart, 2007).

According to Laclau and Mouffe (2001) discourses are, 1) material entities (p. 108), 2) always only temporarily and partially reified, and 3) interpellating every individual in

a subject-position thus framing performances and predisposing perception and cognition (p. 98). In Laclau and Mouffe's thought, the material world only becomes accessible to the subject through practices of articulation that aim at (partially and temporarily) objectifying a particular feature of this world. These articulations can be linguistically, culturally and/or technologically mediated, and they are framed by the characteristics of the physical entities involved. As such, all articulations can be stratified with reference to these physical peculiarities and emerge as contingent upon pre-established frames of reference, rather than as arbitrary constructs.

To provide an example: A map is a discursive articulation of a particular landscape. The articulation 'map' is a physical object that carries meaning accessible via conventionalized code. Symbols and icons selectively highlight particular aspects of a preceding physical reality and convey these to users, while the physical form of the map invites certain performances while it discourages others. The referential relation between map and landscape is not fixed, i.e. the map can articulate features that are not present in reality or it can fail to highlight actually existing geographical formations. As soon as the articulation map is performed, i.e. put to use in particular contexts, a stratification of the referential value becomes possible and good maps can be distinguished from bad or false ones with reference to a preceding material reality that ties down possible articulations about it. As such, the relation between map and landscape emerges as one of contingency rather than arbitrariness.

Discourse theory assumes that expressions can articulate a phenomenon correctly. However, every phenomenon can give rise to various correct articulations. The logic of contingency implies that even though certain accounts can be proven wrong, it is impossible to assert a timelessly valid, objective truth. However, careful analysis of the material affordances and formal properties of a given articulation can move certain

dominant potentials for meaning and performance into sight. To emphasize this, Laclau and Mouffe replace the notion of objectivity with perpetuated processes of objectification within contingent discursive frames.

This logic of contingency extends to the notion of subject positions, as well. Even though Laclau and Mouffe (2001) assert that every individual is positioned by discourse and cannot escape this positioning, their framework allows for a conceptualization of agency under determinate structure. Laclau and Mouffe argue that every subject is overdetermined, i.e. positioned by several discourses at the same time. These positionings constantly intersect and interfere and at times mutually exclude one another. The subject as such emerges as fragmented and split, yet enabled to actively oscillate between various frames that can be successfully dislodged with reference to alternative ones. By these means a core of individual agency is retained and rearticulation, change and subversion become conceivable practices. Discourse theory can productively be combined with Zerubavel's (1998) cognitive sociology and advances in cultural psychology (Kirschner, 2010) to enable an improved understanding of how subjects are positioned and employ their overdetermination to effectuate change.

Through this combination, discourses emerge as performed and embodied, intersubjectively constituted and temporarily stabilized, social mindscapes that are constantly negotiated by overdetermined, socioculturally constituted subjects on contingent material terrain. The means through which subjects are positioned, and exert their limited agency, are tacit or overt cognitive, perceptual and performative schemata that function as patterns of support and restraint and predispose reproductive performances at the level of everyday practice. An analysis of the formal properties through which cultural products invite for a reproduction or de-habitualization of these schemata and the practices they entail, as such, emerges as important field of cultural

research. Culturally inflected border studies, on the other hand, can direct attention to the ways through which cultural expressions either reproduce or subvert the schemata, scenarios and frames that underlie established regimes and practices of in/exclusion.

Analysing (De-)Habitualizing Frames

What, then, is the connection of these theoretical considerations with the study of borders? A border, argues Brambilla (2014) drawing on Paasi's (1996) thought, is "both a symbolic and material construction resulting from an interweaving of a multiplicity of discourse, practices, and human relations "(p. 8). Discourse theory provides a suitable terminology to describe and systematize some of the processes through which such multiscalar borders organize and amplify contingent divisions at a material, social and mental level. I will now turn to neo-formalist analysis to highlight some methodological tools that enable a productive analysis of how cultural expressions interfere with and frame these processes.

In a study based on the thought of Russian formalist Shklovsky (1965), Thompson (1988) has shown how a neo-formalist analysis of film can point to specific textual means that afford a de-habitualising of established cognitive and perceptual schemata and scripts. This form of estrangement, she argues, is the basis of art's potential for subversion and its role as a facilitator of progressive change. Arguing in a similar direction, Schimanski and Wolfe (2013) have connected a formal analysis of the border art by Morten Traavik that dislocates actual Norwegian-Russian border posts to central urban locations to a de-familiarisation of cognitive, perceptual and performative frames of contemporary bordering processes.

Figure 1: Components of bordering processes and the role of cultural expressions
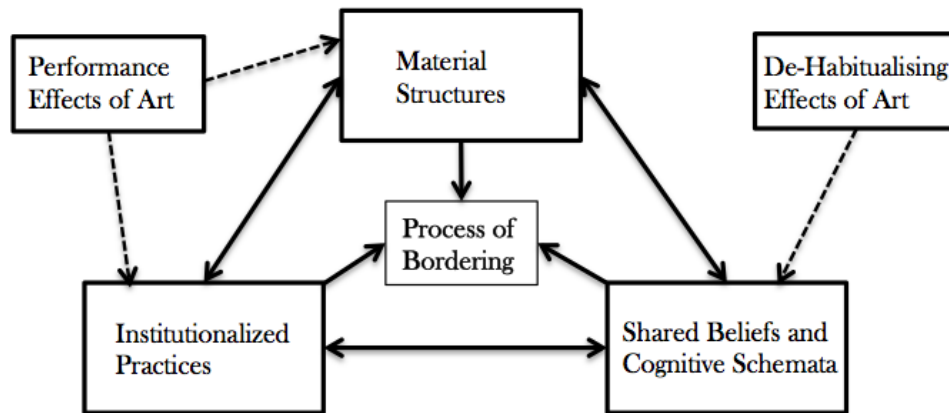
Socio-material mindscapes and discursive positions become accessible only once the subject steps out of the confines of a particular discursive order (and crosses the border into a competing one) and looks at it with the eyes of the other. As such, a de-habitualisation afforded by cultural expressions enables an overdetermination of the subject in the sense of Laclau and Mouffe (2001) that raises awareness for tacit frames of knowledge, practice and perception, and this way opens for an unveiling of previously naturalized power relations and regimes of in/exclusion. What is the case for art in general retains its validity in border art's relation to contingent regimes of in/exclusion (Amoore and Hall, 2010; Weber 2012).

Art can enable overdetermination and repositionings that create potentials for subversive agency and political change. On the other hand, cultural expressions can also serve to reiterate established dominant paradigm scenarios and play into an objectification of contingent articulations and practices as apparently timeless and necessary (Pötzsch, 2013). Empirical studies of cultural expressions' formal properties can point to the textual means through which the activation of certain dominant meaning potentials in and through processes of reception are systematically invited and predisposed.

What has been said above leaves four trajectories for an analysis of the role of cultural products in processes of bordering; 1) an analysis of cultural products' formal

properties and the dominant tendencies of meaning these invite, 2), a contextualization of these dominant tendencies of meaning with respect to discursive frames, 3), research into how situated audiences receive and process these textually generated potentials and 4) an investigation into the ways through which socio-technological frames predispose dissemination and reception.

Even though artworks and cultural products have the inherent potential to impact upon the cognitive schemata that predispose and frame reproductive practices and performances, it is not given that this potential is realized in the complex techno-social environments in which these cultural expressions operate. While the bordering effects of Hollywood war and action cinema are facilitated by the massive availability of these medial forms (Pötzsch, 2013), more subversive or inclusive artistic rearticulations of the present condition often suffer from limited access to media channels and the public. As such, certain works' attitudes do not necessarily translate into corresponding performance effects at the level of day-to-day economic and political practices (Paglen and Gach, 2003).

One way of successfully approaching the problem of dissemination (and of the gatekeeping function of galleries, museums, and art fairs) is the practice of landscape art. Van der Merwe's *Diaspora* that was created for the 2013 X-Border Art biennial in Rovaniemi, for instance, issues a challenge to received understandings regarding borders and mobilities. Consisting of three large boulders that were moved to a residential area of town and a series of border-related terms attached to them, the work connects a discourse of borders, mobilities and in/exclusion with the apparently solid and permanent structures of large, heavy stones (images 1-2). A trace leading up to each rock indicates a recent movement and this way further de-habitualises received understandings of boulders as static markers of identities and division. At the same

time, the work's placing in an urban residential area reasserts a significance of public space as an arena for contemplation, expression and political deliberation thereby performatively challenging its capitalization and de-politization. Attention to the formal properties and immediate context of the work that invites these forms of engagement emerges as an important element of contemporary border studies.

Images 1-2: Strijdom van der Merwe's *Diaspora* in Rovaniemi (Finland), June 2013 (courtesy of the artist).

Bordering Technologies: Bodies, Networks, and Machines

In their call for a new agenda for critical border research, Parker and Vaughan-Williams (2009) assert an increasing complexity of the relation between borders and territorial location. 'Borders', they argue, 'are not only found at territorially identifiable sites [...]. Instead, they are increasingly ephemeral and/or impalpable: electronic, non-visible, and located in zones that defy a straightforwardly territorial logic' (p. 583). This combination of a growing disconnection of regimes of in/exclusion from concrete physical locations with attention to the affordances of new technologies for practices of bordering is salient for the third understanding of the title of this chapter.

As Vukov and Sheller (2013) note, contemporary processes of bordering are increasingly centred upon 'new technologies of bio-informatic border security and remote surveillance' that employ 'sophisticated, flexible, and mobile devices of tracking, filtration, and exclusion' (p. 225) to manage cross-border flows and movements. As

such, biometrics, the ubiquitous surveillance of digital networks, and algorithm-driven predictive analytics emerge as salient dimensions of seeing and thinking borders.

Today, biometrics, dataveillance, and big data analytics to a growing extent include citizens and their day-to-day performances and lived spaces, both online and offline, into the bordering process. This happens through a technologically afforded implicit form of participation (Schäfer, 2011) where subjects, often unknowingly, leave biometric and/or digital traces that are captured, mined and analysed. This way, citizens themselves passively contribute to their own surveillance, exploitation and control (Amoore, 2006; Amoore and de Goede, 2008; Andrejevic, 2007, 2013; Fuchs, 2012). Trusted traveller programmes, RFID-equipped biometric passports, routinely assembled sets of population-level big data and the development of ever-more interoperable databases enables new forms of tracking, profiling and algorithmically driven predictive policing and management (Andrejevic, 2007, 2013; Lyon, 2014; Bauman et.al., 2014). These technologies also afford new regimes and practices of in/exclusion at the contemporary dislocated and increasingly ubiquitous border (Amoore, 2006; Amoore and de Goede, 2008; Pötzsch, 2015).

New technologies of surveillance and control more intimately interconnect borders and human bodies, while at the same time dispersing border regimes across everyday spaces and virtual arenas. As such, borders become at once embodied and ephemeral – they are directed both at specific individuals and at abstracted patterns of life calculated on the basis of digital data – and they impact upon practices at both a top-down and vernacular level. In the following, I will trace some of the technologies behind this double-movement of contemporary bordering.

Embodying Borders: Biometrics

Biometrics-based systems of governance such as the European interoperational databases SIS II and Eurodac, or the US NEXUS programme entail new dynamics for bordering processes. Practices of screening, storing and profiling biometric markers such as iris structure, fingerprints, DNA samples, gait characteristics or affective responses informationalize individual bodies and create data-doubles that are subjected to 'digitised dissection' (Amoore and Hall, 2009) at the contemporary dislocated and increasingly virtual border. These data-doubles exist independently of the physical bodies they represent and limit the agency of specific subjects or of certain abstracted patterns of life on behalf of both commercial and state actors (Amoore, 2006; Ajana, 2013; Amoore and Hall, 2009; Adey, 2009; Pugliese, 2010).

The main purpose of biometric border work is twofold (Ajana, 2013, p. 3; Popescu, 2011, p. 110-111). On the one hand, the objective is to verify the identity of particular travellers – to find out whether or not particular subjects are the persons they purport to be. On the other hand, the aim is to establish identities – to assess who a particular person really is. Both strategies, warns Pugliese (2010), are vested in the ultimately unfounded belief that the human body inheres the capacity to reveal objective truth about certain individuals – a belief that excludes contingencies and disregards the possibilities of errors and frauds, and as such, might lead to a 'discrimination of non-normative subjects' (p. 2).

Through the use of biometrics and interoperable databases for the management of global mobilities, argues Popescu (2011), 'the body has become the ultimate mobile border that can allow the control of movement at the smallest spatial scale' (p. 5). In the era of biometric bordering, 'the body becomes the carrier of the border' (Amoore 2006, p. 347-8). As such, the biometric border is 'never entirely crossed, but appears instead as a constant demand for proof of status and legitimacy' (p. 348). Biometric

technologies dissolve complex subjectivities into 'processable, storable and retrievable information' (Ajana, 2013, p. 7), a process that entails a tacit multiplication and dispersion of these identities across various virtual spheres. The gathered information, however, is not limited to biometric markers, but also includes population-level sets of data assembled through new practices of dataveillance and processed in algorithm-based predictive analytics.

Digitizing Borders: Dataveillance, Algorithms, and Predictive Analytics

Vast amounts of data are daily processed by individuals on their computers, smart phones, credit cards and other digital devices. This information is routinely screened and stored to enable a comprehensive profiling of users for business and security-related purposes (Andrejevic, 2007, 2013; Fuchs, 2012; Mayer-Schönberger and Cukier, 2013). Simonite (2013), for instance, shows that apps such as *Google Now* develop a 'predictive intelligence' that not only foretells what people will do next, but that also actively suggest fitting future performances, thereby providing direct incentives for subjects to actively shape the world in correspondence to initial predictions. Today, social networking sites such as *Facebook* are among the most cherished sources of big data mined for economic purposes (Simonite, 2012; Fuchs, 2012). Of course, such technologies for acquiring and assessing population-level sets of big data are also becoming important for contemporary apparatuses of security that control and manage mobile and networked populations (Amoore and de Goede, 2008; Lyon, 2014; Bauman et.al., 2014; Pötzsch, 2015).

Dataveillance and algorithm-based predictive analytics detach the contemporary ubiquitous border from individual bodies and disperse it across global networks and databases. Increasingly pervasive practices and technologies of surveillance and analytics

entail an implicit inclusion of citizens' everyday practices and habits in the bordering process and lead to an increased automation of contemporary regimes of in/exclusion. The case of the surveillance scandal recently revealed by Edward Snowden can serve as a good example that highlights various implications of these developments.

In 2013 former US secret service contractor Edward Snowden started to leak sensitive information regarding the large-scale surveillance and bulk collection of global communication flows by the US National Security Agency (NSA) and the British General Communications Headquarter (GCHQ). Under the auspices of the PRISM programme the NSA, for instance, gained comprehensive access to the data stored on servers of key Internet service providers such as Google, Facebook, Yahoo, Skype, YouTube and others. In addition, the agency tapped into material Internet infrastructure such as intercontinental fibre optic cables, modified the firmware of important router services, and successfully compromised security applications and encryption tools. Besides Internet traffic also mobile phone communications and geolocation data are accessed and stored (Ball, Schneier and Greenwald, 2013; Gallagher, 2013; Greenwald and MacAskill, 2013; Gellman and Soltani, 2013; Lyon, 2014).

The immediate security-related objective behind the apparent shift in surveillance practices from exceptional individual cases to a generalized practice is an aggregation and mining of sets of big data at population level that allows for the establishment of a norm against which significant deviations can be measured. Analytical applications such as GCHQ's Tempora or the NSA's XKeyscore and Co-Traveller enable an automated analysis and mapping of the vast datasets acquired by the agencies, the results of which increasingly inform political processes and decision makers. The case of signature strikes in contemporary US drone warfare that are directed at algorithmically

determined patterns of association and behaviour, rather than concrete individuals, can serve as a case in point (Shaw, 2013; Chamayou, 2013; Holmqvist, 2013).

These examples show that algorithm-driven predictive analytics increasingly informs security-related decisions and move governance toward managing possible futures (Adey, 2009; Amoore, 2013; Amoore and Goede, 2008; Andrejevic, 2013; Lyon, 2014; Bauman et.al, 2014). By these means, warn Amoore and de Goede (2008), governance is deferred 'into a series of calculations' (p. 180) that disable deliberative processes and reduce the importance of human decision-makers. The evolving 'big data/surveillance link' (Lyon, 2014, p. 4) implies an increased automation of data assessments and subsequent performances that also acquire relevance for border-related practices. These processes form the core of an understanding of contemporary borders as comprised of devices that to a growing extent see, think and act for themselves.

New technologies and techniques of surveillance, assessment and prediction serve to tailor border-crossing procedures and tier mobilities to enhance the speed of normative trusted travellers, while slowing down and ultimately stopping and detaining patterns of life that deviate from the implied norm. These processes are increasingly driven by machines, remain largely unnoticed by the normative majority yet entail at times deadline consequences for non-normative subjects (Ajana, 2013; Pugliese, 2010).

Andrejevic (2007) has argued that new technologies, such as the ones described above, profoundly impact politics and society in late-modern democratic nation states where government intrusions into the privacy of users almost seems 'quaint and rudimentary [...] to a surveillance-habituated public' (p. 211) that is used to delivering data regarding all areas of life to business-oriented agents tailoring offers of new commodities accordingly. Andrejevic coins the terms *iPolitics*, *iManagement*, *iWar*,

iBusiness, iCulture and *iSociety* to account for these processes. Drawing upon Andrejevic's work, Pötzsch (2015) has recently suggested the term *iBorder* as a theoretical tool to better understand the ephemeral, mobile, embodied and ubiquitously networked nature of late modern regimes of in/exclusion.

Regardless of the technological affordances mentioned above, a smooth actualisation of the apparent potentials for comprehensive surveillance, management and control cannot be uncritically assumed. As for instance Tsianos and Kuster (2012), Amoore and Hall (2010), Walters (2011) and Weber (2012) note, the technological advances sketched out so far also entail unprecedented opportunities for systemic failures, critical re-appropriation and tech-savvy practices of resistance. From the erasure of fingertips by migrants to trick biometric systems (Tsianos and Kuster, 2012; Walters, 2011), via the Transborder Immigration Tool – an initiative by art activists who disseminate and electronically tag water supplies and safe routes through the Mexican-US borderland (Amoore and Hall, 2010, Weber, 2012) – to the regular swapping of sim-cards by insurgents in Afghanistan and Iraq to fool automated tracking and targeting mechanisms (Greenwald and Scahill, 2014), new biometric and network technologies afford both practices of management and control, and enable new forms of subversion and resistance.

In both top-down management and bottom-up forms of resistance, however, the growing 'agentic capacities' (Holmqvist, 2013, p. 545) of responsive technical environments have to be taken into account. Algorithmic and biometric bordering entail an automation of procedures of in/exclusion and, therefore, require a rethinking of the axiomatic distinction between human and non-human actors in politics in general and the management of mobilities at the contemporary embodied and digitized

everywhere border in particular. Consequently, calls for practice-based approaches to border studies have to include attention to non-human, machinic forms of cognition and agency that increasingly inform the ways humans see, think and act.

Conclusion: Bordering Practices

As this contribution has shown, the contemporary dispersed and distributed border increasingly sees and thinks on its own. Automated practices of gathering information – sensing the world by various technically enhanced means – and of productively processing the acquired data – a form of algorithm-based machinic cognition – to a growing extent inform and predispose human decision-making and agency. At the same time, processes of bordering emerge as culturally framed. Contemporary borders are as such not only technologically afforded, but also engrained in complex socio-cultural mindscapes that predispose the practices and subjectivities upholding and/or subverting regimes of in/exclusion.

Approaches combining formal analysis of cultural expressions with discourse theory, cognitive sociology and cultural psychology, as well as frameworks adopting a media-materialist and techno-critical perspective emerge as relevant for an understanding of how contemporary borders operate and how they inform perception, cognition and ultimately practices. As such, similar to Bigo (2014) who connects the peculiar bordering practices of European military, border guards and data analysts to concrete technologies as well as the respective social universes shared by the members of each group, future approaches to seeing and thinking borders might trace how socio-cultural mindscapes and socio-technical systems interact to tacitly frame and predispose the everyday practices that constantly shape and re-shape the borders we live by.

A practice based approach to border studies that directs attention to the various day-to-day performances through which situated subjectivities enact, negotiate and potentially subvert the culturally and technologically predisposed regimes of in/exclusion that were outlined above, appears as a viable trajectory for future research. As Brambilla (2014) points out, border research is today an interdisciplinary endeavour that works across multiple scales and dimensions and that accepts 'the complexity of border processes as constructed, lived and experienced by human beings' (p. 14). The present contribution responds to her claim of 'recovering the phenomenological dimension of border studies' (p.14) and suggests ways to better understand the role of culture and technology in this context.

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