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Hardwiring the frontier? The politics of security technology in Europe's 'fight against illegal migration'

Migration controls at the external EU borders have become a large field of political and financial investment in recent years – indeed, an “industry” of sorts – yet conflicts between states and border agencies still mar attempts at cooperation. This article takes a close look at one way in which officials try to overcome such conflicts: through technology. In West Africa, the secure “Seahorse” network hardwires border cooperation into a satellite system connecting African and European forces. In Spain’s North African enclaves of Ceuta and Melilla, advanced border fencing has joined up actors around a supposedly impenetrable divide. And on EU level, the “European external border surveillance system” or Eurosur papers over power struggles between agencies and states through “decentralized” information-sharing – even as the system’s physical features (nodes, coordination centres, interfaces) deepen competition between them. The article shows how such technologies, rather than “halting migration”, have above all acted as catalysts for new social relations among disparate sectors, creating areas for collaboration and competition, compliance and conflict. With these dynamics in mind, the conclusion sketches an “ecological” perspective on the materialities of border control – infrastructure, interfaces, vehicles – while calling for more research on their contradictory and often counterproductive consequences .

Border control; irregular migration; actor-network theory; materiality; illegality

In late 2013, the Spanish government started adorning the advanced triple fencing around the country’s North African enclave of Melilla with military-grade razor wire in order to halt dramatic entry attempts across it by undocumented sub-Saharan migrants. At around the same time, the European external border surveillance system, or Eurosur, was inaugurated in Brussels and at the Warsaw headquarters of the European Union’s border agency, Frontex – feeding official ambitions for full surveillance of the EU’s southern maritime borders amid large arrivals of migrants and refugees across the Mediterranean.

These two technologies – one violently concrete, the other supposedly “humanitarian” and abstract – highlight how Europe’s frontiers have become an important field of investment in recent years, largely thanks to the so-called “fight against illegal migration” engaged in by member states with EU backing.¹

By now, a substantial literature has emerged on the “business of bordering of Europe” in terms of migration controls. Such studies have variously traced the political importance of the growing divide between Europe and its neighbours (De Genova forthcoming; Van Houtum 2010); the selective “gating” of the continent (Van Houtum and Pijpers 2007; Brown 2010); the dispersal of the EU’s borders and the externalization of controls (Balibar 1998; Bigo and Guild 2005); the “securitization” of migration (Huysmans 2007); and the development of bureaucratic means for managing it (Feldman 2012). Building on these literatures, I will here nevertheless sidestep larger debates on Europe’s “borderscapes” (Rajaram and Grundy-War 2007) to focus on the development of specific bordering *technologies*. I will show how Europe’s failing border politics – hostage to short-term member state priorities – is increasingly refracted through man-machine assemblages that are themselves highly political. In fact, I will suggest that rather than halting migration in any meaningful sense, these assemblages simply perpetuate a counterproductive border security approach by “locking in” new forms of collaboration across formerly discrete sectors and political fields. Technology here principally acts as a catalyst for social innovation, rather than having a positive effect on the by-now perpetual “border crisis”, as tragically illustrated by the latest mass drownings in the Mediterranean (cf Basaran 2015).

In bringing the focus onto border praxis and sociality, the article draws inspiration from ethnographies of borders in my home discipline of anthropology (e.g. Driessen 1992; Donnan and Wilson 1999; Pelkmans 2006).² It is also inspired by recent interdisciplinary calls for a focus on “border security as practice” (Côté-Boucher et al 2014), in the vein of Bigo’s (2000) sociological take on border controls. Research on the “materialities” of the border of the kind proposed here is but one way of fleshing out such a grounded approach, complementing other foci on vehicles, data flows and embodied practices, to name but a few aspects of Europe’s border security landscape.

Before proceeding, a brief note on the policing of irregular migration is in order. A substantial literature has developed in criminology and related fields on the emergence of complex “security networks” in policing (e.g. Johnston and Shearing 2003; Dupont 2004), and migration – given its increasing framing as a security problem (Huysmans 2007) – has come to be emblematic of this trend towards “pluralism”. Indeed, the perceived migratory “threat”, scholars such as Loader (2002) and Bigo (2001) noted over a decade ago, has acted as a catalyst for the development of new security capacities and collaborations across the West. Weber and Bowling (2005) have highlighted the ever-expanding “networks of enforcement” in migration control, involving the *dispersal* of such controls as well as the *blurring* between the criminal and administrative spheres, the public and private sectors, and internal and external security (see also Weber 2013). Irregular migration, in short, has come to be constituted as a “global security problem” (Bigo 2001; see also Zureik and Salter 2005) straddling multiple political, geographical and sectorial divides – a trend starkly in evidence at and beyond the physical borders of Europe, where enforcement increasingly takes on outsourced, networked and “nodal” forms, often well before the individual traveller has approached the borderline.

With this broader trend in mind, I will in this article look towards the Spanish borders – a key migratory “frontline” – to investigate how novel security-based collaborations have been forged in a complex process that is at once political, financial and material. Elsewhere I have called the human-material assemblage that emerges through such collaborations an “illegality industry” (Author 2014a). This term, first, simply highlights how the “management” of irregular migration is a particularly lucrative field within the larger “migration industry” (Gammeltoft-Hansen and Sørensen 2013). Border agencies and defence companies now lobby for new security “solutions” and priorities, competing for attention, money and power (Bigo 2005), while other groups – the aid sector not least – have become imbricated in controls, for instance via collaborations in deportation or by caring for those harmed by violent border practices, as is the case at the Spanish fences. The term *industry* here implies an “economics of illegality” around migratory flows – that is, a circuit of exchange, production and consumption centred on the “usage” of migrants for purposes of border control, rescue,

prevention or information-gathering, including by researchers such as myself (Author 2014b).

Besides these “economic” features, the term *illegality industry* also highlights another key aspect of the “fight against illegal migration” – the interactions between humans, technology and the environment that enable “illegality” to be both fought and forged in concrete, material encounters. It is this material aspect of controls that the present article will develop. Through specific border technologies, I will show, key European actors such as the Spanish government and its security forces have generated convergence and compliance around its security-focused migration control goals. However, the new contact points generated by these socio-technological assemblages can also be appropriated in novel ways, fomenting conflict over priorities or even more dramatic border crossings. Technology here comes to play a key role in perpetuating the “illegality industry”, as it feeds on its own failures and on the contradictions it generates.

In the social-material focus proposed here, I take inspiration from the turn towards materiality in recent anthropological scholarship. Authors such as Hull (2012) have considered how artifacts act as mediators of social relations, while Larkin (2014) has led calls for ethnographic explorations of infrastructure. Taking their cue from the latter, Xiang and Lindquist (2014) have recently called for a focus on such infrastructures in studies of migration. Building on Latour’s (1999) observation that “B-52s do not fly, the U.S. Air Force flies”, they assert that “it is not migrants who migrate, but rather constellations consisting of migrants and non-migrants, of human and non-human actors” (Xiang and Lindquist 2014:124). In short, migration is “intensively mediated” through “the systematically interlinked technologies, institutions, and actors that facilitate and condition mobility” – that is, through infrastructures of different kinds: commercial, regulatory, humanitarian and social. My aim here, much like for Xiang and Lindquist, is to grasp the emergence of “systemic” features in Europe’s migration response through interactions between technologies, geographies and people. In this vein, I will suggest one more category for their typology: coercive infrastructure, meant to halt rather than facilitate movement, though the conclusion will discuss some complications in labelling it as such.

A similarly fine-grained approach to materiality is evident in recent trends within

critical security studies. Aradau (2010:493), for instance, has put focus on the “agential role” of materialities in processes of securitization, a lead recently followed up by Frowd (2014), who shows how EU-funded border posts have helped export a European border security model to Mauritania in West Africa, on which more later. In a complementary approach, Walters (2014) has in an important piece on what he terms “viapolitics” put vehicles and transport in focus. As he says (2014:3), “All sorts of political phenomena become newly thinkable once we approach the migration complex from the angle of its vehicles.” Much the same goes for approaching this “complex” from the angle of the technologies meant to keep these vehicles – and their passengers – out. Such a material focus on border praxis may yield new insights into Europe’s response to irregular migration, as well as into changing migratory tactics.

Most of the writers just cited draw inspiration from science and technology studies, and actor-network theory (ANT) in particular (see also Feldman 2012). ANT, in short, approaches human and nonhuman groups as “actants” that, in the process of overcoming resistances among them, generate apparently solid systems (Callon 1986) through what Latour (1993) labels the work of purification and translation. This frame has immediate benefit for studies concerned with systemic features of migration. It allows us to move beyond two of the scientific tendencies Latour (1993:67) warns against: “sociologization” or studying people-among-themselves and “discursivization” or the analytical privileging of language and signification. It also allows for shifting the focus away from the two poles of migration studies – the (political science) view that privileges policy and the (ethnographic) insistence on a grounded “migrants’ perspective” – towards the material, virtual and social interfaces of the migratory encounter. From this vantage point, the fences, control rooms and data systems discussed below act as mediators in a network or “collective” made up of human and nonhuman links. Migrants here function as key connectors or “tokens”; their circulation is the language and currency of the networks.

This may seem reductive, and I should clarify that the aim is not to minimize the agency of people on the move. If anything, the substantial literature on irregular migration has shown that such travellers are creatively reconfiguring mobility in the shadow of the state. As Coutin (2005:200) puts it, migration at times “moves territories, reconfigures scale and multiplies temporalities”. With this in mind, I simply add my

voice to calls urging fellow migration ethnographers to keep shifting our gaze towards the systems and assemblages construed around our once given object of study, “the migrant”, without letting go of perspectives from “below”. This involves more “bottom-up” studies of controls, not just of migratory experiences. Yet as will be seen, the advanced systems rolled out at Europe’s borders cannot be fully grasped without taking migrants’ actions into account, as migratory and bordering tactics ricochet off each other in Europe’s borderlands.

I will here show how border workers have used technology to overcome various hurdles: not least to square the circle of policing migrants on the one hand and rescuing them on the other, but also to smoothen relations between conflicting states, sectors, agencies and officers. Yet technology also “used” these actors, crudely put – creating contradictory and uncontrollable effects. The aim here is not technological reductionism but rather to see how technologies, workers and migrants are “co-constructed” in a chain of mediations (cf Hull 2012:18). I will first look at this briefly in relation to a pioneering Spanish initiative, the “Seahorse” satellite network linking European and African border forces, before turning to the hi-tech (and highly “networked”) Melilla fence and the Eurosur surveillance system. These three technologies show the intricate entanglements in Europe’s “border management” efforts, pointing us towards questions around not just the political economy of controls but also towards what may be termed their “ecological” aspects. In this vein, the conclusion will ask whether there is scope for approaching the relations shaped through border materiality and practice as a “border ecology”, drawing on the “symmetric” perspective of actor-network-inspired theorizing (e.g. Callon 1986).

Seahorse: hardwiring cooperation

Spain holds a peculiar position in European border controls. Once the “weak link” at the external borders of the Schengen area of free movement, it had by the mid-2000s established itself as an important actor on the European stage. In 2006, the Spanish Canary Islands had been beset by a “spectacle” of migration (De Genova 2012) as thousands of boat migrants arrived from West African coasts as a result of the gradual closure of routes into mainland Spain. Yet by 2010-11, the time of my fieldwork along

Spanish and African shores, arrivals in the Canaries had dwindled owing to a mixture of factors, ranging from the economic crisis to deportations and the presence of a large sea patrolling mission, Joint Operation Hera, under the aegis of Frontex and Spain's Civil Guard. The country's interior minister would eventually declare that 2010 had been the best year in a decade for migration control, and Spain's methods were by then envied and emulated by southern European neighbours.³

It should be noted, first of all, that EU-wide coordination and cooperation at the borders – “Europeanizing” controls – is hard work.⁴ In the absence of a shared EU migration policy, controls remain a prerogative of member states, which fiercely hold onto their sovereignty at the frontiers. This is clear even in Frontex's full name: “European Agency for the Management of Operational Cooperation at the *External Borders of the Member States* of the European Union”, which hints at its subsidiary role vis-à-vis member states. Within each country, institutional conflicts abound as well. As noted by Bigo (2001:121), security agencies nervous about their future relevance in a post-Cold War world “compete among themselves to have their objectives included in politicians' platforms”. In Spain, the police, the Navy, the Civil Guard and Customs all have turfs to defend at the external borders. In Italy, even more agencies are involved – among them, the Guardia di Finanza and the the Navy, which in 2013-14 carried out the Mare Nostrum rescue operation much to the chagrin of the country's coast guard. In sum, conflict may be more characteristic of Europe's bordering efforts than outright cooperation – making the Spanish convergence in controls over the past decade all the more remarkable.

The joint maritime patrols coordinated by Frontex and hosted by EU member states over the past decade involve significant networking efforts, and are as such deeply social and political. Authorities and agencies have to link up European control rooms in Warsaw and along southern European coasts; create a collegiate environment among European border agents, sometimes working together with their African counterparts; and link up with these partners' own control rooms and headquarters in Africa, along with the European attachés stationed there. This is the task in which Spain has excelled, as its government and security actors have used the (statistically small) boat migrations along

its coasts as a driver for integration and investments in the conflictive “field” of border controls, to use Bigo’s (2000) Bourdieu-inspired terminology.⁵

Faced with the boat arrivals of 2006, the country’s Socialist government suddenly “discovered” sub-Saharan Africa (Gabrielli 2011): it launched an ambitious development cooperation initiative, Plan África, opened embassies across West Africa and poured resources into the region in exchange for collaboration in patrols and deportations. Even though significant resistance remained in origin communities that were now receiving deportees back, or among the political opposition (Author 2014a), the disbursements paid off: soon the Civil Guard was patrolling African coastlines in collaboration with its Senegalese and Mauritanian counterparts as part of JO Hera, while local forces policed beaches and inland borders. In a brief span of time, a Euro-African policing network had been created in a region where Spain had previously hardly had a political presence. The border was being “networked” in the most concrete sense (Walters 2004) – as I would see not just during my fieldwork in Senegal and elsewhere in West Africa in 2010, but also during a visit to a high-level policing conference in the Canary Islands that spring.

In late April 2010 suited police, uniformed marines and green-clad civil guards congregated in Hotel Meliá in central Las Palmas de Gran Canaria. The fifth annual policing conference on “illegal migration” was redolent with the power of the state: uniforms, flags on tables, glossy police posters galore. Chairs reserved for Frontex officers and European policy organizations stood empty – the result of an Icelandic ash cloud that had blanketed European airspace. “It took a volcano,” joked the discussant, an officer from the European police cooperation Europol. Too many agencies were there already, he thought out loud: 89 African and European security chiefs from 25 countries.

Presentation followed presentation. One civil guard spoke excitedly of Eurosur, the “surveillance system of the future” promising “complete integration” of sea border controls. The Europol discussant exhorted African officers to promote a “model law” on people smuggling, downloadable from a UN website, in their capitals. In the break, African marines mingled with civil guards on the hotel terrace, sipping coffee and tea and digging into patisserie trays. The real action was in backroom talk: Malians laughed hard with civil guards in the halls, a Mauritanian *gendarme* took down phone numbers on his battered Nokia mobile. After the break, as journalists were let into the hall, the director of

Spain's security forces spoke assuredly of "the excellent climate of confidence that has prevailed at the conference". Thanks to "the collaboration between all the institutions represented here", he said, the battle against the "illegal migration" was being won.

The Las Palmas event echoes the migration conferences discussed in Feldman's (2012) ethnography of Europe's migration policy-making machinery, even though the chairs of select representatives from the policy community remained poignantly empty in the Hotel Meliá hall. This was not necessarily a problem for the policy world, however, as Feldman would note. Focusing on indirect policy conversations across disjointed sites, his study explores the growth of a transnational migration management apparatus (in Foucault's sense of *dispositif*) that produces both a profound indifference toward and hyperobjectification of the migrants it targets. In a methodological discussion, Feldman (2011:375) suggests moving from the traditional ethnographic terrain of studying (direct social) "connections" toward a focus on "relations", with the latter understood as being "mediated by abstract third agents" while having "an arbitrary relationship with space and time", in order to grasp the "vast, acephalous, and decentralized world of policymaking" spun around migratory flows (Feldman 2012:7).

The abstract "relations" discussed by Feldman certainly underpinned the Las Palmas event, whether in the "model laws" on smuggling or the Eurosur interface. However, its principal rationale was in fact the creation of concrete *connections* between border officers. For it was such connections both on European and African level, Spanish officers knew, that held the key to success in the "fight against illegal migration" that Madrid had fought with panache since the Canaries crisis. The result of these efforts was the seemingly harmonious gathering of Las Palmas: a patchy network of competing wills, represented by discrete flags on tables, precariously held together beneath the glossy banners and smooth interfaces of Europe's "virtual" frontier at the podium.

Key to the collaboration with African officers was the Seahorse project. Managed by the Civil Guard, Seahorse had since 2005 received more than €6m as part of the EU's €120m Aeneas programme to establish "an effective policy to prevent illegal migration" (MIR 2011). Seahorse involved a range of initiatives aimed to tie police forces into a tighter network: conferences such as the Las Palmas event; training and deployments; and visits by high-ranking African officers to Spain for tours of control rooms and police

academies. The conferences, courses and visits served not only “to see how other countries work on migration”, as one Spanish police attaché put it during interview: they were also junkets that, along with gifts of border policing equipment to the Africans, fomented a shared vision of the border while creating informal connections. In Las Palmas, cake and coffee did as much to boost the border network as endless PowerPoint presentations.

But Seahorse was, above all, a high-tech venture. It would not only expand the transnational policing networks around the “illegal migrant”; it would also hardwire these networks into a secure communications system via satellite. Technology, in short, helped trigger cooperation. The secure system, the Seahorse Network, had by 2010 pulled in Spain, Portugal, Mauritania, Cape Verde, Senegal, Gambia, Guinea-Bissau and Morocco. To host the network, Spain had helped set up “points of contact” in coastal African cities. The contrast with West African forces’ scant resources was stark: in Nouadhibou, a key departure point in northern Mauritania and now a hub for collaboration, there was previously hardly a functioning office for border controls, as civil guards stationed there recalled in conversation. The Civil Guard depicted the arrangement as bolts of lightning, shooting out from a satellite that spans the seas of Africa and Europe (figure 1). In such depictions, new technology was presented as reassuringly (and magically) building connections across the Euro-African border, and by implication ‘zapping’ the migratory ‘threat’ before it even materialized. As one Civil Guard Comandante put it in interview, the task was simply to ‘prevent them [migrants] leaving’ the coastline in the first place – and the African forces’ collaboration, he insisted, was key to that effort.

[figref1]

JO Hera built on this network and its contact points, as depicted in the figure. In Las Palmas, the Civil Guard had set up a regional coordination centre in which Senegalese, Mauritanian and Moroccan officers participated. In Senegal, a smaller national coordination centre had been created in Dakar’s Navy base, where a joint chiefs of staff communicated with Las Palmas via a second control room in the Senegalese Interior Ministry, as well as with the Spanish embassy police attachés. The information did not

stop in the Canaries: by 2010, a steady stream of real-time information was funnelled from Las Palmas, Dakar and elsewhere along the African coast into the Civil Guard's control room in Madrid. Via daily briefings, "flash reports" and teleconferences, information was sent from Madrid to Frontex in Warsaw. Through such day-to-day contact the communications network around the border grew ever more intricate, its transnationalism increasingly taken for granted.

The Seahorse technology had fomented Spanish border cooperation with African states where before there was none. This cooperation was deepened in the new coordination centres, which besides the African presence also brought disparate European and Spanish agencies into physical proximity, including civilian and humanitarian ones. Technology, here, did contribute somewhat to halting the boats to the Canaries – yet in so doing simply pushed routes into the Sahara desert and onwards to Algeria or Libya, as border officials themselves acknowledged (Author 2014a). Quite regardless of its limited long-term "success", however, the technology fundamentally had a *social* effect, allowing the Civil Guard to create a broad network[, OPT CUT as depicted via the lightning bolts in the figure above]. This network was built on two premises, as noted by Casas-Cortes et al (2014:17): first, it represented an "an extra-territorial expansion of an EU and member state-driven migration policy", extending border controls into African territory – an externalization, second, that was moreover "framed in terms of security concerns and simplifying complex migratory and population movements".

Bringing our discussion briefly back to the ANT perspective, we can relate Spain's borderwork to the stages that Callon (1986) set out in his "sociology of translation", providing a material-semiotic window onto the formation of relations of power. The stages discussed by him in a different ethnographic context are all present here: first, "problematization" – with civil guards and the Spanish authorities convincing other actors, both in Europe and Africa, of their definition of the "problem" at hand. This happened as African "boat migrants" became framed as an emergency in the Canaries "crisis", with specific solutions proposed to deal with it. Next follow the stages of "interessement" and "enrolment", in which the Spaniards sought to lock others, especially African forces, into roles defined for them while also seeking to interrelate these roles in a wider network. These steps were accomplished via Seahorse, via the

larger disbursement of funds and equipment to African “partners”, and via the complementary efforts of the EU and the International Organization for Migration, as discussed by Frowd (2014) with reference to the building of border posts and the transfer of migration control technology. Thanks to the statistically small presence of boat migrants – or indeed the mere threat of it – a large network had been forged through the flux of satellite communications, patrolling vessels and personnel around the Euro-African border. In this complex social and material sense, the border was being “hardwired” by Spain and its border agents. This hardwiring gave the border a distinct political reality with which migrants had to reckon: as I interviewed former boat migrants in Senegal, they would tell me of the choppy nature of the seas at certain maritime borders; of which routes across the Atlantic to use to avoid the EU-African border patrols; and of their resentment at how African forces “ate” resources both from migrants (via bribes) and from Europe (via gifts and pay) in their quest to “fight illegal migration” (Author 2014a).

For all Spain’s apparent success in hardwiring cooperation, Callon’s (1986:196) final stage of “mobilization” – the quest “to ensure that supposed spokesmen for various relevant collectivities were properly able to represent those collectivities” – was not properly fulfilled. Policing was suffused with politics, and the network marred by unequal power relations (cf Dupont 2004). In interviews and even during the Las Palmas event, African officers complained about their role in Europe’s outsourced controls: the pay and equipment were insufficient, the task was arduous, the rewards unevenly spread. Worse, information was withheld from them. For while technology opened lines of direct connectivity, it also foreclosed possibilities. Indeed, one thing stands out in the Seahorse sketch above (figure 1) and similar depictions: all information travelled through Spain. No lines of communication united Mauritania and Senegal, or Senegal and the Gambia. The information network was one-way, triggering resentment among African officers engaged in European-funded controls as well as doubts about its efficacy.

As will be seen, the Melilla fence and Eurosur are beset by similar problems: by feeding certain “problematizations”, they complicate others. More important, by framing collaboration through migration controls, they create a mechanism for their own self-perpetuation, as was seen most clearly in the fence technology at Spain’s land borders.

Fences: pointless yet powerful

The fences around Spain's North African enclaves are towering presences built to keep undocumented migrants out – a task bringing very limited success. Their first, flimsy incarnation of the 1990s soon proved insufficient: in autumn 2005, hundreds of sub-Saharan migrants hiding in the Moroccan hills “stormed” towards the fences, leaving at least 14 dead in soldiers' gunfire and many more expelled to the desert. With the help of EU funding, new state-of-the-art *vallas* (barriers) – triple fencing in Melilla, double in Ceuta – eventually towered six metres above ground, enclosing the enclaves in a supposedly perfect armoury which would nevertheless come to be breached in coming years, as will be seen below.

Fences and walls are increasingly circling nervous polities. From Spain to Greece and Bulgaria, from the US southern border to Israel's new desert fence, these barriers do not guard against the traditional military menace but rather target transnational “threats” (Andreas 2003) – including, most strikingly, the “illegal migrant”. As potent symbols of division, the barriers have generated a substantial critical literature (Vallet and David 2012), including studies that seek to look beyond them, towards the more or less “invisible” borders elsewhere that they invariably shield (Parker and Vaughan-Williams 2012). By contrast, studies “gazing directly” at the fences have in the Spanish case highlighted tensions between spectacular fortification and intricate cross-border interaction (Ferrer Gallardo 2011; Bernes 2013), or else delineated historical trajectories of walling out the Other (Gold 2000). While such studies have generated valuable insights that stretch well beyond the fences' immediate confines, it is worth casting yet another glance at these barriers – this time considering their very *materiality*, to see what “work” it does in Spanish and European border operations.

Focusing on their material features, two basic observations should strike us. First, fences have a peculiar quality: you can see through them, to those on the other side – including, in the case of Ceuta and Melilla, the Moroccan forces patrolling it. Second, the materiality of the enclaves' fences had in fact *triggered* the mass entries, or “assaults” (*asaltos*) in the media's terminology, since a critical mass was now needed to climb them,

as civil guards acknowledged in interview. By scrambling across all at once, at least some might make it through and past the guards, thus avoiding extralegal expulsions. In this second sense – of triggering absurd entry methods – the fences were a failure. Yet in the first sense, as a “social” see-through barrier, they were not, or not always so. I will focus here, then, not so much on the fences’ counterproductive effects nor on the spectacle of enforcement that they constitute, but rather on their role as medium for increased cooperation.

Visiting Ceuta’s fence in 2010, I would see this first-hand as a watchman opened the doors and let me and my Civil Guard escort into Morocco. The officer pointed to the sensors snaking through the layers of steel mesh, cables and razor wire. They set off the alarm easily, he said, so they would use cameras or binoculars “to see whether it is an animal, a *negro* (black man) or a *mokhazni* (member of the Moroccan Auxiliary Forces)”. If the thermal cameras spotted an intruder at night, the *mokhaznis* would be contacted to scour the bushes with patrol dogs. Sometimes they “pass right by without seeing them”, the officer said. But the civil guards guided the Moroccans with their night vision: “You have them at your feet now, you’re almost stepping on them!”

As the officer’s comments indicated, the fence had fomented relations with the Moroccan soldiers, who were in constant contact with the Spanish Civil Guards, who in turn communicated with their colleagues in mainland Spain (in fact, the cameras along the Melilla fence could be monitored and controlled from the regional co-ordination centre at the Strait of Gibraltar). Besides acting as a catalyst for this expansive network – extending both inwards and outwards from the borderline – the fence had also brought other groups into contact with one another. Among these were journalists and research visitors such as myself, partaking in the border spectacle; migrants in the hills, who held mobile contact with Moroccan soldiers and the Civil Guards, as informers or even in negotiations over how to cross; aid workers, not least the Spanish Red Cross, which tended to the distressed and wounded; and the defence industry, in charge of the constant upkeep. The *valla*, seemingly a sharp divide, had in this way become a medium for increased cross-border cooperation. It acted as a catalyst in a militarized alignment of technology, border forces, aid workers, journalists and migrants. Yet ironically the “border spectacle” was wholly the fence itself and its promise of absolute separation, not

the networks enabled by it.

While new security technology may sometimes disrupting territorial boundaries (Aas 2005), it was here interweaving with specific geographical constraints and sociopolitical parameters, while in turn shifting or “reconfiguring” the latter (Aradau 2010:498). In this sense, the fence technology had contributed to a novel “border ecology” of sorts, a point expanded on in the conclusion.

The fence had moreover been tasked with suturing the divide between “humanitarian” and coercive means of dealing with migratory flows. In Melilla, the new fencing built after the 2005 deaths was labelled “humane” by the Socialist vice-president at the time: here, technology was waved as a magic wand, promising controls shorn of violence and politics. As seen in the sketch below, the external fence was inclined outwards, making climbing it more difficult and limiting the need for razor wire, most of which had been removed in 2007 to media fanfare. Those who still managed to climb the outer fence faced a moveable upper panel that, once movement was detected, descended and trapped them underneath. If they made it into the middle section, they found themselves snared in an intricate mesh of metal cables known as the *sirga tridimensional*. If the intruders made it past this mesh, next was a lower middle fence; then, finally, the inner fence, again six metres high. Sensors and cameras detected any movement along the fence, allowing guards positioned in patrol vehicles or sentry boxes to intervene almost immediately.

[figref2]

This mass display of technology was nevertheless but an “obstacle” in migrants’ path according to civil guards, or as one officer said: “The fence is useless.”. Yet as a social technology, used to draw in varied sectors in a closer embrace, it was at times rather effective, and especially so as a medium for enrolling Moroccan forces in controls. For a few years after 2005, the networked assemblage around the fence –what can be glossed as the *valla*, incorporating physical fencing, surveillance technology and manpower – did steer migrants away from the land border, towards the riskier maritime route. By 2013-14, however, the *valla* system’s run of luck had ended as migrants found new methods to

make it across, using the *sirga* as a “stepping stone” onto the next fence. Amid these entries, Spain’s conservative government in 2013 added razor wire to Melilla’s “humane” fence; soon Morocco also started erecting yet another fence on its own side. Then, in February 2014, 15 migrants drowned at Ceuta’s maritime perimeter while civil guards fired rubber bullets into the waters around them – triggering calls for a fence extension further into the sea.

These developments seem to signal an overtly brutal approach, contrasting with the Socialist years of 2004-11. However, besides the fact that informal expulsions and pushbacks also took place in that earlier period, the violent developments also point to the uncontrollable momentum of the fence itself – and its contradictory consequences. Put simply: once built, it keeps on growing. A path dependency has been created in which new phenomena created by the fence are addressed by recourse to more fencing. The “border security” approach to migration here keeps reinforcing itself, much as Frowd (2014) found in Mauritania. The Spanish *valla* – a “living system” as one civil guard called it – has created its own dynamic, reminiscent of the “infrastructural involution” discussed by Xiang and Lindquist (2014).

As the *valla* keeps growing, its counterproductive effects multiply. Migrants’ tactics are constantly shifting in immediate reaction to reinforcement (or its anticipation). In direct response to the militarization of the perimeters, migrants’ tactics have come to resemble military operations: groups descending to “attack” the fences (in their own words), with leaders and sentinels guiding others in well-organized groups. They have also developed material techniques of resistance. To scale the smaller pre-2005 fences, migrants used ladders they had crafted in their camps on the Moroccan side. As razor wire was added to the fencing, migrants dressed in several layers of clothes or used carton and gloves for protection. And when Madrid added an anti-climbing mesh to Melilla’s fence in 2013-14, migrants used hooks to climb it or wedged large nails into the tips of their shoes to provide grip. In this way, each advanced border technology was matched by rudimentary but effective techniques from “below”.

The fences have also strengthened the Moroccans’ hand. Despite the Spanish forces’ insistence that relations with the Moroccan forces patrolling the fence were excellent, they often grumbled in interview that “if migrants pass, it’s because they want

them to pass”. In Spanish media and politics, the Moroccans are accused of fomenting entries by looking the other way as migrants “attack”, thus putting pressure on Madrid and Brussels to deepen diplomatic cooperation (not least on Western Sahara) or in the financial, trade and aid spheres (cf Natter 2013). In interview, the Moroccan director of border controls called the enclaves “pull factors” for migrants: “They can put cameras, they can put whatever they want. But the truth that it’s not sufficient if you cannot stop these flows upstream... Once you have them in Melilla and Ceuta, that’s it, you get stuck with them, that’s it.”

The barrier, then, raised the stakes, and not just in bilateral relations. Like the gating around a community, it marked out Ceuta and Melilla as wealthy havens and sites of protest (cf Low 2003). As a spectacle, it attracted not only migrants but also groups with varied grievances. These included Moroccan nationalists staging protest and blocking goods into the “occupied cities”, as well as activists protesting against the EU border in commemorations of the 2005 deaths. In short, the new social channels created by the fence were being subverted by actors hijacking them for their own purposes, adding to Madrid’s trouble at the borders. To frame this in Callon’s (1986) language, the “mobilization” around the *valla* did not just create tensions, like in Seahorse and JO Hera; worse, it was repeatedly undermined by counter-mobilizations. These dynamics may in the end make it ever harder for Spain to hold onto especially Melilla, long claimed by Morocco as part of its territory. The fences will then have served to yet again reframe relations in these borderlands – with most unpredictable consequences.

Eurosur: striving for a virtual border

In December 2013, the European external border surveillance system was officially launched, even though it had already been in operation in countries such as Spain well before that. Eurosur is a hugely ambitious undertaking: a Europe-wide information-sharing system focused on irregular migration, underpinned by a vision of a streamlined surveillance cover of Europe’s southern maritime border and the African “pre-frontier” beyond it, as the areas beyond the EU’s surveillance reach are termed in the jargon.

Pushed by the European Commission, Eurosur has moved ahead at breakneck speed. A roadmap was produced in 2008, four years before the European parliament got to discuss it. Amid involvement of Europe's defence industry and lack of political oversight, critics have lambasted the "technocratic process" behind Eurosur as well as the "blank cheque" seemingly given for its development (Hayes and Vermeulen 2012). Similar concerns are also voiced by border professionals themselves. At the 2013 European Day for Border Guards in Warsaw, Scandinavian police complained to me about the potential costs as the system was gradually extended northwards, away from the southern external borders. How much would it cost to monitor all sea ports, they asked, and who would pay for this staggering investment?

Despite such concerns, the system has now grown to encompass most of Europe. It represents an "intelligence-driven approach" to border surveillance, and as such collects "situational pictures" of the external borders as well as of the pre-frontier.⁶ It consists, on the one hand, of new national co-ordination centres, linked up with one another and with Frontex, and on the other of a set of "surveillance tools", incorporating information from existing systems such as Spain's coastal radar system (SIVE). Like the new Melilla fence built in 2005, Eurosur aims to overcome the divide between humanitarianism and control through technology – yet this is a dream, as is the vision of a smooth "virtual border" of relentless speed and coordination across and beyond EU space.

Eurosur's role in "saving lives" – trumpeted as a goal by Brussels – is limited at best, as Frontex has acknowledged.⁷ In fact, this "humanitarian" aim was only inserted into the Eurosur mandate at a late stage, along with the original goals of preventing cross-border crime (including human smuggling) and irregular migration. These three goals moreover amount to much the same thing: "intercepting" and "rescuing" migrants at sea are now largely coterminous activities, as border guards and Frontex have themselves made clear. Yet a larger factor hampering Eurosur's efficacy was its piecemeal imposition, or how it unevenly overlapped with existing systems. As explained to me when I visited a Spanish regional co-ordination centre, managed by the Civil Guard, Eurosur was clearly a Frontex rather than local priority. Also, manpower had to be set aside – at a time of Spanish austerity, and as the Civil Guard's border operations had

already “poached” staff from elsewhere – to feed the Eurosur terminals with data. From there, moreover, only some “raw data” was sent on to Frontex, with the rest not shared owing to national data protection limits, also ensuring the institutional imperative for the Civil Guard to hold onto its information. As for saving lives, this was ensured by existing arrangements: Spain’s radar network; the sea patrols; information from commercial vessels; and phonecalls from migrants or their associates as they departed.

Eurosur and its striving for full electronic security rehearsed what Bigo (2005:76) has called the “myth of mastering the frontiers”. Part of the problem here was pragmatic. Frontline officers I interviewed called for caution in the rush towards new technology, not least since surveillance and information-sharing systems such as Eurosur are resource-heavy and labour-intensive. Skills-wise, sharing information in a transnational network-of-networks is an uphill task given that many border guards only speak rudimentary English; technology-wise, meanwhile, some surveillance tools such as satellites do not provide continuous real-time information, and so are of little use in time-sensitive interceptions. But beyond these pragmatics of policing lurked larger political battles. As was seen in the limited Spanish transmission of data to Eurosur, each state still holds onto its “own” borders in spite of the “Europeanized” appearance of operations. The dilemma is simple: how to deal with the imperative to keep, rather than share, sensitive border information since such information proves the reason for each security force’s existence and role at the borders?

Eurosur architects were aware of this factionalism. “Nobody wants to give up anything,” one Eurosur officer said at Frontex headquarters. “If I give up the information,” the border agencies reasoned, “I will give up responsibility and my funding will be diminished.” This was the wrong thinking, he emphasized, but there was little room for changing their errant ways. In Spain, the divide between the surveillance community, centred on the Civil Guard, and the intelligence community, mainly the Spanish police, was deep at times. In Italy, with a larger range of agencies and ministries involved, the situation was even worse. As in the tense African cooperation discussed above, in Europe everyone likewise scrambled to secure their objectives and positions (Bigo 2001).

Yet Eurosur was in fact directly tailored to overcome these problems. Its first trick was to focus even more strongly on that one precious target at the border: the irregular

migrant. If the border was a field for information-sharing and information was an expensive commodity, it had to be shared in just the right doses. Eurosur did so by filtering out most information except migration as noise. Yet even this was proving tricky, the Eurosur officer noted. “It’s not a technical problem, it’s a political problem, a will problem,” he said. This is why he always emphasized to national security forces that Eurosur was a decentralized network when trying to “sell” it. “There’s no central node,” he said, no irony in his voice, “because they don’t want to have a Big Brother.”

This was, then, a principal feature of Eurosur – to join up agencies, rather than to facilitate information flows between them. Form trumped content. While this may seem like a fortunate “effect”, rather than the system’s aim, the Eurosur officer in fact stated its purpose in precisely these terms. As he said, the strategy was to create a tool that states have to use, and so enforce compliance. If they started talking, it would never happen.

In Eurosur, each country would have one national coordination centre (NCC) for border surveillance; a “very difficult thing to achieve”. The Eurosur officer’s strategy in installing the “nodes”, the electronic hearts of the Eurosur system, was to confront border agencies with a choice. “I ask them, so where do you want the Eurosur node? Then I force them to fight between themselves.” This has succeeded: by the time of its launch in 2013, there were 18 NCCs across Europe, installed with the help of EU funding. The very materiality of technology, as with the fences and Seahorse, triggered compliance. It also created new winners in Europe’s illegality industry, including the Spanish Civil Guard, which in 2013 inaugurated its state-of-the-art NCC in Madrid. The centre counts on other agencies “invited” to participate in a secondary role: the Army, the Navy, the Air Force and the national police, besides Frontex officers.⁸ In this way, the Civil Guard keeps extending its dominance over border controls through the imposition of a supposedly non-hierarchical information network, “enrolling” other forces (Callon 1986) into its systems and relations.

Is this then a “win-win” situation, creating a new, transnational form of “border guarding” with an integrated “inter-agency” community to match (cf Weber 2013; Johnson and Shearing 2003)? Eurosur did create convergences and pay-offs as agencies were “forced” into sharing the same physical space, enabling close day-to-day interaction and the establishment of a shared “culture” of sorts, much like the coordination centres

and systems that had gone before it.⁹ It also yielded big gains at a new “virtual” frontier, spawning risk-free investments for the defence companies contracted to provide Eurosur technology. Moreover, it helped depoliticize controls, pushing the controversial task of intercepting migrant boats into a technological domain. Soon even African states might be able to join Eurosur through a link-up with Seahorse, as any political qualms were brushed aside by the technical language of its interface, in which migration “events” were created as the “property” of one state that could then be “ceded” to another. In the words of one officer, “you’d just have to create another user”.

Yet Eurosur also created new political battles along new fronts. It was yet another factor in creating more risky migrant strategies, as the “pre-frontier” of controls was pushed back ever further. On a European level, too, and despite the hopes of its architects, Eurosur was not eliminating border politics. Instead it added to tensions among security forces, among member states, and even among Eurosur officers themselves, who held different ideas of the future functionalities of the system. It also privileged certain actors, and not just on national level. Despite the talk about “decentralization”, Frontex will through Eurosur play an increasingly pivotal role at the external borders, appropriating data dutifully fed into the system by border guards across Europe. A symbiosis is at work, then, between Frontex and privileged national forces such as the Civil Guard, leading to “mobilization” around a shared problematic – yet this convergence is instantly threatened by new coalitions outside its frame, as seen with the Italian Navy’s (non-Eurosur dependent) Mare Nostrum operation. As such, Eurosur is a potent political tool with large ramifications – not so much for detection at the borders and beyond, but rather for how border policing is socially organized, as is similarly the case with Melilla’s fence and the Seahorse network.

Conclusion: towards a border ecology?

In the examples given above, technology has helped trigger cooperation, and quite consciously so. The Seahorse network hardwired “collaboration” between African and Spanish forces into a communications system via satellite; Eurosur aimed to overcome factionalism by limiting the digitized sharing of sensitive border information to irregular

crossings; and the fences of Ceuta and Melilla, despite their spectacular divisiveness, served as a medium for increased cross-border cooperation. Meanwhile, the centres used to coordinate these vast systems locked agencies into physical proximity, facilitating the joint humanitarianization and militarization of border controls. Materiality, in sum, mattered greatly to the “illegality industry”, providing an imperfect mechanism for overcoming – if not removing – difference and conflict across the Euro-African border, as well as inside Europe itself. These efforts to control migration, in sum, are “productive” – not just in creating new social relations and frontier economies, but also in fomenting new behaviour among migrants (and smugglers), as seen for instance at the fences.

In what follows, I will provide some concluding remarks on how to understand the productive role of technology in shaping Europe’s border response, returning to the theoretical frameworks of the introduction. Walters (2014:5), setting out his agenda on the vehicles and roads used in migration, says that “by utilizing the neologism *viapolitics* I want to move analysis ‘to the outside’ ... to peer around the edges of mobility, tracing its lines of emergence and crystallization.” My focus on security technologies similarly seeks to “peer around the edges”, but from the perspective of control systems and the professional mobilities they enable, whether in terms of people, tools or information as networks are built between African and European border police. This move mirrors the one suggested by Xiang and Lindquist (2014), who via infrastructure open up a research agenda focused on the mediation of mobility. Like in Bigo’s (2011) work on “smart borders”, the focus shifts to the channels enabling or inhibiting movement. In this vein, we have seen how Seahorse, fencing and Eurosur have contributed to creating channels and managing flows, as regards migrants but above all as regards the shape of border guard cooperation.

However, my material also complicates the picture somewhat. While Xiang and Lindquist (2014:132) write that, in the case of Asian labour mobility, “Migration flows can be fragmented and short-lived, but infrastructure retains a particular stability and coherence,” the same is not quite the case in the examples above. By drawing on the actor-network perspective and its collasation of scales, the previous sections have shown the difficulty of separating channel from flow in these instances. Seahorse, the Melilla fence and Eurosur, I have shown, are piecemeal impositions awkwardly incorporated into

a broader field of socio-political relations, which they in turn contribute to changing. If anything, these are “coercive infrastructures” in the making, without being fully “infrastructural”. They are infrastructural in *intent*, and sometimes do produce “infrastructural effects” – even if short-lived or counterproductive ones.

Besides infrastructure, another way of grasping the dynamics around these systems and technologies is through recourse to a language of economics in the broadest sense. Elsewhere I have done so by exploring the “economics of illegality”, showing how relationships of exchange, consumption and production have taken shape in Europe’s “illegality industry” (Author 2014b). Through technologies such as the fence or Seahorse, specific incentives are created that in turn activate “dispositions” (Bigo 2014) among border workers unequally incorporated into border control efforts. Meanwhile, this economy – while beneficial to many groups – also generates “externalities”, as seen at the fences and on high seas where riskier routes spawn new challenges, and thus more investments. In this sense, the failure of controls has generated a market for ever more controls, in a self-perpetuating and often absurd dynamic.

However, given the intricate entanglements of manpower, machinery and environment seen above, perhaps we need yet another perspective besides infrastructure and economics, and I will briefly suggest drawing on the language of ecology for this purpose. The term *infrastructure* suggests a vertical relationship, a relation between underlying conditions and actual manifestations, whereas *economy* suggests discrete self-interested actors. However, we have seen above the intricate entanglements of “actants”, to borrow from ANT again, where it becomes increasingly hard to separate out any factor for primacy: border guards, policy priorities, material manifestations of technology, the network of connections they enable, and migrants themselves. An ecological perspective, implicit if unstated in Callon’s (1986) work, would highlight such interdependencies among “symmetrical” actors – between humans and machines, between the nearby and the remote, and crucially between people and their environment, the “environment” in this case taken as very much socially and politically constituted.

While we already have studies of the ecological impact (in the traditional sense) of border fencing on wildlife, a similar approach may yield fruitful findings when applied to human relations around borders.¹⁰ While the preceding sections have sought to restrict

such “ecological” considerations to the border policing communities taking shape in creative engagement with new technologies, wider contextual studies on these technologies would enrich our understanding not just of migration politics but also of larger social changes – whether in the marine environment, as with Eurosur; in the frontier cultures of northern Morocco, as with the fences; or in the shifting relationship between poor African nations and their European “partners”, as in Seahorse.

As the Seahorse example testifies, the notion of a “border ecology” also helps bring politics in through the back door – an often cited omission, or elision, in ANT-based studies. Ecology accounts for the feedbacks, negative and positive, created in an unstable system, as well as for the shifting relations within this system. Yet the term also suggests fragility. Just as the ecosystem around an abandoned railway track may easily be obliterated by a new high-speed line, the intricate social relations forged around Melilla’s fence could shift within days if politicians decided to remove the barrier, or if Morocco decided to withdraw cooperation. Ecological feedback loops, and the cementing of relations around these, however suggests one further reason why this may not happen, besides lack of political will: as multiple interests now intersect around the “problematization” around migration (Callon 1986), such a move becomes even harder to contemplate politically as the border micro-system develops its own rudimentary resilience.

To conclude, whether through an economic and an “ecological” lens, we see refractions of a distressing contemporary trend as more and more people drown in the Mediterranean: how Europe’s “illegality industry” has ensured its own self-perpetuation through buy-in and lock-in effects among disparate groups and sectors – all the while utterly failing in its purported task of halting human movement or of containing the man-made tragedies that have followed in the wake of this expensive effort.

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Notes

¹ The problematic term *illegal* is here used in an "emic" sense: see Author (2014a) for a discussion.

² The material in this article is based on a larger research project involving approximately 14 months of ethnographic research in Senegal, Mali, Morocco and Spain (see Author 2014a).

³ For the interior minister's intervention, see <http://tinyurl.com/9cwlh73>

⁴ This point is of course applicable to the fragmented nature of European integration (and European borders) writ large; see Walters (2002:567-568).

⁵ A Spanish migration census, carried out after the 2006 "boat crisis", showed that only 1 per cent of all migrants had entered the country by sea.

⁶ See [http://europa.eu/rapid/press-release MEMO-13-1070_en.htm](http://europa.eu/rapid/press-release_MEMO-13-1070_en.htm)

⁷ See e.g. this statement: [http://europa.eu/rapid/press-release IP-13-1182_en.htm](http://europa.eu/rapid/press-release_IP-13-1182_en.htm)

⁸ On the Madrid centre, see <https://www.guardiacivil.es/es/prensa/noticias/4634.html>. On Eurosur, see <http://www.statewatch.org/news/2014/jan/eu-eurosur-hunko-translation.pdf>

⁹ On cultural dimensions, compare forthcoming work by Mary Kaldor on "security cultures", Zaiotti (2011) on "cultures of border control" and Bigo (2014) on "social universes" of control..

¹⁰ See Cunningham (2012) for an anthropological take on border ecology. For the wider "social ecology" turn, see <http://socialecology.uci.edu/pages/conceptual-social-ecology>