DNA Transnational Data Journeys and the Construction of Categories of Suspicion

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ABSTRACT

Background *Systems for large-scale data exchanges are playing a pivotal role in the governance, surveillance, and social control of criminality in different parts of the world.*

Analysis *This article explores the case study of the Prüm system, which is a technological system for the exchange of DNA data among several European Union (EU) countries. Making use of the concept of data journeys, it addresses how the transnational exchange of DNA data in the EU implicates the construction of categories of suspicion.*

Conclusion and implications *The article shows how supranational- and national-level notions and attitudes over the ownership of data shape data journeys, and it discusses the societal implications of datafication and emerging data justice issues.*

Keywords *Prüm system; Data journeys; DNA data; Categories of suspicion*

RÉSUMÉ

Contexte *Les systèmes d'échange de données à grande échelle jouent un rôle central dans la gouvernance, la surveillance et le contrôle social de la criminalité dans différentes régions du monde.*

Analyse *Dans cet article, nous prenons l'étude de cas du système Prüm, qui est un système technologique permettant l'échange de données d'ADN entre plusieurs pays de l'Union européenne (UE). En utilisant le concept de trajets de données, nous examinons comment l'échange transnational de données d'ADN dans l'UE implique la construction de catégories de suspicion.*

Conclusion et implications *Nous montrons comment les trajets de données sont façonnés par des notions et attitudes supranationales et nationales sur la propriété des données et discutons des implications sociétales de la communication des données et des nouveaux problèmes émergents de justice des données.*

Mots clés *Système Prüm; Trajets de données; Données d'ADN; Catégories de suspicion.*

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Introduction

On May 21, 2015, an elderly couple were found raped and killed in their home in the city of Vienna, Austria. Although the Austrian police found the alleged killer's DNA, no DNA matches[1] were identified in the national DNA database. However, under a transnational agreement on DNA data exchange among European Union countries, the Dutch DNA database offered a DNA match for a 29-year-old Polish man. The Austrian authorities began looking for him. The suspect was arrested at a railway station in Düsseldorf, Germany, on June 8, 2015. There was suspicion that this man might have committed violent crimes in other European countries. Therefore, the authorities of other EU countries—namely, the U.K., Sweden, and Germany—started looking for matches in the Polish DNA database. The suspect's DNA profile matched several unidentified crime scene stains (Machado & Granja, 2018).

The matches in this criminal case were produced in the context of the Prüm system, a transnational system of surveillance and identification designed to govern some of the most contentious and high-profile issues in current European politics, such as cross-border crime and terrorism. This network was created to exchange biometric data (DNA profiles, fingerprints, as well as motor vehicle information) stored in the state databases of different European Union (EU) member countries (European Union Council, 2008a, 2008b). This article focuses solely on exploring the data journeys of DNA data in the EU and the implications for the construction of categories of suspicion.

The Viennese criminal case encompasses several interesting facets to explain why this case study is important in the context of data power. First, the hero of the story was a DNA match, thus relating the criminal case to a data narrative widely circulated that portrays DNA technologies as holding the unrivalled power to identify perpetrators of crimes (Lynch, Cole, McNally, & Jordan, 2008). Framed more broadly, this data narrative thus conveys that complex societal problems, such as serious crimes committed by transnational criminals, might be worked out by expanding the scope of DNA profiling and databasing. Transnational DNA data exchange enabled by the Prüm system is thus presented as a powerful, objective, and neutral method for solving serious crimes (Prainsack & Toom, 2010, 2013).

Second, the European scenario is particularly interesting due to the mandatory nature of the Prüm system. Coming into force in 2008 (European Union Council, 2008a, 2008b), the Prüm Decisions established the *mandatory* exchange by all EU member states of DNA profiles across the EU, regardless of each country's particular socio-economic conditions and technical traditions regarding the management of biometric data. Currently, 25 EU member states have operationalized the exchange of DNA data within the Prüm system (European Union Council, 2019).[2] Nevertheless, the level of implementation of Prüm varies widely, for example while the Netherlands and Austria are connected to 23 countries, Bulgaria is exchanging DNA data with nine countries and the United Kingdom with one country (European Union Council, 2019).

The third element outlined by the criminal case regards the villain of the story: an Eastern European man moving around Europe and potentially committing crimes

in different countries. This case is associated with the narrative of the increasing transnational movement of people and growing cross-border crime (Broeders, 2007; Guild & Geyer, 2008; Hufnagel & McCartney, 2017; Lyon, 2004), and more importantly, relates this case to complex historical and geopolitical intersections between power and agency, which frame relations between Western and Eastern Europe (Wolff, 1994).

The Prüm system and data journeys

There are a number of ethical implications related to the transnational exchange of forensic DNA data under the Prüm regime, with most of the academic debate focusing on data protection, the excessive surveillance of citizens, and potential threats to civil rights, such as privacy, liberty, and the presumption of innocence (McCartney, 2010; McCartney, Wilson, & Williams, 2011; Nuffield Council on Bioethics, 2007). This article chooses a different approach, instead building on insight from science and technology studies (STS) to examine the transnational exchange of DNA data. In the last two decades, STS have significantly contributed to critical thinking about the creation and expansion of the forensic DNA databases used to support the activities of criminal prosecution and the criminal justice system (Cole, 2001; Jasanoff, 1998, 2006; Lawless, 2012; Lawless & Williams, 2010; Lynch, 2003; Williams & Johnson, 2005).

Inspired by such contributions, the concept of data journeys (Bates, Lin, & Goodale, 2016; Leonelli, 2016) is used here to address the "travels" of DNA data in the EU and the implications for the construction of categories of suspicion. According to Sabina Leonelli (2016), data journeys constitute "the material, social and institutional circumstances by which data are packaged and transported across research situations, so as to function as evidence for a variety of knowledge claims" (p. 5). Applied to the Prüm system, the concept of data journeys allows for empirically grasping the decisions involved in the practices of data production, processing, management, and use, while simultaneously outlining how data objects move through space and time connecting different sites of practice across vast data infrastructures (Bates, Lin, & Goodale, 2016). In addition, to conceptualize DNA as something that travels helps draw attention to the mutability of data, illuminating how they are adapted for different purposes by diverse practitioners (Bates et al., 2016; Leonelli, 2016). By interrogating the processes of data management as performative, data journeys thus foster an understanding of the practices through which data can be differently apprehended, acquired, represented, transformed, and integrated.

In the specific case of the Prüm system, such an approach illuminates how forms of subjectivation—in this case, criminalization—do not only depend on the actual information provided by the data but also on the epistemic positioning of practitioners and on the larger social and political setting within which the data travel. In other words, the journeys of DNA data are entangled with the production of particular categories of suspicion, such as certain populations from particular Eastern European countries and other non-EU migrants. The term categories of suspicion is used to outline how "suspects are constituted through social interaction with criminal justice system agents, agencies, and processes" in ways that deploy the "demographic, socioeconomic, and cultural stigma that criminal justice agents associate with suspect status" (Cole & Lynch, 2006, p. 40).

Case study methodology

This article is based on a European Research Council (ERC)-funded project[3] that aims to explore the societal, cultural, ethical, regulatory, and political impacts of the use of DNA technologies in the EU. This research utilizes a multi-methodological approach, including the collection and analysis of legislation and documentation, as well as interviews with forensic practitioners directly involved with the Prüm system. This article draws on insight from 32 semi-structured recorded and transcribed interviews conducted in 20 European countries with 40 professionals operating the Prüm system, also known as Prüm National Contact Points (NCPs).

Participants were first identified from the public contact list provided in the Working Party on Information Exchange and Data Protection documents (European Union Council, 2015), and then by contacting privileged informants in the area. Participants were recruited by email, letter, and telephone calls. Interviews included the collection of the following information: views on and experience with the implementation of Prüm at state and European levels, opinions about the purpose and contribution of Prüm, ethical issues raised by the transnational exchange of DNA data, expectations about DNA technology development and innovation, and perceptions related to communication with the public. To protect the identity of the participants, a letter was attributed to each country in which the participant is based.

Extracts from interviews conducted with NCPs referring to the particularities of DNA data exchange and forms of constructing suspicion were coded and subjected to multiple readings to develop an in-depth understanding. To prevent narrow framings of categories of suspicion, the notion was made researchable by considering not only ideas about suspect or criminal groups but also what the professionals directly cited as being important considerations when making decisions about data processing, management, and subsequent use. These quotations were then systematically compared, contrasted, synthesized, and coded by theme and thematic category following the principles of grounded theory (Charmaz, 2006), then interpreted using a qualitative content analysis approach (Mayring 2004).

Prüm step one and two: A two-fold journey

Europe is gradually transforming into a digital and selective border machine (Broeders, 2007; Van der Ploeg, 1999). The narratives of the experts who operate the Prüm system highlight an ambivalence between the celebration of a European society that facilitates movement and promotes the idea of "no borders" on the one hand, and, on the other, increasingly attempts to restrict and monitor the mobility of people deemed problematic:

> We are just getting globalised. … In terms of fighting crime, the freer the movement of people the harder things can get. [Country K]

In this sense, the Prüm system, by allowing the automatic exchange of DNA profiles across countries, is seen by interviewees as way to "control" potentially dangerous people on the move:

> [Prüm] gives us the opportunity to catch that guy who can travel freely in all Europe. [Country G]

The journey of DNA data in the Prüm system is based on a two-step approach. The first step consists of an automatic exchange of DNA profiles. Specifically, when a search is made in a national database for a DNA sample retrieved from a crime scene and no match is found, the Prüm system permits the data to be transmitted and searched in other EU member state national databases. A notification is then sent to the original member state notifying it of a hit (a matching profile) or no hit. According to interviewees, the journey of data in this first step of the Prüm system is characterized by "neutrality" due to the use of impersonal identification numbers (Porter, 1995), that is, numerical references to profiles. As the following quote illustrates, interviewees believe that the apparent "neutrality" of codes and numbers protects the identity of the person to whom the profile belongs, thus constructing what Helena Machado and Rafaela Granja (2018) described as a black box for privacy issues within Prüm:

> In the first step [of the Prüm system] you only compare DNA profiles, and DNA profiles are only twenty or thirty numbers. There is nothing you can tell about the owner of the DNA profile from the DNA profile itself. [Country A]

When DNA profiles are automatically exchanged between countries, it constitutes an operation that resonates with what Kevin Haggerty and Richard Ericson (2000) describe as the "surveillant assemblage," which "operates by abstracting human bodies from their natural and territorial setting and separating them into a series of discrete flows" (p. 606). However, "hidden" in the seeming neutrality of codes, numbers, and standards, DNA also plays a constitutive role in the construction of categories of suspicion.

The second step within the Prüm system occurs if a hit is identified. At this time further requests for further information are processed through the existing police or judicial channels (McCartney, 2014). Criminality is personalized—and territorialized—in step 2, inasmuch as the type of crime, the name, the nationality, and other personal data are disclosed. Such information leads to subsequent decisions by NCPs on what matches "are worth" following, i.e., which data should continue their journey and which journeys should be interrupted. There are several factors that might intervene in such decisions, such as the time passed since the crime, the severity of the crime, and the overall value for constructing valuable intelligence (Innes, Fielding, & Cope, 2005) for criminal investigation:

> The main parameter is that if the case is not ongoing, and if the case is not of a certain level, nobody will follow-up. Nobody. … The only aspect is to make a balance between the additional value of going further or to stop here. [Country H]

Data is then reassembled into distinct "'data doubles' which can be scrutinized and targeted for intervention" (Haggerty & Ericson, 2000, p. 606).

The construction of categories of suspicion

Making decisions about data journeys also operate along specific notions of categories of suspicion. This does not only mean the re-performance of the border of a nation-state but also the performance of the subject identified by the DNA profile. In such an assessment, interviewees describe how Europe's risky *others* come in many versions.

One of the most prominent categories of suspicion in the Prüm data journeys is the *foreigner* from Eastern Europe countries. The following quote is from a Prüm NCP-based country in central Europe:

> Since the early 2000s, with criminals from East European countries and so on, there are a lot of networks. … So, people are crossing, and with Schengen that's quite easy, you know. … People are coming, so we [know] a list of Lithuanian networks, we know Romanian networks, Bulgarian networks, Polish networks, and so on. [Country H]

The hopes and concerns that accompany the journeys of DNA data across different sites of practice and distinct vast data infrastructures generate particular data-based suspect subjectivities. The choice of which data should be prioritized and looked at operates along specific notions of categories of suspicion. Data that are collected in one place and from a particular set of persons contribute to assessing and judging different persons in different places. This has one important consequence, as data journeys do not always entail the reassembling of personal data that then imposes suspicion on a person. Often, there is a pattern that leads to data-based judgments. Rather than just presenting a request-check for information and responding to a request, data journeys are differently apprehended and integrated into the Prüm system. As described by the following interviewee, some categories of suspicion imply immediate actions:

> We know by investigation experience that such drug criminals, which are very often Nigerians, they also move very strongly. They are very often in the Netherlands, in France, in Spain. So, we say: Such types of crime we should be checking immediately against those, those, and those countries. [Country M]

The narratives of participants reveal how the creation and consolidation of categories of suspicion do not only depend on the actual information provided by the data, but also on the larger social and political setting within which the data travel.

The mutability of data and its journeys

Besides making decisions about which matches to follow-up, interviewees also mention limitations imposed on data journeys, especially with regard to the type and amount of information that can be accessed at a transnational level. For example, once country A makes a request to obtain more information about a DNA hit—a person linked to a particular DNA profile—country B (which received the request) might decide to share or not to share more information. As one interviewee states: "every country is free to share with the rest of the EU whatever they want on a national level" [Country C].

Many interviewees occupy different positions. Representatives of countries in which the custody of the DNA database is in the hands of the police tend to believe that all information available should be provided in order to collaborate successfully and achieve the same goal. In countries where the custody of forensic DNA databases is in the hands of the judiciary, the information provided is generally restricted to a minimum. The following quotations are illustrative of such different positionings:

> As soon as it is available … we send back the information … we can all to-
> gether disrupt all the [crime] networks. [Country H]

> This data is only for our use, no one else has access to this. … If you are in-
> forming about the data a second country, when we get a hit, we have a
> strict list of data that we can provide them. [Country G]

Such different attitudes toward the availability of data outline how the mutability of
data—how they are adapted for different purposes and acted on by diverse practition-
ers—plays a particularly significant role in the Prüm system. The EU rests on the
utopian idea that borders do not exist, which is (at least partially) characterized by
the increased strength of networks of cooperation among different countries. Borders
in the EU are, however, very real institutions, with the associated border technologies.
Data journeys in such a context, thus, simultaneously perform openness and enclo-
sure—a constant dialectical interplay.

Conclusion

The results of this case study about the data journeys of DNA data across the EU sug-
gests that not only do data journeys perform a different version of Europe, they also
perform several forms of categories of suspicion. This forms two types of interrelated
narratives. First, by enrolling and translating heterogeneous elements into sets of data
that determine, enact, and perform categories of suspicion, and second, by managing
controversies related to data journeys between different jurisdictions that (re)create
borders within EU.

This Prüm case study—located in the wider account of the changing dynamics of
technology, geopolitics, and criminalization—thus allows for the empirical exploration
of issues of power and social justice in an age of datafication. Taking into consideration
the increasing shifts in several domains of social life to collect and process massive
amounts of data, this case study articulates how, within contemporary projects that
aim to know and govern mobile bodies (Aas, 2011; Broeders, 2007), criminalization
might take place by managing several decisions related to the production, travels, and
use of data. Demonstrating how supranational- and state-level notions about cross-
border crime and suspect social groups and individuals, as well as attitudes over the
national ownership of data, are enacted, this case study begins to unravel some of the
societal implications of datafication. While initial concerns with the Prüm system fo-
cused on the issues of surveillance and privacy, this case study shows how an increased
emphasis should be placed on the fact that data journeys are not uniform and do not
implicate everyone in the same way. Data journeys within the Prüm system take part
in a system of social sorting, thus (re)constructing categories of suspicion in ways that
highlight geopolitical tensions. In such a context, questions of data justice require de-
tailed study to discover how data power works in different systems.

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Notes

1. A "match" or a "hit" might be used equally to describe correspondence between DNA profiles discovered by a database search at a single instant in time, independent of being a stain or stain-to-person match (European Network of Forensic Science Institutes, 2016).

2. The countries that are not in the Prüm system are Greece, Ireland, and Italy.

3. Project EXCHANGE "Forensic Geneticists and the Transnational Exchange of DNA Data in the EU: Engaging Science with Social Control, Citizenship and Democracy" (ERC Grant agreement No. 648608), led by Helena Machado.

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