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Fixing State Vision: Interoperability, Biometrics, and Identity Management in the EU

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ABSTRACT

Building on Scott's notion of identity as a key concept in early modern statehood, this paper historically contextualises and analyses the current political re-problematisation of identity in the EU. Engaging the recently adopted interoperability initiative that is set to biometrically verify and cross-validate identity records between all European border management, migration, and security databases, it argues that interoperability presents a shift from traditional modes of identity production at the border towards a digital space of identity management. Such identity management is predicated on the establishment of a biometric super-layer structure that cuts across databases without dissolving their legal foundations and introduces a new mode of 'truth' production in the form of a dedicated 'identity confirmation file' that is supposed to re-introduce a reliable baseline for the government of the Schengen area.

Introduction

The border is a site of identity production. Upon entering the Schengen area, third-country nationals (i.e. everyone who is not a citizen of an EU member state) have to undergo rigid identification and registration procedures. These procedures apply to every person, although they differ with regard to the status of that person. A refugee seeking asylum will for example be registered in the Eurodac database for the management of asylum procedures; a person applying for a visa will be registered in the Visa Information System (VIS) already in their home country; and a person applying for a visa-waiver will soon be registered in the European Travel Information Authorization System (ETIAS). Together with the Entry-Exit System (EES) for the systematic recording of border-crossings for third-country nationals, the European Criminal Records Information System for third-country nationals (ECRIS-TCN), and the Schengen Information System (SIS) for law enforcement and judicial cooperation, these databases constitute a complex framework for border management, migration, and security.

While all of the systems are based on different legal provisions, have specific aims and functions, and speak to different regulatory domains, their basic setup is similar: for each registered person, they create an entry that contains basic biographical information (i.e. family name, first name, date of birth, sex, nationality/nationalities), and in most cases at least one biometric characteristic (i.e. a fingerprint or a facial image). Through the collection of these data points, a digital record is produced and inscribes a person's identity vis-à-vis the EU and its member states. This identity then serves as the future reference point for all interactions between that person and authorities within a specific regulatory domain (e.g., asylum, law enforcement, visa management, etc.).

From a governmental perspective, identity provides two fundamental functions. First, it allows the accumulation of knowledge about a person by linking information to that person's identity record. At the border, this knowledge function relates to questions such as 'Is this person entitled to cross the border?', 'How long are they allowed to stay?', or 'Could they present a security threat?' The second governmental function of identity lies in the interface between the state and a person. This is the case when a person presents themselves vis-à-vis state officials and identifies themselves as the physical body that belongs to the registered identity. In the context of borders, migration, and security, state authorities for example use the connection between a person's physical body and their administrative records to identify persons who illegally reside within a given territory, to identify asylum seekers who have unlawfully lodged multiple asylum applications in different countries, or to conduct searches for wanted criminals or missing persons. Identity thus occupies a central role for the government of the Schengen area, as it provides the baseline for knowledge production and for the enactment of consequences from such knowledge.

Identity production at the EU external borders has however recently been problematised by the European Commission as not functioning properly. Despite the existence of multiple large-scale digital databases, identity records have been found to be 'not always complete, accurate and reliable' (European Commission 2017d, 9), thus making it 'very difficult for an authorised official to check, in the territory of a Member State, the identity of a third-country national who cannot or is not willing to present his/her passport, identity card or other identity document' (European Commission 2017d, 10). Moreover, the EU databases for border management, migration, and security are, due to their different legal provisions and regulatory domains, set up in an unconnected fashion. This 'silo structure' leads, so the European Commission reasons, to 'blind spots where persons, including those possibly involved in terrorist activities, can be recorded in different, unconnected databases under different aliases' (European Commission 2017d, 33). From the Commission's point of view, there is thus a perceived lack of reliable identity records that hampers knowledge production and identification and is therefore found to undercut

the government of the Schengen area. In order to address this predicament, the Commission has put forward a comprehensive plan to revise and upgrade the digital infrastructure of the European external border through a number of interconnected legislative proposals.¹

The key piece that binds these initiatives together is the ‘Regulation of the European Parliament and of the Council on establishing a Framework for Interoperability between EU Information Systems’ that was proposed in December of 2017 (European Commission 2017a, 2017b) and adopted in May of 2019 (European Union 2019b, 2019c).² At its core, so the argument I put forward here, the interoperability initiative aspires to fundamentally overhaul the governmental approach to identity in the Schengen area through a number of technical means that will biometrically verify and cross-validate identity records between European border management, migration and security databases. This produces a new administrative super-layer that is no longer exclusively concerned with the production of identity, but first and foremost with identity management that is geared towards the production of ‘truth’ in the form of legible and trustworthy identity records. In order to illustrate this conceptual turn, the paper engages the technical interoperability architecture and the ways in which identity records are supposed to be biometrically verified and cross-validated, resulting in an ‘identity confirmation file’ (European Union 2019b, Art. 34) that will provide the baseline for governmental interventions across the nexus of border management, migration, and security.

Based on an analysis of the policy documents accompanying the interoperability initiative (i.e. legislative proposals and resulting regulations, communications, strategic documents, staff working documents), the paper aims to understand the governmental rationales that underpin this move from identity production to identity management. The European Commission is as close to a government as the EU has, and it is responsible for overall strategy and priority-setting, as well as for proposals for new legislation and the implementation of adopted legislation. An analysis of how the Commission conceptualizes the restructuring of European borders thus provides a window into a larger political vision. I am specifically interested in the problematisation of identity as an issue that needs to be addressed and be subjected to new forms of governmental intervention. Document analysis provides an adequate means to do so, as the documentation surrounding the interoperability initiative presents a consolidated agenda that details why and how specific issues should be addressed. The analysis is theoretically informed by larger historical trajectories of government and identity production.

The paper proceeds as follows: it first discusses the closely entangled emergence of identity production as a prerequisite for early modern forms of statehood, the challenges that blossoming mobility presented for government through identity, and the role of the border as a site of productive

intervention. It then analyses the interoperability initiative and the EU's political vision of biometrics as a means of verifying and cross-validating identity records. Eventually, it offers a conceptual reading of the European border-migration-security nexus as a space of identity management that decisively goes beyond traditional forms of identity production at the border.

How the State Learned and Unlearned to See: Identity, Mobility, Borders

In *Seeing like a state*, Scott (1998, 2) has identified 'legibility as a central problem in statecraft.' For him, the emergence of the early modern nation state in the 18th and 19th century is characterised by the unprecedented measurement and caption of social phenomena in public records that systematically categorised information and made it accessible for the purposes of governing in scalable and rationalised forms. Fundamental to these developments, according to Scott (1998, 67), was the authorities' ability to identify individual persons and link them to relevant information (e.g., place of residence, kinship, land ownership), thus rendering them targetable for many basic governmental operations such as taxation, enrolment into military service, or criminal investigations. As he puts it, 'the premodern state was, in many crucial respects, partially blind; it knew precious little about its subjects, their wealth, their landholdings and yields, their location, their very identity' (Scott 1998, 2). The enumeration, disambiguation, and administrative enrolment of the population in the form of individual identity records was what, to stay within Scott's metaphor, enabled the state to open its eyes, and served as a basic condition for the development of novel administrative and governmental techniques based on aggregate statistics and individual targeting.

Making 'individual citizens officially legible' (Scott 1998, 71) was historically not an easy operation. For Scott, the assignment of surnames can be considered a first crucial step towards the disambiguation of individuals and the creation of unique identity records. As the combination of first name and surname was however in many cases not unique enough, identity records would need to be further complemented with additional biographical data (e.g., the date and place of birth of a person, their sex) and the description of a person's physical appearance (e.g., height, eye colour, or striking features such as scars or tattoos). Generally speaking, the more data points were added to an identity record, the more unequivocally distinguishable a person would be for state authorities – something that was considered to be especially important for criminal investigations (Cole 2001). Identity can, from a governmental point of view, best be understood as the sum of 'our physical embodiment and personal story' (Aware 2014, 1) that makes us visible and legible for the state and its institutions. The creation of state-legible identities was historically complemented by the issuance of identity documents that could serve both as proof of citizenship and as a means to identify a person,

and would eventually lead to the standardised global passport system that we know today (Caplan and Torpey 2001; Salter 2003; Torpey 2000).

The project of making the population legible and governable was however not only challenged by the question how to create accurate and reliable identity records, but also by the lack of population stability. As Scott (1998, 82) argues, 'the more static, standardized, and uniform a population or social space is, the more legible it is, and the more amenable it is to the techniques of state officials.' Needless to say, such a governmental ideal of a fixed and static population did not hold up well against the backdrop of a contemporary social and economic reality in which individuals and goods crossed borders with increasing regularity. Foucault (2007, 2008) has in fact pinpointed cross-border mobility as one of the most fundamental governmental challenges of the early modern state. As the circulation of people, goods, services, and ideas across state borders started to become the default condition, so he argues, governments needed to find ways 'of allowing circulations to take place, of controlling them, sifting the good and the bad, ensuring that things are always in movement, constantly moving around, continually going from one point to another, but in such a way that the inherent dangers of this circulation are cancelled out' (Foucault 2007, 65).

Vis-à-vis political problems such as public health or the productivity of the domestic economy, emerging modes of government were thus less and less concerned with simply securing the territory of the sovereign nation state, but increasingly with the population residing within that territory. If only enough information could be accumulated about this population, so the rationale, then this population could be subjected to techniques of knowledge production, and harm could be tackled based on the produced knowledge. Identity records, in other words, would thus need to be produced for every individual residing within the state's territory at any given point in time. What Foucault (2008) has deemed 'biopolitics' then must keep close track of mobile and volatile populations, turning the production of identity into a continuous operation that must never stop against the backdrop of ongoing flows of mobility.

Borders as entry and exit points into the nation state's territory presented perfect administrative chokepoints to do so, as travellers could at these sites easily be subjected to identification and registration procedures. Borders must in this sense not only be understood as physical barriers of protection from outside threats, but equally so as sites that 'categorize and individualize human beings' (Balibar 2009, 192). Today, the importance of borders as sites of identity production is arguably more pertinent than ever. If, as Lapid (2001) argues, globalised modernity is fundamentally characterised by 'an unruly swirl of deterritorialized forces involving capital, information, and people on the move,' the border has proven to be a prime instrument for identifying and sorting this unruly swirl and transforming it into orderly, intelligible, and

governable populations. For Walters (2002), the ‘biopoliticization of the border’ demonstrates how it has become a primary instrument for the international regulation of economics, health, mobility, and security.

It is against this backdrop that the digital information systems architecture of today’s borders – in the EU as much as elsewhere – must be understood. The identification and registration of third-country nationals in databases for border management, migration, and security is in theory supposed to provide a gapless mechanism of identity production that underpins both the production of knowledge and the identification of individuals. Independent of whether border crossers are refugees, exchange students, businesspeople, or tourists, they all end up in one of the systems, thus rendering their identities known and governable within the Schengen area.

Security is in this context usually presented as the most prevalent issue that could be impeded by faulty or incomplete identity records, as this could decisively undercut knowledge production and identification capabilities and potentially result in harm. It is important at this point to carefully distinguish between identity as a concept and its governmental functions. Logically speaking, a properly inscribed identity record does not at all indicate that the person tied to that record would be harmless. It does however mean that this person can be subjected to modes of knowledge production (i.e. risk assessment), and that consequences from the produced knowledge can be enacted (i.e. preventive security measures). In other words, identity strikes at the very heart of security practices that are geared towards thorough scrutiny and assessment of the ‘unknown unknowns’ that could emerge from flows of global mobility (Amoore 2013; Anderson 2010; Leese 2014).

When the Commission (2017d, 10) points out that ‘authorities know much less about fleetingly present third-country nationals than about stable residents,’ then this statement must be apprehended against the biopolitical imperative of continuous identity production. Only through the thorough administrative inscription of every border-crosser could, so the rationale at work here, an uncharted population be rendered knowable, governable, and eventually harmless. The production of legibility, as historically detailed by Scott, must then be understood as a permanent struggle to administer volatile and essentially unruly populations. If the early modern state learned to see through the production of identity, the contemporary (supra-national) state is afraid to have lost some of that vision due to the blurs of globalised mobility.

Biometrics for a Partially Blind State

In order to fix state vision, governments have turned towards biometrics as a means of identity verification. Broadly defined as the human body’s ‘most unique physical (and behavioral) features that can be practically sensed by devices and interpreted by computers so that they may be used as proxies of

our physical selves in the digital realm' (Aware 2014, 1), biometrics are widely believed to provide the missing link for the establishment of comprehensive and accurate identity records. Under the assumption that the 'the body does not lie' (Aas 2006), the biometric features of a person are allegedly truly unique and forgery-proof, such that they could be used to unequivocally disambiguate even two persons with very similar biographical details and physical appearances (e.g., identical twins), and at the same time put an end to all conceivable forms of identity fraud or misuse. As Pugliese (2010, 95) writes, 'against either the intentionality or will of the subject, a subject's body-bit, once converted to a biometric template, will effectively disclose the identity of the clandestine or dissimulated subject. Hostage to the timbre of its voice or the pattern of its irises, the body offers itself up despite the subject.' Although critical scholars have pointed out how biometrics continue to fail to deliver on their powerful promises in practice (Jacobsen and Rao 2018; van der Ploeg and Sprengels 2011), this has not diminished their political appeal (Caldwell 2015; Gelb and Clark 2013) but has rather reinforced technical efforts to address previous shortcomings (Abomhara et al. 2020; Labati et al. 2016; Robertson et al. 2017).

The invocation of biometrics as a means of verification, from a biopolitical rationale of knowledge production, indeed provides an accurate complementary piece to practices of risk assessment, as it 'operates as a form of power/knowledge applied upon masses of 'live' bodies' (Epstein 2007, 152) on their way across borders and other sites of identity production. The uncertainty that emanates from flows of cross-border mobility could, if one is willing to believe this perspective, through biometrics be transformed into verified categories of 'bona fide'/'fraudulent' identity based on the body itself, and databases and passports have been widely upgraded with biometric characteristics such as fingerprints, facial images, or iris patterns (Broeders 2007; Epstein 2007; Leese 2018). By tying identity to the body, biometrics are supposed to produce a form of 'truth' in the sense of vetted, reliable identity records for purposes of knowledge production and government.

Particularly in the context of border databases, scholars have critically engaged with biometrics and have warned against possible implications for forms of government that are predicated upon profiling, surveillance, and exclusion (Amoore 2006; Broeders 2007; Dijstelbloem and Broeders 2015; Dijstelbloem and Meijer 2011; Muller 2009, 2011). A particularly pertinent debate has thereby revolved around the notion of 'identity management' (Ajana 2012, 2013; Muller 2004, 2005, 2010; Popescu 2015; Pugliese 2010). The increasing entanglement of bodies, borders, and databases, so scholars have in this vein put forward, notably reconfigures the relations between the state and the individual. Ajana (2012) has for instance argued that through the incorporation of biometrics, citizenship 'is becoming increasingly reduced to processes of identity management and the implementation of technical operations,' thereby undercutting notions of belonging and

political community that are fundamental for democracy. For Muller (2004), similarly, the idea of biometric identity management bears witness of a managerial form of state-citizen relations that '[strips] away the cultural and ethnic attributes of citizenship,' thus 'sanitizing' and bureaucratizing the governmental nexus of borders, migration, and security – while at the same time shifting the political scope towards the management of databases (Muller 2005, 84).

These analyses remain important and timely. Scholars have however paid little attention so far to how notions of biopolitics, biometrics, and identity management translate into concrete technical architectures. In other words: how exactly does identity management transcend beyond traditional forms of identity production, and what are the implications of biometric identity practices for how the Schengen area is supposed to be governed in the future? The remainder of this paper attempts to unravel how identity management in the EU is politically conceptualized through biometrics as a means to render multiple databases interoperable and verify and cross-validate identity records between them. It pays specific attention to the technical construction of a super-layer structure for identity management in the form of an 'identity confirmation file.' The analysis highlights how this super-layer operationally draws together multiple different regulatory domains without dissolving their legal foundations, and how through such an architecture the nexus of border management, migration, and security is further fortified.

Making Databases Interoperable

As outlined earlier, the European Commission has identified two intertwined problems with European identity records. First, identity records remain potentially erroneous and unreliable. There are several reasons for this: identification and registration procedures might not always function properly, they might be executed sloppily (or not at all, as borders had been temporarily open during the 'migration crisis' in the summer of 2015), and this is further aggravated by undocumented border crossings and identity fraud (European Commission 2017d, 3). Second, the European databases for border management, migration, and security are not connected, as they are based on different legal grounds and the information that they contain can therefore not easily be integrated (European Commission 2016a, 3). Thus, the current border framework 'does not recognise connections between different pieces of registered information, leading to blind spots and incomplete pictures for competent authorities' (European Commission 2017d, 9).

The interoperability initiative is supposed to provide an integrated solution to both of these problems through the establishment of a super-layer structure that is geared towards the verification and cross-validation of identity records

while maintaining the formal separation between the different systems. Verified and cross-validated identity records will then, so the rationale,

allow those systems to supplement each other in order to facilitate the correct identification of persons, including unknown persons who are unable to identify themselves or unidentified human remains, contribute to combating fraud, improve and harmonise the data quality requirements of the respective EU information systems, [...] streamline access for the purposes of preventing, detecting or investigating terrorist offences or other serious criminal offenses to the EES, VIS, ETIAS and Eurodac, and support the purposes of the EES, VIS, ETIAS, Eurodac, SIS and ECRIS-TCN. (European Union 2019b, 28)

From a technical perspective, the interoperability architecture has four core components: (1) the European Search Portal (ESP); (2) the Shared Biometric Matching Service (Shared BMS); (3) the Common Identity Repository (CIR); and (4) the Multiple-Identity Detector (MID) (European Union 2019b, Art. 1). As Figure 1 illustrates, the ESP is the front-end application that allows competent national authorities to query the interoperable database architecture (European Union 2019b, Art. 6). It should be noted at this point that the new super-layer structure for identity management will not necessarily introduce new cross-domain access rights but maintain existing legal and operational separation (European Union 2019b, Art. 7). Authorities concerned with asylum will for instance still be limited to access data stored in asylum databases. Queries might however produce ‘hit flags’ that indicate whether a specific identity record is also present in other databases, such that different authorities could then cooperate in established ways (European Commission 2017d, 25). This is however not the main rationale of the interoperability architecture. Rather, it is supposed to ensure that all existing and new identity records are ‘truthful’ ones, and to verify and cross-validate entries across all databases on a continuous base.

This will be operationalized through the remaining components of the interoperability architecture. The Shared BMS is the storage for biometric

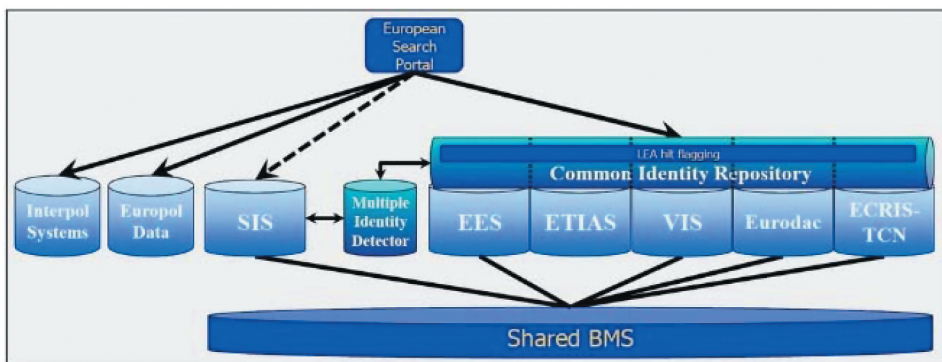


Figure 1. Interoperability architecture (European Commission 2017a, 6).

templates obtained from all databases that contain biometrics, thus allowing for queries with biometric data (European Union 2019b, Art. 12). The CIR and the MID are the key pieces for identity management processes. The CIR will extract identity records from the EES, VIS, ETIAS, Eurodac, and ECRIS-TCN databases, thereby ‘creating an individual file for each person’ that is registered in one of the systems (European Union 2019b, Art. 17). The MID will be connected to both the CIR and the SIS, thus creating links between data in the different EU information systems (European Union 2019b, 32) and ‘allowing detection of multiple identities, with the dual purpose of facilitating identity checks and combating identity fraud’ (European Union 2019b, Art. 25).

In order to do so, the MID will mobilize biometric matching techniques to determine whether identity records stored in the CIR and the SIS belong to the same person or different persons, and whether these identities could be considered truthful or whether they could potentially be fraudulent ones. Through this process, so the Commission reasons, identity records could be both verified and cross-validated between different systems, such that ‘criminals and terrorist suspects cannot exploit information loopholes, for instance by using different aliases recorded in several, unconnected databases’ (European Commission 2017c). The MID will be triggered every time an individual file, an application, or an alert will be created or updated (i.e. when an identity is created or updated) in the EES, VIS, ETIAS, or SIS databases (European Union 2019b, Art. 27). This essentially means that every time a person interacts with state authorities, all European border management, migration, and security databases will be put in relation with each other and identity records will be verified and cross-validated. The determination criteria for sameness and similarity are thereby defined based on the (1) biographical data and (2) biometric data that make up individual identity records. A matching process based on biographical data and biometric data can lead to four possible outcomes: a white link, a green link, a yellow link, or a red link (see Table 1).

A match between both biographical data and biometric data means that the same person would be present in multiple systems with the same biographical identity and that the identity could be confirmed by establishing a ‘white link’ between the entries in different databases, signifying a verified ‘bona fide’ identity that is considered trustworthy (European Union 2019b, Art. 33). In case there would be a match between biographical data, but no match between biometric data, this would mean that two different persons (based on the

Table 1. Possible MID identity links.

	biometric data match	no biometric data match
biographical data match	WHITE link (‘bona fide’)	GREEN link (different persons)
no biographical data match	YELLOW link (not yet verified) RED link (‘unlawful’ identity)	-

different biometric characteristics) would share the same or a very similar biographic data, but that they could from now on through a ‘green link’ be reliably disambiguated as two different persons (European Union 2019b, Art. 31). The European Commission gives the following example for such a case:

Visa applicant A is stopped at border-control as a SIS alert exists on identity A. After biometric verification, visa applicant A is not the person under SIS alert. This case of identity disambiguation is shown as a green link by the MID. Visa applicant A will not be bothered next time and could now use automated border control because of the green link. (European Commission 2017e, 56)

In case there would be a match between biometric data, but no match between biographical data, the assumption would be that the same person (based on the same biometric characteristics) would be using different identities, thus committing identity fraud. In such a case, the MID would establish a preliminary ‘yellow link’ between these different identities, and a manual investigation would need to either confirm or disprove this assumption (European Union 2019b, Art. 30). In case that the manual investigation would result in the confirmation of identical biometrics but different biographical data, the ‘unlawfulness’ of the identity record would be marked by a ‘red link’ (European Union 2019b, Art. 32). The Commission describes such a case as follows:

Asylum seeker X (claimed identity not based on any travel document) is identified in VIS (based on fingerprints) as Y. The biographical identities are analysed and very different. This case of multiple identities is shown as a red link by the MID. (European Commission 2017e, 57)

All MID matching processes will ultimately result in an ‘identity confirmation file’ (European Union 2019b, Art. 34) that will establish a ‘true’ baseline for identity records. The identity confirmation file will contain the different identity links and structure them along the categories shown in Table 1. Each of the categories, conveniently colour-coded (with white and green signalling trustworthiness/‘go’; whereas yellow and red warranting caution/‘stop’), thereby contributes to the re-establishment of a vetted and reliable interface between state and individual.

The Commission in fact considers the MID as a ‘necessary innovation to effectively address the fraudulent use of identities, which is a serious breach of security’ (European Commission 2017a, 8). The identity confirmation file is in this sense then supposed to imply administrative and practical clarity and eradicate ambiguity and interpretation. As Maguire and Rao (2018, 11) put forward, ‘if bodies can be linked through biometric technology to databases, assorted officials no longer depend on narratives of untrustworthy others, who might be terrorists, illegal immigrants, beggars, or welfare frauds.’ Social interactions, allegedly prone to weakness and/or failure, could thus through the consultation of the identity confirmation file be reduced to a minimum.

After all, human officers could be tricked, bribed, or otherwise overcome. Instead, the identity confirmation file would re-introduce a verified and cross-validated baseline truth as the basis for knowledge production and government.

One must at this point be mindful that the colour codes in the identity confirmation file must be understood as epistemic categories and not as *prima facie* normative evaluations of the person belonging to an identity record. The only statement that a white or green link makes is that the relation between biographical and biometric data has been confirmed (white) and disambiguated (green). This does not mean that these persons could not still be criminals, terrorists, or fraudsters. The only logically viable implication is that, from the perspective of the state, they have been made amenable to biopolitical techniques of government. Vice versa, a red link, while technically marking a person as ‘unlawful’, says little about the reasons why someone attempts to assume a different identity. The biopolitical message at work here is however quite clear. It reads: the state is not sure about you, and it must find out more, so that you can eventually be forced back into governable categories – in one way or another. The notion of ‘truth’ as constituted through the identity confirmation file first and foremost implies the imperative of legibility as described by Scott. Such legibility, however, now becomes ‘upgraded’ by the reliability imbued by biometric verification and cross-validation, such that identity can provide the best possible basis for knowledge production.

From Identity Production to Identity Management

This paper argues that the EU interoperability initiative marks a significant move from the border as a site of identity production to the (digital) border as a space of identity management. There are two main features that set it apart from already existing forms of identity management in databases. First, although the legally required silo structure of different databases for security, asylum, migration management, law enforcement, and business facilitation is formally maintained, the interoperability architecture produces a super-layer structure in the form of a large-scale identity grid for third-country nationals that is geared towards verification and cross-validation of identity records. This grid in principle functions like a relational database that cross-references records with individual characteristics – however with the added value of a new baseline truth (i.e. the identity confirmation file) for multi-domain use. This ‘truth’ cannot, at least in theory, be compromised, as it is tied to the forge-proof biometric features of a person that can neither be erased nor denied. The added value of the super-layer structure, according to the rationale of the Commission, is that it creates a digital space within which border management, migration, and security become drawn together through

identity as a cross-cutting governmental tool that pertains to all regulatory domains that need to produce knowledge about mobile, volatile populations.

Second, the super-layer structure ensures that the administration of identity records will be expanded in scope (i.e. multi-domain use), scale (the vastly increased number of identity records that can be verified and cross-validated), and precision (i.e. the production of 'true' baseline identities). The technical architecture of the interoperable border is set up in a way that the identity confirmation file will grow with every interaction between individual and state that triggers a verification and cross-validation process – until, at least in theory, there are no more blind spots and perfect state vision has been re-instated. But of course, this operation must never end, as new blind spots are continually produced by the very nature of global mobility itself. If freedom, as Foucault (2007, 48) has it, is 'nothing but the correlative of the deployment of apparatuses of security,' then identity management becomes a necessary by-product of global circulation in a world presumably full of threats. Biometric verification and cross-validation are politically perceived as techniques to force the rogue elements of the population back onto the administrative grid and tie them to an unshakeable and true identity via their own physical body. Identification, as Caplan (2001) writes, 'was – is – essentially unruly.' Against the backdrop of such recalcitrance, the mobilisation of biometrics to tie a person's administrative enrolment (i.e. their identity as produced through the classification and bureaucratisation of individual characteristics and relationships) to this person's unique bodily features is set to stabilise identity records and to put biopolitical knowledge production back on a solid foundation.

The turn to biometrically backed identity management notably characterises renewed regulatory attention to one of the historically pivotal functions of the border: the constitution of administrative apparatuses through the identification and registration of mobile populations. The ability to count and record, and therefore to keep track of who enters, who leaves, and who dwells within the territory of the state as a key prerequisite of government has been politically rediscovered and adapted to the aggravated challenges of population management in the 21st century. Whereas historically large amounts of resources had to be invested in order to fit an essentially unruly humanity into statistical categories (Desrosières 2002; Hacking 1990; Porter 1995), biometric verification and cross-validation address these struggles through 'truth' as an administrative category that is already built into the human body. In doing so, it appears that identity management will transform how biopolitical governmental techniques constitute and mobilise identity. As Muller (2005) has observed already early on, biometrics in fact seem to have 'very little to do with the politics of borders and bodies, and much more with the management of the database.' The single database has in the meantime become multiple databases, and biometrics are considered to be the key that

allows for the consolidation and management of identity records between them. Sure enough, the border persists as the physical site of identification and registration, and thus serves as an integral element that constitutes and updates databases in the first place. But the governmental surplus value of identity management is that it is supposed to eradicate the blurs that will inevitably be caused by the recalcitrance and unruliness of (globalised) life itself.

If, as Dijstelbloem and Broeders (2015, 24) have argued, ‘border control has turned into a distribution of tasks and functions that focus on monitoring, registering and cross-referencing,’ then identity management has a number of broader implications for our understanding of how borders, migration, and security are supposed to be governed in the future. First, it feeds into an overarching logic of security operations in the digital age, including the possibility to access converged and comprehensive data profiles at any location through the invocation of the body’s very own unique features. In other words, identity management must be understood as a politics of identity that seeks to biometrically anchor population records in a centralised fashion. Ambiguity is thereby eradicated through the detection and production of ‘legible-bona fide’ (white, green) and ‘legible-fraudulent’ (yellow, red) categories of identity.

Second, identity management, at least in theory, makes the partial blindness of the state amenable to an allegedly easy technological fix. The MID and the identity confirmation file enter the architecture of European border management, migration, and security databases in a cross-cutting fashion, such that the existing structure of legally separate information silos need not be dissolved. Rather, the ingenuity of identity management processes suggests that one could simply extract identity records from each system, verify and cross-validate them, and store them in a separate file that can be referred to as truth baseline for knowledge production and governmental intervention.

Third, whereas the European citizenry has already been biometrically fixed through the incorporation of biometric templates in passports and ID cards, easily legible for purposes of automatically verifying a traveller’s identity and checking their eligibility to cross the border, the envisioned interconnectedness of border management, migration, and security databases will add third-country nationals to this already extensive identity management grid. As Popescu (2015) has put it, ‘ideally, for biometric technologies to work best, there should be one global database that contains several types of biometrics for each person, enrolls the entire population of the planet, and is stored in cyberspace to be easily accessed.’ The European Union appears to be on track to make a serious attempt towards such a bold governmental vision, as it seeks to expand its biometric identity management grid every time a third-country national enters the Schengen area.

Conclusions

State vision has come a long way since authorities started to disambiguate citizens through the assignment of surnames. I have suggested here to take Scott's (1998) analysis of early modern statehood as a starting point to understand the current political problematisation of identity and the turn towards biometrics and identity management. Statecraft, as Scott has put forward, has as a project of legibility always been intricately entangled with the production and administration of identity. However, due to both the liberal prescription of openness and the fundamental porousness of borders, there can never be perfect identification and registration, and therefore never perfect legibility of the population. In other words, there will always be blind spots when it comes to knowledge production. From a state perspective, this means that the foundation for biopolitical techniques in the governmental nexus of border management, migration, and security will by default lack some of the accuracy required by practices of risk assessment and prevention. The interoperability initiative targets this predicament through the establishment of a super-layer structure for identity management that ties together identity records across various regulatory domains and strives to establish a baseline layer of legible and 'true' identity records for governing the Schengen area.

The engagement with literature on processes of state-building and evolving forms of governmental techniques in early modern Europe demonstrates that there is a good deal of continuity in terms of the problematisation of population and identity. Getting to know the population remains key for administrative purposes as much as it does for security practices. What has however radically changed since the early days of the modern nation state are the means by which the population is supposed to be rendered legible and amenable to political techniques. Today, the idea of identity as a governmental tool is predicated upon large-scale digital datafication and algorithmic analytics. Biometric verification and cross-validation of identity records throughout multiple large-scale databases, so I have argued, must be understood as the contemporary extension to early modern nation states' practices of identity production. The mere production of identity is, however, no longer considered to be sufficient against the backdrop of an unprecedented (and rising) number of border-crossings. Rather, the new interoperability architecture for the Schengen area bears witness of a shift towards identity management that aspires to simultaneously verify and cross-validate identity records across multiple domains. The results from such verification and cross-validation processes then form a new, allegedly truthful basis for knowledge production and government.

The main takeaway from the analysis presented here might be summarised as follows: from a biopolitical perspective, identity can only be a viable governmental tool once it has proven to be accurate and reliable. Starting from the

idea of general suspicion that informs contemporary security practices, any administrative blind spots must then almost by default linked to the possibility of terrorism, crime, or fraud. Only once proven trustworthy, identity records can be mobilized for knowledge production and governmental intervention. In practical terms, this means that third-country citizens with verified and cross-validated identities can be given a chance to free themselves from the hassles of security (and even join Automated Border Crossing programmes and other facilitation initiatives), whereas for the rest, suspicion prevails and techniques of risk assessment and prevention can be intensified (Côté-Boucher 2010; Leese 2016; Sparke 2006).

Eventually, as Dijstelbloem and Broeders (2015, 28) have put forward, ‘the coupling of biometrics, information storage systems, risk profiles, migrant categories, and travel data leads to a network in which references circulate.’ The purpose of the MID and the identity confirmation file is to anchor these circulating references within a vetted baseline record that can serve as an administrative hallmark throughout multiple domains (e.g., migration and asylum, international security, internal security and law enforcement, judicial cooperation, etc.), political spaces (i.e. EU external borders, but also outside and within the Schengen area), and that will pertain to different categories of population subgroups (e.g., businesspersons, tourists, refugees and asylum seekers, exchange students, etc.). The current restructuring of the European external borders speaks to the very foundations of what Scott has described as statehood’s project of legibility – only that this project has now been updated with cutting-edge technology that allegedly makes carefully managed and curated identities available across the administrative domains of migration, border control, security, and potentially many more.

Notes

1. (1) The proposal for the establishment of a European Criminal Records Information System for third-country nationals (ECRIS-TCN) has been adopted in April of 2019 (European Union 2019a). (2) The proposal for the establishment of an Entry-Exit System (EES) for the collection of data on border crossings has been adopted in November of 2017 (European Union 2017a, 2017b). (3) The proposal for the establishment of a European Travel Information and Authorisation System (ETIAS) for pre-travel security and irregular migration screening of visa-exempt non-EU nationals has been adopted in September 2018 (European Union 2018a). None of these systems has been implemented yet. (4) The proposal for a revision and expansion of the European asylum fingerprint database EURODAC to include illegal third country nationals and irregular border crossings (European Commission 2016b); as well as (5) the proposals for a revision of the Schengen Information System (SIS), including technical and operational improvements such as new alert categories and more efficient information exchange between Member States and EU agencies (European Commission 2016c, 2016d, 2016e) are at the point of writing (January of 2020) still under negotiation.

2. The interoperability initiative was based on the recommendations made by the “High-level Expert Group on Information Systems and Interoperability” set up in 2016 on behalf of DG Home (Directorate-General for Migration and Home Affairs 2017), and corresponds closely with a new legislative mandate for the European Agency for the operational management of large-scale IT systems in the area of freedom, security and justice (eu-LISA) that was adopted in December of 2018 (European Union 2018b). The legislative process for the interoperability initiative was split into two separate (yet largely identical) proposals due to the different legal provisions concerning the regulation of borders and visa (European Commission 2017a; European Union 2019b), and the regulation of police and judicial cooperation, asylum and migration (European Commission 2017b; European Union 2019c).

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References

- Aas, K. F. 2006. ‘The body does not lie’: Identity, risk and trust in technoculture. *Crime, Media, Culture: An International Journal* 2 (2):143–58. doi:10.1177/1741659006065401.
- Abomhara, M., S. Y. Yayilgan, A. H. Nymoen, M. Shalaginova, Z. Székely, and O. Elezaj. 2020. How to do it right: A framework for biometrics supported border control. In *E-Democracy – Safeguarding democracy and human rights in the digital age*, ed. S. Katsikas and V. Zorkadis, 94–109. Cham: Springer.
- Ajana, B. 2012. Biometric citizenship. *Citizenship Studies* 16 (7):851–70. doi:10.1080/13621025.2012.669962.
- Ajana, B. 2013. Asylum, identity management and biometric control. *Journal of Refugee Studies* 26 (4):576–95. doi:10.1093/jrs/fet030.
- Amoore, L. 2006. Biometric borders: Governing mobilities in the war on terror. *Political Geography* 25 (3):336–51. doi:10.1016/j.polgeo.2006.02.001.
- Amoore, L. 2013. *The politics of possibility: Risk and security beyond probability*. Durham/London: Duke University Press.
- Anderson, B. 2010. Preemption, precaution, preparedness: Anticipatory action and future geographies. *Progress in Human Geography* 34 (6):777–98. doi:10.1177/0309132510362600.
- Aware. 2014. What are biometrics? White paper. Bedford: Aware, Inc. Accessed February 13, 2019. https://www.aware.com/wp-content/uploads/2015/05/WP_WhatAreBiometrics.pdf.
- Balibar, E. 2009. Europe as borderland. *Environment and Planning D: Society and Space* 27 (2):190–215. doi:10.1068/d13008.
- Broeders, D. 2007. The new digital borders of Europe: EU databases and the surveillance of irregular migrants. *International Sociology* 22 (1):71–92. doi:10.1177/0268580907070126.
- Caldwell, T. 2015. Market report: Border biometrics. *Biometric Technology Today* (5):5–11. <https://www.sciencedirect.com/science/article/abs/pii/S0969476515300795>
- Caplan, J. 2001. “This of that particular person”: Protocols of identification in nineteenth-century Europe. In *Documenting individual identity: The development of state practices in the modern world*, ed. J. Caplan and J. Torpey, 49–66. Princeton: Princeton University Press.

- Caplan, J., and J. Torpey. 2001. *Documenting individual identity: The development of state practices in the modern world*. Princeton: Princeton University Press.
- Cole, S. A. 2001. *Suspect identities: A history of fingerprinting and criminal identification*. Cambridge/London: Harvard University Press.
- Côté-Boucher, K. 2010. Risky business? Border preclearance and the securing of economic life in North America. In *Neoliberalism and everyday life*, ed. S. Bradley and M. Luxton, 37–67. Montreal/Kingston/London/Ithaca: McGill-Queen's University Press.
- Desrosières, A. 2002. *The politics of large numbers: A history of statistical reasoning*. Harvard: Harvard University Press.
- Dijstelbloem, H., and D. Broeders. 2015. Border surveillance, mobility management and the shaping of non-publics in Europe. *European Journal of Social Theory* 18 (1):21–38. doi:10.1177/1368431014534353.
- Dijstelbloem, H., and A. Meijer. 2011. *Migration and the new technological borders of Europe*. Basingstoke: Palgrave Macmillan.
- Directorate-General for Migration and Home Affairs. 2017. High-level expert group on information systems and interoperability: Final report. May. Accessed January 3, 2020. <http://ec.europa.eu/transparency/regexpert/index.cfm?do=groupDetail.groupDetailDoc&id=32600&no=1>
- Epstein, C. 2007. Guilty bodies, productive bodies, destructive bodies: Crossing the biometric borders. *International Political Sociology* 1 (2):149–64. doi:10.1111/j.1749-5687.2007.00010.x.
- European Commission. 2016a. COM(2016) 230 final. Delivering on the European Agenda on Security to Fight Against Terrorism and Pave the Way Towards an Effective and Genuine Security Union. 20 April. Brussels.
- European Commission. 2016b. COM(2016) 272 final. Proposal for a Regulation of the European Parliament and of the Council on the establishment of 'Eurodac' for the comparison of fingerprints for the effective application of [Regulation (EU) No 604/2013 establishing the criteria and mechanisms for determining the Member State responsible for examining an application for international protection lodged in one of the Member States by a third-country national or a stateless person], for identifying an illegally staying third-country national or stateless person and on requests for the comparison with Eurodac data by Member States' law enforcement authorities and Europol for law enforcement purposes (recast). 4 May. Brussels.
- European Commission. 2016c. COM(2016) 881 final. Proposal for a Regulation of the European Parliament and of the Council on the use of the Schengen Information System for the return of illegally staying third country nationals. 21 December. Brussels.
- European Commission. 2016d. COM(2016) 882 final. Proposal for a Regulation of the European Parliament and of the Council on the establishment, operation and use of the Schengen Information System (SIS) in the field of border checks, amending Regulation (EU) No 515/2014 and repealing Regulation (EC) No 1987/2006. 21 December. Brussels.
- European Commission. 2016e. COM(2016) 883 final. Proposal for a Regulation of the European Parliament and of the Council on the establishment, operation and use of the Schengen Information System (SIS) in the field of police cooperation and judicial cooperation in criminal matters, amending Regulation (EU) No 515/2014 and repealing Regulation (EC) No 1986/2006, Council Decision 2007/533/JHA and Commission Decision 2010/261/EU. 21 December. Brussels.
- European Commission. 2017a. COM(2017) 793 final. Proposal for a Regulation of the European Parliament and of the Council on establishing a framework for interoperability between EU information systems (borders and visa) and amending Council Decision 2004/512/EC, Regulation (EC) No 767/2008, Council Decision 2008/633/JHA, Regulation (EU) 2016/399 and Regulation (EU) 2017/2226. 12 December. Brussels.

- European Commission. 2017b. COM(2017) 794 final. Proposal for a Regulation of the European Parliament and of the Council on Establishing a Framework for Interoperability Between EU Information Systems (Police and Judicial Cooperation, Asylum and Migration). 12 December. Brussels.
- European Commission. 2017c. Security union: Interoperability of EU information systems. Accessed February 12, 2018. https://ec.europa.eu/home-affairs/sites/homeaffairs/files/what-we-do/policies/european-agenda-security/20170629_interoperability_of_eu_information_systems_en.pdf.
- European Commission. 2017d. SWD(2017) 473 final. Commission Staff Working Document Part 1/2: Impact Assessment Accompanying the Proposal for a Regulation of the European Parliament and the Council on Establishing a Framework for Interoperability Between EU Information Systems (Borders and Visa) and Amending Council Decision 2004/512/EC, Regulation (ED) No 767/2008, Council Decision 2008/633/JHA, Regulation (EU) 2016/399 and Regulation (EU) 2017/2226 and Proposal for a Regulation of the European Parliament and the Council on Establishing a Framework for Interoperability Between EU Information Systems (Police and Judicial Cooperation, Asylum and Migration). 12 December. Brussels.
- European Commission. 2017e. SWD(2017) 473 final. Commission Staff Working Document Part 2/2: Impact Assessment Accompanying the Proposal for a Regulation of the European Parliament and the Council on Establishing a Framework for Interoperability Between EU Information Systems (Borders and Visa) and Amending Council Decision 2004/512/EC, Regulation (ED) No 767/2008, Council Decision 2008/633/JHA, Regulation (EU) 2016/399 and Regulation (EU) 2017/2226 and Proposal for a Regulation of the European Parliament and the Council on Establishing a Framework for Interoperability Between EU Information Systems (Police and Judicial Cooperation, Asylum and Migration). 12 December. Brussels.
- European Union. 2017a. Regulation (EU) 2017/2225 of the European Parliament and of the Council of 30 November 2017 amending Regulation (EU) 2016/399 as regards the use of the Entry/Exit System. Brussels: Official Journal of the European Union.
- European Union. 2017b. Regulation (EU) 2017/2226 of the European Parliament and of the Council of 30 November 2017 establishing an Entry/Exit System (EES) to register entry and exit data and refusal of entry data of third-country nationals crossing the external borders of the Member States and determining the conditions for access to the EES for law enforcement purposes, and amending the Convention implementing the Schengen Agreement and Regulations (EC) No 767/2008 and (EU) No 1077/2011. Brussels: Official Journal of the European Union.
- European Union. 2018a. Regulation (EU) 2018/1240 of the European Parliament and of the Council of 12 September 2018 establishing a European Travel Information and Authorisation System (ETIAS) and amending Regulations (EU) No 1077/2011, (EU) No 515/2014, (EU) 2016/399, (EU) 2016/1624 and (EU) 2017/2226. Brussels: Official Journal of the European Union.
- European Union. 2018b. Regulation (EU) 2018/1726 of the European Parliament and of the Council of 14 November 2018 on the European Union Agency for the Operational Management of Large-Scale IT Systems in the Area of Freedom, Security and Justice (eu-LISA), amending Regulation (EC) No 1987/2006 and Council Decision 2007/533/JHA and repealing Regulation (EU) No 1077/2011. Brussels: Official Journal of the European Union.
- European Union. 2019a. Regulation (EU) 2019/816 of the European Parliament and of the Council of 17 April 2019 establishing a centralised system for the identification of Member States holding conviction information on third-country nationals and stateless persons (ECRIS-TCN) to supplement the European Criminal Records Information System and amending Regulation (EU) 2018/1726. Brussels: Official Journal of the European Union.

- European Union. 2019b. Regulation (EU) 2019/817 of the European Parliament and of the Council of 20 May 2019 on establishing a framework for interoperability between EU information systems in the field of borders and visa and amending Regulations (EC) No 767/2008, (EU) 2016/399, (EU) 2017/2226, (EU) 2018/1240, (EU) 2018/1726 and (EU) 2018/1861 of the European Parliament and of the Council and Council Decisions 2004/512/EC and 2008/633/JHA. Brussels: Official Journal of the European Union.
- European Union. 2019c. Regulation (EU) 2019/818 of the European Parliament and of the Council of 20 May 2019 on establishing a framework for interoperability between EU information systems in the field of police and judicial cooperation, asylum and migration and amending Regulations (EU) 2018/1726, (EU) 2018/1862 and (EU) 2019/816. Brussels: Official Journal of the European Union.
- Foucault, M. 2007. *Security, territory, population. Lectures at the Collège de France, 1977–78*. New York: Palgrave Macmillan.
- Foucault, M. 2008. *The birth of biopolitics. Lectures at the Collège de France 1978–79*. New York: Palgrave Macmillan.
- Gelb, A., and J. Clark. 2013. *Identification for development: The biometrics revolution*. Washington, D.C.: Center for Global Development.
- Hacking, I. 1990. *The taming of chance*. Cambridge: Cambridge University Press.
- Jacobsen, E. K. U., and U. Rao. 2018. The truth of the error: Making identity and security through biometric discrimination. In *Bodies as evidence: Security, knowledge, and power*, ed. M. Maguire, U. Rao, and N. Zurawski, 24–42. Durham/London: Duke University Press.
- Labati, R. D., A. Genovese, E. Muñoz, V. Piuri, F. Scotti, and G. Sforza. 2016. Biometric recognition in automated border control: A survey. *ACM Computing Surveys* 49 (2):1–39. Article24. doi:[10.1145/2933241](https://doi.org/10.1145/2933241).
- Lapid, Y. 2001. Identities, borders, orders: Nudging international relations theory in a new direction. In *Identities, borders, orders: Rethinking international relations theory*, ed. M. Albert, D. Jacobson, and Y. Lapid, 1–20. Minneapolis/London: University of Minnesota Press.
- Leese, M. 2014. The new profiling: Algorithms, black boxes, and the failure of anti-discriminatory safeguards in the European Union. *Security Dialogue* 45 (5):494–511. doi:[10.1177/0967010614544204](https://doi.org/10.1177/0967010614544204).
- Leese, M. 2016. Exploring the security/facilitation nexus: Foucault at the ‘smart’ border. *Global Society* 30 (3):412–29. doi:[10.1080/13600826.2016.1173016](https://doi.org/10.1080/13600826.2016.1173016).
- Leese, M. 2018. Standardizing security: The business case politics of borders. *Mobilities* 13 (2):261–75. doi:[10.1080/17450101.2017.1403777](https://doi.org/10.1080/17450101.2017.1403777).
- Maguire, M., and U. Rao. 2018. Introduction: Bodies as evidence. In *Bodies as evidence: Security, knowledge, and power*, ed. M. Maguire, U. Rao, and N. Zurawski, 1–23. Durham/London: Duke University Press.
- Muller, B. J. 2004. “(Dis)qualified bodies: Securitization, citizenship and ‘identity management’”. *Citizenship Studies* 8 (3):279–94. doi:[10.1080/1362102042000257005](https://doi.org/10.1080/1362102042000257005).
- Muller, B. J. 2005. Borders, bodies and biometrics: Towards identity management. In *Global surveillance and policing: Borders, security, identity*, ed. E. Zureik and M. B. Salter, 83–96. Cullompton: Willan Publishing.
- Muller, B. J. 2009. Borders, risks, exclusions. *Studies in Social Justice* 3 (1):67–78. doi:[10.26522/ssj.v3i1.1024](https://doi.org/10.26522/ssj.v3i1.1024).
- Muller, B. J. 2010. *Security, risk and the biometric state: Governing borders and bodies*. London/New York: Routledge.
- Muller, B. J. 2011. Risking it all at the biometric border: Mobility, limits, and the persistence of securitisation. *Geopolitics* 16 (1):91–106. doi:[10.1080/14650045.2010.493775](https://doi.org/10.1080/14650045.2010.493775).

- Popescu, G. 2015. Controlling mobility: Embodying borders. In *Borderities and the politics of contemporary mobile borders*, ed. A.-L. A. Szary and F. Giraut, 100–15. London: Palgrave Macmillan.
- Porter, T. M. 1995. *Trust in numbers: The pursuit of objectivity in science and public life*. Princeton: Princeton University Press.
- Pugliese, J. 2010. *Biometrics: Bodies, technologies, biopolitics*. New York/Milton Park: Routledge.
- Robertson, J. J., R. M. Guest, S. J. Elliott, and K. O'Connor. 2017. A framework for biometric and interaction performance assessment of automated border control processes. *IEEE Transactions on Human-Machine Systems* 47 (6):983–93. doi:[10.1109/THMS.2016.2611822](https://doi.org/10.1109/THMS.2016.2611822).
- Salter, M. B. 2003. *Rights of passage: The passport in international relations*. Boulder: Lynne Rienner Publishers.
- Scott, J. C. 1998. *Seeing like a state: How certain schemes to improve the human condition have failed*. New Haven/London: Yale University Press.
- Sparke, M. B. 2006. A neoliberal nexus: Economy, security and the biopolitics of citizenship on the border. *Political Geography* 25 (2):151–80. doi:[10.1016/j.polgeo.2005.10.002](https://doi.org/10.1016/j.polgeo.2005.10.002).
- Torpey, J. 2000. *The invention of the passport: Surveillance, citizenship and the state*. Cambridge: Cambridge University Press.
- van der Ploeg, I., and I. Sprenkels. 2011. Migration and the machine-readable body: Identification and biometrics. In *Migration and the new technological borders of Europe*, ed. H. Dijstelbloem and A. Meijer, 68–104. Basingstoke: Palgrave Macmillan.
- Walters, W. 2002. Mapping Schengenland: Denaturalizing the border. *Environment and Planning D: Society and Space* 20 (5):561–80. doi:[10.1068/d274t](https://doi.org/10.1068/d274t).