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Special Issue

Anthropology meets Pragmatist Philosophy: Anticipatory Knowledge and the Practices of Measuring and Producing (In)Security

Edited By
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Coping with the Unknown

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This special issue brings together research from various disciplines to not only assess the current state of human rights, aid and development projects, and legitimate governing orders – often framed as factors of human security – but also to critically examine the increasing reliance on measures of compliance and progress in these areas, reflecting the current "world of indicators," as Richard Rottenburg and Sally Engle Merry put it (2015). While the tools and models currently being utilized are indeed quite powerful, the call for different, more effective kinds of knowledge and evaluative instruments in the face of (allegedly increasing) uncertainty, nevertheless, continues to grow at the same time. Yet neither the various political or humanitarian crises, nor the urgent calls to take action are by any means new. Far from representing an unusual state of affairs, uncertainty is both fundamental to the human condition and the world we inhabit. John Dewey (1938) described the very contingency of social life as the starting point for human reflection, for the generation of meaning and social constructions of evaluation.

What is characterized as uncertainty and contingency at the philosophical level is understood in terms of vulnerability and insecurity at the level of practical engagement and human interaction. Despite our best attempts to make our world certain, regular, thus predictable, we seem incapable of escaping this fundamental aspect of existence. Yet this apparently unbridgeable 'gap' is paired with another apparent constant, namely our undeterred efforts to make our world more certain and secure (even when these efforts themselves sometimes serve as further sources of insecurity). This understanding of the world and human practices represents one of the main tenets of pragmatist philosophy. Unlike more traditional and

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historically dominant conceptions of knowledge, which presuppose a division between the theoretical and the practical, pragmatism conceives of epistemology in terms of our practical relationship to our environment and world. Expressed in terms of our topic, pragmatists are concerned with and focus on precisely the relationship humans have toward this 'gap', as well as the practices we employ and further develop to deal with these uncertainties. This inquiry intersects, in fact, with the ways in which social and cultural anthropologists, whose work is informed by practice theory – in the vein of Pierre Bourdieu, Sherry Ortner, and many others – understand and study human agency and the production of cultural and social meaning by "acting subjects" (Ortner).

Times of crisis inevitably provoke more pronounced responses, and the ongoing Covid crisis is no exception. The current pandemic highlights the continuing calls for action as well as amplifies the processes, strategies, and measures meant to address an even more uncertain, more fundamentally threatening future. The global nature of the Covid crisis has also laid bare the interwoven nature of several large-scale networks and their ambiguity. This level of integration and complexity is both a potential vulnerability and a strength of the contemporary world.

What was initially a healthcare crisis in one part of the world rapidly spread to other areas and transformed into a set of interlinking crises, the effects of which have acted as seismic waves disrupting entire economic systems, challenging social cohesion, and further aggravating the already growing political divides, economic and resource inequalities, bodily and financial security, and structural deficiencies with regards to, for example, healthcare and social services.

But these crises have also generated equally strong responses in the areas of communication, cooperation, and research to address these challenges and mitigate the effects of the pandemic – i.e., to regain a degree of control and make the crisis calculable. The calls for better infrastructure (both physical and digital), increased funding of hospitals and healthcare professionals, decreased reliance on certain countries or supply chains (i.e., greater diversity when it comes to critical infrastructure and key production facilities, such as pharmaceutical production and research facilities), and a more equitable allocation of resources have become much louder.

While the idea for this special issue originated well before the Covid crisis, and thus does not explicitly deal with it, the pandemic and its implications nevertheless serve to emphasize what we are trying to get at: how we deal with risk and uncertainty, and how these activities shape our relationship with the future. **Alice Hills** explores issues of security production by looking at how emergent police forces in two Somali cities, Kismayo and Baidoa, are shaped by cultural practices. Based on prototypical models of policing, political considerations, local power relations, and social phenomena have also served to shape the two police

forces that find themselves within the general paradigm but at the other end of the technical and financial spectrum.

The adoption and adaption of circulating models to new environments and different situations is a tried-and-true means of creating a hoped-for future. The ethnographic investigation by **Christina Garsten** and **Adrienne Sörbom** looks at what they term "future industry," which is primarily engaged in the outlining and analysis of possible geopolitical scenarios. What has long been the domain of governments, institutions like think tanks, consultants, and some governmental bodies have made an industry out of organizing the future – and its alleged plannability. By taking a leading role in the process of anticipation, this industry's versions of the future are not only sketched out but also commented on and made into a commodity.

That the future industry is having a profound impact on how governments, private business, and citizens perceive and act toward their collective futures is made tangible by **Astrid Matejcek** and **Julia Verne**. In their contribution, they examine how the Tanzanian government is using specific technologies as a way to address and manage problems like climate change, rapid population growth, or conflicts related to land use and competing modes of livelihoods. While the use of the Mobile Application to Secure Tenure (MAST) by the government aims at making the agricultural futures in the Kilombero Valley actionable, it is also generating new insecurities and new economics of knowledge in this part of rural Tanzania, rendering it a double-edged sword.

And while technology and sophisticated theoretical modeling appear to be the dominant approaches to dealing with uncertainty and the future in this day and age, **Annika Witte,** with her ethnographic study in Uganda, shows us that we should not underestimate the effectiveness of perhaps the most common and informal forms of interpersonal communication: rumors and gossip. She explores how the discovery of oil there not only attracted companies and a mostly non-local workforce to the region, but it also opened up a space for rumors about the future of oil in the region and those involved in the oil business. In the absence of information from the government about the actual plans for developing oil, gossip and rumors spread throughout the local population and fueled – in a double sense – projections of the future. More than just 'talk' with a questionable factual basis, this practice can be seen as an exchange of risk narratives meant to share a possible dark future informed by past negative experiences.

Following up on the importance of lived futures, **Johannes Schick** offers a more theoretical reflection on futures and the role of technology in their production. Discussing the work of Henri Bergson and Gilbert Simondon, he points out that the increased technological development of prediction and control does not take into account the temporal dimension and anticipatory faculty of

living beings. Images play a key role in our structuring practices, and it is argued that the positive force attributed to them by Bergson can potentially be turned against itself when confronted with the numerous challenges currently facing humanity. Instead, human beings and the environment need to be conceived in terms of a constant and open-ended reinvention process.

While the modes of producing and measuring anticipatory knowledge that are discussed in this special issue imply the travel and transformation of ideas and/or norms, much more is at stake here: Without a theoretically guided understanding of human engagement with the world, of how social practices function, or even of the process of thinking, we are setting ourselves up for a fall back into overly simplistic understandings of the phenomena at play. Thus, it would seem critical that we approach the practices of measuring and producing (in)security both in terms of a nexus of social identity, organization, and interaction *and* as a site where thinking takes place, knowledge is (re)produced, and the power of decision-making is reconstituted in the carrying out of said practices. This means not only assessing the kinds of knowledge (and their corresponding tools) already at work, but equally important, looking to social practices in order to understand how these kinds of knowledge are produced in the first place. To this end, the contributions to this special issue are focused on and explore social facts, entanglements, and interfaces where anticipatory knowledge is actually generated and where it renders real consequences. At the same time, they demonstrate the potential of the particular interdisciplinary encounter of empirical anthropological research and pragmatist philosophical epistemology.

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Police, clans and cash in Somalia

By
Alice Hills

Abstract

This article explores the ways in which emergent police forces in conflict-affected Southern societies are shaped by cultural practices operating through social phenomena. It uses the record of the prototypical police forces found in the Somali cities of Kismayo and Baidoa, 2014-2017, to explore the ways in which culture, power relations and local realities — in this case, clan-based calculations, Somali and international politics, and physical insecurity — influence police development. It draws on the cities' experience of a donor-funded "basic policing" programme to identify the motivating forces shaping police evolution in a society familiar with many aspects of conventional policing operations and vocabulary but positioned at the opposite end of the technical and institutional spectrum to those shaping police studies' canonical literature.

Keywords: Clans, cultural practices, police, recruitment, stipends, Somalia

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This article explores the ways in which police forces emerging in volatile post-conflict Southern societies with low literacy rates are affected by cultural practices operating through social phenomena. It uses the implementation of a three-year donor-supported police project introduced into the Somali cities of Kismayo and Baidoa in 2014 to explore the ways in which culture, power relations and local realities — in this case, clan-based calculations, Somali and donor politics, and chronic insecurity — affect the meaning, development and implementation of police programmes.

Based on interviews with senior international and Somali advisers and analysts in Mogadishu, Nairobi and London in 2016 and 2019, its focus on the cultural practices and values influencing the organisational development of formal policing permits exploration of the dynamics (i.e. the issues producing movement and change) of emergent police forces in an otherwise inaccessible environment.[1] Drawing on Grindle's discussion of good-enough governance as "the minimal conditions of governance necessary to allow political and economic development to occur" (Grindle 2007: 554), though using the term descriptively rather than technically, it identifies the impact of Somali preferences and practices on the minimum requirements necessary for the political and social phenomenon that is internationally acceptable formal policing. The article's basic assumption is that policing is a process of interaction within specific environments of interest and power (Findlay and Zvekić 1993: 5). Further, policing is not only a product of its environment: it shapes its political and social development in a fundamental manner. Thus, the key cultural practices, behaviours and norms affecting the selection and deployment of Somali police officers[2] are clan-related; clan affiliation, which is regulated by Somali customary law or *xeer*, is the main indicator of identity within the Somali nation and effectively determines access to policing provision (Luling 2006, Gundel 2009). Nevertheless, clan is itself a flexible political and social tool, and clan relationships are often a mask for elite economic, political and ideological interests (World Bank and UNSOM 2017: 17, Home Office 2019: 13, 14). In other words, clan helps to illustrate the ways in which the behaviour, preferences and values shared by most Somalis (i.e., Somali cultural practices) are externalised and become events or occurrences capable of influencing group or individual conventions, norms and organisations (i.e., social phenomena). Although the dynamics at play are opaque and inaccessible to most non-Somalis, Kismayo and Baidoa's experience nevertheless helps to provide the granular detail needed for meaningful analysis.

The discussion that follows considers, first, the challenges of identifying the factors shaping prototypical or quintessential forms of police forces. To explore the explanatory value of this approach it notes, second, the contextual details of Kismayo and Baidoa's police before, third, identifying the minimal requirements

needed to meet local expectations. These are reflected in section four, which pays special attention to three issues expressing the power relations, cultural preferences and physical insecurity at the heart of Somali policing: recruitment, stipends and retention. The discussion concludes that while the formal structures of prototypical police forces indicate the political expectations of their most influential (and typically international) advocates, the day-to-day development and implementation of such forces is influenced primarily by local cultural preferences operating through social phenomena.

Policing reflects cultural preferences

It has long been accepted that the social order reproduced by the police reflects the needs and expectations of the society that permits its operation (Marenin 1985). Further, much is known about the technically sophisticated policing found in rich industrialised societies such as the USA, UK, Japan and Australia, each of which exports its preferred style of policing to conflict-affected societies (Bayley 1990, Chan 1997, Reiner 2015). Yet little is known about the dynamics of formal policing in countries where state and police institutions are a facade, and opaque and informal decision making is favoured over institutional clarity and procedural predictability, even though their experience offers insight into the police's evolution towards professionalism and institution building (Giustozzi and Isaqzadeh 2013: 1). In other words, there is a gap between the canonical touchstones of policing and those found in fragile Southern countries: in this case, Somalia.

Dedicated to facilitating the technical and political standards associated with "professional" policing, the international communities' preferred approach relies on multi-agency co-operation, service and community-oriented policing, which is presented and justified in terms of technical standards or, more commonly, democratic norms and values such as accountability and gender equality. A case in point is the United Nations Development Programme (UNDP)'s focus on policing strategies designed to 'improve access to inclusive, equitable and accountable forms of security and protection for all Somalis' (UNDP 2019). The result is that donors import international models and practices while neglecting the realities of everyday Somali life, downplaying the extent to which security provision is linked to clan-based calculations, business opportunities, political influence, and resources such as cash and land (de Waal 2015: 109-129).

Although police studies now include ethnographically informed accounts of police forces in relatively functional states such as Niger and Nigeria, little attention is paid to formal policing in societies in which state and police institutions are a facade (contrast Beek et al. 2017). One result is that the billions of euros, sterling and US dollars – and Turkish lira and Japanese yen – spent on police-related

projects in Somalia have achieved little of practical or analytic value. It could not be otherwise when donors do not know how Somali police understand their role or spend their day, let alone understand the ways in which international and local approaches converge or diverge. More fundamentally, little is known about the ways in which police development and the power networks associated with emergent security forces and their occupational culture relate to social practices. One way to address this is to explore the empirical foundations and defining traits of specific examples of Somali policing.

Somalia's experience is extreme, so it provides a readily comprehensible limiting case and Kismayo and Baidoa's experience makes the fundamental or residual elements of formal policing visible. Its experience offers generic and granular details that help to illustrate the energising and relational forces influencing emergent police while reminding us that in much of the world policing provision (and residents' engagement with it) owes little to formal structures and actors and everything to power politics, local preferences, contingencies and legacy issues, i.e., to cultural practices expressed through social phenomena.

Basic policing's explanatory value

At first glance, the 'Re-establishing basic policing programme' (RBPP) introduced in Kismayo and Baidoa is a conventional donor response to a standard Somali request: it was developed and supported by the UK's Department for International Development (DFID) in response to an official request from Somalia's president in 2012 for UK support for police stipends. The combination of international consensus on Somalia's strategic significance and the president's use of the language of state-building and democratisation ensured that RBPP received political permission and funding at the Somalia conference held in London in May 2013 when £8 million was pledged to the Mogadishu-based Federal Government of Somalia (FGS)'s security, justice and armed forces plan. This was reconfirmed at the European Union (EU)'s Somalia Conference in Brussels in September. The Brussels talks focused on the role of the FGS and its Somali Police Force (SPF), but also addressed the need to improve security in three cities recovered from the militant group al Shabaab in 2012: Kismayo in the federal member state of Jubaland, Baidoa in South West State and Beledweyne in Hiraan (approximately 520 kilometres to the south of Mogadishu, and 230 and 342 kilometres to its north-west, respectively). This was internationally acceptable because the discussions included agreement on a "New Police Model" setting out a framework for governing and delivering policing in Somalia's federal system (UNSOM 2017). Working with the African Union Mission in Somalia (AMISOM) and Africa's Intergovernmental Authority on Development (IGAD), donors (including the United Nations Assistance Mission in Somalia, UNSOM) promoted the negotiation of memoranda

of understanding between the FGS and Jubaland and South West State on the establishment of the federal member states' police forces and their relations with the federal government's force. This included developing what became known as RBPP, which was intended to enable 1,800 recruits to carry out basic police functions after completing a 12-week course provided by AMISOM. The programme was understood as comprising two components: Stipend delivery and a human resource system managed by the UN's Office for Project Services, UNOPS (£6.3m), and third-party monitoring of the police's performance, behaviour and respect for human rights by Sahan, a Nairobi-based consultancy (£1.8m). Monitoring was a prerequisite for Jubaland to be eligible for the payment of stipends.

The original DFID call for RBPP referred to developing a baseline for analysing how Somalia's formal police and justice sector operated while identifying potential indicators for measuring future progress (DFID 2016). In the event, RBPP was presented in terms of it achieving objectives measured in precise numbers, democratic values and political goals: it was to assist Somali authorities in recruiting up to 1,860 officers who would improve security for Somali citizens (particularly women and girls) and enable the re-establishment of essential services such as health and education while facilitating AMISOM's exit and the handover of basic responsibilities to Somali security institutions. It is not clear who in DFID was responsible for this agenda, but it was quickly agreed that RBPP was to deliver civilian policing and be rolled out in liberated and accessible areas across southern and central Somalia, starting with Kismayo and Baidoa (DFID strategic adviser, London, 10 June 2019). The high reputational and financial risks associated with this were acknowledged but regarded as politically acceptable (Devtracker 2015: 2).

The RBPP was implemented in 2014 and operated successfully as a stand-alone programme until 2017 when it merged with the UK's new Security and Justice Programme to form part of a component addressing "Expanding, training, equipping and providing infrastructure for the police" It then moved from being a bilateral project to becoming part of a joint policing, security and justice programme managed by UNOPS and funded by, amongst others, the EU (which allocated €80m), Germany, Italy, Denmark, the UK, Japan, Turkey and the USA which provided training in criminal investigation and counterterrorism.

The programme's success owed much to the practical manner in which international and local approaches to policing provision were accommodated. The decision making associated with it may have been unclear, but details were handled pragmatically; neither side made unreasonable demands and implementation remained a simple flexible compromise. DFID reports might state that RBPP was a contribution to building a more inclusive political settlement while increasing the public support necessary for developing a social contract between politicians

and the populace, but in practice DFID and AMISOM handled their involvement lightly, allowing the clan-related concerns of elders and local politicians to influence the selection, vetting and recruitment processes. Similarly, DFID's insistence that Kismayo and Baidoa's liberation from al Shabaab required RBPP to first develop an elementary police doctrine capable of promoting good practice while meeting Somalia's security challenges was ignored by the cities' militia-like police (DFID 2017: 7).

The RBPP adds to our understanding of the influence of cultural practices and values on police development in three important ways. First, its recruitment and vetting phases illustrate the criteria needed to satisfy local expectations, the reasons why would-be officers apply, and what they expect. Second, RBPP emphasises that the critical factor affecting emergent police forces is the payment of stipends; stipends are a temporary measure that buys a modicum of loyalty, and this is as, if not more important than their value as a cultural signifier of Somali avarice or poverty, or a signal of the political and open-ended nature of the international community's commitment to unitary statehood, and the nature of its engagement with Somalia's federal governments. Third, RBPP's record suggests that policing based on officers' physical presence has greater potential for improving police-community relations than the value-laden approach associated with conventional forms of community-based policing.

Priorities in Kismayo and Baidoa

The documentation for RBPP makes no reference to DFID commissioning surveys of residents' views on the proposed police. Despite this, much can be deduced about what people wanted and the minimal requirements they thought necessary for stabilisation. Specifically, information on the role of police before and after 2014 is available from the Hargeisa-based Observatory on Conflict and Violence Prevention (OCVP), which in 2015 conducted a series of surveys using standardised questionnaires and indicators evaluating community perceptions of the deployment and performance of the various formal and informal security providers. Further, despite Kismayo and Baidoa's different geographical location, population size and security levels (Kismayo was regarded as safer than Baidoa), police in both cities shared sufficient commonalities to make the requirements for good enough policing clear (for district profiles see OCVP 2015a, 2015b). OCVP's findings can be supplemented by the surveys conducted by Sahan's Somali researchers, thereby providing a record of RBPP's key features as they appeared to residents.[3]

Kismayo is a port city in Somalia's southern Lower Juba province and the commercial capital of the autonomous Jubaland region, which is a part of the Federal Republic of Somalia. Its population of some 234,850 (which includes

more than 30 sub-clans) makes it the third largest city in Somalia. Its combination of port revenues, relatively fertile soils, grazing grounds and marine resources also make it a valuable prize for al Shabaab, which controlled it until 2012, when it was driven out of the city by an alliance between the Somali National Army (SNA) and AMISOM under a UN mandate. In 2013, the Juba Interim Administration (which was established in 2010), was officially recognised as the government of Jubaland under a national reconciliation agreement, and its courts resumed operations in December 2014 (OCVP 2016: 2-3). The 230,000 residents of Baidoa, capital of the Bay region and one of Somalia's main economic centres, also came from multiple clan and ethnic backgrounds. But Baidoa district had been very badly affected by war in the early 1990s and in 2013 was patrolled at night by AMISOM's Quick Response Forces, which acted as a standby in the event of an attack by al Shabaab. And despite their relative stability, both towns experienced — and continue to experience — attacks; in July 2019, 26 were killed when al Shabaab attacked a Kismayo hotel (Reuters 2019).

The priority for both cities was a basic police force capable of facilitating stabilisation, rather than health or education services. Indeed, OCVP's representative range of respondents regarded security as the cornerstone of development, and were particularly worried by the presence of al-Shabaab, clan-based fighting, revenge attacks, and violent land and family disputes exacerbated by the involvement of unemployed youths (for the representative nature of respondents and their views on police see, e.g., OCVP 2015a: iii, 6-14). Kismayo was considered to be the safer of the two cities but, even there, residents identified power struggles as the main cause of conflict, with fighting between the security forces and al-Shabaab a major cause of concern; significantly, al-Shabaab was able to exploit clannism and ruthlessly impose justice while using the revenue provided by the religious duty to give alms and charity to pay its soldiers and operatives well and regularly (DefenceWeb 2017). Although not mentioned by respondents, social cohesion may have been adversely affected by rapid urbanisation, the expansion of sprawling low-density developments and an increase in the number of IDP sites (OCVP 2015b: xi, UN Habitat 2017). In the first two weeks of July 2019, drought drove more than 5,000 internally displaced persons to Baidoa town, adding to the existing 323,000 (OCHA 2019).

In 2014, security was formally delivered by a combination of Somalia's police and military forces with support from AMISOM troops and the National Intelligence Security Agency (NISA) — and, as OCVP's surveys make clear, Kismayo and Baidoa's residents referred to security providers and security provision, rather than to police or policing. In the aftermath of al Shabaab's expulsion, powerful clans in the new states had quickly created agencies modelled on former president Barre's intelligence agency, which was by far that era's

strongest institution (Ahmad 2013), so it comes as no surprise that Jubaland's Intelligence Agency was also active. Each of the providers had different mandates and lines of authority and communication and operated independently though residents supported them through committees such as neighbourhood watch groups (madani) while the state's role was often undertaken by traditional leaders such as clan elders and sheikhs (religious leaders), whom the majority of OCVP's respondents trusted more than the police (OCVP 2015a: 6-14).

Despite this, the police were the preferred provider for many OCVP respondents. In the year leading up to 2015's surveys, respondents in Kismayo reported an increase in cases reported to the city's small police force, especially with regard to civil matters such as trespass and family or business disputes, as well as to petty crimes such as theft and domestic violence, while the number of serious crimes reported to the police almost equalled that reported to traditional elders (intelligence issues and al Shabaab are dealt with by intelligence or military forces). The reasons for this are unclear but an OCVP youth focus group said that relevant factors included the type of case, level of confidence in the security provider, expected outcome and complainants' financial resources (OCVP 2016: 17). Respondents in Baidoa also identified the police as the most trusted security provider even as informal providers such as traditional elders and religious leaders were widely regarded as legitimate decision makers, especially for dealing with civil matters or petty crime (OCVP 2015b: xi).

Although 52 per cent of OCVP's respondents in Baidoa declared their satisfaction with the police, insisting that they trusted it to some extent, they were aware of the obstacles undermining the police's performance. As in Kismayo, these included corrupt officials, inadequate resources (including vehicles and fuel), insufficient numbers of officers and police stations (in 2015 there were two stations in Baidoa and one in Kismayo), and the authorities' failure to provide officers with "fair compensation for doing a very risky job" (OCVP 2015a: iii, OCVP 2015b: 5-14). Addressing such issues would, it was thought, offset the unwillingness of suitable recruits to join the police and, importantly, lessen dependence on AMISOM troops (particularly the Kenyans assisting the SNA to secure Kismayo), and restore something akin to normalcy. Respondents did not think that the police's performance had worsened in 2014, but (and this is significant in the light of the popularity of policing by presence) it is clear from their comments that the absence of uniforms or an official logo meant that it was difficult to separate police from militants or militia; only the elderly officers who had served during the Barre era could distinguish easily between the two (OCVP 2015a: 8). But there were no easy answers because Somalia's formal and informal actors lack the functional divisions that define responsibilities in more settled societies, and typically play multiple and overlapping roles (World Bank 2017: 40).

Policing's minimal requirements

In contrast to most donor projects in Somalia, RBPP addressed the minimal requirements needed for internationally acceptable everyday policing; it concentrated on locally prioritised issues while recognising that the initial focus on recruitment and basic training would soon need to shift towards improving performance and police-community relations. Instead of focusing on the organisational structure, capacity and institutional development of the police at state level, it addressed issues, such as clan representation and stipends, that directly affected the officers on whom street-level policing depended. RBPP's documentation allows us to identify not only the factors influencing this, but also the real needs of internationally supported but locally driven development. And they are few in number. The initial priority was recruitment because numbers matter and the type of applicant selected influences the ways in which a police officer is perceived and operates. But stipends are as important because they help to buy the loyalty on which forces depend. In addition, they offer insight into local perspectives on three fundamental, but otherwise inaccessible, issues: the nature, purpose and role of the police. In practice two questions dominated RBPP's agenda: what was affordable, and how best to address Somalia's violence and cultural complexity (World Bank 2017: xi).

Function matters more than form

The purpose of the police matters because, in policing as in architecture and industrial design, form follows function and prevailing norms, rather than, as donors might wish, function following form; in other words, what a police force does is more significant than how it is organized or presented. Even so, the purpose of Somalia's police is ambiguous and contradictory tendencies abound. Blurred functional divisions between police and militia are one such issue, not least because policing styles are influenced by Somalia's chronic violence which is thought to be clan related. But this is inaccurate; while clan identity is an important factor, it is not the element driving conflict and is often used to mask elite interests (World Bank 2017: 17). Further, policing provision is part of the business of politics for Somalis (de Waal 2015) and of stabilisation for donors, and, while local and international goals and values are often incompatible, especially on issues such as human security and gender equality, the resources brought by internationals ensures donors a certain influence. At the same time, many older Somalis are acquainted with the vocabulary of international policing; Somalia had a conventionally organised police force in the three decades after independence in 1960 so many are familiar with the notion of a state-based police even if civil war meant that it was not until the early 2000s that today's SPF (re)emerged in Mogadishu and Puntland. The result is that rather than rejecting international

models, Somali police and politicians typically subvert, undermine, ignore or mimic the processes and values promoted by their international sponsors in order to gain specific goals (Bhabha 1994:121-122).

The SPF is widely recognised as the legitimate descendent of that original force, celebrating its 78th anniversary in 2021, whereas Kismayo and Baidoa's official police forces were not created until 2015 when the federal states were recognised. Perhaps because of this, residents value their state-based police force (security analyst , Nairobi, 15 April 2019). Some take pride in it because it gives credibility to their new state while others value it as a source of employment or, better still, revenue; the US$6,000 brought into Kismayo annually by new recruits (each of whom receives $100 a month) represents a major bonus. It is therefore important to ask what sort of police residents wanted, and what they thought police should or should not do. This matters more than the police's organisational structure, not least because Kismayo and Baidoa do not yet have functioning state institutions; the police are arranged along clan lines, politicians have personal militia, and residents rely on their clan to address policing issues (Peace Direct 2019).

Like their peers in Kismayo, the authorities in Baidoa wanted the police to be "trained, respectful, and close to the community" (Sahan 2015: 6). How, then, did successful recruits behave? How were they deployed? How did they understand their job? Unfortunately, it is not possible to offer detailed answers because little is known about Somali police culture and everyday business. International police advisers may have some understanding of Somali attitudes, but they are rarely in post for long and most base their assessment on the processes and norms of their home country. Additionally, the nature of Somalia's languages and culture ensures that most international organisations rely for interpretation on Somali cultural advisers, many of whom were formerly part of the Somali diaspora and lack police experience. Fortunately, the surveys conducted by OCVP and Sahan's Somali researchers suggest tentative answers.

Despite donors' advocacy of trust-based police-community partnerships, the picture that emerges in 2014 is one in which officers spend most of their time in stations or posts in potentially dangerous localities, emerging only to man checkpoints or conduct some form of operation or shakedown. Indeed, many officers were too old or unfit to do otherwise; as Baidoa's police commissioner told OCVP in 2015, of the city's 70 officers, 20 spent their days in one of the city's two police stations because they were too old to take part in operations or patrolling (OCVP 2015b: 14). It suggests, too, that there is a Somali equivalent to the distinctive "canteen culture" shared by many officers in UK police stations (Waddington 1999). Perhaps because of this, residents rate the police's physical presence more highly than their technical skills or response rates. And there is a notable police presence in Kismayo and Baidoa. This may not tell us much

about the nature of police culture, but it makes aspects of everyday police business visible. By 2015, police activities included traffic duty, checkpoint security and static guard duty at government facilities (PCR 2017: 14); foot patrols and the presence of a substantial number of police during the day and, occasionally, at night were particularly popular with residents in the urban core while some units were deployed to outposts surrounding the cities in order to reinforce the authority of the local government. The police presence might have been limited but, as studies of preventive patrol in Minneapolis found, even in the USA, the optimal length for patrol stops is 11 to 15 minutes (Koper 1995). Further, and despite substantial anecdotal and circumstantial evidence to suggest that few officers value police-community relations as such, let alone seek to provide a service, there are cases of police and residents collaborating to share information and manage insecurity. In Kismayo, community members who have received security training from the police collect and share information with officers while checkpoints on roads leading to Kismayo town keep a list of community elders who can be called on to resolve issues as they arise (elders are often asked to vouch for people or to clarify incidents) (Peace Direct 2019: 22). Nevertheless, the police's role is limited and most of the crimes and incidents that might be expected to involve officers are resolved by clan elders and customary law. Some crimes are reported to the police, but most are not because residents are afraid of reprisals by the accused. Also, the absence of a formal functioning justice system means that most suspects are released without charge.

These details help to indicate the extent to which Somali police culture is affected by clannism, poverty and violence which can only be addressed by specialised units able to act decisively. Indeed, many of Sahan's respondents said that they would prefer a fighting force capable of taking on, e.g., al Shabaab, which continues to control several major towns in Jubaland (security analyst, Nairobi, 15 April 2019, Somali Affairs 2019). It is not by accident that police in Kismayo and Baidoa are commonly described as security forces and their formal command structures remain aligned with those of the former Somali military. It also means that distinguishing between police and militia is not a priority because the police is essentially a militia; the two are not separate functionally, politically or culturally, and, while there may be 600 police in Kismayo, there are 5,000 militia (senior UK adviser, Nairobi, 16 April 2019). The expectations of residents and officers are accordingly low. Residents do not complain when police stay inside their guard houses, fail to record custody cases, and ignore evidence. Meanwhile AMISOM's provision of six weeks of basic drill-related training is accepted because it provides shoes, clothes (i.e., uniforms) and regular wages; $100 is paid into the account of those who are present and behave.

Visibility is as important as accessibility

The key to basic policing in Kismayo and Baidoa lies in what is best described as policing by presence. To its credit, DFID understood that policing needed "to be considered in terms of providing a visible security presence, that behaves and performs in a manner which builds confidence [sic] of communities" (PCR, 2017: 7). In practice, presence, accessibility and reassurance were mutually reinforcing, and residents found the results understandable, acceptable and reassuring in a way that donors' conventional community-oriented policing was not. Hence OCVP took the high level of awareness of the proximity of police stations reported in Baidoa as an indicator of police presence; a majority (86%) of respondents were sufficiently aware of the police to say that they lived less than forty minutes away from their closest station (OCVP 2015b: 13-14). Indeed, accessibility was one of the main reasons why OCVP and Sahan's respondents chose the police as their preferred security provider.

The police's presence was evident in three main ways (security analyst, Nairobi, 15 April 2019, PCR 2017: 14). First, police were visible at checkpoints, which could be at an airport, a busy intersection, a location identified by elders, or traffic control points, especially in Baidoa, where abuse and beatings often happened when tuk-tuks (three-wheeled taxis) failed to stop or drivers misunderstood instructions. Patrol groups of five or six officers were also seen, sometimes in pick-ups donated by Japan (this was more common in Kismayo). Second, both cities had a donor-funded police headquarters and main police station. As the safer of the two, Kismayo also had several one-man posts whereas Baidoa had a police representative in each area even though this could leave the individual concerned alone in a dangerous locality. Nevertheless, accessibility to officers did not necessarily improve police-community relations, especially in Baidoa where OCVP found that an individual's status and familiarity with officers was thought to have the greatest influence on police responses (OCVP 2015b: 9, compare Owen and Cooper-Knock 2015); those without connections were unwilling to report crime to the police because they feared being labelled as an informant or accused of causing the incident. This suggests that, in reality, the success of policing by presence, static or mobile, may have been fortuitous, owing more to Somali realities than to RBPP, let alone to DFID's advisers. For residents wanted to develop personal links with known officers at known locations whereas DFID saw the police's presence on the streets and in stations as a means to not only develop links with international organisations engaged in Somali police development, but also to ensure security sector reform, and the rule of law and access to justice more broadly (senior international adviser, Nairobi, 16 April 2019).[4]

Three critical issues

The RBPP's record indicates the ways in which cultural norms operating through social phenomena affected the political legitimacy of the new federal member states, the desirability of the resources associated with its delivery, and the pragmatic response of residents to the new police. The disadvantage of our not knowing the detailed negotiations accompanying its implementation is offset by the insights RBPP offered into the development of state-based forces in a patriarchal and legally plural environment in which the group is more important than the individual. The RBPP offers opportunities to explore, empirically and analytically, the motivating forces affecting police development in a society familiar with conventional policing operations and vocabulary but positioned at the opposite end of the technical and institutional spectrum to those shaping police studies' canonical literature.

Three linked issues express the impact of cultural rules and expectations on the emergent forces: recruitment, reward (i.e., stipends) and retention. Recruitment comes first because the type of applicant selected influences the way in which a force operates, develops and is perceived. It, together with retention, emphasises the criticality of local power relations and group interests in clan or tribe-based security forces. But the resources associated with recruitment and deployment mean that neither can be considered in isolation from clan interests. Attempts to loosen the link have to date failed.

Recruitment

Recruitment was the first step in implementing RBPP, so selection and vetting were a priority. The process was conventional, but it provides insight into the procedural points at which Somali and donor expectations met. The second phase of vetting and selection for the Jubaland State of Somalia (JS) police force conducted in Kismayo, 16-25 May 2016, is representative of the process.[5]

The initial responsibility for determining the composition and conduct of the new police lay with the JS acting with the support and advice of external organisations such as the African Union Police (AUPOL) which worked alongside JS authorities to vet and select 200 recruits. Some 250 members of Jubaland's existing security forces applied (a significant proportion of whom were probably Ogaden, a large sub-clan of the Darood family), and 140 were selected for the second police training course, but their overall quality was low. Perhaps because of this an open call was made using public advertisements around Kismayo town. This resulted in 200 applications from the public, 70 of whom were chosen to join the exercise. Although some of those chosen may have been al Shabaab sympathisers, the open call ensured that most of Jubaland's clans were represented even if the Ogaden's 33% share ensured its dominance (it had been 50% in the first

phase). But this was reasonable because officers need to be representative of the communities they come from if they are to have the networks and local knowledge required for effective policing .

Two findings deserve note. First, although Somalia's police are not dependent on the existence of a police institution, the RBPP assumed that bureaucratic structures existed: applications were to be submitted to Jubaland's ministry of interior through the police commissioner's office. Second, pragmatism was as important as formal selection criteria. Candidates were vetted by a joint Jubaland and AMISOM/AUPOL team of 18 individuals whose procedures included profiling based on personal information (including clan and sub-clan affiliation), a medical examination, a fitness test, and a written exam. Although many applicants were ineligible because they were unfit, illiterate (many did not have the high school education listed in the advertisement) or from the wrong clan, clan representation usually superseded everything else, including literacy; 40% of those selected were illiterate. Thus, many of the successful Jareer candidates interviewed by Sahan in Kismayo had not completed their high school education but were accepted because their inclusion helped to ensure community participation. But there were exceptions to the rule as when a significant proportion of the former police from the Ogaden who had failed the vetting and screening exercise were dismissed. Similar considerations influenced the process in Baidoa. Residents often told Sahan's assessors that clan calculations should be removed from decision-making on the police, but it is not clear what could have replaced it; literacy levels were low, conventional forms of discipline were unwelcome, and social cohesion was sustained by elders and place of origin (i.e., clan).

Although training is not strictly part of recruitment or retention, it too influences (and expresses) attitudes to being a police officer. Working with UNOPS and AMISOM, RBPP funded the establishment of basic training facilities for 600 recruits in Kismayo and 600 in Baidoa. But judging from the experience of international advisers training SNA soldiers in basic logistics, many recruits had unrealistic expectations of what was expected of them. Thus, Steigman found that clan-based calculations affected every aspect of SNA life; relationships amongst his trainees were based on power rather than on goodwill or professional recognition, and any form of disciplinary procedure (e.g., weapons searches) was resented (Steigman, 2018).[6]

Comparable problems were evident at RBPP training camps. Recruits who failed the initial sift were upset and disrespectful, though the likelihood of their being targeted by al Shabaab meant that they still spent six months (unpaid) at the camp (Sahan 2017: 27). Meanwhile, disciplinary issues reoccurred during training because there were no accountability or performance monitoring measures. Just as the Somali co-ordinators Steigman worked with were unsure as to whether

trainees were actually in the SNA, so many police commanders were unable to say where a specific officer was on any given day; weekly attendance parades were held at the police headquarters in Baidoa, but there were no repercussions for those who failed to turn up.

Reward

Recruitment offers insight into the dynamics of policing, but stipends are arguably more significant because they help to buy loyalty and ensure retention, i.e., they illustrate local perspectives on the nature, purpose and role of the police. They also show how donors accommodate Somali expectations and demands for, unlike recruitment and deployment which often run regardless of external influences, the payment of stipends depends on donors.

Three features are noteworthy. First, stipends are a bureaucratic measure that conforms to donors' political culture. Thus, between April 2013, when the UK's foreign secretary and development secretary approved outline plans for DFID to provide £8 million for the support of police stipends, and the end of 2016, RBPP spent precisely £6,240,791.47 (PCR 2017). Comparable processes shaped donor-Somali relations, as when a co-financing agreement was signed between DFID and the Federal Member State authority in Jubaland whereby the Jubaland authorities agreed to pay officers $100 directly each month, with DFID authorising UNOPS to make the donor-funded payment once confirmation of receipt was received.

Second, stipends are indicative of the cultural tensions that exist when top-down external policies and processes meet the interests of local actors: stipends dominated meetings between donors and Somali officials, absorbing time and energy, and creating dependency. Delivery was made easier in Kismayo and Baidoa by the introduction in 2015 of an electronic system that delivers money to individual's mobile phones or bank accounts (registered and trained recruits in Baidoa receive a monthly electronic stipend), but there is no way of managing Somalis' unrealistic expectations.

Third, in theory, stipends are a signal of the international communities' commitment to providing an environment in which new forces can develop and stabilise, but in practice they are temporary wages that may buy the loyalty needed for retention and successful operations. This matters because many officers are militiamen, and desertion or unauthorised leave is common. Each trained officer receives a monthly stipend according to rank: constables to captains receive US$ 100, majors to colonels $150, brigadier generals $300 and major generals $900 (DFID 2015: 2). But this is not enough to prevent desertion or corruption in a country that Transparency International ranks as the most corrupt in the world (Transparency International 2019). In Baidoa, for example, the leadership of the

police rests with federal police officers who are paid irregularly by the federal government. Inevitably, differences in pay structures lead to friction between the police and their supervisors and can result in regional police collecting money at illegal checkpoints on behalf of the police leadership. Kismayo presented a relatively benign environment in which to implement RBPP, but Baidoa was always more challenging.

Retention and attrition

Recruitment has received significant attention since the end of the Cold War, but international analyses invariably focus on the early stages of vetting and selection and ignore retention even though this is key to assessing success. As the experience of the South West State Police in Baidoa, interim capital of South West State (SWS) shows, retention tells us more about the physical and cultural realities at the heart of policing's early phases than anything else.[7] Thus 600 officers were initially recruited but by February 2017 the number of active officers stood at 547, which represents an attrition rate of 9%. Although this figure is within the parameters of international standards for security forces in developing states, the underlying factors prompting police desertion reflect the brutally basic nature of emergent police forces.

The main reasons for desertion included dissatisfaction amongst those recruited from areas outside Baidoa, inadequate command structures, and deployment to front-line positions. The RBPP had been founded on the idea of establishing regionally based police in support of the emerging Federal Member States with Baidoa the preferred deployment location for its police. However, political accommodation within the SWS authority meant that the regional government selected the majority of recruits from Lower Shabelle and the remainder from rural areas in Bay and Bakool, i.e., that approximately 200 officers (or one-third of the force) were recruited from locations which were far removed from their area of deployment. The SWS informally promised local authorities in Lower Shabelle that officers from there would be deployed back to their home location, but the promise was not kept, and 50% of those recruited for Baidoa deserted in the first year. Overall, approximately 90% of those leaving came from locations outside of Baidoa town.

The combination of negligible support networks and low stipends placed many officers under considerable pressure, but Somali approaches to command and authority structures also played a part (security analyst, Nairobi, 15 April 2019). In Kismayo the police were answerable to the Jubaland authorities whereas in Baidoa they were responsible to police commanders. Meanwhile the federal officers responsible for supervising the regional police provided limited support, attendance measures did not exist, and local authorities did not hold deserters

accountable (the named elders responsible for individual recruits in the initial vetting procedure played no role during training or implementation). There were no weapons-management procedures either, so 62% of the officers who left did so with their government-provided gun, which sold for US $900 – $1200 or the equivalent of a year's worth of stipend payments. Attrition was then made worse by harsh deployment methods. For example, in February 2017, 88 police were deployed to front-line posts on the outskirts of Baidoa; 64 were posted to Goofgaduud, which lacked basic food, water and medical supplies and was under constant attack from al Shabaab, while 20 were posted to Owdinle village and four to Deynuuney without equipment or sufficient ammunition. Deployed to such posts indefinitely and on an *ad-hoc* basis, the officers concerned were treated as expendable militiamen acting in support of South West State's claims to statehood and political recognition.

Conclusions

This analysis of the basic policing programme implemented in Kismayo and Baidoa indicates the ways in which cultural practices can affect, and operate through, a significant social phenomenon. Drawing on RBPP's implementation, it explores the ways in which police development is shaped by culture, power relations and local realities — in this case, clan-based calculations, Somali and donor politics, and physical insecurity. Its discussion of recruitment, stipends and retention emphasises that policing is not only a product of its environment, but also that it shapes or reinforces its development fundamentally.

Focusing on the ways in which local preferences and cultural practices affect social phenomena such as police forces offers a more persuasive explanation of the ways in which prototypical forces develop than approaches emphasising structural variables or ethical standards. It illustrates the energising and relational factors influencing such forces while emphasising that in much of the world policing provision (and a populace's engagement with it) owes little to formal structures and actors and everything to local norms and preferences, informal power networks, legacy issues and contingencies.

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[2] The conventional term 'officer' is used here despite the police being essentially militiamen. Men made up 87% of Kismayo's first recruit class though the vetting and selection committee adjusted the results of Phase II to ensure that there was 10% female participation.

[3] Although Sahan's records are unpublished and unverifiable, its methodology was cross-checked against that of OCVP, which is supported by DFID. For OCVP's methodology see, e.g., OCVP 2015a, i [sic]-5.

[4] For a critical development studies perspective on aid projects, see Rottenburg 2009. For development anthropologies, see Olivier de Sardan 2005.

[5] This section is based on Sahan 2016.

[6] Steigman's article was published online as *"Logistics at the Edge of the Empire: US Army Logistics Trainers in Somalia"*, Small Wars Journal, 7 February 2018, but was removed hours later.

[7] This section is based on Sahan 2017.

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Future Fears: Anticipation and the Politics of Emotion in the Future Industry

By
Christina Garsten and Adrienne Sörbom

Future of Engineering – Warsaw June 2019

The room was abuzz with voices of excitement. After a long day of presentations about what the future of engineering may look like, it is time to make our own contributions in the craft of foresight. We are about 50 persons, seated in groups of eight around round tables. A cardboard game is placed at each table. Prominently placed at the center is the name of the game: *Stranger Futures*. To the right, eight trends are framed and listed, for instance, "Increasing cognitive and creative abilities of AI" and "Increase in applications of neurotechnology-based innovations." There is a small brown cardboard board in front of each participant, and each board has four figures and four dots. Three of the dots are colored in lilac, jade, antique red, and the fourth dot is an empty circle outlined in black. Above the dots are four figures, resembling an eye/screen, an engineer/doctor, a tractor and a brain/neural network. In the coming hours, the Polish strategic foresight consultancy TCF – *Tempus est Carpendi Futurum* – explains to us how to play the game. Company CEO Adam Kowalski opens the session by briefly describing how TCF serves client interests to "stay on the wave of change." He continues describing how "clients trust our foresight" because "we provide value." To this end, TCF develops various kinds of tools – the game being one of these. The basic idea of *Stranger Futures* is to make use of the collective intelligence of the participants and challenge their unquestioned beliefs about the future. The goal of the game is to enhance the client's "future actionability" and "have fun while doing it." Kowalski ends by quoting Mark Twain, saying that "it ain't what you don't know that gets you into trouble, it's what you know for sure that just ain't so." His comments are met with laughs, applause, and nods of recognition.

We now turn to our tables. The game master at our table, Maciek Dabrowski, who works at TCF, sits behind a ten-centimeter-high cardboard shield where

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he keeps his game instructions. He introduces the game to the players. Over the course of the next hour, we play a round with one of the trends on display at the table. During the game, trends can be intensified, weakened, or stay more or less as they are. The idea is to explore "the reality of creating innovations in 2050," as Maciek explains. He continues: "Does anyone have any ideas, in regard to how one of these trends might change?" The woman seated next to us, Petra Lans, a noteworthy actor in the future industry working at a British futures learning foundation, says that she believes that in 2050 people will not need to eat because of advances in stem cell research. "You can just place back your growing cells, so you won't need to eat food anymore." Maciek makes a note of this, and as this trend will disrupt basic assumptions about human life, she is assigned the status of "precognite," which is recognized by two coins. As it turns out, this is more than we will earn over the course of the entire game, since we are not deemed "innovators." We supported Laura's idea and developed it further by suggesting that in 2050 we would all live in global tyranny, under which new stem cells would be distributed to all humankind.

The game continues with other ideas regarding the stem cell process. Maciek is kindly developing participant suggestions to make them applicable in the game. Once each person at the table has taken her/his turn suggesting new ideas or adjusting others' ideas, it is time to vote. Do the others believe that what is proposed is likely or not? The stem cell projection receives a majority of affirmative votes, whereas we are the only ones who find the idea of global tyranny plausible. We lose the coin we have earned. We all cheer and laugh, and it is time for the next round.

Introduction: A Landscape of Affectivity

The futurist consultancy TCF and the game *Stranger Futures* exemplify practices within the market of the Future Industry, composed foremost of consultancies but also foundations, associations, and academic institutions. Commonly, narratives produced within this industry specialize in future scenarios in various formats, fixating the future as a "commodity," i.e., something that can be bought and sold on a market, and whose abstract nature is made to appear substantial and real (cf. Taussig 1980). When futurists and engineers play *Stranger Futures,* emotions such as fear, hope, anxiety, and optimism are invoked in tandem with scientific concepts and visions based on science fiction. The very idea of the game is to make participants/customers experience and sense what this version of the future might entail and then reflect on this future, asking questions what this means for their own personal and/or organizational lives. The emotions are intended, by those provoking them, as a way of opening minds to imaginations and conceptions of a time to come, and, it should be added, of anchoring these images of the future

in the contemporary situation. The introductory vignette exemplifies practices used to "make up" potential future trends, in Hacking's sense (Hacking 2006), fantasizing about their implications and about potential winners and losers.

Emotions are at the core of human day-to-day activities, and they permeate organizations profoundly, influencing them and their motivations, political behavior, decision-making, and relations (Fotaki, Kenny & Vacchani 2017). Emotions and affectivity have, accordingly, been of long-standing interest in the humanities and social sciences (Hopkins et al. 2009). Since the early 1990s, however, we have witnessed an emotional or "affective" turn which has engulfed almost all major disciplines (Clough & Haley 2007). More than 40 years of inquiry into emotions in social contexts have made significant contributions to the fields of anthropology and sociology (e.g., Flam 2018, Lutz & White 1986, Leavit 1986, Andrew 2014). The turn has also had consequences in the studies of politics. Until the early 2000s, politics had for decades been analyzed void of emotion (Demertzis 2013:1), but are now picking up pace (e.g., Valentino at al. 2011, Wodak 2015, Vasilopoulou & Wagner 2017). Despite this growth in emotions as a generic field of study within the social sciences, the role of emotions for understanding the world of futures consulting has yet to be explored.

The intention of this paper is to contribute to an understanding of the character of organizational processes within the Future Industry by analyzing how emotions come into play in futurist practices. The Future Industry, we contend, serves and feeds into the emotional streams of contemporary politics and economics. By doing so, they also play a part in making up new contemporary forms of influence and governance. We wish to describe how this industry makes use of emotions, oftentimes in combination with a lingo alluring to science, in the interest of selling edited beliefs of the future. In this industry (like in many others) the cultivation, articulation and management of fear, anxiety, and hope, as well as a reliance on rationality, reason, and evidence, are central components. The Future Industry attempts to let its customers sense the pros and cons of this future. It "sells" emotions and states of affectivity, and terms this "knowledge of the future." Its anticipatory practices to a large extent involve the making of a "politics of emotion," involving the voicing of "problems" and the presentation of "desirable futures."

The paper is based on ethnographic work in the Future Industry, which consists of many types of organizations, involved in the charting and relating to the time to come. The bulk of organizations constituting the industry are various types of future consultancies, offering their products to governments and businesses. But research institutes, foundations, think tanks, academic departments, and even associations also form part of this burgeoning industry. Because of their varying principals and constituencies, they differ in the degree to which selling is at the core of the

organization. Exact demarcations of the industry are virtually impossible to draw. In practice, this means that, for instance, university researchers may figure as part of the industry, but also consultants and "futurists" in various capacities. The field is, therefore, nebulous in character. At the core, however, are attempts to anticipate possible, plausible, and preferred futures, and to sell these as commodities.

The paper is structured as follows: First we conceptually introduce the role that the Future Industry may play in contemporary political visions, and the way emotions can be made use of in these activities. Second, we make use of ethnographic data from within the industry, in order to describe the type of product that is offered for sale. Third, and lastly, we discuss how organizations within the industry build their claims on reason, cognition, and metrics, founding a large part of their sway in putting emotions to work.

The material drawn upon for the paper is based on a combination of semi-structured and conversational interviews (about 80), participatory observations at events (such as when playing *Stranger Futures*) and at workplaces (some 160 days), and reading a large number of reports, websites, and other texts. Observations range from complete participatory observations to an observer role. Data has been transcribed and thematically analyzed, using NVivo as a systematizing and heuristic tool. For this paper, we are using data relating to the theme of "emotions and affectivity." Note that apart from Klaus Schwab all names are pseudonyms, introduced in order to safeguard anonymity of the informants. The empirical data set as a whole comprises some 30 organizations. For the purposes of this paper, three main sites are used as points of departure for studying the Future Industry: the Swiss foundation World Economic Forum (WEF), the global network/association Millennium Project (TMP), and the California-based consultancy Institute for the Future (IFTF). These three ethnographic sites vary in size, level of action (global or national), and the character of constituencies. This variation is useful for developing and illustrating our argument. Importantly, in spite of the variation, they share the trait of having overt political interests; a trait that is important in order to understand the possible political implications of the industry they form part of. As the motto of the World Economic Forum indicates, they are all in the game for "improving the state of the world." Certainly, they would not easily concede to the idea that they are in any way "political." We maintain, however, that they at the level of discourse contribute to the setting of future political agendas.

The Future Industry: Business, Politics, and Emotions

Our interest in this industry is driven by a deep-seated curiosity regarding politics and modern problematics of government and governance. Inspired by Rose and

Miller, we see contemporary political power as taking shape through a profusion of shifting alliances (Rose & Miller 1992). Central to modern contemporary forms of politics are the linkages formed between those entities that produce knowledge of others and the projects they pursue in the light of conceptions such as healthy, prosperous, efficient, profitable, etc. Knowledge is thus at the core of political activities and the very formation of its objects. Paraphrasing Moisi, author of *Geopolitics of Emotions* (2009), we submit that the mapping of futures to a large extent involves the making of a politics of emotion, as "they impact the attitudes of peoples, the relationships between cultures, and the behavior of nations" (2009: 29). In the voicing of "problems" and the presentation of "desirable futures," the cultivation, articulation, and management of fear, anxiety, and hope, as well as a reliance on rationality, reason, and evidence, are central components. In this capacity, they also play central roles in "the writing of future worlds," in Hannerz' (2016) terms. As described by Adam and Groves, "future" has in the late-modern world been emptied of content, extracted from historical context, and thus become open for imagination, colonization, and traversal (Adam & Groves 2007:13). The contemporary entails that we understand ourselves not as observers but as implicated participants, inescapably responsible "for that future in the making" (ibid: 15). This imagination of an open future, hinging on our actions, is the shop floor of the Future Industry and a key site for futures becoming cultural facts (cf. Appadurai 2013).

In the organizational settings of the Future Industry, processes of anticipation and foresight are invested with both emotions and rationalities. Here, these interlinked practices, emotions, and rationalities together form a "product" that has the capacity, and oftentimes intention, to reshape the world. The product is an amalgam which introduces both political sense-making activities and a feeling of place, identity and security. As such, rationalities and emotions are cultivated and used to mobilize around certain services and communicative processes in order to create a sense of direction and authority. For consultancies and other types of organizations active in the Future Industry, providing possible and plausible visions of futures are key activities for attracting attention, gaining credibility, and ultimately for designing present and future actions. They employ a wide range of technically sophisticated tools, methods, and models (metrics, indexes, forecasting, and scenarios) to assist them in imagining possibilities, sketching trajectories, and providing a basis for further decisions.

In this process, a range of emotions are involved and intermingled. Specifically, we suggest, emotions such as fear, hope, anxiety, and optimism are cultivated as part of the attempts of future consultancies to position themselves in the competitive market of political ideas and ideologies. Emotions hold the promise of destabilizing and unsettling us, to move us into new states of being. They are a means by which

such consultancies may gain attention and leverage for its work and propositions. At times, emotions also work to attract individuals to work with these organizations, as in communities of expertise and topical task forces. Affectivity, i.e., the emotions that we experience and display, especially in terms of how these emotions influence us to act and make decisions, is thus part and parcel of the methods used by the Future Industry as it endeavors to shape the interests and priorities of others. Not least, affectivity is put to work to attract and entice politicians and policymakers into engaging with urgent political issues. Through the strategic use of seductive communicative actions, Future Industry organizations work to shape and frame economic, social, and policy predicaments, as it were, and more specifically to advance how they wish, for instance, social, economic, and environmental challenges to be understood and worked upon. In this sense, emotions are integral to the seductive offer of future consultancies. Seduction, in the broad sense, entails drawing people in and holding them in one's thrall. It involves radiating some quality that attracts others and stirs their emotions and influences their thoughts in ways desirable to the seducer. Thus, seduction is intimately tied up with subtle forms of governance—the practice of a discreet and subtle form of soft power that works more effectively than coercion (Garsten & Sörbom 2018).

Seductive Emotions

With reference to central bankers, Holmes (2014) argues that rather than predicting the future, they seek to create the elements of a tractable future, and they do so with words. They use language to sustain not merely the ideas that animate our economic future, but also the structures of feeling, the sentiments, and expectations that make them real. This view of the performative communication by central banks also corresponds to the Future Industry; explicitly aiming for organizing the future. Here, words are aligned with predictions in, for instance, the scenario format, and drawn upon in the interest of making the future operative. The products of the Future Industry are scripted pieces of a future showing discernible features that buyers of the industry's products and other audiences can reflect and act upon. Collectively, these bits of anticipation form narratives of possible futures.

Compared to central bankers, though, actors within the Future Industry do not have the same type of leverage or mandate to inscribe the future. When a central bank calls for a press conference, representatives of the media are most often there, keen to spread the word of this authority. Moreover, the actions taken by central banks are of immediate consequence to many other organizations. Organizations in the future consultancy market must work differently. These organizations cannot decide what other actors should do; they lack the external

decision-making capabilities that a state-based authority has. Yet, the industry is obviously not without consequence. Not only because economic and social transactions involving high stakes are taking place, but also because individuals and organizations will actually make use of the scripts and templates that the future industry provides (Flyverbom & Garsten, in press).

To achieve authority in Coleman's sense (1974), that is, to be able to influence the actions of others, think tanks and futurists in general commonly propel ideas and visions and induce action among other actors by drawing on seduction as a social mechanism (Garsten & Sörbom 2018). Seduction, as recognized by political scientist Joseph Nye, implies the exercise of a subtle, soft form of power—the ability to shape the preferences of others through appeal and attraction, not by force (Nye 2008). At the personal level, we all know the power of attraction and seduction. In politics, as Nye shows, seduction is a staple and tends to be associated with an attractive personality, culture, political values, and institutions. Many values propelled by futurists, such as democracy and human rights, individual opportunities, and sustainability, are deeply seductive and almost irresistible. Soft power means getting others to want the outcomes that you want, to move in your direction. It is thus a form of cooptation and constitutes, in Nye's words, "real power" (2004). We suggest to understand the workings of the Future Industry to be based on the same type of seductive actions that we may see in politics.

At the core of seduction, we find emotions. Emotions are key for understanding the energy of mobilization that seduction can entail. By analyzing the emotions that the Future Industry draws upon, we can better understand the micro-sociological foundations of what the actors of the industry do. As Collins (2004) underscores in his analysis of emotions, it is the emotional energy of taken-for-grantedness — not the *Sturm und Drang* emotions — that constitutes much of the mundane life. Considerable work goes into producing this sense of everyday life. As Collins argues, the feeling that "nothing out of the ordinary is happening here" is what permeates mundane life (2004:106). Conversely, the role of the Future Industry with respect to emotions, we find, is to disturb the routine and the sense of mundanity, to rattle and wake up the actor it interacts with, and to introduce new perspectives through emotions.

Fundamentally, these emotions vary around fear, anger, happiness, and sadness (Collins 2004: 106). Our assumption is that out of these basic emotions, instilling a sense of happiness is what the Future Industry aims for. As Ahmed writes in her analysis of happiness in the contemporary, it "is the end state," and socially understood as "the perfect end," that to which all other things become means (Ahmed 2010:34). As such, happiness is "directed at certain objects, which point toward that which is not yet present." The actors of the Future Industry take an active interest in framing the "shared orientations" that groups/organizations

see "as being good" and "the cause of [future] delight" (ibid:35). Correspondingly, and worth underscoring, they also frame what to gravitate away from.

The ultimate interests of the actors in the Future Industry are varying, some more political and some more financial. That is to say, for some actors, fear and other emotions are made use of in the interest of shaping the future in a specific direction, while for others the main interest is to be a successful actor in the Future Industry, seen as a market. To be sure, combinations of the two are frequent, but the distinction is valuable as it underscores the simultaneously political and economic aspects of the industry. Irrespective of interests, the consequences are social, as they may bring about actions in and around the industry. In the coming examples of how this is attempted, we emphasize fear and happiness, as these are the core emotions drawn upon. These emotions are sent out like boomerangs into the unknown, coming back instilling both fear and hope for the future.

Invoking Fear

The orientation within the Future Industry towards happiness, and the avoidance of fear, anger, and frustration, is predominantly constructed by words. Moving and static images are also drawn upon, but written texts and spoken words make up the bulk of the materials for these constructions. A large part of these words are based on some form of referred or mimicked scientific work, mediating what the organization wants the reader to feel. Science is made both the base of beliefs for the future, and the catalyst for affections.

The World Economic Forum (WEF) publishes a yearly report on global risks. The *2018 Global Risks Report* had the title: *Fractures, Fears and Failures*. The report provided a pessimistic view of the state of the world and the enhancement of risks. Whilst 2017 was described as a year of "widespread uncertainty, instability and fragility," the 2018 report maintained that respondents to their annual Global Risks Perception Survey were much more pessimistic about the year ahead. The report highlighted four major concerns: (1) persistent inequality and unfairness, (2) domestic and international political tensions, (3) environmental dangers, and (4) cyber vulnerabilities. These risk domains all pointed to the increased dangers of systemic breakdown, it was claimed.

The WEF *Global Risks Report* is indicative of the fabrication and significance of fear and related emotions in organizations such as think tanks and future consultancies. It draws on the image of the globe, stressing how the contemporary generation holds the key to the future in its hand. This is both the generation "enjoying unprecedented technological, scientific and financial resources" and the "first generation to take the world to a systems breakdown" (WEF 2018: 5). The future is seen to be truly in the hands of this generation, open and ready for

action. At the same time, the specific characteristics of the future as sketched by the organization are commonly conceived as irreversible and inevitable. As often described by WEF founder Klaus Schwab, the world is with certainty witnessing a revolution, to which it has to adapt:

> We stand on the brink of a technological revolution that will fundamentally alter the way we live, work, and relate to one another. In its scale, scope, and complexity, the transformation will be unlike anything humankind has experienced before. We do not yet know just how it will unfold, but one thing is clear: the response to it must be integrated and comprehensive, involving all stakeholders of the global polity, from the public and private sectors to academia and civil society (Schwab 2016: 1).

Technology is here treated as a force that may be part disruptive, part beneficial to humankind, but fundamentally natural, innate to the world, and elementary as is, for instance, the tsunami appearing after an earthquake at sea. You can—in fact, you have to be—proactive, drawing on foresight to protect and make the best of the situation, but you cannot avoid the evolution of technology.

The Millenium Project, a US-based but global think tank engaged in providing "global intelligence" for future foresight, warns about the threats of advanced technologies to employment. In a presentation of the think tanks' future scenarios we read: "A growing body of AI experts believes that if socio-political-economic systems stay the same, and technological acceleration, integration, and globalization continue, then half the world could be unemployed by 2050" (Millennium Project 2019a).

To address this grand challenge, The Millennium Project has launched a Future Work/Technology 2050 study with eight steps, involving literature and a related research review, road maps and scenario drafts, policy implications, national planning workshops, and public discussion. To create a sense of urgency and acuteness, the organization works to make its readers imagine what a world in which half of the population would be unemployed would look and feel like. As its CEO presents it in a short film, the idea is "to make real the feeling, the taste, touch and feeling of the future" (TMP 2019b). Propelled by the unease and worry that such imaginations may stir, the think tank then mobilizes select groups of experts through planning workshops and scenario drafts, intended for policy implementation.

We took part in one of these workshops, set up in the US with foremost governmental staff participating. The aim of the workshop was to articulate what the US government needs to change in relation to AI and future work. As is

common at events within the Future Industry, a sense of seriousness encapsulated it. A few days before, we had been let to know that we could not bring any laptops, cell phones, or digital devices into the session rooms, as we were to enter a military setting of sorts. And, more specifically, as the two of us were non-US citizens, parts of the area were off-limits to us. Leaving all our digital belongings outside the session rooms where we were to spend the next six hours, we were contemplating the message of gravity this sent. The discussions to take place must be understood as serious business, we gathered.

The main meeting room was set in grayish tones. Gray walls with gray carpets, metal chairs with darker grey seats. The only color to be seen was found on the US flag, which was leaning against the wall, but nailed in order not to slouch. Also, the light blue shirts of the many (mostly white) men participating in dark grey suits, added color to the room. In the grey daylight outside, a tree with pink flower blossoms suggested something colorful to look at.

After a brief introduction by the organizers, we split up into smaller discussion groups; Christina sits down with the culture and technology group and Adrienne with the group discussing government's role in 2050 for the world of work. Discussions in the groups are engaged, and since we have left our digital devices outside, no one is googling or checking out other stuff. The groups are leaning in towards each other, eagerly facing the person talking.

The future we are discussing is presented in the scenarios provided by TMP. Even though three versions were presented – truly positive, pretty bad, and really bad – discussions set out from the worst scenario. No one seemed to believe or at least be interested in the positive scenario, neither entertaining the idea of the "the self-actualization economy" nor the playful conceptual inventions such as "Next Tech and artificial super intelligence" from the positive mixed-bag scenario. Rather, it is conclusions such as the following that dominate the discussion: "Two thirds of the world's workforce is either in the informal economy or unemployed," and "Since guaranteed income systems are not in place, social strife, and the growth of cybercrimes, terrorism and organized crime dominate much of world affairs" (TMP 2017:138). The discussions circulate around words such as "disruption," "friction," and suggestions that "it's gonna be completely different," and "institutions need to change because the current model isn't serving."

In the afternoon, it is time for participants to formulate their recommendations for government to move forward with. Participants take the task seriously, even though the whole workshop is a voluntary exercise and recommendations are not to be taken to the government, but form part of what TMP suggests in its coming activities. We work quietly and intensely in smaller groups on how to get these recommendations right. Still, in this part of the workshop, suggestions are somewhat lighter in tone. A major conclusion from the groups is that we need

better stories on progress and specifically with respect to the US, and why not establish a museum of the Future at the National Mall in DC? Another group suggests that the government needs to engage citizens in its future activities. A third group raises the question of how we can measure progress, and not merely failures? Finally, Peter Fox, convener of the event, concludes by saying that "we need to be smarter, we have been warned by Elon Musk and others." While leaving the workshop – feeling tired after a whole day of workshopping – we discuss what messages had been conveyed. A sense of fear and urgency had been communicated, but also an instance of hope and room for action. The governmental actors of the workshop were sincere in their aspirations to solve future issues. Yet, we wonder, what could a day such as this accomplish?

Future Metrics

Creating a sense of need, and readiness for action, by its narratives of the time to come, the Future Industry also builds upon statistics, pictures, graphs, and texts. The *WEF Global Risks Report* is a strong seller in this respect. The reports come out impressively, with texts and graphs intertwined with the narration of future risk. Rita Lesley, a senior manager at the WEF headquarters in Geneva and responsible for the report, describes the complexities of the work involved in constructing the risks in the following way:

> We've got fifty global risks that we look at as a set, and then we conduct a perception survey over summer to fall every year, and then coming out from that we sort of identify the key emerging themes in peoples' minds about the potential high-impact, high-likelihood risks for the coming ten years, and then we extract it into three different cases. It's almost like telling a story around these risks. (Interview, 2013)

When we met Rita Lesley there were 50 risks, but the number has changed over time. The number had just expanded from 37 in order to balance the risks internally. She explains that this was done because "some were much more macro, like climate change, and others were more like micro, like flooding, but we try to keep it on the same order as much as possible, so there is comparability." Later, the number of risks continued to change. In 2015 the number of risks were reduced to 28, whereas in 2020 the number had gone up again, to 30 risks.

The criteria for being presented as a risk in the survey are set by the WEF itself. Rita Lesley explains:

> Each risk will have global implications, in the sense that it affects more than one region and more than one industry, and it would be something that cannot be solved by one stakeholder. These risks can be of two sorts: coming about as a shock, like the financial crisis in 2008; or underlying factors amplifying the shock. In the case of the financial crisis, that would be the sort of structural issues around the financing incentives, or there might be structural issues around how the financial market is organized.

These risks are not static: they can all be put on or removed from the list at any time. If the creeping risk of ineffective antibiotics would be mitigated, for instance, it would be removed from the list.

As Rita Lesley says: "We can't really be repackaging old news, but at the same time we can't be too far out, because otherwise it becomes science fiction." Thus, the construction of the risk report is a balancing act between at least two issues affecting their work. One issue is the danger of missing something that later turns out to be a significant risk, affecting the lives of many people, simply because it is not mentioned in the channels that Lesley and the team have established. A second issue is to address a risk that many people do not truly consider to be a global risk, but merely something that some actor wants to bring into the discussion. There is, of course, a strong interest among many actors to get their specific concern into the analysis and rated as a risk by the WEF. Since the WEF intends not to take sides in political issues, however, it is of great importance for the team to keep the risks that end up in the report as neutral and non-political as possible. Accordingly, an important part of the team's work is to validate and evaluate the importance of risks raised by their many contacts.

Through its activities, WEF articulates and opens up a specific "horizon," to use Koselleck's (2004) term, here used as a figurative and analytical device for negotiating relationships among experience, everyday life, and historical and future time. The sense of future time at the WEF is generated through tensions between experience and expectation, between identified risks and possible solutions. Their increasing divergence opens a horizon, toward which agency can be projected, and the authority and influence of the WEF may be leveraged. This horizon is envisioned from its headquarters by the shores of Lake Geneva. They articulate a particular form of "anticipatory knowledge" (Gusterson 2008), geared to contribute to the shaping of political priorities and agendas, reflecting WEF's central values and priorities. Its future risk scenarios aim to shape perceptions of what constitute "global problems," and how they might best be addressed and governed. In this way, they contribute to the anticipatory governance potential of the WEF: governance geared to integrate imaginaries of the future into regulatory

processes. The scenarios for possible futures developed in this context inform new ways of building resilience to risks and threats of various kinds through close collaboration with its funders: the largest transnational corporations in the world.

Just as the risk scenarios of the WEF, the metrics of the future presented by TMP also tend to invoke a sense of *evolution*, thus combining a sense of crisis and urgency with something completely natural. What we are facing according to TMP, and the Future Industry at large, is a societal evolution where we go from one phase in history to the next, driven by technology. As James Cantor from the Institute for Global Future opens his book on the Extreme Future (showcased by the WEF as one of the world's ten best predictions of the future: "We were at the beginning of a sea of change" (Cantor 2006). In the 2017 version of its *State of the Future Index,* TMP presents how the Earth and its human population will fare in the coming decades. Based on its own calculations, which began in the mid-1990s, it argues that we, humankind, are gaining more than we are losing. In the table describing the general trend of humankind, a more or less straight upward line goes from 1990 to 2030. After 2017 until 2030, the line is only indicated by dots, but the general prediction is that "we are gaining more than we are losing" (TMP 2017: 173). It states that, "the rate of global improvement for the coming decades will be 1,14%. versus 3,14% for the period 1990 to 2017." (TMP 2017: 6). Apparently, the world had a hick-up of positive evolution around 2007, prior to the financial crisis of 2008, because that is the only indication of non-linear transformation in the calculations of the state of humankind. TMP warns, though, that "although we are winning more than we are losing, where we are losing is very serious. 'Business as usual' trend projects for water, food, unemployment, terrorism, organized crime, and pollution could create complex future disasters" (TMP 2017: 8). The essential idea is that you can and need to design the future. The future is so extreme that it does not look like anything we have seen before. The plodding along will not make do.

Instilling Hope

In June 2018, the California-based think tank Institute for the Future (IFTF) announced on its web site that its Institute "first ever "Magician-in-Residence," Ferdinando Buscema, will inject even more wonder into Futures Thinking":

> Institute for the Future (IFTF) has partnered with magic experience designer, author, and organizational consultant Ferdinando Buscema as IFTF's first ever 'Magician-in-Residence.' Buscema and IFTF will co-develop events, corporate workshops, and research at the intersection of technology, organizational strategy, and magic to spark

> the imagination. (https://www.iftf.org/future-now/article-detail/iftfs-magician-in-residence, accessed March 18, 2021)

The Institute intends to use magic, as a way of constructing affectivity and precipitating insights. "Magic provides audiences an opportunity to playfully challenge the very notion of what's possible, fueling curiosity, and renewing people's sense of wonder about the world," says Buscema (ibid.), an internationally acclaimed conjurer and sleight-of-hand artist who regularly performs at the prestigious Magic Castle in Hollywood. The Institute describes its new collaboration:

> IFTF will meld its time-tested methodologies for futures thinking with Buscema's magic experience design to help organizations and the public think systematically about the future in astonishing new ways and, ultimately, make better decisions in the present. (https://www.iftf.org/future-now/article-detail/iftfs-magician-in-residence, accessed March 18, 2021)

The above quote makes visible the importance of hope and positivity, indeed magic, in future-oriented think tanks and the Future Industry at large. The conjuring of hope is yet another way by which the industry tries to offer possible ways forward; moving the globe away from the dangers and risks of environmental disasters, weak state formations, massive unemployment, or other types of systemic breakdowns. The quote also captures the sense of agency and empowerment that is often underscored by, for instance, think tanks and consultancies geared to designing the future. As expressed, for instance, by James Canton: "I want to challenge you, the reader, to see the future as a designable event that the individual can influence" (Canton 2006: 4). He continues:

> It's a new kind of future, not the steady plodding of progress from one moment to the next, punctuated by brief bursts of innovation, that characterizes much of history. Now we face a post-9/11 future. The future of our lives, of our work, of our businesses – and most all the future of our world – depends on us gaining a new understanding of the dizzying changes that lie ahead. I call this future-readiness (Canton 2006: 4).

This "future-readiness" suggests that there are ways to understand and manage the openness of the future and that both individual and organizational actors may learn how to do this. In a similar vein, Bob Johansen, at the Institute for

the Future, articulates much of the same positive empowerment and hope in his book *The New Leadership Literacies* (2017). He argues for the development of a specific leadership capacity that is required in order to meet a disruptive future, the so called "future literacy". This is a term that has both been launched within the industry and established as a framework of UNESCO's future oriented activities (https://en.unesco.org/themes/futures-literacy, accessed 2019–10–08). The idea within UNESCO is to foster a "capability" and a "skill that allows people to better understand the role that future plays in what they see and do." To some extent, then, orienting towards the future, apprehending risks and opportunities, and articulating ways of dealing with these are capabilities that can be learnt. It also implies that actors may organize themselves to develop and expand these kinds of capabilities. Future literacy can be taught and learnt. In this process, "voluntary fear exposure will allow leaders to create low-risk spaces where they can practice rapid prototyping for innovation" (Johansen 2017: 45). Fear and hope are thus constructively conjoined by and within the Future Industry.

Sense, Sensibility, and Seduction

Contemporary forms of governance build to a large extent on the assumption that what is critical and valued can also be measured and compared. The reliance on and trust in numbers, on which the work of Future Industry organizations largely reside, articulates the combinatory exercise of aligning aspirations towards credibility, legitimacy, and quality with subtle yet coercive forms of control and oversight. The forms of knowledge created by the use of metrics and indicators rely on the magic of numbers and the appearance of certainty and objectivity that they convey. "Indicators have the capacity to convert complicated contextually variable phenomena into unambiguous, clear, and impersonal measures" (Engle Merry 2011: S84). They represent a technology of producing readily accessible and standardized forms of knowledge and reason, and are thus highly attractive to think tanks and similar organizations with governance ambitions.

Alluding to the tension presented in Jane Austen's novel *Sense and Sensibility* (2017, first published 1811), we see tensions between how Future Industry actors present a conflict between two opposite ways of approaching the world. Jane Austen indicates that both sense and sensibility are necessary for a complete life, but in this novel, she demonstrates that the pain and vagaries of living require a greater use of sense than of sensibility. Although the definitions of these two abstract nouns repeatedly shift meaning, the reader quickly comes to understand that Elinor and Edward Ferrars represent "sense" and Marianne and John Willoughby are the book's representatives of "sensibility."

In a somewhat similar vein, the story of the Future Industry is built around this tension. Despite their claims to evidence-based knowledge production and facts-based reports – sense, as it were – future consultancies and the like are, like any other organizations, repositories and fabricators of emotions of all kinds – i.e. of sensitivity. And indeed, what explains a large part of their seductive qualities may be found in their deployment of emotion. The "texture of affectivity" may be said to be more multilayered and convoluted than that of rationality (Albrow 1997: 107). Sensations, feelings, and moods inhabit emotions, attitudes, vices, and virtues. As Martin Albrow (ibid.) has it: "As with rationality the descriptive and evaluative are hardly to be disentangled except as phases in a process." Affectivity should be recognized as a key aspect of organizational performance. Moreover, and more importantly, the affective dimension may allow us to understand and explain how Future Industry actors are transforming themselves from fringe voices to persuasive political actors who set the agenda and frame media debates (cf. Wodak 2015). This "politics of fear" is entrenching new social divides of nation, identity, gender, and educational background.

Speaking with political theorist and cognitive scientist George Lakoff (2008), we object to the dichotomy between reason and emotion. The old view of Enlightenment and its modern rational version saw reason and emotion as opposites, with emotion getting in the way of reason. This view is utterly misleading. Instead, reason requires emotion. Also, in the political domain, as Westen has shown in his book *The Political Brain* (2007), emotion is both central and legitimate in political persuasion. Emotions *are* rational, rather than irrational.

The politics of emotion that is cultivated within the Future Industry builds to a great extent on the seductive capabilities of its communicative actions. It rests, in other words, on the invocation, framing, and leverage of emotions. The new authority relations, forged by way of Future Industry foundations, consultancies, think tanks, etc. may build their claims on reason, cognition, and metrics, but a large part of their sway resides in the emotions that are put to work and that attract and seduce its audiences and stakeholders. A focus on affectivity may reveal the micro-politics of educated populism: how discourses, genres, images, and texts are performed and manipulated in both formal and also everyday contexts with potentially profound political, economic and social consequences.

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Mobile Application to Secure Tenure in Rural Tanzania: Anticipating Diverging Agricultural Futures and the Production of (In)securities in the Kilombero Valley

By
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Abstract

In light of climate change, projected population growth, increasing conflicts over land and the question of food security, the Tanzanian government takes the respective visions of environmental futures as a cause and justification for particular measures in the here and now. One such modality through which agricultural futures in the Kilombero Valley are currently made present and decided upon is the use of the Mobile Application to Secure Tenure (MAST). Through the use of this application, on the one hand, a more capital-friendly land legislation should be developed. On the other hand, by issuing Certificates of Customary Rights of Occupancy (CCROs), which are supposed to offer a certain security to current land users, expected conflicts are sought to be reduced and prevented. Thus, by examining the use of MAST and the particular ways in which it renders possible futures actionable, this article contributes to ongoing research that aims to illustrate how "humans [...] do not own and shape 'their' future alone" (Granjou et al. 2017: 8). While such technologies are generally developed and employed to increase certainty, following the implementation and effects of MAST, in particular, we will show how the specific materiality of this mobile application not only allows to secure tenure, but, at the same time, creates new insecurities that contribute to the complex emergence of environmental futures in this part of rural Tanzania.

Keywords: environmental futures, (in)security, anticipation, mapping narratives, land (in)formalization, mobile applications, SAGCOT, human-technology-nature relations

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Introduction

Uncertain environmental futures, projected population growth and the question of food security have come to shape the visions for African agriculture in a particular way. Considered as "Africa's sleeping giant" ten years ago in a World Bank report discussing the prospects for commercial agriculture (World Bank 2009), an image of African agriculture as being ready for its awakening through an optimization of inputs and resource use has become prevalent in policy circles (see also World Bank 2013). In Tanzania as well, food crop production has been identified as being far below its potential, leading to efforts by the government as well as by various donors and development agencies to provide a fertile ground for agricultural intensification. Launched in 2010, the Southern Agricultural Growth Corridor of Tanzania (SAGCOT) was meant to serve as a main facilitator in this regard, with the Kilombero Valley being promoted as one of six development clusters at the end of 2018.

Advancing a familiar trope in the land rush context (see e.g., Cotula 2013), the growth corridor concept seeks to incorporate areas with "yield gaps" or "idle" land into modern market relations, potentially based on joint ventures with foreign capital. That this apparently idle land is only very rarely actually "unused" or "asleep", and that land ownership and use is actually highly contested, becomes clear in reports about forced evictions of (agro)-pastoralists and violent conflicts between local peasants and "newcomers" who wish to benefit from attractive farming conditions in the Kilombero Valley (e.g., Nindi et al. 2014). Indeed, as Kimaro (2014) has pointed out, as a result of these political efforts, the demand for agricultural land in Tanzania from both smallholders as well as from commercial farmers and potential investors has never been higher. Fear of severe local conflicts, political instability, resource degradation and other environmental risks thus forms a shadow over these highly optimistic visions for African agricultural landscapes.

Both visions, whether euphoric or fearful, contribute in particular ways to what has been called a "regime of anticipation" (Mackenzie 2013: 391), a state characterized by a thinking and living toward the future (Adams et al. 2009: 246). In this case, particularly politicians, development practitioners, and investors make efforts to create preferred futures by "enacting a future that (hopefully) makes a present that (hopefully) shapes the future" (Wilkie & Michael 2009: 504, see also Anderson 2007). Hence, in anticipatory action, uncertain environmental futures become cause and justification for particular measures in the here and now.

One such modality through which agricultural futures in the Kilombero Valley are currently made present and decided upon is the use of the Mobile Application to Secure Tenure (MAST). Through the use of this application, on the one hand, a more capital-friendly land legislation should be developed. On the other hand, by issuing Certificates of Customary Rights of Occupancy (CCROs), which are

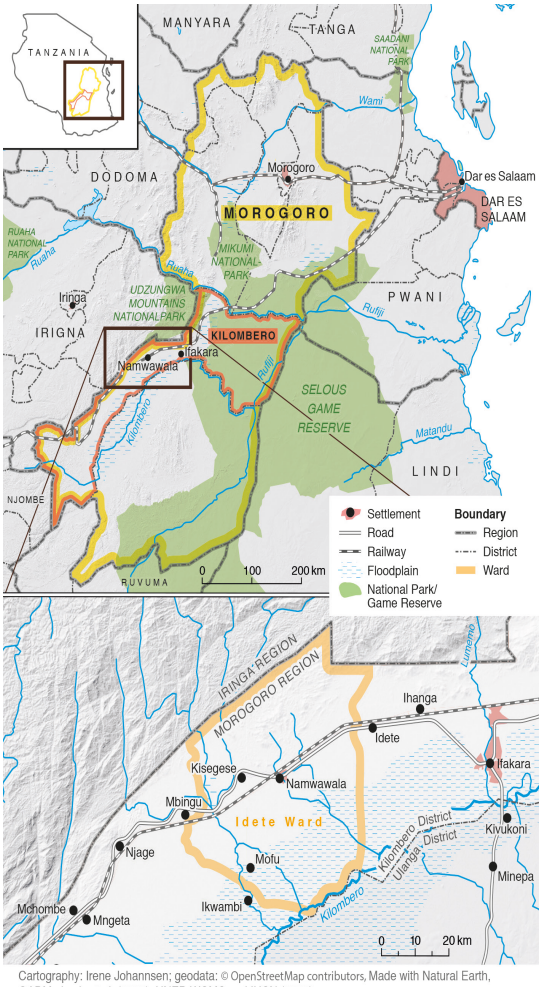
supposed to offer a certain security to current land users, expected conflicts are sought to be reduced and prevented. By examining the use of MAST in the Kilombero Valley in this article, we set to emphasize the notion that "anticipation includes more than acts of representation and their effects on how people perceive future possibilities" (Groves 2017). Focusing on this digital technology and the particular ways in which it renders possible futures actionable, we contribute to ongoing research that aims to illustrate how "humans [...] do not own and shape 'their' future alone" (Granjou et al. 2017: 8). While such technologies are generally developed and employed to increase certainty, following the implementation and effects of MAST, in particular, we will show how the specific materiality of this mobile application not only allows to secure tenure, but at the same time creates new insecurities that contribute to the complex emergence of environmental futures in this part of rural Tanzania.

2. Making Land, Preventing Conflicts: Agricultural (Techno)politics in the Kilombero Valley

Tanzania has a chequered history of agricultural policies and slogans (see e.g., Sulle 2016). Embracing a market-oriented agricultural transformation agenda, the concept of the Southern Agricultural Growth Corridor of Tanzania (SAGCOT) has been developed with the aim to facilitate the commercialization of Tanzanian agriculture by tripling the output of food or agrofuel production through private-sector investments. The project's major goal has been stated as to bring 350,000 hectares into profitable production by channeling investments into designated clusters, where large-scale farms and agribusiness players would develop linkages with smallholder farmers through so-called hub and spoke structures (i.e., outgrower schemes and block farming arrangements) (Milder et al. 2012: 2). In order to facilitate this, the government of Tanzania has committed itself to help investors to identify and secure land, to upgrade the road, energy, irrigation, and rail infrastructure along the corridor, as well as to train and organize smallholder farmers. The program has also called for significant regulatory restructuring, e.g., regarding land legislation, to further facilitate the entry of capital into agriculture.

The Kilombero Valley in the South of Tanzania, one of the largest wetlands in Africa, nestled between the Udzungwa Mountains to the Northwest and Selous Game Reserve and Mahenge Highlands to the Southeast, lies at the heart of the sixth cluster promoted by SAGCOT (Fig. 1: Map of Kilombero Valley). For its population, which is supposed to amount to half a million, the wetland has long provided a fertile ground for agriculture, both subsistence farming and the production of cash crops (Beck 1964, Monson 1993, Dinesen 2016). This has also attracted migrants from other parts of Tanzania (Kangalawe & Liwenga 2005:

970). Thus, contrary to being "idle" and waiting to be put to use, agriculture has been extended, especially rice production, to fulfil the needs of an increasing population. Moreover, the arrival of pastoral and agro-pastoral communities has heightened the pressure on land through increasing livestock numbers. This has not only been associated with environmental concerns but also with increasing conflicts over resource use, particularly between farmers and livestock keepers (Kangalawe & Liwenga 2005). Against this background, the Kilombero Valley does not only appear to be a hotspot regarding its economic potential, but also for far-reaching socio-ecological transformation processes and conflict dynamics which have led to calls for legal reforms regarding these land issues.



Cartography: Irene Johannsen; geodata: © OpenStreetMap contributors, Made with Natural Earth, GADM, Jarvis et al. (2008), UNEP-WCMC and IUCN (2021)

Fig. 1: Map of Kilombero Valley

Realising the need to not only identify available land and make it investable, but to also provide the ground to avoid increasingly violent conflicts over land, Tanzania has started a complex and institutionalized land demarcation and valuation process. The CCRO in 2004, the Land Use Planning Act No. 6 of 2007, the Tanzania-G8 Land Transparency Partnership (TLTP) in 2013, and finally the Land Tenure Support Program (LTSP) launched in 2016 have all been targeting the issue of land rights. The last of these programs, the Land Tenure Support Program (LTSP), which officially ended in July 2019, was initiated as a pilot project under the Tanzanian Ministry of Lands, Housing and Human Settlements Development in cooperation with the Department for International Development (DFID), the Danish International Development Agency (DANIDA) and the Swedish International Development Cooperation Agency (SIDA), with the particular aim to develop or find a technology that would make it possible to secure tenure in rural areas of Tanzania.

Hence, building on earlier attempts with similar aims, various ways of mapping, registering, and distributing CCROs have been tried out over the past three years in the Kilombero Valley. Finally, the Land Tenure Assistance (LTA) was able to provide MAST which has recently been tested by the United States Agency for International Development (USAID). This service seeks to combine a participatory approach and on-the-ground training with a mobile application and a data platform. So far, MAST has been piloted in parts of Burkina Faso, Zambia and Tanzania with the stated aims to (among others) prevent and mitigate conflicts over land and resources, create incentives to improve agricultural productivity, enable more responsible land-based investment, and to lay the ground for an efficient and sustainable natural resource management (Msigwa et al. 2018, USAID 2019), thus seemingly being a perfect tool to anticipate environmental futures in the Kilombero Valley.

3. MAST in Practice: Mapping Land and Shaping Hopes in Namwawala

The narratives accompanying the adoption of MAST in the Kilombero Valley clearly indicate how a long-term political challenge is being turned into a technological challenge (Weinberg 1993, see also Woods 2012 on "technological fixes" for rural futures). While, on the one hand, a new set of tools is supposed to reduce the costs and efforts of land formalization, on the other hand, the technology is regarded as a solution to land use conflicts by allowing all land users to make their claims, apparently independent of dominant power structures.

As Crampton and Krygier have highlighted, "cartography's latest 'technological transition' [...] is not so much a question of new mapping software but a mixture

of 'open source' collaborative tools, mobile mapping applications, and geotagging" (Crampton & Krygier 2006: 12, see also Monmonier 1985, Perkins 2003). The application of MAST is clearly situated in this "technological transition", aiming at empowering counter-mapping initiatives (see Hodgson & Schroeder 2002). Nevertheless, within the LTSP, the technology is entering rather top-down structures. First, the software specialist together with the programmer who initially designed and developed MAST for USAID had to adapt the application to the spatial context of the Kilombero Valley. On this basis, the mapping teams of the Land Tenure Support Program were then being trained how to use the registration, mapping, survey, and storage tools of the application.

Inside the Land Tenure Support Program

It was these technology experts who were our entry point to the ethnographic research that forms the basis of this article. While examining the role of digital technologies in informing human-nature relations in the Kilombero Valley, Astrid was able to visit all departments of the Land Tenure Support Program and regularly assisted the Geographical Information System (GIS) team (Fig. 2: The GIS department at the LTSP. Source: own photograph).

Fig. 2: The GIS department at the LTSP. Source: own photograph

One day, when the field workers came to the office of the LTSP in Ifakara to transfer the data from the tablets to the local server, she was invited to join the

field team on their new mapping project in Namwawala. During this process, she used the applications herself, got to know the different mapping and landscape elements and talked to both the field staff as well as the villagers about the difficulties and hopes of the program and its results. Over the course of six weeks, apart from numerous informal conversations, twenty interviews were conducted, eight of them with villagers, four with technology, software and GIS specialists, three with the project management and five with experts from associated areas of the project such as communication, social services, nature conservation, conflict consulting and the legal department. This way, this study resonates with newly emerging work in the field of non-, post-, or more-than-representational cartography, which is oriented towards processual, context-specific unfoldings of mapping as a narrative (Kitchin et al. 2013, Caquard & Cartwright 2014). Especially in the fields of the so-called spatial and digital humanities as well as in spatial anthropology, participant observation and observant participation in the creation and handling of maps have been advocated in order to bring social, cultural and political embeddedness into projects of "(digital) representation". Hence, "deep mappings" as a kind of equivalent to the "thick description" after Geertz, are on the rise (Roberts 2012, Roberts 2016) and have formed a major inspiration for this fieldwork.

Out in the Village

Namwawala is one of the villages in the Kilombero Valley situated directly along the railway line which leads from Dar es Salaam to Zambia. Here, before the mapping team arrived, the news about the project had already been spreading by word of mouth, radio and local drum-messengers. Namwawala is considered a state-approved village – implying an intact village government with democratically elected leaders – and officially, it is not affected by any conflicts. As such, it fulfils the two major prerequisites to participate in the program.

According to the formal structure of the LTSP, each village project starts with a couple of workshops to educate the villagers about the program and land rights. In addition, the planned restructuring of the legal apparatus in rural Tanzania, as well as infrastructure upgrades, are being discussed with the village government. After these trainings and discussions, the participation of the village in the project needs to be confirmed by both parties. If the village does not wish to pursue this extensive land formalization, it would however still have to cover the costs for the received trainings. Also, the program can withdraw its activities in case conflicts shine through in these training workshops. Thus, these are usually carefully hidden by the villagers at this stage, in order not to jeopardize their chances to acquire an official certificate for their land. After both parties have agreed to go on, the actual mapping process starts.

Only after the village government agreed upon the village boundaries as well as the new land use plan, focusing in particular on the separation of designated pastures from agricultural land, the final step of the LTSP's interventions can begin: the mapping and data collection of all the land holdings of each villager. This is meant to be done in a participatory process to increase the legitimacy of the data and related decision-making (see Gupta 2011). To ensure this, the mapping practice happens in a very specific constellation of people who accompany the tablet, the GPS and the App MAST through a village.

Fig. 3: A mapping team on its way through Namwawala, Source: own photograph

The field team of about 15 para-surveyors of the LTSP live in the village as long as they work there (usually a time period of four to eight weeks per village). While the para-surveyors watch over the tablets and GPS-devices, their mappings are supervised and corrected by a LTSP spatial planner and a number of selected villagers (Fig. 3: A mapping team on its way through Namwawala, Source: own photograph). Furthermore, each para-surveyor is assigned a secretary who creates the village household lists while s/he is doing the digital data recording. In addition, the owner of the property is present as well as his or her neighbors who are sought to control and verify the passages along the tangent borders. Finally, and arguably the most important person joining this process, is a representative of the Village Adjudication Committee (VAC) formed only for this purpose. Most of these representatives have been trained in land rights, community rights or conservation. Considered not only as knowledgeable and trustworthy but also as having a strong influence on the villagers, this person serves as a kind of organizer, leader, and impartial witness during the mapping process. After all, led by the

owner, followed by the para-surveyor and the tablet, watched by neighbors, the VAC and the secretary, the mapping teams make their way along the boundaries of land parcels in residential areas and farmland.

From Digital Information to Land Certificates

After a plot has been mapped, all the data of the owner and the neighbors are being recorded in detail in the tablet. This is at least how it should be done. In the residential area, 25 parcels as a minimun have to be mapped, described and corrected every day. This does not seem feasible to the team. The para-surveyors prefer to sit down in a shady hut and wait for all the people whose plots were mapped to come and report for data collection. The lengthy questionnaire contains census-like questions regarding the person, the household and its possessions. However, the people are willing to submissively give out their information and receive a small yellow note with some abbreviations, names and signatures in return. The fact that many wear their best clothes for this already indicates the meaning and hopes associated with this process.

When the office of the LTSP receives a finished dataset, corrections are made (if necessary) before the maps are being printed in Dar es Salaam. From there, they are sent back to the Kilombero Valley, where they are put up in the villages to allow for further comments and corrections. Finally, on that basis, the CCROs are printed, stamped, signed, laminated and handed over to the landowners. This way, more than 50,000 CCROs have already been distributed. These are seen to express the success of the project, which by mid-2019 had mapped 50 out of 81 villages in the Kilombero district.

This extensive granting of individual user rights generally reflects the long-standing assumption that an individual land title acts as a driver for agricultural intensification and sustainable resource use, even though this has hardly ever been proven in practice (Peters 2009). The CCROs are still promoted as a way to bring security, peace and development to the Kilombero Valley through clarified land conditions and the ultimate devolution of customary tenure systems through the penetration of statutory law into rural areas of Tanzania. However, a closer look at the mapping practices itself and its different im/material effects reveals that the process is not as straightforward as intended. In the following section, we will indicate some of the tensions and difficulties that emerged in this attempt to translate a dynamic and contested physical landscape into a digital map. This way, it will become clear how the measuring of plots through digital mapping hardly provides any "technological fix" but contributes in rather ambivalent ways to the production of future (in)securities.

4. The Production of (In)securities through Digital Measures

MAST as a collaborative mobile application fits the current cartographic trend to leave the terrain of academics and experts and form a more "undisciplined cartography" (Crampton & Krygier 2006: 12) instead. In the following, we will first focus on the different spatial knowledges and ways of measuring that come together during the process of translating physical elements of everyday life in Namwawala into a two-dimensional representation and digital database. Pointing to the new (in)securities that emerge as the one cannot correspond exactly to the other also reveals how mapping is always deeply intertwined with "the social, cultural and technical relations at particular times and places" (Kitchin & Dodge 2007: 333). With regard to the application of MAST in Namwawala, it becomes clear how customary and statutory laws, migration dynamics, relations to the government and external stakeholders, the project itself and its technical feasibility all contribute to the negotiation of spatial boundaries. In a second step, we will then illustrate the continuing tensions and new insecurities that emerge in the attempt to formalize land use. Driven by visions of change or deterred by fears of mediocrity and powerlessness, we show how anticipatory actions of cooperation and refusal are part and parcel of the process, which become inscribed in the emerging map. Finally, we take the first project results and its accompanying discourses as a starting point to critically reflect on the maps' ambivalent effects, paying particular attention to the (failed) hopes and promises associated with it in the first place.

4.1 The Translation of Physical Landscapes into Digital Space: (Re)shaping Plots

> "Then I was allowed to map a plot of land of an elder sitting in a corner eating dry cassava with a little salt and shouting across the street that he was clearly too old to walk around his plot. Soon, one of his sons appeared to lead me. Together, we walked along the locally identified features in the landscape. Trees served as cornerstones, wall projections as lines, changes of crops in front gardens or backyards as boundaries and trails as markers in the landscape. Sometimes things were planted or constructed exactly for this purpose, at other times ownership was highlighted through these features." (Research Diary, 28/03/2019)

For some time, we were walking through labyrinths of houses, huts, raw building

structures, fields, cowsheds, trees, bushes, and garbage dumps. Often, they seemed impenetrable and unmanageable. None of the paths were straight, nothing planned or clearly laid out. The landscape appeared dynamic and alive, meaningful and practical - not in the planning sense - but out of everyday life. However, through mapping, each parcel was put into a uniform shape and scale in the tablet.

As it is hardly visible to outsiders which of the trees actually represents a landmark of neighboring plots, the villagers need to point them out in this "cartographic encounter" (Lewis 1998, Short 2009). This way, on the one hand, the locally shared knowledge becomes transparent as a labeled GPS point in relation to three others. On the other hand, during this fixation or rather "geographic translation" (Belyea 1992) of the physical elements into a digital database, local ways of knowing are often challenged by different rules and ways of measuring that rather lead to abstraction and standardization.

When mapping the rice fields, for example, the mapping group suddenly came across a river and noticed that, by law, the border of the field should be 60 meters away from it. However, since the tablets were not able to connect to the internet in that place, it was impossible for the para-surveyor to load the satellite image and overlook the surrounding area. As it appeared to be too difficult to determine the legally correct boundary by foot - due to the size of the rice plants it was only possible to see the river when a foot already hit the water - this farmer was lucky, and his field was mapped as it appeared on the ground. But this was not always the case.

> "Between the mapping of the plots, we often had to discuss the roads. Those that already exist should have a width of five meters, but they hardly do. But instead of following their actual shape, they now have to be mapped as they should have been constructed and maintained. Other roads have to be newly constructed on the map, as there is a rule that every plot has to be accessible by road. So the roads are built, at least on the map." (Research Diary, 28/03/2019)

The roads are not the only elements that look different in the map than in the village. Apart from the given rules about shape, size and accessibility of a plot, the fixation of physical boundaries in the database is constantly informed by the base map depicting landscape features, but also former boundaries set by the government and the para-surveyors. These include the aforementioned village boundaries and the village land use plan, but they also show land possessions of companies or the church, protected areas and so-called reserved land, for example, the Tanzania-Zambia-Railway (TAZARA) and its buffer zone. Thus, when mapping the hamlet bordering the TAZARA buffer, the para-surveyors realized that quite a

number of houses reach into the railway buffer. After cross-checking again and again with both, the use of MAST as well as the commonly used footsteps, it was clear that these areas should not be mapped.

Fig. 4: Physical versus digital landscapes of Namwawala, Source: own photograph

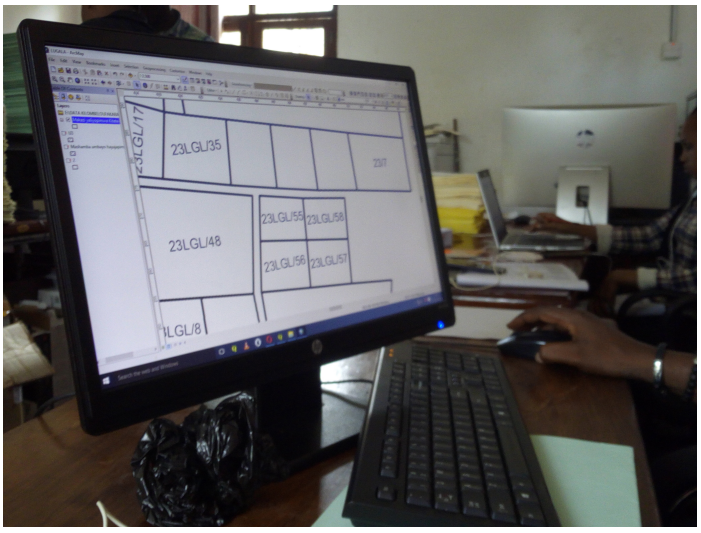


Fig. 5: Physical versus digital landscapes of Namwawala, Source: own photograph

This shows how the rules and guidelines accompanying the application may lead to a considerable reduction of the land of the farmers on the map, and it also severely alters its shape (Fig. 4 & 5: Physical versus digital landscapes of Namwawala, Source: own photograph).

The shape is usually derived from four corner points. Moreover, the maximum size of each parcel is given, so that larger parcels have to be divided. As a result, clear, straight parcels of similar size emerge digitally, which are hardly recognizable when walking through the village. They certainly look very different to the plots that were commonly measured when being allocated, sold or leased among the villagers. Usually, this is done with a measuring rope with a scale of ten knots composing the length of one acre. For uneven or smaller areas of land, footsteps are taken. But even though these conventional methods are also based on the metric standard system and stick far more closely to the actual shape, the new, digital way of mapping is still perceived as more accurate by the villagers. As one farmer states:

> "It does not change my life but it helps me to know my plot. You can measure by using a rope and you believe that you have five acres while they are less than that. If you use this technology, you are sure of the area you own and it helps you to determine the capital you can produce. It is a clear projection I can make now." (Interview with farmer, 19/04/2019)

This statement also reveals how this supposedly new and more exact way of knowing one's land is closely related to new methods of working one's land as they have been promoted recently, such as projections for seeds, inputs and yields that are tuned to exact spatial measures. Thus, even if the digital mapping might mean that parts of one's plot need to be deduced because of a planned road or to allow the old road to appear as wide as it should be, the accuracy of the new measurement and its clear shape is still seen as an asset by many, as they hope to be able to link the formalization of land to increased productivity, as SAGCOT has promised - even if mainly with regard to large-scale investors.

Overall, the ethnographic insights show how the translation of physical landscapes into the digital database is far from straightforward with diverse effects. For those plots successfully mapped, the owner will be informed of his or her field size as digitally measured by MAST. The size will be noted on the CCRO, as well as the shape of the plot. Other parts, however, will be excluded and other land uses are assigned to it through the base map, which is constantly referred to and thus looms like a shadow over the negotiations on the ground. This means that this process of mapping and "unmapping" of the village, as Roy (2003) puts it, is conducted under tension as it is decided upon residents, if they will own the land they currently use forever or never. In this sense, as the following will illustrate, mapping and unmapping becomes a constant process of anticipatory negotiation between the diverse actors involved.

4.2 The (In)formalization of Present Land Use: (Re)assigning Ownership

Tensions among Namwawala residents have been there for a long time, with a major line of conflict between the "locals/natives" (in Kiswahili "wenyeji" and thus not necessarily dependent on birth), which are comprised of people from different tribal backgrounds having arrived in the Kilombero Valley from pre-colonial times until the mid-twentieth century, and the "newcomers", Tanzanian migrants who have arrived since the Sixties, however mainly used to refer to (agro-) pastoralists from further north (e.g. Wasukuma). The "newcomers" are seen, not without jealousy, as the driving forces behind novel farming methods and modern house constructions. In general, they are considered to be "more economic". As (agro-)pastoralists they are responsible for the spread of the highly disputed livestock farming in the valley, with some occupying large pieces of land which they are thought to have acquired through bribes to the village leaders, so at least the local elders say. What is causing particular tensions is the observations that "newcomers" often do not know about or respect the land demarcations made by former customary land users. As this elder complains:

> "If they would only invade the land that is still unattended or just bush… but when I was transferred first to Zambia and then to Mngeta [to work for the railway], someone invaded my land. After my return in 2012, I was shocked that a large part of my land was gone. This happened with disregard to the demarcations I had done with sugarcane." (Interview with elder, 18/04/2019)

However, legal standards and local customs may not only be unfamiliar to "newcomers". On the one hand, the Tanzanian legal framework has hardly penetrated to rural areas, so that only few people in the villages know about their rights, and local jurisdiction is hardly based on it. On the other hand, it is also difficult to decide what can be considered as local customary law, especially in a fertile area such as the Kilombero Valley with a highly dynamic population. Moreover, even laws commonly accepted may not always be enforced. In effect, it is difficult to say who is legally or illegally using land.

In this complex and rather unclear legal setting, MAST is used in anticipation of a further proliferation of conflict outbreaks. Fixing borders and making them transparent, it should serve as a clear legal basis for the application of state laws and therefore forms a central component in the transition from customary tenure to statutory law. Apart from providing some rules and guidelines, such as those concerning maximum plot size and shape, the decisions regarding concrete boundaries and ownership, however, have to be made by the team accompanying

the mobile application on the tablet. As presented before, apart from the para-surveyor this includes the landowner – or at least present land user –, his or her neighbors, and the representative of the Village Adjudication Committee (VAC), whose general role it is to solve land conflicts according to local customs, modelled on the role of the elderly. Thus, the decision-making authority is seemingly shifted to the villagers themselves with the aim to create an atmosphere of trust which is not always given in relation to the village government, half of which consists of appointed external representatives of the state. Due to the heterogeneity of actors and unknown or contested local customs, these teams, however, often still have to deal with doubts and suspicion, and were sometimes even met with complete refusal when arriving on farms.

> "When it stopped raining, we took two motorcycles in the direction to the fields. Mainly rice is cultivated here, as well as maize, and I also see some cattle. The farm-roads are narrow, washed up and muddy, some even completely flooded. Half an hour later, and after having had to lift the motorcycles over a bridge, which only consisted of a log, a man is waiting for us at a shady glade. We stop and everyone begins to whisper. After a while, I get nervous. Is the path not passable, or were the para-surveyors not found? After a long discussion, the spatial planner comes to me to explain that we are about to enter the farm of a Msukuma who is still hesitant towards the mapping as he fears to lose this land to investors. Luckily, the VAC accompanying the group is also a Msukuma. He steps out to explain the whole process to the farmer. Finally, we are allowed to enter the farm." (Research Diary, 01/04/2019)

The LTSP team often had to do a lot of convincing because the farmers were afraid of investors. In this area, in particular, they feared that the Kilombero Sugar Company (KSC), partly owned by the state, would expel them from their land. After the company was originally given land in a protected area which it had to return in response to the complaints of environmental organizations, they were first compensated with land belonging to the rice fields of Namwawala. After protests broke out in the area, it was established that the land should remain in use by the villagers and the company received a monetary compensation instead. Nevertheless, rumors and fears regarding the KSC appearing to take this land remain, especially as the company only recently tried to expand its activities by reclaiming land in other parts of the valley.

> "The farms of Wasukuma that we visit are large and located far outside the village, yet close to a protected area. Unlike other villagers who usually have their houses in the residential area, these farmers live on their farms. For the para-surveyors, mapping these farms is particularly difficult. As he tells me, many Wasukuma were hiding from the team and did not want to be mapped. They are afraid that it might turn out that they had expanded their fields at the expense of the protected area." (Research Diary, 01/04/2019)

As outsiders, such as state officials or NGO workers, who previously arrived in this area were often associated with either external investments or conservation, both at the expense of local farmland, MAST, as well, is seen to bring uncertainty. Before the mapping is completed, it is hard to tell what it will bring.

Instead of simply confirming land use as well as demarcating available land, it rather points to overlapping land (mis)uses when looking through official maps and legal frameworks. Farmland that extends into other areas is not mapped; buildings in buffer zones, for example, are marked with the letter X, meaning that they shall be torn down in the future. In the case of the TAZARA railway line, so far, it is unclear if and when this will happen, as it depends on a possible upgrading and extension of the railway. However, the residents inside the TAZARA railway buffer zone will not receive a certificate.

In effect, through MAST, some villagers who have long used their land according to previous customs and rules, now become officially landless as their land extends into a protected area or a buffer zone, or simply sits in conflict with other, previously invisible land uses, owners or investors as depicted in the base map. By the residents in Namwawala, these new landless are generally considered to be the greatest risk in terms of future conflicts and crime and stand in stark contrast to the original hopes associated with secure tenure. Furthermore, there is a lot of resentment in the village, because, some residents who have only informally acquired their land, did not follow local customs or were still in conflict as their land ownership was contested by neighbors, are now suddenly assigned the official landowners, and can secure their current possessions in the long term through newly set inheritance regulations. Overall, this clearly shows how MAST redefines formal and informal land-use for the inhabitants of Namwawala by (re) assigning and withdrawing land ownership.

4.3 Repercussions from the Database: (Re)setting the Future

The translation process of different forms of spatial knowledge into a digital

dataset and the new definitions of formal and informal which come along with this determines if someone becomes a proper landowner or an official landless, thus epitomizing the complex interplay of the digital and the physical. As indicated above, the digital base map always serves as reference and orientation during the fixation of locally defined and negotiated borders. Besides, it informs the mapping of those boundaries which are not known or ignored by customary use. Thus, while a major effort is put into digitizing the physical landscape, the digital map already exerts its influence on the ground during the mapping process. Moreover, it is the expected result that triggers further expectations and material repercussions.

> "I can refer to one example, if I have five people in my family, I know that I have to cook a certain amount of food. Through the project, I believe, if the government knows that people of a certain area own a certain area of land, it is easier for the government to provide help. They will know the largeness of the area and the inputs required in agriculture. Previously, the area was not exactly known, the total number of farmers neither." (Interview with VAC, 19/04/2019)

Even though the Kilombero Valley, traditionally associated with the opposition party, has often felt neglected by government efforts to strengthen rural areas, some villagers clearly hope that MAST will put their village on the map when it comes to agricultural policies and other rural development initiatives. Here, the mapping is seen to provide the government with the necessary knowledge to design more appropriate measures for their support. Hence, participating in the program is closely associated with the hope to participate in and benefit from development projects. In a way, this shows how the program's guiding idea of idle land as an untapped resource that needs to be made investable is transformed into a notion of long-awaited care by the state for the inhabitants by knowing about their properties.

However, some fear that this knowledge about ownership and the size of properties might lead to tax collection and tax increase. As one farmer emphasizes:

> "At first, people couldn't imagine what will happen or change through and after the project. Many people rejected the program after hearing that after registering they would have to pay tax for their lands. But later, when they were informed through seminars from the government, they accepted. […] Now, they expect things such as getting loans to become much easier if your land is legalized. The truth is, as they were trained and educated, they realized that there is success ahead of them." (Interview with farmer, 19/04/2019)

For many farmers, the hope for loans dispels fears of tax payments, as they expect that trusting in MAST will be rewarded with being trusted by banks. This is certainly considered to be one big advantage of a transparent digital database, which can supposedly be accessed easily by financial institutions and illustrates again how the aims and activities of the LTSP are appropriated in the process by the villagers. Finally, the digital map itself seems to incorporate a particular vision of the village.

> "A thing that inspired me when we were in this mapping process was to see in the tablet how the village will look like. It was inspiring me so much. It is like visualizing the future of this village." (Interview with VAC, 19/04/2019)

According to the map, the village has clearly arranged blocks of parcels which are accessible via wide roads. On the tablet, Namwawala also has an area for social and health services as well as an industrial zone. In particular, the straight, rectangular and arranged polygons on the map suggest uncontested and clear borders in the residential area, in between fields, between farmland and protected or reserved areas and, most importantly, between agricultural land and village pastures. This representation nourishes the vision of a "more developed" and conflict-free village. In light of its emergence and the many contestations and disappointments it triggered during its production, it is clear that this map only shows one of many alternative futures, probably a rather unlikely one. Yet, it portrays an "indeterminate potentiality" (Massumi 2007) by performatively establishing the presence of what has not happened and may, in fact, never happen (Kinsley 2010).

And, indeed, there are already some strong indications that the digital map as an anticipatory device will not serve as a dynamic basis for further development visions and conflict prevention in the village. Despite the participatory approach advocated by the LTSP, the para-surveyors were strictly prohibited to give the tablets to the villagers. In consequence, the residents of Namwawala were not able to learn how to use the mobile application.

> "We shall not measure or register again because we do not have this machine which is used to measure. It is not really sustainable. We cannot divide the land into pieces for our children. Only them, they are measuring our lands by using these machines. Will these machines remain here, if I get into conflict with my neighbor concerning boundaries? Maybe we need to check again where the boundaries were in the machine. But people lied to us that maybe the machines stay here, maybe not." (Interview with VAC, 19/04/2019)

As this VAC infers with disappointment, the tablets, the data base and, with it, the digital map leave Namwawala with the LTSP after the mapping is finished. This way the villagers are prevented from formally trading land, dividing and merging parcels, changing the names of inheritors and, most importantly, they cannot clarify conflicts on the basis of the new data base. In this regard, the presumed effects of the project seem rather questionable. In contrast to the production of a dynamic digital map which accounts for actual processes in a timely manner, it appears simply as a new version of a classic land use map. Though in digital format it rests far away, out of sight and therefore also out of use for some of the most crucial local demands, leading to new uncertainties as the actual use of the map and any digital editions remain invisible for the residents in Namwawala.

5. Conclusion

African rural landscapes have received increasing attention in the wake of climate change, projected population growth, increasing conflicts over land and questions of food security. While some see huge potential in "awakening a sleeping giant" through agricultural intensification, others rather fear a rise of conflicts and resource degradation. Both of these contrasting visions, however, contribute in particular ways to what has been called a "regime of anticipation" (Mackenzie 2013: 391), a state characterized by a thinking and living toward the future (Adams et al. 2009: 246). In this regard, the Land Tenure Support Program and the use of MAST in the Kilombero Valley can be read as one way in which the present is transformed, intervened in and ultimately governed in the name of the future (Granjou et al. 2017).

In this case, the reliance on a mobile application shows how an uncertain future is, first of all, rendered a technical issue. Using a participatory approach and new digital technologies, MAST is regarded as a straightforward tool to bring clarity into current land issues. Being able to issue CCROs for each and every villager is expected to not only prevent increasingly violent conflicts over land, but also to be able to identify investible land to boost agricultural production. A closer look at this digital technology and the ways in which it becomes entangled into the local context on its way through the village, however, shows how the diverse (material) affordances that come along with it not only create new securities but rather contribute to new insecurities and conflicts.

First, the mapping narratives from Namwawala, one village in the Kilombero Valley, shed light on the complex process and effects of institutionalized land demarcation in an area of multiple interests and uses. As Li (2014) has pointed out, land, indeed, seems to be a recalcitrant element in the calculation of a state that is keen to attract foreign investment. While the Tanzanian state openly announces

that there is investible land to be consolidated in a Land Bank, ready for fast-track investments in the SAGCOT clusters, the situation in Namwawala indicates that this land is hardly unused but forms a central part of often overlapping, multiple interests and practices. These are highlighted in the digital map, as it allows to include multiple layers which bring together government perspectives, abstract rules and guidelines, and the concrete practices on the ground. Nevertheless, even if the digital mapping device may visualize multiple uses, CCROs will only be issued when land use is clear and does not overlap with any other function of the land as determined in general land use and development plans. Therefore, instead of securing tenure and highlighting idle land, some actors are rendered officially landless, and plots need to "be emptied", not to be made ready for investment, but to fulfil the demands of buffer zones or protected areas. Those who will finally receive a CCRO might not recognize their land on it, as it may have been reduced in size and adapted in shape to fulfil the requirements of road access and other infra-structural demands. Overall, regulations and guidelines as well as diverse technical affordances make it impossible for the virtual map to match the actual situation.

Nevertheless, the digital technology bears hope for more accuracy and accountability, and appropriate provisions by the state for this remote area. During the mapping process this becomes apparent in unquestioned and voluntary sacrifices of private land for public interests. Often, this is closely related to hopes concerning loans as well as an increasing credibility more generally as soon as one holds a CCRO. However, the digitization as well as the formalization, through their need to either map or unmap, formalize or informalize, create new insecurities. In this regard, fears of losing land lead to diverse anticipatory actions on the side of the farmers, as, for example, hiding from the mapping team or openly rejecting to participate in the process of land (in)formalization. Therefore, the resulting digital map itself, though seemingly offering transparency, only offers a limited view of the village. Due to the fact that the map stays out-of-reach for the farmers, doubts about enhanced development through this technological fix increase even further. Instead of being a tool which is able to more accurately record the dynamics on the ground, it becomes a fixation, a snapshot, unavailable for further changes and adaptations.

Yet, the creation of this kind of representation by means of digital technologies and tools of visibility (Roy 2009) can hardly work as securing and stabilizing. Not only the maps themselves are meanwhile regarded as processual and never complete. As Kitchin and Dodge have emphasized, "it is productive to rethink cartography as ontogenetic in nature; that is maps 'emerge' through practices and have no secure ontological status" (Kitchin & Dodge 2007: 331). In this vein, this contribution shows that, instead of foregrounding the resulting map as an at least momentarily stabilized entity, only a closer investigation of the digital mapping itself is able to reveal its complexity and contingency as a form of anticipatory governance in

which the future is not shaped by humans alone (Granjou et al. 2017). While paying particular attention to the (im)possibilities of translating a physical landscape into a digital database, it also highlights critical issues in the opposite translation process, as the digital representation challenges actual practices and their material manifestations. So far, the anticipated effects of MAST remain limited. However, a number of (unintended) side effects and diverse (in)securities have taken shape. The future will tell, in how far the digital will be performative to actually change the physical world in the Kilombero Valley and what kind of anticipatory actions will be taken by the different actors to counter them.

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Rumours as Anticipatory Knowledge in a Future Petro-State

By
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Abstract

Building on ethnographic research in Uganda, this paper discusses the mundane practice of rumourmongering and gossiping as anticipatory practices. The discovery of crude oil in Uganda brought a small oil boom to a region endowed with this natural resource, including some infrastructure development, the presence of foreign oil exploration. As these companies came into the region, so too did (young) men working for them or seeking employment. However, as the development of the oil remained in a phase of not-yet-ness, a temporal space opened up for rumours about the oil – and anyone involved with it – flourishing in the oil region. The scarce information on the (national) development of the oil project only served to intensify the rumour mill. The rumours used familiar tropes such as gender stereotypes or witchcraft in relation to the presence of foreign or at least non-local workers. Ugandans living in the oil region wondered what negative repercussions the boom might have for them and viewed the strangers with suspicion. During my fieldwork, I encountered rumours of wife-snatching, sexual harassment and even human sacrifice. This paper argues that these rumours can be understood as risk narratives or in terms of sharing of anticipatory knowledge. Looking at rumours and gossip in this way highlights the presence and relevance of anticipatory knowledge in our day-to-day lives.

Keywords: Oil, future, anticipation, rumours, risk, uncertainty

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Introduction

Sitting by the side of the road in Buseruka, I was passing away the afternoon watching the noisy road construction work in front of me. The "oil road" was being upgraded to tarmac to improve the connection between Hoima and the oil wells at Lake Albert. Next to me were the grandchildren of the family I was staying with. Together we were watching the Turkish construction workers and their big machines at work. I noticed that the children watched the Turkish workers with great interest yet kept their distance. Asked why they were shy, the oldest girl, who was very outspoken, told me that their parents had warned them not to go too close to the Turks. They had heard that the Turkish workers would lure children with money, then abduct them and drink their blood or spill it on the road.

I encountered this and other rumours and gossip during my ethnographic research in Uganda's oil region from 2012 to 2015. The prospect of living in a petro-state had impacted on imagined futures of Ugandans. After discovery of oil in 2006, Uganda started preparing for its exploitation by drafting plans, policies and legislation; the country started building infrastructure and negotiating with the operating oil companies and even inviting other companies to explore for more oil.[1] However, in 2021, Uganda is still becoming an oil state. If or when the oil comes as well as what societal, political and economic repercussions this would have remain uncertain. Uganda's oil is in a state of not-yet-ness, a liminal and uncertain phase in which the future is still being made (Witte 2018). The stories people tell each other about the oil and about the developments surrounding the search for oil in this not-yet-ness are part of what has been called resource-making. It refers to a social and political process by which resources are produced not only as substances but also as concepts that belong to a certain ideational system (Ferry and Limbert 2008: 4).

This paper traces imaginations of Uganda's petro-future in rumours and gossip about the negative social effects of foreign or non-local oil workers who came to

remote parts of the country for exploration. The paper analyses these rumours and stories in terms of the sharing of anticipatory knowledge that points to risks and can create both insecurity and uncertainty. Anticipatory knowledge here refers to knowledge of the future generated through predictions, imaginations, forecasts, probability calculations, divinations or risk narratives. This knowledge is an interpretation of (assumed) facts based on theories, beliefs or even emotions such as fear or hope.[2] One could go as far as saying that anticipatory knowledge tells us as much (or even more) about the present as it does about the future. With anticipation, the future finds its place in the present. It is not just temporally ahead of us, but it is among us, it is part of our present thinking, talking and acting. The future itself is a temporal space filled with hopes and dreams, fears and worries. Humans anticipate what could be; they think and talk about possibilities; they plot strategies and plans or navigate life by realising sudden opportunities, dodging misfortune and by creating contingencies (Whyte and Etyang Siu 2015, Vigh 2009).

In the following, I first present my methodology before working out the conceptual framework of this paper by discussing the concepts of rumours, risk and anticipation. Finally, I turn to a presentation and discussion of the stories and rumours I heard during my research in Uganda's oil region.

Methodology

The empirical material for this paper was gathered over the course of 15 months of multi-sited fieldwork in Uganda between 2012 and 2015. I was based in Hoima for most of my research. Labelled by some the "oil city", it was the gateway to the first oil discoveries. I also spent shorter periods of time, ranging from a few days to several weeks, in villages closer to the exploration sites. My research was based on interviews with a variety of stakeholders: small businesses, companies, village and regional politicians, national ministries, as well as civil society organisations and churches. Of course, living in the oil region and interacting with people on a daily basis brought me within earshot of the rumours and gossip people told each other about the developments surrounding the oil. Such stories are the focus of this paper and which I analyse under the framework of risk and anticipation. The next section presents the theoretical framework of this paper.

Rumours, Risk and Anticipation

Rumours are appraisive descriptions and interpretations of reality based on values and norms (Allport and Postman 1947 cit. in Stewart & Strathern 2004: 42). People draw on their knowledge and history to interpret the present but "by doing

so inadvertently or purposely create the future" (Stewart & Strathern 2004: 50). So more than just reflecting reality, rumours are constitutive of it and refresh societal values and norms (Stewart & Strathern 2004: 40, 56). Rumours can also be seen as a tool of social criticism directed against domination (Turner 1993), or a means to control behaviour and maintain social norms (Gluckman 1963). Leon Festinger (1957) considered rumours of impending doom as unconscious rationalisations of existing fears. He built his renown theory of cognitive dissonance on this observation. This means that certain "doom" rumours can be seen as instantiations of uncertainty people experience and feel. In this sense, the rumour provides a justification for the fear after the fact.

Rumours and gossip are similar in the sense that both rely on unsubstantiated information, which can be true of false, spread by word of mouth. Furthermore, both involve a give and take of information and can catalyse social processes: Robert Paine notes that "gossip serves to pattern issues which were but vaguely or confusedly perceived by a local population" (Paine 1967: 283). The gossiper shares his/her interpretation of these issues through the gossip. Gossip and rumours differ in that rumours happen in wider networks (Stewart & Strathern 2004: 39). Moreover, gossip is only interesting to the listeners if s/he at least remotely knows the person that is the object of the gossip. When it comes to rumours, however, it is not necessary to know the person, and the source of the rumour is usually unknown and irrelevant.

Regarding witchcraft rumours, authors have noted that they actually abound in situations of massive social change and uncertainty. Famously, the Comaroffs (2000, 1993) connect witchcraft stories to the disruptive social effects of capitalism in Africa. Heike Behrend links cannibalism stories in Uganda to the horrors of the first wave of HIV/AIDS and to the fight against witchcraft on the part of Christian churches (Behrend, 2007, 2011). In a similar vein, Luise White (1995, 2000) shows that vampire stories in colonial Kenya flourished in a situation of tremendous social changes brought about by the colonialists. Another massive social change that caused stress and triggered stories about "soul-eaters" was the monetisation of society in Niger (Schmoll 1993). Building on Jean-Noël Kapferer, Stewart and Strathern state that "the genesis of a rumour depends on scarcity of information about an event or putative event and the anxiety that flows from such uncertainty or scarcity" (Stewart and Strathern 2004: 46). In contexts in which there is insufficient information, such as in Uganda's oil region, rumours can sow doubts and they gain a social significance.

Rumours build upon as much as further intensify uncertainty: "Equally, rumor and gossip tend to feed on and contribute to patterns of uncertainty in human communication that are intertwined with the probability of misunderstanding and conflict" (Stewart and Strathern 2004: 4). Stewart and Strathern thereby

point to the role rumours play in the production of the future: they have the potential to influence social processes and take part in the formation of moral imaginations. Rumours and gossip work as catalysts for social processes either leading to avoidance or exacerbation of conflict (Stewart and Strathern 2004: 36). The social effects of rumours are also discussed by Bonhomme in his analysis of witchcraft rumours of "penis snatching" and "killer phone calls" as transnational genre characteristic of Africa's occult modernity.

> Like many rumors of this kind, they are self-fulfilling prophecies. The frantic spread of the rumor in a particular locality creates a climate of fear, or even panic, which makes phone calls, handshakes, or alms suddenly appear suspicious to many. And this suspicion inevitably triggers incidents, which by a sort of snowball effect, impart new vigor to the rumor's circulation. (Bonhomme 2012:209)

In other words, these rumours create uncertainty and insecurity, but the source of harm is so broad and vague (like a handshake that ends up shrinking a penis) that prevention becomes difficult. Rumours and gossip can thus catalyse social processes leading to uncertainty and insecurity, e.g., when they trigger mob justice (Allen 2015).

Although uncertainty and insecurity are often used interchangeably, they need to be distinguished from one another. Whyte (2009: 213) distinguishes the two as follows: uncertainty is a state of mind and insecurity is a social condition that refers to a lack of protection and weak social networks that provide no safety in the face of adversity. Uncertainty means a radical questioning of what reality is (Calkins 2016). It means unpredictability, instability, lack of (accurate) knowledge, unreliability and the difficulty to interpret or even fathom life (De Boeck 2012: 200). It can be described as, "we know that we do not know, but that is almost all that we know" (Callon et al. 2011: 21). Uncertainty is not a condition inherent to a situation, but rather it is a question of perception. Someone needs to raise the question of whether reality is really what it appears to be. This is particularly the case with witchcraft rumours. For doubt about reality to arise, a good and at least somewhat believable story from a neighbour or friend can be enough. Witchcraft rumours, in particular, identify a potential harm; however, the means to manage it are less than certain. Rumours contain too little information for informed guesses; they transform uncertainty into potentialities – not into certainty.

Rumours and gossip discussed in this paper highlight a harm that is threatening a valued object or category of persons. This identification of a source of harm as well as the attachment of value are essential parts of a risk narrative according to a relational or social constructivist understanding of risk: the elements of a risk narrative are the

risk object, the object at risk and the relation between the two (Boholm & Corvellec 2011, Hilgartner 1992). Generally, the social constructivist definition of risk differs from the common view that sees risks as probability calculations or damages that can be predicted with numbers. It instead emphasises that risks are socially constructed through (scientific) reports that single out harmful agents or through stories people tell each other about the dangers that surround them – sometimes but not always corroborated by numbers. Hilgartner (1992: 51-52) argues that risks are only constructed by risk experts who scientifically establish them. My understanding of risk construction differs from Hilgartner's with regard to the laymen's role in risk construction. In my understanding, risk narratives are also stories people tell each other about potential harm. In this perspective, risks are not an objective category but something that is created subjectively and in interaction with others.

Risks have been called the anticipation of catastrophe (Beck 1986). Anticipation includes discourses, practices, technologies and material devices that bring the future into the present (Weszkalnys 2014). Anticipation means expecting or predicting something and acting on or talking about it. Risks offer a way of anticipating possibilities and thereby to manage or even profit off uncertainty by predicting the future. Risks can thus be seen as a form of anticipatory knowledge. Therefore, the way we construct risks – i.e., the risk narratives – also belong to anticipatory knowledge. As noted above, at times risk narratives are contained in rumours that connect risk objects to objects at risk. Hence, rumours can also be understood as anticipatory knowledge even though this might seem counterintuitive, because rumours are about events that happened in the past. As research has shown, however, rumours don't just describe past events but also deliver interpretations of them that at times have a predictive character. Moreover, rumours – just like risks – have the potential to change how the listener perceives reality and acts in it.

Risks can transform uncertainty so that they offer the illusion of certainty. When it comes to risk, we know the groups who are at risk, we know the events that could take place, their causes and their possibilities, while with uncertainty we don't (Callon et al. 2011: 20–21). As Hilgartner pointed out, we know about the causes through a selection process. One cause gets singled out from many other possible causes, and the chain of causes stops at a certain point. This point is particularly important and warrants attention (Hilgartner 1992: 42). Mary Douglas famously argues that risks are essentially cultural, and that the perception of risks is connected to the norms and values of a culture (Douglas 1992, Douglas & Wildavsky 1983). While I do not agree with this culturalist perspective, the connection it makes between risks and values is nonetheless worth noting, for I understand risks to reflect values and norms – as categories open to negotiation and change, not as static cultural categories.

Risks are like binoculars: they make something far away appear close and within our reach – in this case, a temporal distance. With risks the future becomes palpable. We anticipate it and even shape the future, as the acknowledgement of risks can reflect back on present behaviour. This paper analyses rumours as risk narratives and thereby adds to an understanding of everyday anticipatory knowledge. It moves the discussion of anticipation to very mundane aspects of life that are a far cry from sophisticated forecasting tools and probability calculations.

In the following section, I will discuss some of the rumours that I encountered in Uganda's oil region during my research. I see the rumours discussed in this paper connected to the uncertainty that was prevalent in the oil region. The rumours draw on familiar tropes involving gender norms and witchcraft.

Rumours in the Oil Region

Uganda's oil region spans several districts around Lake Albert in Western Uganda and West Nile in the North-West of the country. A common feature of the districts where oil was discovered was a predominance of (smallholder) agriculture as the main economic activity, relative poverty and a more marginalised position vis-à-vis the nation state. Hoima, the oil city and slow-paced capital of the formerly great kingdom of Bunyoro, had the reputation of a backwater place. The fishing communities on the shores of Lake Albert were difficult to reach before they were connected via the improved road network to the rest of Uganda as a consequence of oil production. In the 1990s, Bunyoro had a high poverty rate, one comparable to the war-ravaged Northern Uganda (Kiiza et al 2013: 11). While the rate went down considerably, still more than a third of Bunyoro's population was living in poverty in 2016 (UNICEF 2020: 7). The oil districts in West Nile fared even worse with more than three quarters of the population living in multidimensional poverty (UNICEF 2020: 7, 10).

The not-yet-ness of Uganda's oil meant an extended temporal space for rumours about the oil and anyone involved with it to flourish. Ugandans living in the oil region not only wondered about whether they would profit from the oil but also worried if it might have negative repercussions for them. While I had heard rumours that people thought they could tap free-flowing oil at the wells in jerry cans, I found many to be sceptical about the glorious petro-future the government and the oil companies proclaimed.

For one, sound knowledge about the oil project was scarce. Farmers, fishermen and politicians of villages situated in exploration areas expressed their lack of knowledge about the oil and were worried it might affect their livelihoods. Fishermen feared losing their right to fish or having to leave the area altogether, while farmers thought they might lose their land and livelihood. Relocation was a

major fear and was related to experiences made during the exploration activities and the construction of a new road. In a school essay competition organised by an NGO in Hoima, the overall top three expectations were work, roads and resettlements – an ambivalent mix of positive and negative expectations. People did not just fear the changes but also looked forward to a better overall standard of living, including schools, hospitals, better transport, a market for local produce and an industrialisation of the region.

Another reason for scepticism was that the oil discovery had brought new tensions to the oil region: conflicts about land and the adequate compensation, the destruction of crops, property or cultural sites during oil exploration, and an increasing number of (young) men from other parts of Uganda or even other countries. This increase in migrant labour was remarked on even though the region had seen migration before. As the oil region borders the Democratic Republic of Congo, it has hosted hundreds of thousands of Congolese refugees. Also, internal migration to the region has existed before the oil discovery, e.g., Balaalo cattle keepers on transhumance. Yet it was only after the discovery of oil that their presence became contentious (Kinyera & Doevenspeck 2019: 9). A recurring complaint in interviews and conferences organised by civil society was about the sudden increase in population that usually accompanies resource booms. This population increase was viewed critically since it meant an influx of foreigners. People feared these foreigners would bring their own "cultural practices' that might challenge the local or "traditional" ones, especially if they married locals. I often heard complaints that young (and mainly non-local) men who got a job in the oil industry were spending their salaries in bars and on local women. In this paper, I focus on these negative expectations connected with the population increase and above all the presence of foreign men in the region.

In 2013, I stayed for several weeks in Pakwach, a small town in West Nile on the banks of River Nile. While there, I discussed the impacts of the arrival of oil workers with a Ugandan volunteer for a local NGO. He told me how elders in Panyimur, a close-by fishing village on the northern shore of Lake Albert, had complained to him that the women only liked to be with the (foreign) oil workers and not with the local men anymore. The elders were worried that the women (and the young men) would not marry anymore, eventually leading to a breakdown of social structures. These elder men interpreted the impact of these changes on the future: if girls were no longer interested in the local boys, social structures would invariably change. This was only compounded by claims that the oil workers had no regard for a woman's marital status or age.

Rumours of oil workers taking young women or even other men's women abounded. Reportedly, this led to several cases of broken-up marriages. One local politician in Pakwach told me how this happened to both his son and daughter.

He confided in me that one oil worker impregnated his school-going daughter, and his son's wife was caught with an oil worker at one of the lodges in town. He explained that the oil workers spoilt the young girls by spending money on them.

Another resident of Pakwach and former casual worker I talked to was determined about not letting his wife work for an oil company because he feared the boss could harass or charm her:

> These guys have the money but they don't mind. [...] The situation guys have brought on is alarming, immorality talking. Marriages are breaking up. They have gone as far as snatching settled wives (Former casual worker, interview, 2013).

While conducting interviews in Pakwach, several people told me stories about oil workers sleeping with underage girls, spreading HIV or impregnating them. A Ugandan casual worker for a subcontractor saw these women dating oil workers as "stupid villagers" for believing the workers were interested in more than just sex. Yet the workers considered them only as their "by the ways".

From a female perspective, the situation was much more complex. In a focus group discussion, women from Pakwach did mention that some women or girls got taken advantage of, but that others consciously chose to go with the oil workers as they needed the money they gave. All women were concerned though about the effects these promiscuous oil workers had on the HIV/Aids infection rate in town, referring to Pakwach as being "dead" already. Some of the women were bitter that the only employment opportunity the oil had brought them was prostitution. Indeed, women in Uganda, including in the oil region, were disfavoured in terms of access to education, wage labour and resources such as land (see e.g., International Alert 2014, UNFPA 2017).

Women and girls from the surrounding villages came to Pakwach on market day and then simply stayed on instead of going back home. The community development officer of Pakwach explained that these girls hoped to find a man or customers. Pakwach has had prostitution before the oil boom as many truck drivers coming from Kenya or Congo stopped here on their journeys. However, she told me the situation had worsened when the oil activities started and many young men moved into the area.

The complaints about oil workers were not just common in Pakwach but also in other parts of the oil region. During my research stay in 2012/2013, the construction of a road between Hoima and Kaiso-Tonya, a village close to future oil production sites, was underway as mentioned in the introductory vignette. The Turkish construction company had brought Turks to do the job. While normally housed in a camp, on their days off they would flock to Hoima town to enjoy

what leisure it had to offer. Gossip about the Turkish men and their chauvinistic or sexist behaviour were flying around. People were annoyed by how the Turkish men treated their women: sleeping with many women and with prostitutes and sexually harassing female casual workers at work.

While the construction on Kaiso Road was in full swing, I stayed for a couple of weeks with a family of a former politician residing along the road. During this time, I witnessed one particular interaction between the Turkish and local workers. Sitting by the side of the road, I saw a middle-aged Turkish worker teasing and touching a young female co-worker's buttocks and breasts while she was laughing and teasing him back. I could not tell whether she was uncomfortable or not. I must have had a surprised look on my face, for she walked up to me and explained that they were just joking and then walked back to the man. Clearly, these rumours are not entirely unsubstantiated. They do reflect some part of reality – but under a particular prism. They interpret social reality based on stereotypes about women and strangers, in this case the Turkish manual labourers.[3]

The rumours can be interpreted as reflecting the unsettling effect the arrival of wealthier men, deemed to be more attractive to local women, had on many local men. This is not the only case of strangers attracting local women, as Bourdieu shows in his analysis of detrimental social change in his home region with the arrival of stylish and eloquent visitors from the city, who impressed the rural ladies more than the resident farmers (Bourdieu 2007). Using Gluckman (1963), it is possible to argue that the function of the rumour was to control behaviour and to shield women from both the dangers (but also the opportunities) that came with these new men. Yet, I see little evidence for this regulatory function of risk. If intended as regulatory devices, they failed as women still went out with oil workers.

However, the functional argument is also familiar from Mary Douglas' analysis of risk. She compares risks to taboos: they both create connections between actions and harm and influence or regulate (future) behaviour (Douglas 1992: 26-7). According to Douglas, the important question is always: who is accorded the blame if something goes wrong? (Douglas 1992) This cultural or relativistic theory of risk has been criticised for being neither based on empirical data nor substantiated later by empirical studies (Boholm 2015: 58). However, asking the simple but powerful question of who is accorded the blame is still an important part of analysing risks.

The rumours related not only to how (foreign) oil workers posed a risk to society, e.g., breaking up families, but also how they were a risk for women who were exposed to their charms and/or aggressions. What was expected to go wrong, then, was the destruction of family structures – and the social fabric, no less – with the existing culture being lost to a new mélange of cultures. Something of value, that is, the family as well as daughters or wives, had come under threat. And

who was to blame? It was the strangers that came to the region working for the oil companies (and its subcontractors). The threat stemmed from an outside agent – the oil worker. All elements of a risk narrative, i.e., the risk object, the object at risk and the causal narrative, can be found in these rumours (Boholm and Corvellec 2011; Hilgartner 1992).

These rumours can be seen as a warning to both men and women of the potential harm that can come from close interactions with the oil workers. The rumours were told in anticipation of continuing negative experiences by local women and potential adverse effects on local culture and the general social setting. The rumours reflect values the rumourmongers gave to family or, more generally, the current social structure. These values speak to prevalent gender norms that see men as the provider, decision-maker and head of the family.

In all the rumours, if viewed as decision-makers, women were considered too stupid for their own good, or they were reduced to mere objects of male desire (from which they had to be protected). The risk object in turn was "male strangers". These were the men that stole wives, deceived young girls and abused women. Not surprisingly, in a society with dominant patriarchal values, this is a very male-centred perspective on the topic. Needless to say, some women might have done a good job of calculating the risks and the gains they stood to make.[4] Also, romance and finance are connected in intricate ways, and money flows in relationships can also foster sexual identities for both men and women (Mills & Ssewakiryanga 2004).

Finally, let us consider another, more chilling rumour in detail that I described in the introductory vignette. It depicted Turkish construction workers, who built the abovementioned Kaiso Road, as some kind of vampires. Asked about it later, the children's grandfather, a former local politician whose family I was staying with for a couple of weeks, confirmed that these stories circulated, but he said they were just the imagination of people. The Turkish men only sacrificed goats – not humans – for the road.

This story connected the Turks to ritual murder, i.e. witchcraft, or cannibalism. Strangers, or in fact strange men (here in the double sense of the word), were once again the risk object, while this time the object at risk was a category of persons generally perceived to be less able to protect themselves: children. The rumours of vampires are similar to the "lionmen" stories that circulated in Chad, in which Exxon oil workers were eaten by lionmen (Reyna 2011). Reyna argues that this story gave people in the Doba Basin the opportunity to voice their fears connected with the arrival of the oil industry. The stories sow distrust and encourage resistance against imperial domination. The rumours I discuss here can also be seen as a kind of subaltern resistance against domination by foreign actors or, more specifically, if we take a longue durée perspective, against long-lasting

unequal power relations between (white) foreigners and local men. While this perspective focuses on the present grievances, I would add that the rumours in the oil region can also be seen as resistance against a feared continued future domination by foreigners up to the complete erasure of "traditional" culture by foreign cultures.

Building on the studies mentioned in the theoretical framework, I suggest the stories of blood-drinking construction workers are an instantiation of the uncertainty people in the oil region felt. The rumours can be viewed as reactions to the massive changes that suddenly arrived: big machines ploughing through the landscape driven by foreigners who do not even speak a familiar language. These rumours show a level of distrust towards foreigners who came to the oil region and from whom children and women were best kept away. As the grandchildren themselves had pointed out, their parents had used the rumours to warn them and tried to control their behaviour.

The trope of the dangerous stranger is a familiar one in witchcraft rumours, as Bonhomme points out:

> As we will see, rumors of penis snatching, of killer phone numbers, and of deadly alms all revolve around anonymous interactions that turn out to be fatal. These new forms of the occult focus on the dangers of anonymity, which is precisely an interactional repertoire typical, and even constitutive, of modernity (Bonhomme 2012: 211-212).

A trope of these witchcraft rumours is thus the dangerous stranger. Unlike "classic" forms of witchcraft, the new risks do not spring from intimacy and the family but from anonymity and strangers (Bonhomme 2012: 225). Bonhomme sees such rumours as "a sense of exposure and vulnerability to occult forces, which relates to other dimensions of insecurity in everyday life" (Bonhomme 2012: 226). And the strangeness, as in this case, is the unknown and uncertain.

The occult rumours thrive in a climate of mistrust and suspicion as well as situations where people are forced to interact with strangers. While the rumours Bonhomme writes about are situated in the urban context, the sudden influx of many strangers to a rural area due to oil exploration activities might just as well be such a situation of unavoidable interactions with strangers. The occult rumours turn these interactions into mortal dangers (Bonhomme 2012: 226). The spread of rumours in the oil region also follows the trope of strangeness. Drawing on familiar tropes such as strangeness, or basing the causal argument on widespread gender stereotypes, makes the risk believable even without scientific evidence. These rumours were not only reactions by the locals to new uncertainties but also anticipations of possible negative outcomes for themselves and their society.

Spreading the rumours can be understood as sharing anticipatory knowledge. It makes others aware of perceived risks they might not have heard about or realised otherwise. Rumourmongering might seem too simple an act and too mundane a practice to consider them risk narratives or anticipation. Yet, it is precisely these mundane sources that inform a lot of our day-to-day behaviour and judgement. Furthermore, analyses of witchcraft rumours have demonstrated how they can easily escalate from story to self-fulfilling prophecy. Witchcraft rumours have an explosive potential and have often led to violence and mob justice, thereby contributing to and creating insecurity. Yet, the intention of telling the story and pointing out a risk might have only been to keep the listener safe from a perceived harm.[5] Risks and security are thus double-edged swords, and above all in situations of uncertainty, such as in the oil region, insecurity is just a rumour away.

Conclusion

In this paper, I have argued that rumours can be seen as anticipatory knowledge. The rumours I presented here pointed out risks in a climate of uncertainty. Risks are not just probability calculations but are also stories about potential harm that people tell each other based on their own (or someone else's) experience. These stories don't have to be elaborate, yet the elements of risk narratives can be found in mundane gossip and rumours. The rumours I analysed in this paper were circulating in Uganda's oil region after the discovery of oil and during ongoing exploration activities. The stories emerged in a moment of not-yet-ness filled with social changes and uncertainty. The rumours were about sexual relations foreign or non-local oil workers had with local women and girls. Other rumours attributed cannibalistic practices to some of these strangers. The rumours were risk narratives that depicted the family as a social unit and women and children as individuals at risk of being harmed by the strangers. The (witchcraft) rumours drew on familiar tropes, such as strangeness and gender stereotypes, as causal arguments, rendering them believable to the listener. While partially based on real experiences, the rumours were more than reflections of the past: they were told in anticipation of the dark side of the future. This paper suggests that anticipatory knowledge can be discovered even in the mundane acts of gossiping and rumourmongering. While far from informed predictions or forecasts, such risk-rumours are highly relevant in the way they can shape the perceptions, expectations and even actions of those who hear them.

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[1] There are three oil companies currently operating as a joint venture in Uganda: the multinational Total E&P Uganda Ltd, the Chinese multinational Chinese National Offshore Oil Corporation (CNOOC), and the Irish independent company Tullow Oil Uganda Ltd. Since 2017, Tullow Oil has become a non-active partner in the business.

[2] In this paper, I am not concerned with the truthfulness or accurateness of these predictions or of the underlying facts. My focus is on the ways in which these rumours themselves can impact the future irrespective of their factual correctness.

[3] These rumours are of course generalisations that do not capture the diversity and difference among the Turkish workers. The rumours are reproduced in this text for sake of analysis.

[4] See research on prostitution as a form debrouillardise (Homaifar 2008), or on "detoothing" in Uganda, in which a woman uses her sexuality or the promise of sex to extract money and gifts from a man (Sadgrove, 2007). Also, motivations to be part of "something-for-something-love' are diverse and complex and by no means stupid at all (Samara, 2010).

[5] Of course, one should not view these rumours as entirely detached from their sensational and entertainment value. They also make for a good and chilling story – a story likely to be shared with more people for this very reason.

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Images of the Future: Anticipating, Fabulating and Inventing with Bergson and Simondon

By
Johannes F.M. Schick

Abstract

This article analyzes the conceptions of anticipation and invention in the philosophies of Henri Bergson and Gilbert Simondon. In doing so, I analyze the questions how futures are anticipated and what role technologies play in the anticipation and invention of the future. Technologies are increasingly used to predict, prescribe and control behavior. These technologies are based upon the ontological belief that reality is computable and predictable. With Bergson and Simondon, I aim to show that this ontology does not take the temporal structure and the anticipatory faculty of living beings into account. Anticipation is an essential activity of a living being in its milieu. In order to survive, living beings structure their milieu to make their future actions reliable. Images are central to this process. They are constantly evoked by and with practices. They are transformed and used to anticipate and imagine the future. Yet, these images are affectively charged and can be an expression of what Bergson calls "myth-making function" (*fonction fabulatrice*). While Bergson describes this function as a positive force, one can ask whether this force turns against itself in face of our contemporary climate crisis, digital technologies and the crisis of open democracies. An alternative is to understand and to construct technical objects as essentially open in analogy to the living being. This implies a conception of the human not as a fixed conception, but as an "open adventure" (Simondon 2016, 121) that constantly re-invents itself in relation with nature and technology.

Keywords: Philosophy of Time, Philosophy of Technology, Philosophy of Life, Henri Bergson, Gilbert Simondon, French Epistemology

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Digital technologies such as face recognition, the algorithms of Google, Amazon and Netflix suggesting products, videoclips and films, are increasingly used to anticipate, to shape and control the behavior and the desire of the user (Berardi 2017, Zuboff 2019). Seemingly, technologies[1] are used to create a controllable future that is derived out of the probabilities of data sets. The belief in these data sets goes together with the belief that the future can be anticipated via technologies. Both beliefs imply that being and time are calculable and computable.[2] Technologies are in this conception attempts to tame the aspects of reality, which are *not yet* under control. Algorithms calculate probabilities and are either tasked to make a decision (e.g., flag a person at the border as dangerous or not) or support the decision-making process (i.e., provide data). Technologies co-constitute modes of action. Therefore, questions of doubt and trust are implicated in the interrelations of human beings with technologies (see Amoore 2019, Keymolen 2016). The belief in the power and potentiality of technologies shapes how we anticipate and imagine the future. In this essay, I will focus on the questions of how anticipation is conceived, whether technologies are able to anticipate the future or if the phenomenon of anticipation leads us to a different conception of future-making that is based upon unpredictability, novelty and openness. I will investigate these questions along the lines of the philosophies of Henri Bergson and Gilbert Simondon.

Firstly, I will introduce Bergson's and Simondon's conception of time as a proactive force that cannot be transposed in mathematical terms. The future cannot be calculated. Possibilities are therefore not anticipations of the future but are conceived from the vantage point of the present possibilities in the past that never existed. They cast shadows into the past. The "possible" always occurs ex post, but does not correspond to the temporal structure of the anticipation of a living being *in actu*. It is thus a "pseudo-problem" in Bergsonian terms. Bergson contrasts the "possible" with "lived reality", which unfolds itself and can neither be calculated, nor prescribed. This does, however, not mean that anticipation of the future does not exist, but merely that anticipation is an engagement with the world exceeding the faculties of human intelligence. This understanding of anticipation is further developed in the second part of this paper. In a close reading of Simondon's lecture course *Imagination et Invention*, I will link the concepts of anticipation, the image and invention.

Anticipation is an activity of a living being in its milieu. In order to survive, living beings structure their milieu to transform it into a territory, where modes of action become reliable. In this process *images* are created, i.e. they are evoked out of the interplay between the individual and its milieu. These images are neither completely belonging to the subject, nor completely belonging to the milieu. They institute a realm that is open to the activities of the subject and can also be

informed by the milieu. Images are therefore central to the process of how living beings transform their milieu. Simondon argues that images are part of a recursive cycle between the living being and its milieu. Images are constantly evoked by and with practices, transformed and used to anticipate and imagine the future. Yet, these images are also always affectively charged. They can either lead to invention or disguise the real in order to prevent new modes of being. I will address this aspect of the imaginary in a third step in going back to Bergson's notion of the myth-making function (*fonction fabulatrice*). This function is conceived as a virtual instinct that provides a natural reaction – when needed – against the sober faculty of human intelligence. The exposure to forces of nature, when analyzed by human intelligence alone, for instance, would inhibit any activity, since in face of natural catastrophes, these would be futile. According to Bergson, the myth-making function counters intelligence in creating an affective account that allows human beings to act. Yet, while Bergson describes this function as a positive force, one can ask whether this force turns against itself in face of our contemporary climate crisis, digital technologies and the crisis of open democracies. An alternative is to understand and to construct technical objects as essentially open in analogy to the living being. This implies a conception of the human not as a fixed conception, but as an "open adventure" (Simondon 2016: 121) that constantly re-invents itself in relation with nature and technology.

I. Possibility and Reality

In his article *The Possible and the Real,* Bergson discusses whether or not a future situation can be foreseen or completely anticipated. The article opens with a thesis that runs through his whole philosophy: "The continuous creation of novelty, which seems to be going on in the universe" (Bergson 2007: 73) . This discussion relates the epistemological problem of the experience of time to the ontological problem of the evolution of life (Bergson 2009: 381). This dynamic process is first and foremost experienced as duration (*durée*), i.e. as subjective experience of time (Bergson 1950; 2005). Time is not an abstract entity, but rather consists in the concrete experiences of the subject's inner life, which is given by an intuition. Accordingly, scientific time is an abstraction of this intuition and a transposition of a dynamic interpenetration of multiple states into a spatial form (Bergson 1950: 89ff.). The experience of an emotion, for instance, comprises several bodily and mental states that are simultaneously experienced. A scientific measurement of an emotion separates these states and transposes them into elements, which belong to an emotion, but merely a recombination of the parts does not recreate the experience (Schick 2012: 240ff.). Time as duration is for Bergson the condition of possibility for subjective experience

and allows an explanation of change and transformation.[3] Bergson argues from the vantage point of time as duration against a deterministic interpretation of scientific findings in psychology, evolutionary biology and the neurosciences. This does, however, not mean that the results of the sciences are invalid or not useful. Quite the contrary: The point of departure of any scientific finding – and also of any philosophy – is an intuition (Bergson 2007: 163)[4]. But, as mentioned above, this intuition is then transposed into a stable set of elements, formulas, ideas and material tools, which are just the elements that are necessary in order to have this experience, but are not sufficient to reconstruct the experience of an individual subject.

Ideas and scientific theories are products of the homo faber, who's intelligence "is the faculty of manufacturing artificial objects, especially tools to make tools, and of indefinitely varying the manufacture" (Bergson 1998: 139). These tools, be they hammer, platonic idea or algorithm, are extracted in a material engagement with the world, are stable over time and allow to structure the world. They are tools to make the outcome of actions and of programs of actions predictable, reliable and safe. A specific mode of action involving human beings, their instruments and the material the tools are applied to produce the same outcome. Yet, as Gilbert Simondon points out, already in the production of bricks and tiles specific materials have to be used in order to guarantee a stable outcome (Simondon 2005: 39f.). Materiality co-constitute the mode of action, which shows that it is not under complete control of human intelligence. This implies that neither human intelligence nor its products can predict the future or anticipate future events in a full sense. Only conscious beings are able to anticipate the future (Bergson 2007: 8).

It is this ontological and metaphysical claim that Bergson seeks to illuminate by showing what the differences between anticipation, virtuality, possibility and reality are. An anticipated or imagined event has aspects of virtuality. It is not yet actualized and possesses potentiality, that is, there are still pathways open and a definite outcome is not prescribed by the presence. The real – which constitutes this presence – is seemingly richer than what human intelligence can predict.[5] According to Bergson, this is due to the essential creative and unforeseeable unfolding of life. Too many factors may play into the actualization of an event, so that a complete prediction of an event is for the human intellect impossible. This leads to a strange sounding claim of Bergson: Events become only retrospectively possible. This goes together with Bergson's conception of the possible: Possibilities are neither present nor allow to foresee the future, they are rather "shadows of the past" (Bergson 2007: 14), i.e. constructions of the present moment, which rely upon past conditions. The "possible" is thus identified as a pseudo-problem. These problems are caused by an excessive and exclusive use of human intelligence

without referring to the concrete experience of duration. Thus, theoretically a conception of nothingness is possible, even though it remains merely an "idea", which has no basis in the experience of any living being (Bergson 2007: 78). This holds for the conception of possibilities, since retrospectively an infinite number of outcomes can be imagined. The creation of possibilities in the past, is the making of human intelligence: In analyzing the complex event, i.e. in distinguishing different moments of a continuous movement, it establishes points in time where a different path seemed possible. Yet, the whole act of discerning and analyzing these possibilities is performed from the vantage point of the present and projected in the past: "We must resign ourselves to the inevitable: it is the real which makes itself possible, and not the possible which becomes real." (Bergson 2007: 85)

The action itself is in the moment unforeseeable, i.e. it is not fully determined by past experiences of the subject. The subject is never exclusively determining the outcome of an action. Not only the changing circumstances are a sign of the transformative character of reality, but also the process of actualization of past experiences.

II. Anticipation and Invention

This does, however, not mean that the present moment is not determined by the past. The anticipation of opportunities is the capability to transgress the boundaries of the present to create and invent future realities. Time is an active force according to Bergson and Simondon. The future is in the present a virtual, relational force that cannot be prescribed:

> The future can neither be condensed, nor be described in detail, nor can it be thought. It can only anticipate itself by a real act, since its reality is not condensed in a number of points; it is between the possible points that its energy exists; the future has its specific, its own atmosphere/ambiance, it is relational force and an activity, that is implicit even before its realization; Being pre-exists itself across its present. (Simondon 2005: 282)

Virtuality is precisely what exists *between* calculated "possible points". Human intelligence can by means of calculation determine probabilities, but the potentiality of the future – even though it is implicit – cannot be reduced to these points. The ontological status of virtuality is therefore a force that has not yet been actualized, cannot be foreseen, condensed or calculated, but which describes nevertheless the presence of the future in the present moment.

Simondon points out, that this leads to a specific tension of a future that is prescribed and based upon a "spatial representation" of time and a future, which is anticipated by means of desire and will:

> The needs of long-term forecasting for action have introduced rationalization into the dimension of the future and have dispelled the myth, at least in the economic and demographic field; time is beginning to organize itself like space; the future is annexed by the knowledge *(le savoir)*, it is no longer the privileged field of the optative, of desire, or of will. And yet, the image regains its density and its strength which leads it towards the anticipation of the collective future, outside and above prospective rationalizations, which are above all extrapolations, but not real inventions. Scientific fiction is one of the ways in which the image regains its power for the future, that is to say, its prophetic function; it is the image of the real world caught up in its tendency and pushes further, truly anticipating, seized in advance according to the cognitive and emotional aspect, not merely assumed.[6]

The spatialisation of time echoes Bergson's critique of scientific time. Temporal events such as affective experiences are, as mentioned above, transposed into a spatial representation. Here, each element of the experience is assigned a position, which allows to predict and calculate the following position. The future becomes a representational point that succeeds logically from its preceding points. For anticipation to work and for time to unfold, however, a surplus is necessary that cannot be reduced to a mathematical representation of the world. This surplus is what Simondon signifies as "image". The image allows to carry aspects of the will and of desire to enter into the process of how time actualizes itself as future.

The image has a peculiar status. It is above and below rationalization, it regains its power through (science) fiction, where futures are, according to Simondon, really invented. The question is, however, not only how these futures are invented, but also what their performative and normative status for a society is. It seems, for instance, that dystopian views of the future are far more common and attractive than utopias.

Anticipation with and through images starts already on the level of the organism, even though the image regains its power in science fiction. Science fiction is already a specific kind of anticipation that becomes necessary for the human being. Anticipation is an act of invention performed by living beings in general. To live implies a proactive force that thrives of the potentiality of its milieu. The milieu is conceived of as *physis* – in the Aristotelian sense of the word:

> What lacks prospective to be a real anticipation, is this qualitative power, this *physis* which gives the future its veritable dimension of a development in course of action. To foresee does not only mean to see, but to invent and to live: the veritable prevision is to some degree praxis, tendency in the development of an already inchoate action. The image, reserve of an oriented emotion linked to a knowledge, assures that the act is continuous and true to its progress and adds to the prospective a "proactive force". (Simondon 2008: 17)

Simondon is interested in the *praxis*, the how, of living individuals to *solve* their problems. Invention and anticipation are solutions to problems that living beings have in and with their milieu. The problem-solving praxis consists in a mode of action that employs *images*. Images are, following Simondon, an intermediary reality between subject and object, past and future, and the abstract and the concrete (Simondon 2008: 7).[7] The subject is not the exclusive proprietor of images. Images are generated in a recursive cycle between the subject and the milieu. The living being is structuring its milieu by means of images:

> The mental image is like a relatively independent subset within the subject living being; at its birth, the image is a bundle of motor tendencies, a long-term anticipation of the object's experience; during the interaction between the organism and the environment, it becomes a reception system for incidental signals and allows perceptive-motor activity to be exercised progressively. Finally, when the subject is again separated from the object, the image, enriched by cognitive input and integrating the affective-emotive resonance of the experience, becomes symbolic.[8]

The subject is conceived as a "generator of signals", allowing him to anticipate and to receive, conserve and recycle the signals of its milieu.[9] The process of generation of images begins with a "bundle of motor tendencies", which the living being develops in its interaction with the milieu. Both, milieu and organism, are sources of novelty and chance. The actions of both are not completely predictable. Each organism has specific patterns of movement, which condition the engagement with the environment. This engagement produces the images halfway between the subject and the object. The organism in its local activity corresponds with the bundle of signals coming from the milieu (Simondon 2008: 30).

Action, perception and symbolic memory are thus three different phases of the image (Simondon 2008: 28). While at first, the organism is immediately involved in its action with the milieu, it progressively structures the milieu until

it turns into its territory. The access to the territory is granted by system of images that structures according to, for instance, basic models of fight or flight of enemy or prey, the perception of the objects in the milieu. This territory is the condition, according to Simondon, for the development of mental conduct (Simondon 2008: 64). He stresses, however, that he does not intend to oppose the human to the animal, but rather to show, the frequency of mental conduct. Mental activity in a strong sense (and pushed to its limit for the sake of the argument), is only possible for animals, in their territory, since the milieu is organized according to their set of "primitive categories". However, it does not follow that the behavior and the milieu are determined, but on the contrary that animals succeed in inventing new solutions to their problems (hunting prey etc.) in their territory.[10] As an example of the recursive relationship between the living being and its milieu, which is particularly striking, Simondon describes the behavior of a jaguar in captivity. Jaguars use great detours in their hunting behavior, but are unable to solve comparatively simple problems in captivity. They are exposed to a "new, inorganized world", where the jaguar is reduced to its biological regime of perceptions (i.e. seeing merely prey or enemy, waiting for a sexual partner). The cycle of images is thus rebooted and the objects are not perceived as having potential for intelligent behavior (Simondon 2008: 64).

These images can become "symbolic". As symbols, they further stabilize the relation between images and objects. Simondon interprets symbols in its literal meaning as one part of a whole, which is necessarily referring to its other, complementary half.[11] This might – at first sight – complicate matters even more: now we have motor-images evoked by objects – halfway between subject and object – as well as symbols that refer to its other, which seemingly exist in the world. Simondon develops a model of understanding practices on different levels of being. The human being passes from the immediacy of concrete situations to a "symbolic formulation of problems". The symbolic allows to "solve the infinite diversity of practical problems in each situation" as well as "general and theoretical problems" (Simondon 2008: 153), i.e. it creates distance between the concrete problem and the subjects solution.

This view becomes relevant, when turning to the human practices structuring a milieu. The transformation from the immediacy of anticipation and practices to a theoretical approach involves the organization of other living beings. Its genealogy is linked to the domestication of animals, to the employment of human beings and the use of technical objects.[12] As long as an individual remains on its own to solve a problem, i.e. anticipates, imagines and executes a task, practical thought remains linked to its operator as milieu of formalization and execution of the project (Simondon 2008: 153). A more abstract representation is formed as soon as other agents are employed. The human being has to organize the practices

of the agents (use of tools, control of the behavior of the animals) and has to account for the resistance of the materials. The human operator remains closely tied to the practices as long as she deals with animals. This means the human operator controls the behavior with concrete practices, where the human body is part of an operational chain and its controlling influence is mediated by tools such as the yoke, the reins and the whip.[13] However, each tool stands for a practice that has to be performed with it. The practice and the tool are two complementary parts – symbols – that form a whole, but can exist independently from each other. The object refers to an operation and vice versa.

As soon as a task is performed with human actors, the transmission of orders cannot take the form of a complete subjection and requires a conception, which can be communicated and is thus formalizable and forms an independent system (Simondon 2008: 153f.). This systematization allows the various tasks and actions to remain focused on the goal to be achieved. They introduce an order that is hierarchically structured and is intended to guarantee that each actor knows how the ensemble works:

> Order and organization, given order and structure of execution are formalizations of the task according to the requirements of the transmission of information from the one who knows and wants to the one who executes and obeys.[14]

The hierarchical systematization of work allows a stable performance of tasks over time. As long as the transfer of information is guaranteed the same outcome can be expected. It hinges, however, on the opposition of order and organization provided by an entity that has knowledge of the complete structure and is enforcing its will in comparison to an entity or entities that receive orders, obey and execute them.

This structure is still at work, when dealing with objects. While they exist independently of the human being, their symbolic meaning refers to this information. This information is crystallized as human gestures in technical objects (Simondon 2017: 151; 2005: 340). Technical objects are the organization of such orders. A computer chip for instance consists essentially of a series of rocker switches that are either open or closed (0/1) and translate the logical principle of the excluded middle. Technical objects are the results of human inventions and as such the highest form of formalization (Simondon 2008: 163).

Yet, in contrast to the structure of performing technical tasks as information transfer allowing to make future actions stable and predictable, invention itself does not rely upon the same temporal structure. Human beings act in an environment that makes it necessary to constantly face the particularity of

situations and to invent new modes of organization (Simondon 2008: 150). Even though technical objects provide relative stability, they are applied by human beings in a milieu, which is structured according to the technical objects and their operational modes. New problems and obstacles can, however, occur, if the milieu is transformed or new structures are found within it.

Both instances might require new practices. A problem represents an "epistemological obstacle" (Bachelard 2012) in the milieu or – to speak with Thomas Kuhn – it cannot be solved in terms of the "old paradigm". An invention becomes necessary, when a problem discontinues the completion of an operation (Simondon 2008: 139). This implies that the milieu itself has the potential to effect transformations of the operational mode. Or, as Simondon puts it, the "situation is problematic, that dualizes action, cutting it up into segments, either because a medium term is missing or because one part of the action is destroying another equally necessary part of the action" (Simondon 2008: 139).

The operation, which is in a recursive relation with the milieu, is no longer compatible with the situation at hand. To illustrate the need for invention and how problems are solved, Simondon turns to the fable of the "Stone in the Road".[15] While the fable and its moral is not of interest for Simondon, it shows metaphorically – and within the fable quite literally – how invention and obstacle relate to each other. He tells the story that several travelers are confronted with a rock that blocks the road. It prevents them from continuing their travel, i.e., it represents a discontinuation of their operational mode and "dualizes the action" in several parts, since, in order to continue to travel, they have to agree upon the common goal to continue their travel, to assign tasks of how to remove the rock, etc. This leads to a specific temporal relation, instigated by the necessity to solve the problem. Simondon claims that "anticipation and prevision do not suffice" to solve the problem, since every "individual traveler is capable of imagining to continue to walk on its own, when the rock is removed" (Simondon 2008, 140). What is needed is that the present operational mode is restructured by the future:

> [I]t is still necessary for this anticipation to return to the present by modifying the structure and conditions of the current operation; in the case chosen, it is collective anticipation that modifies each of the individual actions by constructing the system of synergy. Thus, there is a structuring return of the content of the anticipation on the formula of the present action; this is a return of information, or rather a return of organization whose source is the order of magnitude of the result, the regime of the operation thought to be achieved and complete. Invention establishes a certain type of recurring action, a *feed-back*, which goes

> from the regime of the complete result to the organization of the means and sub-ensembles according to a mode of compatibility.[16]

Simondon points out that the anticipation of the future, in this case anticipating conditions in which the problem is solved, is essential for the invention itself, since it modifies the actions to achieve this goal. The operation of the invention is cyclical. At first, an individual imagines the problem as solved, i.e. the stone is removed. Yet, in order to achieve this solution, other agents are needed. The goal thus transforms the individual mode of action into a collective anticipation. This collective anticipation of removing the stone structures in turn the activities of each individual participating in the solution of the problem.

In this recursive interplay between anticipation and invention the virtual future, where the problem is already solved, is a force structuring the present. The feedback transforms the anticipation, enriches the experience and is the condition of possibility to solve the problem. New pathways within the given reality become visible and restitute operational modes both on the level of the relation between the organism and the milieu and on the level of the organization of the action itself (Simondon 2008, 139). Invention institutes a recursive cycle of the subject with its milieu. It begins on the basic level of motor images that are connected to anticipating motor movements up to the invention of symbolic systems. Invention changes therefore the order of magnitude:

> The invention could then be considered as a transformation in the organization of the system of mature images, bringing back, by a change of level, mental activity to a new state of free images allowing a new genesis to begin again: the invention would be a rebirth of the cycle of images, allowing to approach the milieu with new anticipations from which will result adaptations that had not been possible with primitive anticipations, then a new internal and symbolic systematization. In other words, the invention operates a change of level; it marks the end of a cycle and the beginning of a new cycle, each cycle comprising three phases: anticipation, experience, systematization.[17]

Any invention is the start of a new cycle of images that anticipate the world, structure experiences and are ultimately systemized to invent new modes of being. These new modes can be practices, theories or objects, all of which structure the milieu of living beings. This implies that these images are co-constituted by the objects in the world. We are using the technical to structure, understand and re-form the world.

These processes take not only place in the scientific or technical field, but also in the aesthetic, the political and the moral field. These fields are never completely separated but interpenetrate each other (Simondon 2008: 157f.). What is needed is therefore to understand, *how* living beings pose problems and how machines and images are employed to solve these problems.

> To solve a problem is to be able to step over it, to be capable of recasting the forms that are given within the problem and in which it consists. The solution of real problems is a vital function presupposing a recurrent mode of action that cannot exist in the machine: the recurrence of the future with respect to the present, of the virtual with respect to the actual. There is no true virtuality in a machine; the machine cannot reform its forms in order to solve a problem. (Simondon 2017: 156)

It is important to note that Simondon stresses that machines cannot solve problems. Neither on their own, nor – in an emphatic sense – for human beings. Problems occur only for living beings, machines only fulfill tasks. This aspect gets regularly lost in the discussions surrounding Artificial Intelligence. It is undeniable that the progress of "intelligent machines" is impressive and that the digital age transforms how human beings interact, work and desire. But the problem of how human beings act, is neither a problem caused by technical progress, nor can it be solved by means of technical progress. The operational mode is accompanied by the affective-emotive mode, which co-constitutes individual and collective actions (Simondon 2008: 157). It remains a problem for human beings and how they want to "continue to live" on the "refractory planet" earth, as Bergson formulates in *The Two Sources of Morality and Religion*.

III. Bergson's Myth-Making Function a Technology of Anticipation?

Bergson introduces the myth-making function *fonction fabulatrice* to explain the genesis of the belief in supernatural entities out of natural tendencies (Bergson 2002). Life evolves, according to Bergson, in diverging tendencies (Bergson 1998: 51ff.; Deleuze 1988: 100ff.). The driving force of evolution is the *élan vital*. This principle of life is immanent, has no prescribed goal and is finite (Bergson 1998, 254). The image of the *élan vital* describes life as a process of differentiation. Instinct and intelligence constitute vital tendencies where the *élan vital* found an end. Each faculty provides answers to the vital problems of animals and human beings, i.e. they describe specific modes of action of animals and human beings. But since both are expressions of the *élan vital*, pure intelligence exists only as

abstraction. Intelligence is always embedded in the vital process of evolution. While animals and human beings have distinct modes of actions, they share both their ontological status as conscious living beings, since consciousness starts for Bergson as soon as there is memory and movement (Bergson 1975: 16).

Instinct, intelligence and intuition are thus ontologically separated, but share a common origin.[18] Since humans are living beings that evolved out of animals, intelligence and intuition have still instinctual aspects. Bergson describes human intelligence as "the luminous nucleus around which instinct, even enlarged and purified into intuition, forms only a vague nebulosity." (Bergson 1998: 177). This holds for instinct as well as for intelligence: All instincts are surrounded by a fringe of intelligence and all intelligence is surrounded by instinct, yet they are not of the same kind, but complementary to each other "and they are complementary only because they are different, what is instinctive in instinct being opposite to what is intelligent in intelligence" (Bergson 1998: 136).

Bergson's theory of differentiation and interpenetration is for two reasons important for the question of anticipation and technology. For one, it shows that any human activity is rooted in the *élan vital*. One might agree or not with this immanent metaphysical principle, but it allows to frame the problem of human techniques with reference to questions of nature. Technology and nature should be thought in accordance with rather than opposing each other. However, this does not absolve human beings to use technologies as they please. On the contrary, it shows that technical objects do not have an inherent positive or negative value, but are solutions to problems of human beings. These in turn are also always social.

Secondly, it implies the existence of "virtual instincts" that operate intelligently. The fringe of human intelligence consisting of instincts provides human beings with an affective relationship with their environment (Bergson 2002: 312, Schick 2012: 217ff.). They are not pure intellectual beings that rationalize their behavior and act accordingly. The instinct even becomes necessary when intelligence provides information that are threatening for the social cohesion, i.e. that the individual prefers its own good over the good of the community, or in life threatening situations, when a purely abstract appraisal of the situation would lead to despair and fear of death instead of action (Bergson 2002: 131). Bergson introduces the "virtual instinct" as a "counterpoise" to intelligence. It still possesses the potentiality of an instinct, but is shaped by intelligence:

> If intelligence now threatens to break up social cohesion at certain points - assuming that society is to go on - there must be a counterpoise, at these points, to intelligence. If this counterpoise cannot be instinct itself, for the very reason that its place has been taken by intelligence, the same effect must be produced by a virtuality of instinct, or, if you prefer it, by the

> residue of instinct which survives on the fringe of intelligence: it cannot exercise direct action, but, since intelligence works on representations, it will call up "imaginary" ones, which will hold their own against the representation of reality and will succeed, through the agency of intelligence itself, in counteracting the work of intelligence. This would be the explanation of the myth-making faculty. (Bergson 2002: 119)

At the fringe of intelligence, the "virtual instinct" is informed by intelligence and is the zone of contact the human being with reality. It thus also indicates an intuition, which would be the ideal activity of the human being in accordance with itself and its milieu. The reason out of which intelligence calls up the "imaginary " is therefore for Bergson never arbitrary but has its roots in a concrete situation. The workings of the "virtual instinct" Bergson calls the myth-making function is therefore intelligible even if it has a specific rationality.

This virtual instinct is at work mainly in three different instances: as a natural defensive reaction against the inevitability of death (Bergson 2002: 131; Higaki 2013: 269), "*against the representation, by the intelligence, of a depressing margin of the unexpected between the initiative taken and the effect desired*" (Bergson 2002: 140) and as the source for the creation of religious representations. Gods are in their beginning not persons or totems, but natural forces that are via the myth-making function personalized (Bergson 2002: 152). Otherwise human beings could not cope with the overpowering force of nature and their role within it.

> Since instinct no longer exists except as a mere vestige or virtuality, since it is not strong enough to incite to action or prevent it, it must arouse an illusory perception, or at least a counterfeit of recollection so clear and striking that intelligence will come to a decision accordingly. *Looked at from this first point of view, religion is then a defensive reaction of nature against the dissolvent power of intelligence.* (Bergson 2002: 122)

The myth making function is therefore a fabulation of anticipated events. It is at work in events that reason cannot explain instantaneously. In order to provide an explanation, the *myth-making function* "arouses within intelligence itself images and ideas which hold in check the depressing representation or prevent it from materializing" (Bergson 2002: 152) and creates a reasonable fable. The function is therefore in line with the workings of memory and human intelligence (Bergson 2002: 119). Memory images are used as elements of the fable and combined in a coherent order. With respect to the temporal structure of anticipation and technology, the myth-making function can be characterized as a "technology of anticipation". As virtual instinct, it consists neither in the stable elements that

result from the work of human intelligence, nor is it an instinctual behavior bare of any intelligence.

Bergson gives an interesting example of the myth-making function, he derived from the "psychic sciences": A lady, who was on an upper floor of a hotel, wished to go downstairs. Coming to the lift she saw, that the door of the elevator was open and attempted to enter it. Naturally, she expected the elevator to be there, since the door only opens when the elevator waits. Expecting the usual, and unsuspecting the unusual, she stepped forward, the elevator, however, was not on her floor.

Fortunately, she did not fall in the shaft, because just in the moment before she fell, "she felt herself flung backward, the man entrusted with the working of the lift had just appeared and was pushing her back on the landing" (Bergson 2002: 129). Then, she came to her senses and realized that no one was there.

A rational explanation is that her body felt intuitively that there was a void space in front of her. In the moment of the event, this explanation was impossible. The *fonction fabulatrice* created therefore the representation of the operator in order to explain the event. In the instances of the *fonction fabulatrice*, a virtual past is transformed into a representation of the present moment. The body anticipated the situation, but the mind did not fathom its strange ability. The subject needed a representation that it can understand, even if it entails an imaginary lift operator.

This example shows the interpenetration of the social, the technical and the concrete body of the individual. The technical routine is expected to function. The malfunction is something "out of the order" that requires an extraordinary behavior of the individual. Within the normal routines the human body functions as "man's first and most natural technical object, and at the same time technical means." (Mauss 2006: 83) In its habitual engagement with the world, it almost works like a cog in a machine. It is not perceived in its role as an instrument.

Yet, it is conceived as a body that is under control of one's own mind. It seems as if the imaginary lift operator is necessary, because a quasi-instinctual, intuitive bodily anticipation is not conceivable. For the human intelligence, as portrayed by Bergson, it is more reasonable to assume a social situation, where each agent plays a specific role: The story of the lift operator is an expression of the modern dualisms. It distinguishes between human and non-human actors, the human operator and the technical device, the body of the lady entering the lift as an instrument and the human mind as the faculty operating the body. The myth-making function is always related to its socio-technical milieu. It activates images that are chosen and rendered according to the present situation. Yet, they are not only applied to the presence, but also imply a rendition of possible futures.

This future making aptitude is also at work at the (in)famous last sentences of the *The Two Sources of Morality and Religion*, where Bergson claims that human beings "have to determine whether they want to go? on living or not" and "if they

want … to make just the extra effort … [to] fulfill … the essential function of the universe, which is a machine for the making of gods." (Bergson 2002: 317) In order to create these gods can either be read literally, i.e. transhumanistically, or within the theoretical framework of Bergson's theory of religion, i.e. in terms of the myth-making function, which is deemed responsible for the genesis of religious representations. What kind of gods are created?

It is precisely this structure that is of interest for us concerning the digital age and "new" technologies. It expresses that the engagement with the material world is the point of departure of religious representations, myth and for literature (Bergson 2002: 108f.). The three aspects of the myth-making function, the fear of the inevitability of death, the depressing representation of a margin of the unexpected between the initiative taken and the effect desired, and even as religious representation of an omnipotent being all come back in the relation of human beings with technologies. The narratives surrounding artificial intelligence can be understood from this perspective: The narratives of a general artificial intelligence (GAI) or a "singularity" can not only be considered as a possible technical innovation, but also as a "fabulation" in Bergsonian terms. It is a reaction against a force that goes beyond the powers of the human being. One could even claim that the conception of a GAI implies a belief system based upon the computability of reality (Ito 2019). Furthermore, the narrative implies that the outcome of the development of GAI is uncertain: it oscillates between a benevolent GAI or an GAI that performs its tasks without any ethical considerations.[19]

What kind of relation would have to be developed in order to use the myth-making function productively? Is there a "technological" imaginary that either obscures or elucidates our relations to technology?

Conclusion

We need an approach to technology that does not formulate anticipation as a simple prediction, but invents the future in the sense of Bergson and Simondon. However, the invention of the future is not an event that can be reduced to new technologies. Technologies are always social and natural. They therefore permit new ways of being with techniques that are not predictable in the strict sense, but can only be anticipated by means of the myth-making function. This entails becoming a poet of technology by taking the act of dealing with technology as producing images seriously. The imaginations that techniques evoke can of course be dystopian, utopian or even be abused to exert power. That is, if one takes the thesis seriously that the myth-making/fabulative function is a defensive reaction against nature and its power, then the myth-making/fabulative function can also be directed against itself. Examples would be – without being able to go into detail

here – not only the fear of total control by technology, but also the denial of climate change, the hatred against refugees and the reference to "fake news" when media coverage contradicts one's own political opinion. All this is based on or leads to conspiracy theories, which are in some ways the new myths of a closed society. These social groups refuse to universalize the concept of man, i.e. to understand the concept of the human being as an "open adventure", which is contingent on its cultural configuration and constantly in transformation.

This, in turn, does not mean that these affectively charged reactions to the socio-techno-ecological complexity of the 21st century are incomprehensible or irrational, but these processes have to be understood and identified as expressions of the myth-making function. A mere critical attitude, however, would capitulate to a world view of supposedly factual constraints and deny one's own being as open, living system.

For, as Bergson tells us, the task of man is to participate in this "machine that creates gods", i.e. the universe. This means that human beings have always been a species that goes beyond itself and opens, invents and re-invents what it means to be human. Yet, this invention hinges upon the relationship with the environment and technology. Following Simondon, a situation should be imagined, where a symmetrical relationship is established between human and non-human actors.

Anticipation does not mean using techniques to maintain the status quo. Nor does anticipation mean to keep people, signs and things in closed systems in which their movements and actions remain predictable. Rather, anticipation means designing and inventing socio-technological-ecological networks, enabling participation in order to create new modes of being.

Author

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[1] The French tradition of philosophy of technology and techno-anthropology usually uses the term "technology" to signify the "study of techniques" as a "human science" (Loeve, Guchet, Xavier, and Bensaude Vincent, Bernadette 2018: 5ff.). In this article, I do not make this distinction, but use technology to speak about the practices of human beings with technical objects and technical networks.

[2] Franco Berardi opposes in "On Futurability" with reference to Bergson's text "On the possible and the real" power and potentiality: "I call potency the subjective energy that deploys the possibilities and actualizes them. Potency is the energy that transforms the possibilities into actualities. I call power the selections (and the exclusions) that are implied in the structure of the present as a prescription: power is the selection and enforcement of one possibility among many, and simultaneously it is the exclusion (and invisibilization) of many other possibilities." (Berardi 2017: 1f.)

[3] For the specific problem of transformation and change see the lecture *The Perception of Change* (Bergson 2007: 107–31)

[4] The relationship between science and philosophy is explained most clearly in Bergson's *Introduction to Metaphysics*: "I take the view that several of the great discoveries, of those at least which have transformed the positive sciences or created new ones, have been so many soundings made in pure duration. The more living was the reality touched, the more profound had been the sounding. But the sounding made on the sea floor brings up a fluid mass which the sun very quickly dries into solid and discontinuous grains of sand. And the intuition of duration, when exposed to the rays of the understanding, also quickly congeals into fixed, distinct and immobile concepts. In the living mobility of things, the understanding undertakes to mark out real or virtual stations, it notes arrivals and departures; that is all that is important to the thought of man in its natural exercise. But philosophy should be an effort to go beyond the human state." (Bergson 2007: 163).

[5] "Reality is global and undivided growth, progressive invention, duration: it resembles a gradually expanding rubber balloon assuming at each moment unexpected forms. But our intelligence imagines its origin and evolution as an arrangement and rearrangement of parts which supposedly merely shift from one place

to another; in theory therefore, it should be able to foresee any one state of the whole: by positing a definite number of stable elements one has, predetermined, all their possible combinations."(Bergson 2007: 77)

[6] If not cited from English editions, all quotes are translated by the author of this article. The original French quotes are cited as endnotes. "Les nécessités de la prévision a long terme pour l'action ont introduit la rationalisation dans la dimension d'avenir et en ont chasse le mythe, tout au moins en domaine économique et démographique ; le temps commence a s'organiser comme l'espace ; le futur est annexe par le savoir, il n'est plus le champ privilégié de l'optatif, du désir, ou du vouloir. Et, cependant, l'image retrouve sa densité et sa force qui la porte vers l'anticipation de l'avenir collectif, en dehors et au-dessus des rationalisations prospectives, qui sont surtout des extrapolations, mais non de véritables inventions. La fiction scientifique est une des voies par lesquelles l'image retrouve son pouvoir d'avenir, c'est-a-dire sa fonction prophétique; elle est l'image du monde réel saisi dans sa tendance et pousse plus loin, réellement anticipe, saisi par avance selon l'aspect cognitif et émotif, non pas seulement supputé." (Simondon 2008: 17)

[7] This conception of the "image" refers to Bergson's notion of the "image" in *Matter and Memory* (Bergson 1991) and is, as Jean-Yves Chateau points out, a reaction against Sartre's phenomenological account of imagination (Simondon 2008: XXff.).

[8] "L'image mentale est comme un sous-ensemble relativement indépendant à l'intérieur de l'être vivant sujet; à sa naissance, l'image est un faisceau de tendances motrices, anticipation à long terme de l'expérience de l'objet ; au cours de l'interaction entre l'organisme et le milieu, elle devient système d'accueil des signaux incidents et permet à l'activité perceptivo-motrice de s'exercer selon un mode progressif. Enfin, lorsque le sujet est à nouveau séparé de l'objet, l'image, enrichie des apports cognitifs et intégrant la résonance affectivo-emotive de l'expérience, devient symbole. De l'univers de symboles intérieurement organise, tendant à la saturation, peut surgir l'invention qui est la mise en jeu d'un système dimensionnel plus puissant, capable d'intégrer plus d'images complètes selon le mode de la compatibilité synergique. Après l'invention, quatrième phase du devenir des images, le cycle recommence, par une nouvelle anticipation de la rencontre de l'objet, qui peut être sa production." (Simondon 2008: 3)

[9] "En fait, il ne s'agit pas de ramener toute l'activité mentale à l'image en cours de genèse, mais de montrer que, dans l'anticipation, puis au cours de la relation perceptivo-motrice, enfin dans le souvenir, et ultérieurement surement dans l'invention, existe une activité locale faisant du sujet un véritable générateur de signaux servant a anticiper, puis a recevoir, enfin a conserver et a « recycler » dans l'action les signaux incidents venant du milieu." (Simondon 2008: 4)

[10] Simondon discusses, whether or not animals are capable of invention, extensively in Imagination et Invention (2008: 142-153). At the very least, animals are capable of making "detours". Simondon acknowledges differences in the mode of action of animals and human beings, but is – instead of marking essential differences of species – interested in analogical relations between these different modes.

[11] "Les symboles vont par paires, ce qui veut dire qu'un symbole est un fragment d'un tout primordial qui a été divisé selon une ligne accidentelle." (Simondon 2008: 5)

[12] Sigaut points out that slavery might have played an integral part of technical innovation in Antiquity, since it allowed for a new sexual distribution of labour: "[S]lavery in Antiquity would have been a systematic means of making men do women's work, which would explain its vital importance for the economy. Slavery made it possible to take a number of tasks out of the family or home, to which they had until then been confined, and to turn them into commercial trades." (Sigaut 1994: 450) Domestication of animals and organization of labor by employing human beings allows for new social and also technical organization.

[13] For a detailed discussion of the evolution of the yoke see (Haudricourt 1987: 127–33).

[14] "Ordre et organisation, ordre donné et structure de l'exécution se trouvent être des formalisations de la tâche selon les exigences de la transmission d'information de celui qui sait et veut à celui qui exécute et obéit." (Simondon 2008: 154)

[15] A king places overnight, to see how his subjects react to a problem in the public space without the help of government, a rock in the middle of the road. Simondon adapts the story to his needs. While in the original fable the king places the rock in the middle of the road, Simondon does not give an explanation why the rock appears. Also, he recounts the solution of the problem as a collective effort by the travelers that are together confronted with the situation, while in the fable the rock is confronted individually. I am,

however, not sure, whether Simondon refers to this specific fable, since he merely claims it to be "a popular fable", without making further references.

[16] [I]l faut encore que cette anticipation revienne vers le présent en modifiant la structure et les conditions de l'opération actuelle ; dans le cas choisi, c'est l'anticipation collective qui modifie chacune des actions individuelles en construisant le système de la synergie. Il s'effectue ainsi un retour structurant du contenu de l'anticipation sur la formule de l'action présente ; il s'agit là d'un retour d'information, ou plutôt d'un retour d'organisation dont la source est l'ordre de grandeur du résultat, le régime de l'opération pensée comme achevée et complète. L'invention établit un certain type d'action en retour, d'alimentation récurrente (*feedback*) qui va du régime du résultat complet à l'organisation des moyens et des sous-ensembles selon un mode de compatibilité. (Simondon 2008: 140)

[17] "L'invention pourrait alors être considérée comme un changement d'organisation du système des images adultes ramenant, par un changement de niveau, l'activité mentale à un nouvel état d'images libres permettant de recommencer une genèse : l'invention serait une renaissance du cycle des images, permettant d'aborder le milieu avec de nouvelles anticipations d'où sortiront des adaptations qui n'avaient pas été possibles avec les anticipations primitives, puis une nouvelle systématisation interne et symbolique. Autrement dit, l'invention opère un changement de niveau ; elle marque la fin d'un cycle et le début d'un nouveau cycle, chaque cycle comportant trois phases : l'anticipation, l'expérience, la systématisation." (Simondon 2008: 19)

[18] Bergson introduces the dualisms between instinct and intelligence, matter and memory, etc. methodically to exemplify their interpenetration in duration.

[19] A popular example is Max Tegmark's Life 3.0 (Tegmark 2018).