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Citation: Prainsack, Barbara and Toom, Victor (2013) Performing the Union: the Prüm Decision and the European dream. *Studies in the History and Philosophy of Science C*, 44 (1). pp. 71-79. ISSN 1369-8486

Published by: Elsevier

URL: <http://dx.doi.org/10.1016/j.shpsc.2012.09.009>
<<http://dx.doi.org/10.1016/j.shpsc.2012.09.009>>

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A slightly adjusted version of this article has been published in the special issue 'Forensic Cultures' in *Studies in History and Philosophy of Biological and Biomedical Sciences* 44(1), edited by: Ian Burney, David A. Kirby and Neil Pemberton, see <http://www.sciencedirect.com/science/journal/13698486/44/1>. Preferred citation is Prainsack, Barbara and Toom, Victor (2013) 'Performing the Union: The Prüm Decision and the European dream', *Studies in History and Philosophy of Biological and Biomedical Sciences* 44(1): 71-79.

Performing the Union: the Prüm Decision and the European dream

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Abstract: In 2005, seven European countries signed the so-called Prüm Treaty to increase transnational collaboration in combating international crime, terrorism and illegal immigration. Three years later, the Treaty was adopted into EU law. EU member countries were now obliged to have systems in place to allow authorities of other member states access to nationally held data on DNA, fingerprints, and vehicles by August 2011. In this paper, we discuss the conditions of possibility for the Prüm network to emerge, and argue that rather than a linear ascent towards technological and political convergence and harmonisation, the (hi)story of Prüm is heterogeneous and halting. This is reflected also in the early stages of implementing the Prüm Decision which has proven to be more challenging than it was hoped by the drivers of the Prüm process. In this sense, the Prüm network sits uncomfortably with success stories of forensic science (many of which served the goal of justifying the expansion of technological and surveillance systems). Instead of telling a story of heroic science, the story of Prüm articulates the European dream: One in which goods, services, and people live and travel freely and securely.

Keywords: Prüm Decision, transnational bioinformation exchange, *apparatus*, European Union (EU), performativity, stories

1. Introduction: Beneficial technologies

We will start with a story. This story has been told before, and it keeps being re-told regularly when the topic of forensic DNA databases is discussed. The particular version of the story presented here was included in the 2007-2009 annual report of the national DNA database (NDNAD) of England and Wales:

Steve Wright was sentenced to life imprisonment in February 2008 for the murder of five prostitutes in Ipswich in December 2006. In 2003, Wright had been arrested on suspicion of stealing a small sum of money while working as a hotel barman and a DNA sample taken from him. He was subsequently convicted of theft. When the five prostitutes were murdered within a very short space of time, the police were able to recover samples from one of the bodies which were sent for analysis and produced a match with Wright's DNA profile. Wright was subsequently charged and convicted of the five murders and sentenced to life imprisonment. If he had not been identified by his DNA, he might have gone on to commit even more offences.¹

This 'official' story – which is not the only possible story to be told - has become a 'founding myth' for forensic DNA profiling and databasing as a technology for solving crimes.² Its success results from the interplay of several factors, including mundane ones such as influential authors having told this story and their readers having served as multipliers. Yet it is arguably also the particular narrative of the story, and the role ascribed to the technological tools, which accounts for its success. As policy studies scholar Dvora Yanow argued, 'humans create myths as an act of mediating contradictions'.³ A myth 'is a narrative created and believed by a group of people which diverts attention from a puzzling part of their reality'.⁴ Myth creation is therefore not to be understood as an intentional process but instead as the emergence of a narrative that will obtain a dominant position in the discourse on a particular topic.

With respect to the account of Steve Wright's conviction, the authors of the NPIA report clearly did not 'make up' the story, but their account is structured in a particular way. The authors highlighted certain elements of the case and put it together in such a way that a coherent narrative emerged. They arguably did not do so to change the 'true' story, but because they focused on what they considered the essentials. What particular narrators consider essential, in turn, depends on their frames of reference; in the words of policy analyst Charles Herrick, the 'narrative itself establishes and warrants the validity and utility of its constituent elements'.⁵ For example, if our frame of reference is exonerating the wrongfully convicted, we will see different elements in a given setting

¹ NPIA (2009), p. 8.

² Bell (2009); Toom (2011).

³ Yanow (1996), p. 189.

⁴ Yanow, (1996), p. 191; see also Della Sala, (2010).

⁵ Herrick (2004), p. 430.

as relevant than in a scenario where our primary frame of reference is, for example, cost containment. It is in this sense that myths are constructed, not authored; their construction and maintenance are continuous collective endeavours of sense-making. Myth-creation typically does not merely serve the vested interests of certain stake holders, but it also bridges – as Yanow pointed out – seeming contradictions or inconsistencies in a given situation; for example, that the good of crime control can conflict with the good of protecting individual freedom and privacy. Myths 'are designed to explain what we do not know and cannot know absolutely, to block further inquiry and redirect our attention, to enable us to temporarily suspend doubt especially in the face of contradictory information'.⁶

It is in this light that the story of Steve Wright's conviction can be seen as a founding myth for forensic DNA profiling – as well as perhaps for the wider category of 'bioinformation' which signifies information based on the analysis of physical or biological characteristics of individuals, like DNA profiles and fingerprints.⁷ The story of Wright's conviction removes doubt and ambivalence about the usefulness of forensic bioinformation for the conviction of the guilty. In this story, the problem is one that has been created in the social sphere and solved by technological means: Technology helps to find truth and obtain justice. As such, it resonates with Jay Aronson's account of other stories in the field of forensic DNA technologies which represent a 'sanitized version of history with DNA as the triumphant hero';⁸ and it gives DNA technologies, to use Sheila Jasanoff's term, the air of a 'technology of hubris'.⁹ It underscores these technologies as objective and neutral methods for solving societal problems.

The tacit claim of the story – which is enhanced by its authoritative status – is the extension of the story line from the particular to the general: The more technology is available, and the more widely it can be applied, the more culprits can be caught and sentenced. In essence, the story tells us that in order to solve serious crimes, we need technology. All the possible problems and ambiguities inherent in the use of technologies – for example, that forensic DNA analysis always bears the risk of contamination, of human or machine errors, etc, and that even a DNA match between a suspect and the crime scene does not automatically prove guilt¹⁰ – are absent from its narrative. It provides a firm basis upon which the systematic extension of DNA profiling – from its use on an *ad hoc* basis to the systematic storage of profiles in a centralised database – seems like the logical solution to a problem.

The continuous re-telling of the story of Steve Wright continues to provide support for what we call the 'spirit of expansion'. This spirit of expansion is the result of the foundational myth of DNA databasing; a foundational myth is therefore not only an idealised version of reality, but it helps to produce it as well. Such is in accord with what sociologist John Law calls the performative capacity of stories, as they 'make a difference, or at any rate might make a difference or hope to make a difference'.¹¹ The performative capacity of stories is illustrated with the following example: In the

⁶ Yanow (1996), p. 193; see also Westerlund & Sjöstrand (1979).

⁷ Nuffield Council on Bioethics (2007), p. 5.

⁸ Aronson's (2007), 195-196; see also Edmond (2011); Lynch et al. (2008).

⁹ Jasanoff (2003), p. 239.

¹⁰ Lynch et al (2008); Prainsack (2010).

¹¹ Law (2002), 39; see also Law & Singleton (2000); Majone (1989).

early 2000s, it had become increasingly difficult to keep records in the DNA database in England & Wales up to date. As a result, subject profiles that should have been removed from the database were still there, due to shortages in human resources needed to delete them. Then it happened that such a subject profile – which in line with regulatory provisions should have been removed – matched a crime scene trace. Because it was held illegally, it had to be considered inadmissible.¹² This situation – that law enforcement had to forego pursuing an investigative lead which could have led to the conviction of a perpetrator due to inadmissibility of the lead – contributed significantly to the decision of the British government to retain, in the future, *all* DNA samples and profiles obtained in accordance with the prevalent rules for taking samples in England & Wales (a decision which is currently in the process of being reversed, as a result of *the S and Marper v. United Kingdom Judgment* of the European Court of Human Rights¹³). Although an improvement of administrative procedures, or an increase in resources devoted to database maintenance, would have been an equally plausible response to this problem, the preferred solution was an expansion of the scope of DNA profiles retained in the database with the aim to, as declared by former prime-minister Tony Blair in 2000, 'hunt down criminals'.¹⁴ This is exactly congruent with the thrust of the narrative of the story of Steve Wright's conviction.

In this article, we are interested in how technological innovation, transnational regulation and institutional coordination 'make a difference', how they are productive for establishing a 'forensic culture'.¹⁵ Cole uses this term of 'forensic culture' to refer to the 'deliberate thinking about what sort of "culture" will be conducive to producing whatever it is we want from forensic science'. Our aim in this paper is to enquire what kind of 'forensic culture' is being produced by the so-called Prüm Decision and the beginnings of its implementation (the Prüm regime). The Prüm Decision is part of European Union (EU) legal framework regulating transnational exchange of bioinformation (and vehicle data) for the purpose of fighting transnational crime, illegal migration and international terrorism.¹⁶

We examine the Prüm regime as producing a forensic culture which is made up by laws, technologies, institutions, regulations, discourses, scientific statements etc. We are interested in the associations between these heterogeneous actors and the nature of their connections, and the urgent strategic need that they address. These issues are addressed in the next two sections, where we focus on two practices of forensic bioinformation exchange: fingerprints and DNA profiles. Our approach towards understanding forensic culture resonates with Foucault's concept of the *apparatus* as a set of 'strategies of relations of forces supporting, and supported by, types of knowledge'.¹⁷ This approach enables us to see various elements – material and immaterial, formal and informal, intended and unintended – as *a priori* equally important factors in the production of hegemonical values and practices (understood as normative points of reference for 'how to do

¹² Williams & Johnson (2008), p. 84-85.

¹³ The Coalition Government in the UK declared its intention to adopt similar regulations as those governing the Scottish DNA database (Home Office, 2011). At the time of writing the fate of these plans were yet unknown. Regular updates can be obtained at the GenewatchUK website: <http://www.genewatch.org/sub-563146>.

¹⁴ Quoted in Williams & Johnson (2008), p. 86.

¹⁵ Law (2002), p. 39; see Cole, this volume.

¹⁶ Prainsack & Toom (2010).

¹⁷ Foucault (1980), p. 196.

things right'). In short, we are interested in the transnational exchange of fingerprints and DNA profiles in its capacity to 'capture, orient, determine, intercept, model, control or secure the gestures, behaviours, opinions, or discourses of living beings'.¹⁸ In the final section, we argue that the Prüm regime sits uncomfortably with the typical heroic thrust of foundational myth of forensic technologies and inquire how the Prüm regime performs the EU and thus both presupposes and fosters certain kinds of subjectivities.

2. Europe's disappearing borders and emerging transnational networks

Throughout its history the EU has taken several steps towards easing movements across borders for goods, services, and persons. Of particular importance are the Schengen *acquis* in 1995 and the Treaty of Amsterdam in 1997. The former pertained to the abolition of border controls of a number of European countries, and the latter adopted the Schengen agreement into EU law¹⁹ and thus rendered it part of the so-called *acquis communautaire* (the body of laws, regulations, and rules in the EU that new accession countries automatically take over when they join the EU).

The gradual disappearance of border controls within the EU has allegedly led to increased possibilities for illegal migration, transnational crime and international terrorism. To combat these side-effects of European integration, Belgium, Germany, Spain, France, the Netherlands, Luxembourg and Austria signed the so-called Prüm Treaty, which provided that each country would be allowed to search national databases containing DNA profiles, fingerprints, and vehicle data of all other signatory states on a hit/no hit basis (see below).²⁰ These countries were the main drivers of the Prüm Treaty.

Three years later, in 2008, the Treaty was adopted into EU law (hereafter: the Prüm Decision), meaning that all EU member countries who had not yet done so were now obliged to set up databases for DNA, fingerprint, and vehicle data,²¹ and allow access to their data to relevant authorities in other EU countries.²² The cross-border exchange of data for criminal investigation in Europe, however, did not begin with the EU: Law enforcement agencies have always sought each other's help in tracking down a suspect or determining whether crime scenes in different countries

¹⁸ Agamben (2009), p. 14.

¹⁹ This means that the provisions of the Schengen agreement were no longer international law but supranational (EU) law and thus binding for all EU member countries (unless they had explicitly opted out). The list of Schengen member countries is not entirely congruent with the EU member countries: While EU members Ireland and the UK opted out of Schengen, several non-EU members, namely Iceland, Norway, and Switzerland, voluntarily opted in (and Liechtenstein is about to do so). This means that non-EU residents holding Schengen visa can also travel to these three non-EU states without passing any border controls. In addition, three micro-countries that are neither EU members nor Schengen signatories are de-facto part of the Schengen area due to their bilateral agreements with their surrounding countries: Monaco, San Marino, and Vatican City. (At the time of writing this paper, three EU countries – Bulgaria, Cyprus, and Romania – although being bound by the Schengen regime, had not yet implemented it, and Denmark had unilaterally re-introduced selective border controls; see Mahony & Pop, 2011.)

²⁰ Prüm Treaty (2005).

²¹ In the context of this article, we focus on forensic uses of bioinformation, that is, those uses of fingerprints and DNA that are situated at the intersection of science and law.

²² EU Council (2008).

could be related to one another by means of matching fingerprints or DNA profiles, or in short, forensic bioinformation.²³ Thus, what the Prüm Treaty did was to remove some of the obstacles for the circulation of forensic bioinformation that had been erected in Europe from the early 20th century.²⁴

Irrespective of whether the investigation is transnational or not, for identification and individualisation purposes, two kinds of samples are needed: samples secured at crime scenes (traces), and samples obtained from subjects (reference samples). If a reference profile (that is, a profile obtained from a person by means of a cheek swab) matches a profile from a biological trace from a crime scene, it is deemed likely that the originator of the reference sample is the originator of the crime scene trace (there is a small chance – typically one in one billion or less –, that that sample originates from a random person in the population at large).²⁵ If a latent fingerprint matches a reference fingerprint, then it will typically be concluded that the subject is the originator of that latent print. In both instances, a match is considered strong evidence that the subject was present at the scene of a crime. Hence, forensic bioinformation provides a method for establishing connections between crime scenes, *locus delicti*, victims, and suspects. In the next section, we will analyse the mechanisms that contributed to making these connections.

3. Producing the Prüm regime: fingerprints and DNA profiles

As outlined above, the Prüm regime pertains to the transnational exchange of bioinformation to facilitate the solution of criminal, terrorist or migration cases by identifying persons in the DNA or fingerprinting database of another member country, especially if no match has been obtained between crime scene traces and DNA profiles or fingerprints stored in the databases of the country where the crime was committed. In addition, the Prüm regime also enables law enforcement authorities to link unsolved crimes in their own countries to unsolved crimes in different member countries to the same (as yet unidentified) person; to expose individuals who are registered with different identities in different member countries, and possibly establish their 'true' identity; and to search requests for arrests or whereabouts.²⁶ As we consider the Prüm regime as an *apparatus*, we are interested in describing the involved 'actors' and analysing their connections.²⁷ We will see how networks for exchanging digital fingerprints and DNA profiles are 'composed of elements with very

²³ Cole (2001).

²⁴ See McCartney et al. (2011) for a discussion of critical perspectives arguing that Prüm represents a step back from the Hague Principle of Availability (2004), and see also Balzacq (2006), p.7: '...Prüm members will exchange less data than foreseen in the principle of availability. Finally, and more fundamentally, while for the principle of availability direct access to the data is the rule, the Treaty of Prüm intimates that indirect access should be the norm.' This is accurate to the extent that agencies will not have direct access to the personal data of the originator of DNA profiles that match to profiles in their country, but they are only able to access directly information about the existence or non-existence of a match (see below). The exchange of further information can then take place via bilateral channels.

²⁵ See Butler (2005); M'charek (2005). There is however another way to calculate the likelihood that a sample originates a suspect. This way of calculating is grounded in a Bayesian statistical analysis. Many voices in forensic science call for a further introduction of likelihood ratios, see Aitken (2009). For social science analyses of Bayesian reasoning in forensic practice, see Lawless & Williams (2010).

²⁶ See Schmid (2010).

²⁷ Foucault (1980); Agamben (2009).

diverse histories and logics'.²⁸ The Prüm regime can hence be understood as a mechanism for overcoming these differences. Put differently, the aforementioned strategic need of the Prüm Decision is to produce a European forensic culture, one that re-orders not only transnational cooperation in the domain of policing and safety, but one that also facilitates the production of a new kind of subjectivity. Yet to arrive at this level of analysis, we will first discuss how science, law and commerce in interaction produce the Prüm regime.

3.1 Operational features

The system operates by allowing law enforcement officers (or members of the judiciary, in countries where forensic databases are not held by the police) to search the relevant databases²⁹ of other EU countries for matches to their search request, be it an unidentified fingerprint or a DNA profile derived from a crime scene trace. If there is a match, then the requesting party can liaise with the contact point in the country for which the match is reported, and ask for nominal data – such as the name and address of the person to whom the DNA or fingerprint was established. In some cases of matches obtained between DNA profiles, the requesting party will carry out a confirmatory analysis, that is, a re-analysis of a DNA sample to decrease the chances that the automated match was a false positive, which in light of the sheer amount of profiles stored in forensic databases across Europe has become a frequent occurrence.³⁰

In case of an automated fingerprint match, the system works differently. Within the Prüm framework, fingerprint data is regarded as digitalised 'fingerprint images, images of fingerprint latents, palm prints, palm print latents and templates of such images (coded minutiae)'.³¹ After transmission, the digitalised dactyloscopic data are compared on the basis of algorithms. This process identifies a range of possible matches for a particular print. This is the case because fingerprint matching entails the comparing of full prints (print of the full finger, or fingers and palm, in good quality in the database) with partial or latent prints left at crime scenes.³² The most likely matches are subsequently interpreted by a fingerprint expert.³³ Thus the matching process entails the 'manual' comparison between the patterns of the prints.³⁴ This is a time consuming process which renders it unfeasible to follow up on every possible match between two prints within

²⁸ Rose & Valverde (1998), p. 543.

²⁹ Strictly speaking it is not a country's DNA or fingerprint database itself which is rendered searchable to representatives of authorities in other countries, but a (sometimes modified) electronic 'copy' of that database. Most countries have settings that ensure that profiles and data uploaded to their own databases are automatically also uploaded to the 'copy' database that is part of the Prüm network. The reason for the existence of a 'copy' database is that countries can apply filters that limit the scope and category of profiles and data being fed into the Prüm network; for example, a country can decide not to upload profiles obtained from a certain category of suspects or convicts. This is possible because legal provisions of the Prüm Decision do not contain any requirements as to the scope of profiles and information that need to be exchanged.

³⁰ Hicks et al. (2010); Weir (2004, 2007); Curran et al. (2007); Van der Beek (2011).

³¹ EU Council (2009).

³² Within the Prüm network, the following scenarios for comparison are possible: ten-fingers print to ten-fingers print (TP); TP to latent fingerprint (LT); palm print (PP) to latent palmprint (LP); TP to unresolved LT; LT to unresolved LT; PP to unresolved latent PP; LP to unresolved LP, see EU Council (2009); Schmid (2010).

³³ See also Lynch, in this volume.

³⁴ See Cole (2001).

databases of EU member countries highlighted by the automated process.³⁵ Whether a reported possible fingerprint match will be assigned the resources (fiscal, human, time, and other) necessary to analyse it further depends on different factors such as the quality of the print, the importance of the case in connection with which it is found, etc. The resources will always be supplied by the requesting country.

But besides the political decision to engage in closer collaboration on combating transnational crime, what were the conditions of possibility for the Prüm Decision to emerge? And has it worked smoothly so far?

3.2 Connecting dactyloscopic databases

Whenever the history of the Prüm Decision is told, the harmonisation of technological practices, protocols and standards is usually given a prominent place in the story. In the realm of fingerprinting, several systems and infrastructures for the transnational exchange of data predate the Prüm era.³⁶ In the context of the Prüm Decision it was assumed that its implementation would partly rest on the basis of these existing infrastructures.

The transmission of dactyloscopic data to other EU jurisdictions for purposes as specified in the Prüm Decision is carried out via the Automated Fingerprint Identification System (AFIS), which is based on standards published by Interpol and the US National Institute of Standards and Technology. These standards, the so-called 'Data Format for the Interchange of Fingerprint Information' (the so-called ANSI/NIST-ITL 1-2011), were 'not intended for manual entry and interpretation: rather they are intended for transmission of information between computers'.³⁷ The actual exchange of dactyloscopic data takes place via several systems which have developed over the last two decades. A key infrastructure in this context is the Eurodac system, which stores fingerprints of asylum seekers and certain kinds of illegal immigrants. It is based on EU Council Regulation 2725/2000 and is run by a central unit within the European Commission.³⁸ Eurodac consists of a central database containing fingerprints as well as particular types of personal information about the originator of the print (EU country of origin; sex; place and date of asylum application, or place and date of the apprehension of the person; reference number; date of taking of the fingerprints; date of transmission of the print to the central Eurodac unit). Another important, yet much newer system containing dactyloscopic data is the Visa Information System (VIS), whose main aim it is to aid the implementation of the common visa policy and to prevent 'visa shopping', namely the practice employed by non-EU citizens whose visa applications have been rejected by one Schengen country to apply to other Schengen countries until one will eventually admit them.³⁹

³⁵ See also McCartney et al. (2010), p. 20; Schmid (2010).

³⁶ See Van der Ploeg (2006).

³⁷ See www.nist.gov (last visited, 3 March 2011); Interpol (2004), p. 1.

³⁸ EU Council (2000).

³⁹ VIS is based on the Council Decision 2004/512/EC, EU Council (2004); relevant in this context is also Regulation [EC] 767/2008, concerning the exchange of data between member countries on short-stay visas via the VIS system; EU Parliament and Council (2008). Data recorded on VIS are: information on the applicant and

Various kinds of data collected by national policing, prosecuting and customs authorities are exchanged transnationally via the Schengen Information System (SIS), one of the pre-existing infrastructures on which the Prüm regime rests. SIS enables authorities in Schengen countries, as well as Europol and Eurojust, to obtain information pertaining to particular kinds of persons and property.⁴⁰ It provides police, customs and other law enforcement officials with information about wanted persons and goods, missing persons, the whereabouts of a person for judicial purposes and enables discrete surveillance.⁴¹

3.3 European loci: The harmonisation of technologies and practices

With regard to DNA profiling and databasing, a group of forensic scientists of the European National Forensic Science Institutes (ENFSI) working on (what was then called) 'DNA fingerprinting' initiated the European DNA Profiling Group (EDNAP) in 1988. The declared goal of the group was the harmonisation of practices and standards of DNA profiling across Europe. Very early on, EDNAP members expected 'that an integrated Europe with open borders could well see the escalation of cross-border crimes'.⁴² When EDNAP was founded, DNA technologies had been in use for forensic and policing purposes for no more than few years and suffered from important technical drawbacks. Most importantly, early DNA technologies lacked scientific and procedural standardisation and were susceptible to misinterpretation.⁴³ Interpreting a DNA profile and declaring a match was – and remains in some instances also today – a challenging expert activity. These early DNA technologies did thus not lend themselves to standardisation and rendered digital storage impossible.

In the early 1990s, geneticists discovered so-called short tandem repeats (STRs), and soon these were seen as potentially very valuable for forensic casework, mainly due to three characteristics. First, STRs rendered degraded biological samples suitable for forensic DNA typing. Second, STRs can be determined exactly and expressed numerically. Hence, the third advantage of STRs is that they can be stored digitally in DNA databases.⁴⁴ Forensic scientists within EDNAP started to standardise

on the visas requested, issued, refused, annulled, revoked, or extended; photographs; fingerprint data; links to previous visa applications and to the application files of individuals travelling together.

⁴⁰ Europol is a European agency supporting law enforcement agencies in the EU in counter-terrorism and tackling organised crime specifically, Eurojust is a judicial cooperation body within the EU. The central legal foundations of SIS are Regulation (EC) 1987/2006 (EU Parliament and Council 2006) and Council Decision 2007/533/JHA (EU Council 2007).

⁴¹ <http://www.consilium.europa.eu/showPage.aspx?id=1178&lang=en> (last visited, 3 March 2011). The successor of SIS, which is still under development and which unsurprisingly goes by the name SIS II, will allow for the collection and exchange of not only identifying nominal data (name, address, sex, aliases and nationality), but also biometric information like photographs, specific physical characteristics and fingerprints. Noteworthy in this context is also the SIRENE (Supplementary Information Request at the National Entry) network, which whose establishment is regulated in the Schengen convention. It comprises of offices in all Schengen member countries and provides supplementary information on alerts, as well as support and coordination for operational measures undertaken in response to an alert. Therefore, the tasks of SIRENE offices also include the exchange of data. Several newer software systems, such as SIRPIT (SIRene Picture Transfer) for the transmission of fingerprints, pictures, and DNA profiles, and VISION for the transmission of video or audio data, have been developed for this purpose.

⁴² EDNAP (2009).

⁴³ Lander (1989).

⁴⁴ Toom (2010), p. 181.

methods, protocols and results of STR analysis, which ultimately led to the designation of several STR loci to be used across Europe.⁴⁵ These were eventually collated as the European Standard Set (ESS) of loci endorsed by the European Council.⁴⁶ Hence, it was due to the joint effort of forensic geneticists from different countries and EU policy makers that the basic conditions of possibility for transnational exchange were established. In addition, several biotech companies, such as *Promega* and *Applied Biosystems*, developed so-called multiplex DNA typing kits, which combined a technique to multiply low quantities of DNA – usually referred to as polymerase chain reaction (PCR) – with the seven ESS STR loci and have been available since the mid 1990s. On the basis of ESS, random match probabilities (RMPs) of 1 in 50 million could be obtained (this means that the chances that the profile of a randomly drawn person from the general population would match a given DNA profile was 1 in 50 million).

But the prospect of transnational exchange on a European level, combined with expanding rules for inclusion of citizens in forensic DNA databases across Europe, was also anticipated to lead to the risk of 'false positive' (so-called adventitious) profile matches, meaning that individuals could be (wrongfully) matched to a DNA trace not originating from them. A survey published by the European Network of Forensic Science Institutes (ENFSI) in July 2011 indicated that DNA databases in Prüm countries contained more than 9.2 million reference profiles and more than one million DNA traces.⁴⁷ Comparing all these profiles to another would lead to trillions DNA comparisons.⁴⁸ Adventitious matches using a seven locus ESS have become a routine occurrence. Anticipating this, the ENDAP proposed the addition of five new STR loci to the ESS which was passed as EU Council Resolution in 2009; the underlying idea is that the higher the number of loci compared, the lower the statistical chance to obtain 'coincidental' matches⁴⁹ All biotech companies producing STR-PCR-kits have already developed a new DNA analysis kit containing the twelve ESS loci destined to enhance the discriminating power of DNA analysis.⁵⁰

The creation and standardisation of the ESS comprising twelve STR loci represents the result of collaboration and cooperation of forensic geneticists throughout Europe. It has also been driven by efforts of biotech companies who provided so-called multiplexes for DNA typing with the required ESS; and it is finally endorsed in an EU Resolution. Further standardisation and harmonisation efforts have provided, and continue to provide, the conditions of possibility for transnational exchange of DNA profiles.

⁴⁵ Gill et al. (1994, 2000).

⁴⁶ EU Council,(2001). Resolutions are not legally binding. Issued by the European Council, the Council, or the European Parliament, they convey views or intentions regarding the process of European integration, or regarding specific issues.

⁴⁷ ENFSI (2011b).

⁴⁸ $9,200,000 + 1,000,000 = 10,200,000$ profiles. When all these profiles are compared to each other, more than 52 trillion comparisons are made: $\frac{10,200,000 \times 10,199,999}{2} = 52,019,994,900,000$ (it should be noted, however, that only profiles from crime scene traces that have not matched a subject profile are included in the comparison). For further explanation, see Van der Beek, 2011.

⁴⁹ Gill et al. (2006), p. 244; EU Council (2009), p. 1-2.

⁵⁰ Budowle et al. (2011); ENFSI (2011a).

3.4 The bumpy path to Prüm

Yet at the same time the implementation of the Prüm Decision thus far has not functioned as smoothly as many had hoped, and further issues can be anticipated. As the Berlin-based political scientist Eric Töpfer points out, the fact that half of all EU countries were not Prüm-ready less than a year before the deadline in August 2011 can be attributed to a variety of reasons. For example, problems occurred in mobilising political majorities to adapt national law to the Prüm provisions; conflicts arose between stakeholders over who should be given certain administrative competences and responsibilities; and human and financial resources were scarce. Moreover, at least ten countries anticipated problems to be Prüm ready as various systems are incompatible and need to be replaced.⁵¹ In other words, connecting to the Prüm network not only is time intensive, but also expensive: a Belgian study reported that the average cost for a country to access the Prüm network approximates two million Euros.⁵² For countries that had no national DNA database in operation before 2008 – such as Italy, Greece, Malta, or Ireland –, the costs are likely to be much higher.

In order to overcome these problems, some of the drivers of the Prüm process volunteer time and effort to get slow implementers 'in line'. For example, Germany set up a Mobile Competence Team, and Austria initiated the establishment of a Prüm helpdesk at Europol.⁵³ Yet it remains to be seen if these measures are aptly suited to deal with jurisdictions where political commitment to partaking in the Prüm project is generally low.

Besides these technological, operational and political problems, the Prüm regime has been subject of criticism by a range of scholars who have raised issues like civil liberties, function creep, legitimacy, risk of installing a police state and further erosion of fragile positions of victims of human trafficking or child abuse.⁵⁴ In this context, it is of pivotal importance that the institutions of the Prüm regime can be held accountable with regard to the exchange of bioinformation. However, as noted by McCartney and colleagues, publicly accessible information on international cooperation involving DNA exchange in general is scarce.⁵⁵ We found that the same applies to the availability of information with regard to the transnational exchange of forensic bioinformation; there is no public accessible central file or webpage that informs the public at large about the progress being made

⁵¹ Töpfer (2011), p. 2.

⁵² EU Council (2010b). According to the custodian of the Dutch forensic DNA database, Kees van der Beek, the costs for adjustments to Prüm in the Netherlands were significantly lower. Van der Beek also argues that DNA analysis in general is a cost-effective way of identifying suspects: The cost of producing, uploading, and storing a DNA profile at the Dutch Forensic Institute (NFI) is approximately 100 Euro, including the costs for the administration of the database. In addition there are costs incurred for the police and the Public Prosecution Office which are also estimated to be 100 Euro per DNA-profile. In the Netherlands, about 25,000 new DNA profiles were loaded onto the Dutch DNA database in 2011. About 5,000 matches between trace profiles and subject profiles were obtained in that year, resulting in an average cost of every DNA match between a crime scene stain and a person (meaning the identification of a suspect) of about 1,000 Euro (25,000 x 200 Euro = 5 million Euro, divided by 5,000 matches = 1,000 Euro per match). Although there are no published data on the costs of identifying suspects without the help of DNA technologies, this figure, according to Van der Beek, seems relatively small (personal communication with the authors, May 2012).

⁵³ EU Council (2010a).

⁵⁴ Bunyan (2010); Kirkegaard (2008); Bellanova (2008); Guild and Geyer (2008); Prainsack and Toom (2010); McCartney et al. (2011).

⁵⁵ McCartney et al. (2010), p. 20; see also McCartney et al. (2011).

with regard to the exchange of forensic bioinformation (with the activities of the Custodian of the Dutch DNA database, and the Austrian Ministry of Interior, being notable exceptions⁵⁶).

There are, however, some data available with regard to the DNA databases in the 27 EU member states and non-EU member countries Norway and Switzerland provided by the aforementioned ENFSI.⁵⁷ The population of the 29 Prüm countries totals approximately 500 million citizens. As Cyprus, Greece, Ireland, Italy, Malta, and Portugal were, at the time when the ENFSI survey was concluded in July 2011, still in the process of setting up their national DNA databases, the total number of citizens living in countries with existing DNA databases equalled 400 million. A total of 9,268,353 subject profiles were stored in the various national DNA databases, as well as 1,018,615 profiles obtained from traces at crime scenes. On average, 2.23 per cent of the total population within Prüm countries with active forensic DNA databases had their DNA profiles included in DNA databases, although these proportions vary greatly between individual countries.⁵⁸

At the time of finishing this paper in spring 2012, about half of all EU countries were operational for DNA within the Prüm network.⁵⁹ Because the centralised storage of fingerprints for forensic and policing purposes has been practiced in most European countries long before the dawn of the DNA era, the number of fingerprints stored at national registries is significantly higher. As mentioned earlier, the Prüm Decision does not include provisions as to what profiles and fingerprints should be included in the national database (and therefore, which kinds of profiles and fingerprints will be exchanged); whether or not DNA samples should be retained, and after what amount of time samples, profiles, fingerprints, and other data should be deleted from the system. There is great variation regarding laws, regulation, and practices within Prüm countries also in this respect. The NDNAD in England & Wales, early in 2011, held more than five million DNA profiles of subjects out of a population of 53 million, the Scottish DNA database contained 236,000 profiles out of a population of 5 million, and the forensic DNA database in Poland held 27,772 out of a population of 38 million. This shows that the mere size of a national population does not 'predict' the size of forensic DNA and fingerprint databases. This is the case because of different thresholds and criteria for the inclusion of profiles and data. With regard to DNA, the variation between the proportion of the total population whose profiles are stored in forensic databases stems also from forensic DNA legislation coming into effect at different times; for example, laws on the establishment and operation of forensic DNA databases were enacted in 1994 in the Netherlands, in 1997 in Austria, and in 2008 in Portugal.⁶⁰ Yet at the same time it should be kept in mind that the existence of dedicated laws is not

⁵⁶ See <http://www.forensischinstituut.nl/dna-databank/>, which provides continuous updates. See also Schmid (2010), and Schmid and Scheithauer (2010).

⁵⁷ ENFSI (2011b).

⁵⁸ Hindmarsh & Prainsack (2010); Toom (2012 in press). For an overview of many countries' DNA databases, see the <http://dnapolicyinitiative.org> (accessed 12 May 2012) which is initiated by GeneWatch UK, Privacy International and the Council for Responsible Genetics.

⁵⁹ As of May 2012, Cyprus and Estonia are Prüm ready and it has been recommended to the European Commission to approve that these countries' DNA databases become part of the Prüm network; Portugal and the Czech Republic received approval but, at the time of finishing this article, did not start exchanging DNA data (personal communication Dr Kees van der Beek, Custodian of the Dutch DNA database, 12 May 2012). UK, Italy, Greece, and Denmark, are expected not to be able to start exchanging data within the Prüm framework in the near future.

⁶⁰ Hindmarsh and Prainsack (2010).

always a prerequisite for the existence of a DNA database, or for DNA profiling for criminal investigation in a country. In some countries, like England and Wales, the establishment of a centralised forensic DNA database preceded the issuing of dedicated legal provisions.⁶¹

Also the rules for inclusion of DNA profiles differ from one country to another.⁶² Whereas in England & Wales, a sample can be obtained from persons arrested for recordable offences (e.g. drunkenness, begging, causing nuisance etc), in France DNA will be obtained and uploaded to the database only from suspects and convicted individuals in connection with violent and property crimes. In Belgium, profiles from suspects are not included in the database, convicts' profiles are uploaded only when the conviction was for a crime against persons.⁶³ Taking saliva samples from individuals, in many jurisdictions, is considered a violation of the body. These differences in assessments of the level of invasiveness of obtaining DNA from different parts of and within the human body are related to different historical, political, and cultural legacies, and different approaches to human rights protection. Also other issues such as the growth of DNA databases is shaped by existing legal frameworks, the organisation of democratic institutions, and shared understandings of where the line should be drawn between individual freedom and public interest.

The situation is different with regard to fingerprints, because they have been integrated into criminal investigation and crime prevention for so long; laws and rules pertaining to from whom they are taken and under which circumstances, and for how long they are stored, have emerged over decades bottom-up. In addition, there is no distinction between the retention of the physical sample and the profile, as fingerprints are stored in a digitalised manner in computerised systems (see above section 2). Criteria for inclusion and retention are, in most jurisdictions, wider than for the inclusion and retention of DNA profiles. For example, although only in minority of countries, DNA profiles of arrestees are included and permanently retained in a DNA database, the same does not hold true for fingerprints. As Cole summarised,

virtually all countries adopted the practice that arrest was sufficient to warrant the permanent archiving of fingerprint patterns in law enforcement databases. This widespread, permanent retention of fingerprint data was widely considered unremarkable and to invoke little or no privacy violation, in part, I would argue, because fingerprint patterns were widely perceived as being devoid of any information that could be predictive of race, ethnicity, behaviour, or health.⁶⁴

It is noteworthy that the European Court of Human Rights (ECtHR), when it delivered its Judgment in the case of *S and Marper v. the United Kingdom* in 2008, considered the indiscriminate and indefinite retention of both DNA samples and profiles, and fingerprints, as unlawful.⁶⁵ It did not distinguish between fingerprints and DNA regarding their invasive character. Yet, as Cole pointed out, this view does not correspond with laws and practices in most countries which treat the

⁶¹ See McCartney et al. (2010), p.4; Krimsky and Simoncelli (2011).

⁶² For an overview see Asplen (2009).

⁶³ See also Dierickx (2008).

⁶⁴ Cole (in press).

⁶⁵ Prainsack (2010); Cole (in press).

computerised processing and retention of fingerprints as a much less contentious issue than the processing and retention of DNA samples and profiles.

These differences and contingencies show that the 'road to Prüm' is much bumpier than the drivers of the Prüm process had hoped. Thus, it is not a story where technology is the solution to a problem. Although the (hi)story of Prüm does contain elements to that effect, for some actors, it seems, the suggested technological solution creates many new problems.

4. Performing the Union: Making subjects

The story of Steve Wright's conviction, as we argued in the beginning of this paper, portrays technologies for obtaining and retaining forensic bioinformation as mechanisms that help to obtain truth and justice. The story is chronological, linear and coherent, and it portrays forensic bioinformation systems as automatic, unproblematic and autonomous mechanisms for solving crimes and catching culprit.⁶⁶ The moral of such stories is that the implementation of more mechanisms like national DNA databases, AFIS and the Prüm regime will lead to more crimes being solved. In this sense, these stories contribute to support for further expansions of these crime-fighting mechanisms, which in the end will be translated in the realms and domains of legislation, technology, policing and – in the context of our analysis of the Prüm regime – the EU. It is for this reason that we stress the performative power of stories.⁶⁷ Yet, we extend this notion of performance to Cole's concept of 'forensic culture' to explore how this is conducive to performing the European Union.

4.1 The Prüm regime as an apparatus

Especially against the backdrop of the vision of the EU as a political and geographical unit, the Prüm regime is more than the sum of its parts; we therefore see it as an *apparatus*.⁶⁸ We consequently drew attention to, first, the heterogeneities of the Prüm regime, its quality of binding together national laws pertaining to the regulation of crime and evidence collections, converging various digital forensic bioinformation (AFIS, DNA databases) datasets into standardised and interlinked databases, and fostering closer collaboration between various national criminal justice institutions with different regulations regarding collection and retention of forensic bioinformation. Second, the notion of apparatus encourages a closer look at the nature of the connections between these elements, which we have taken in the previous sections focusing on the historicity and materiality of actors within the Prüm network. The rhetorical-programmatic level is yet another element in the apparatus. The Prüm Decision presented itself as emerging from a strategic need for the 'stepping up of cross-border cooperation, particularly in combating terrorism, cross-border crime and illegal migration'.⁶⁹ This diagnosis of a strategic need – which is reflected in media stories and policy

⁶⁶ Toom (2011).

⁶⁷ Law (2002), p. 39; Law and Singleton (2000).

⁶⁸ Foucault (1980).

⁶⁹ EU Council (2008).

documents alike⁷⁰ – is interesting in itself, as within the history of Europe the period when travel was interrupted by a dense network of national border controls lasted less than a century. Prior to WWI, border controls were scarce, and the problem of transnational criminal migration was the subject of passionate discussions in concerning nomad populations, and the problem of transnational anarchist movements (which are comparable to the contemporary discourse of 'war on terror').⁷¹ Thus, border controls could be seen as the exception, not the rule, throughout European history.⁷² Yet even if we accept that the Prüm regime emerged out of, and responded to, a newly arising strategic need, it should be noted that it creates new strategic needs at the same time: such as the need for increasing harmonisation of political values, technologies, and practices (thus the further homogenisation of the very elements that partly provided the conditions of possibility for Prüm). These newly created needs resonate with the prevention and security discourses of the post-9/11 world. If strategic needs and discourses of security are performative as well, then the final question to be answered in this contribution is what the strategies and discourses of the Prüm regime perform, and what subjects it presupposes and helps produce.⁷³

4.2 Embodying the European dream (or: gluing Europe together)

The perceived need to respond to threats emerging from the gradual disappearance of national border controls in Europe, in connection with the prevalent discourse of security and risk prevention, fostered initiatives for a closer transnational cooperation in combating terrorism, cross-border crime, and illegal immigration. The Prüm regime was conceived to provide mechanisms and infrastructures to achieve this goal. One of the designated functions of the Prüm regime is thus to connect a wide variety of heterogeneous actors, jurisdictions, objects and values. It does so with the help of several 'glues': First, there is the crime glue, which takes advantage of infrastructures for the exchange of data across borders that predated Prüm. As we have shown, however, these infrastructures are only partly compatible, and newcomers – especially recent EU accession countries who did not have centralised forensic databases for DNA or other data – regularly need to overcome difficult political, technological, financial or operational obstacles to fit in.⁷⁴ This problem is addressed by providing technological and know-how support, and it comes along with a second sort of glue, one that is destined to appease political resistance as well: It is the mobilisation of the European dream, the dream of overcoming cultural, political, and socio-economic disparities to achieve a European area where goods, services, and persons travel freely and securely. The main ingredients of this 'European glue' are articulated in terms of communal benefits: The freedom of movement is not an end in itself, but it is destined to ensure collective wellbeing, prosperity and solidarity.

We started this contribution with a story, and we would like to end it with one. Here is one of the stories of the Prüm regime, as told in the annual report of the Dutch DNA database:

⁷⁰ See eg European Commission (n.d.).

⁷¹ See eg Bussell (1919).

⁷² We are very grateful to Daniel Meßner for helpful discussions on these historical parallels.

⁷³ Agamben (2009), p 11.

⁷⁴ See also McCartney et al. (2011).

In December 1994, the remains of a 72 year old woman were found. She was killed in her house in Heerlen. The case could not be solved and thus became a so-called 'cold case'. A crime-related biological trace originating from the unknown suspect was uploaded to the Dutch DNA database [after its establishment in 1997]. On July 25 2008, the Dutch and German DNA databases were connected for the first time under the remit of the Prüm Decision. The biological trace from the 1994 cold case was then compared with the German DNA database. Subsequently, a match was found between this trace and a 51 year old male from Kaiserslautern [in Germany]. ... The suspect was arrested on July 29, 2009, [in connection with] the murder in 1994, and was convicted for that crime in February 2010.⁷⁵

This story brings together the full array of heterogeneous actors we encountered in this contribution: technological infrastructures, operational procedures, criminal justice systems and political commitment. It does this not only by constructing a chronological, linear and coherent narrative, but also by suggesting that it was the opening of the borders in criminal identification which rendered the identification and conviction of the perpetrator possible. European integration, as articulated by this second story, provided the basis for the solution of this crime (this notion is enhanced by the explicit reference to the Prüm Decision). The Prüm Decision as articulated in the annual report of the Dutch database enabled criminal justice authorities to do something that all Europeans should do, namely work together. According to this narrative, those who are sceptical of the implementation of the Prüm Decision, or aspects of its technological, legal and/or practical elements, are not primarily individuals exercising their rights to critique what they consider the undue expansion of policing powers and instalment of a surveillance state, but they are turned into opponents of a safe and secure 'Europe'. Thus, those opposing Prüm are discursively moved outside of a claimed European consensus that we need more cross-border collaboration in crime prevention and criminal investigation.

As alternative to the celebratory and linear history of Prüm as it is commonly told we have tried to show that different stories of Prüm are possible. Such an alternative stories echo Jasanoff's notion of a 'technology of humility'.⁷⁶ But they are more attentive to less prominently visible details, and to normativities present in discourses and materialities. Moreover, instead of telling a story of either success and empowerment or failure and disempowerment, in our reading, the (hi)story of Prüm contains both: The Prüm regime helps to empower certain actors (forensic scientists, National Contact Points), technologies (DNA analysis), and goals (render cross-border crime more risky), and it potentially disempowers others (crime scene investigators; certain groups of innocent people who may attract the attention of authorities due to false positive matches; the goal of not devolving more national competences to the EU level). These empowering and disempowering effects are almost always intertwined.⁷⁷

Such alternative stories – while being messier, less elegant, and often multi-layered –, can enrich our knowledge about technological cooperation in general and the performing capacity of a European 'forensic culture' in particular.⁷⁸ Rather than marginalising them, they highlight relevant unintended

⁷⁵ NFI (2010), p. 25, authors' translation.

⁷⁶ Jasanoff (2003), p. 240.

⁷⁷ We used the term 'situated dis/empowerment' to highlight this effect; see Prainsack and Toom (2010).

⁷⁸ Cole, this volume.

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consequences (failure of some countries to meet the implementation deadline due to political resistance and lack of resources; high probability of false positive matches) and benefits (due to a decrease in personal data travelling across borders before a DNA or fingerprint match is established, Prüm is likely to lead to better data protection in this regard) and thus offer opportunities for collective learning, also in the context of European integration.

Acknowledgements: We are grateful to Kees van der Beek, Ian Burney, Daniel Meßner, Reinhard Schmid, Eric Töpfer and Elazar Zadok for very helpful comments on the manuscript.

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