

# Racism and Racial Surveillance

## Modernity Matters

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## Chapter 9

### Politics of (non)belonging

Enacting imaginaries of affected  
publics through forensic genetic  
technologies

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#### Introduction

The special circumstances of the violent death of the Freiburg student and the origin of the underage suspect from the Middle East gave rise to demands by the police and politicians to use expanded possibilities of forensic DNA analysis. Such analyses can help to make assessments about the appearance and origin of an unknown possible perpetrator, which can be used by the police for their criminal investigation work.

(Opinion of the German Trace Commission on the possibilities and limits of the DNA-based inference of external body features, the biogeographical origin and the age of unknown persons based on crime scene traces in the context of police investigations, from 14 December 2016, GEDNAP 2016)

The Freiburg rape and murder – which the quotation above is referring to – took place in the autumn of 2016 and sparked a public debate in Germany about introducing and regulating forensic DNA phenotyping (FDP) technologies. FDP assembles a set of technologies geared towards inferring externally visible characteristics from DNA traces found at crime scenes, which then provide investigative leads in the criminal investigation based on the inference of human externally visible traits such as eye, hair and skin colour, as well as biological age and, potentially, biogeographic ancestry. Right after the murder of the student Maria L., FDP was presented by policymakers as a solution to the type of case that involved an asylum seeker from Afghanistan, and to make criminal investigation processes overall more efficient. Critical commentators perceived FDP technologies as a highly risky technology, with the potential to threaten privacy rights and to discriminate against minority groups.

In December 2019, some of those FDP technologies were legalised for criminal investigation on the federal level in Germany: namely the inference of external visible characteristics such as eye, hair and skin colour, as well as

the biological age of an unknown criminal suspect; the inference of biogeographic ancestry was not included. In 2018, Bavaria, one of the 16 states of Germany, additionally already had included the inference of biogeographic ancestry in the set of techniques available for police work. They legalised its use in specific situations of “imminent danger” (which can be regulated on the state level in parallel to the federal level). The public controversy that accompanied the regulation process of the FDP innovation took place in times of increasing xenophobia, racism and right-wing extremism. From its very outset, the proposal for regulating FDP technologies was entangled with expectations, estimations and conciliations about the potentially harmful impact of FDP technologies on marginalised communities. The debate mobilised resentment against migrant minorities that was reinforced in the context of the immigration situation following the “summer of migration” in 2015 and within the wider societal climate after the reported sexual assaults events in Cologne in 2016. The climate had changed from the much anticipated German “Willkommenskultur” (welcoming culture) and turned into discussions about the dangers of “political correctness” and “too liberal” immigration policies (Boulila and Carri 2017). Since then “unacknowledged racisms” accompanied public and policy debates involving migrant issues (*ibid*).

Police spokespersons, single policymakers and forensic geneticists joined together, calling for using available but not yet legalised technologies. Civil society and academics from diverse disciplines began warning of the potential harm of these technologies, emphasising, in particular, the potential for discrimination, stigmatisation and racism caused by the exposure of FDP technologies to minority groups (Lipphardt 2018). For long, public perceptions regarding genetics in Germany were still influenced by memories of Germany’s Nazi past and of how science was used in racialising genetics and the eugenics movement (Kattmann 2017). Germany’s past has contributed to a strong sense of privacy regarding genetics and a general suspicion of state actors accessing sensitive genetic information and was also dominant when regulators decided in favour of establishing the DNA database in 1998 (Deutscher Bundestag 1995; Lee 2016, 216).

Over time, diverse stakeholders ranging from forensic geneticists to civil society groups called for varied safeguards – proposing limiting its use to severe crimes or training criminal justice actors to prevent racial discrimination – to achieve acceptable and accountable technologies. Those calls have not been taken into account by the legislator. The German regulatory process of FDP technologies sparked my interest as it looks to be a case of smoothly introducing controversial technologies in a political-cultural context that is overall sensitised for risks of racial discrimination, in particular entangled with genetics. Furthermore, viewpoints deriving from justified concerns about risks and the potential harm of FDP technologies seem to be easily disregarded and ruled out.

The chapter explores how knowledge politics shape ways of public legitimate knowledge-making about FDP technologies, demonstrating FDP's techno-scientific utility to specific publics while segregating them from other affected publics. The term "affected publics" builds on the pragmatist philosopher John Dewey's famously proposed definition: "The public consists of all those who are affected by the indirect consequences of human action, to such an extent that it is deemed necessary to have those consequences systematically cared for" (Dewey 1927, 15). Dewey's take on the affected public attracted significant interest from scholars in Science and Technology Studies in exploring technologies' consequences on publics, and, in particular, the processes of problematisation and their material entanglements that bring about publics (Marres and Lezaun 2011; Marres 2012; Dijstelbloem and Broeders 2015). I argue that knowledge politics prioritising some forms of knowing FDP over others also prioritise knowledge about consequences on publics. I take inspiration from Sheila Jasanoff's recent work on the politics of public knowing and the diverse regimes of sight (Jasanoff 2017). Jasanoff identified three different modes of authorised seeing that render data both visible and actionable, while, at the same time, constructing "invisibilities" and different viewpoints of public knowing. She called them the views from nowhere, everywhere and somewhere, which come with their mechanisms of legitimation, including discourses of valid seeing and practices of consensus building. I ask here, rephrasing Jasanoff (2017): What are different modes of *knowing* the consequences of FDP technologies for *imaginaries of the affected publics*? Whose knowing and viewpoint count, under which rules of the game and what gets relegated to the margins of invisibility and inaction?

The analytical perspective inspired by Jasanoff's regimes of sight help us understand the knowledge politics entangled with FDP technologies that favour some forms of authorised knowing and marginalise other forms, including forms of knowing about assumed risks and potential harm for specifically affected publics. I explore different modes of knowing about FDP, and how they are entangled with value commitments and implications for imagining affected publics. However, as Jasanoff's work does not consider how knowing may be entangled with strategic ignorance of other modes of knowing, I pay particular attention to how modes of knowing different from authorised forms become relegated (McGoey 2012; Aradau 2017). Furthermore, I delve into specific the politics of (non)belonging, which establish and manifest *visibilities* and *actionability* about some suspicious criminalised phenotypic and genetic minorities while downgrading or ruling out certain modes of knowing and concerns about the risk of racialised discrimination entangled with FDP technologies.

I analyse policy documents from regulators as well as regulatory consultation opinions and interviews with stakeholders engaged with these technologies. The chapter then reconstructs the diverse viewpoints deriving

from different modes of public knowing, which accompanied the regulation process of these technologies. Multiple affected publics are imagined when FDP technologies become configured as technologies of othering, marking differences between “us” and “them,” sorting out specific “risky” people with different appearances. The analysis reveals particular politics of belonging by imagining specific publics as benefitting from the technologies in the name of security and other publics as potentially being harmed by generalised suspicion.

The chapter is broken down into four sections. It begins by portraying the German process of public discourse on the regulation of FDP as a case of pondering and negotiating the technology’s proportionality, appropriateness and public legitimacy to protect society from crime and at the same time to prevent the harmful application of the technologies on specific population groups. Subsequently, the chapter assembles building blocks for an analytical heuristic on enacting imaginaries of affected publics as the politics of (non)belonging. Therefore, it critically discusses and advances Jasanoff’s recent work on the struggles between different “regimes of sight” and the politics of public knowing. Additionally, it mobilises conceptual insights from Nira Yuval-Davis’ politics of non-belonging (Yuval-Davis 2006). The third section focuses on methodology, followed by the empirical analysis of different modes of public knowing of FDP revealing different viewpoints and modes of seeing the consequences of FDP together with imaginaries of affected publics. Additionally, the analysis identifies forms of the politics of (non)belonging in the context of FDP technologies that make specific imaginaries of affected publics visible and enact and manifest these imaginaries in public debate. Finally, I reflect on the entanglement of the politics of (non)belonging with modes of knowing and seeing FDP’s consequences for affected publics.

### **Modes of knowing technology’s consequences and enacting imaginaries of affected publics**

Dewey’s take on the affected public attracted significant interest from scholars in STS in exploring technologies’ consequences on publics (Dijstelbloem and Broeders 2015), the processes of problematisation and their material entanglements, which bring about publics (Marres and Lezaun 2011; Marres 2012), as well as how affected publics are the contingent outcome of (non)participation itself (Chilvers and Kearnes 2020). This chapter develops further the notion of *imaginaries of affected publics* as enacted in views and discourses about forensic genetics innovations and which estimate legitimate technologies’ consequences of potential harm and benefits for specific publics.

The interest in *imaginaries* of affected publics takes inspiration from Ezrahi’s thinking on imaginaries of democracies (Ezrahi 2012),<sup>1</sup> in the sense that imaginaries are understood as the latent collective imaginations that

generate ever-changing concepts of legitimate power and authority, which compete for enactment and institutionalisation in the political arena and beyond. This notion of imaginaries has received major attention via Jasanoﬀ and Kim's (2015) work on socio-technical imaginaries that decouple imaginaries of democracy in Ezrahi's interpretation from its political philosophical context and broaden it towards contexts of science and technology in democratic societies.

In the case of FDP technologies in Germany, the people affected by their materialised *de facto* consequences are yet to be identified once the technologies have been implemented over some time. But already, in the process of emerging, the technology becomes the subject of negotiation in terms of its harm and benefits throughout the regulation process, the technology's potential to affect specific publics in particular ways was assumed as being most harmful in the form of discriminating against minority groups (Weitz and Buchanan 2017; Lipphardt 2018; Wienroth 2020). Yet, some forensic geneticists, policymakers and police forces countered that the technology is not harmful and stigmatising *per se* and that its cautious use and implementation needs to be ensured and measured to prevent discrimination.

Ruha Benjamin (2019), reflecting on the US context, has explored a range of discriminatory designs of new technologies that encode but replicate existing inequities of racialised legacies. She identifies different forms of discriminatory designs, including explicitly amplifying racial hierarchies in technology design, reproducing existing inequities by ignoring social divisions, and aggravating racial bias in an effort to technologically fix it. It is beyond the scope of this chapter to review comprehensively German racialised legacies. But most obviously from its history of race science and eugenics, particularly in the 20th century, to the criminalisation of migrants after the summer of migration 2015 in the 21st century, various discriminatory systems in different eras have produced and reproduced social divisions and inequities, producing wider ecologies for the politics of belonging and non-belonging (Yuval-Davis 2006).

Exploring the different assumptions about potential harm and benefits for specific publics in justifying the support for or rejection of FDP technologies, reveals – or so goes my hypotheses – latent and implicit imaginaries of segregated affected publics, partially replicating inequities of other eras, most often of binary nature (minority versus majority, suspicious versus non-suspicious, rare appearance characteristics/biogeographic origin versus frequent appearance characteristics/biogeographic origin), typifying one public against the background of another, etc. In that sense, these imaginaries assemble – as I further develop my argument – diverse interdependent signifiers of belonging and non-belonging that are enacted discursively and may stick to the early technology, thereby contributing once more to becoming part of wider cultural repertoires as ecologies for the politics of belonging and non-belonging.

Jasanoff's early work on using political cultures of public knowing to study what she calls civic epistemologies (Jasanoff 2005) has helped apply country- and culture-sensitive approaches to understanding the political-cultural repertoires of legitimacy creating public knowledge around forensic DNA databasing and forensic genetic technology innovations (Amelung et al. 2017, 2020).

Jasanoff explored the heuristic of civic epistemologies to refer to ways and practices of public knowledge that are culturally specific, historically and politically grounded, and which are used as a basis for making collective choices (2005). In an earlier contribution (Amelung et al. 2017), we adjust the heuristic to explore the current status of forensic genetics surveillance societies and demonstrate its utility in analysing the specific situated public ethical and democratic perceptions of risk and benefits. Thereby, we suggest expanding the focus and integrating the ethical debate in an STS-inspired view on the democratic challenges of forensic genetic surveillance. Such an angle opens the perspective to reflecting on the knowledge flows that foster forensic genetic innovations and shape their public acceptance, and expand on questions such as: What are legitimate forms of public knowledge production in forensic genetics? How is the epistemic authority of knowledge claims achieved in collectives and how does it influence the shape of forensic technologies in an accountable manner? And, how can such DNA technologies and forensic DNA databases be regulated in democratically responsible ways?

Jasanoff (2006) argues that science and technology in liberal democracies are meant to serve the public and are enacted in ways that demonstrate their credibility and utility to their spectators, the citizens (with particular ways of public knowledge-making, forms to gain public accountability and demonstration practices). Yet, the relationships between science/technology and society are ambiguous. In particular, biological sciences, which are foundational for biotechnology as well as for forensic genetics, are used as instruments of governance, helping sort and classify people according to standardised physical, mental, or social characteristics. Thus, science has specific practices that can be used to construct objectivity, expertise and the visibility of expert bodies. The implicit dominant notion is that representative governments can anticipate their citizens' needs and facilitate science and technology for the benefit of their interests.

The widely acknowledged strength of Jasanoff's concept of civic epistemologies is that it may help to understand very general patterns of political cultures and their specific characteristics derived from stylised, culturally legitimated approaches to producing public facts and public reason. However, the concept leaves us with two shortcomings. First, we remain poorly equipped to understand the situated heterogeneous views, perspectives and public knowings of sub-collectives within the wider political cultures of public knowing. The interest in patterns of large collectives tends to



foreground commonalities of such collectives and shared public knowing that features the authoritative and dominating epistemic claims and forms of public reason. To be attentive to the multiple claims and forms of public knowledge-making entangled with technological change – including those that do not gain epistemic authority, and also do not turn into widely shared knowledge claims – a consideration of Jasanoff and Kim’s work on socio-technical imaginaries (2015) and regimes of sight (Jasanoff 2017) complement the analytical repertoire in a helpful way, as I further outline below.

Second, civic epistemologies as very general patterns of political cultures rely on the nation-state as the unit of analysis for comparison to identify characteristics of political cultures distinct in comparison to other nation-state’s political cultures. Thereby, the references to “nation” and the “nation-state” require additional reflection. Jasanoff reflects on the imagined character of nationhood by referencing Anderson (2006) and Ezrahi (1990) and emphasises the interest in identifying projects of reimagining nationhood through particular episodes and moments of significant scientific and technological change. Yet, the focus on patterns of large collectives configuring nationhood prioritises widely shared knowledge claims, and thereby configuring specific notions of belonging and non-belonging, over marginalised, tacit and implicit yet constitutive sub-collective views for re-imagining nationhood. Therefore, embracing the politics of belonging and non-belonging in a more differentiated manner may help us better understand the dynamics of public knowing in the context of emerging technologies entangled with racialised discourse in two ways. I suggest they could be explored, first, by detecting the diversity of collective views reimagining nationhood, and second, by specifying the underlying imaginaries and their particularity of segregating affected publics and drawing specific lines of distinction constituting belonging and non-belonging publics.

The relevance of imaginaries for the politics of belonging and non-belonging has been stated by Benedict Anderson in his work on “imagined communities” (Anderson 2006). He builds on an abstract sense of imagined belonging and in consequence also non-belonging, “because the members of even the smallest nation will never know most of their fellow-members, meet them, or even hear of them, yet in the minds of each lives the image of their communion” (Anderson, 2006, p. 6). Yuval-Davis (2006, p. 204) has prominently clarified how the lines of distinction are drawn: “The boundaries that the politics of belonging is concerned with are the boundaries of the political community of belonging, the boundaries that separate the world population into ‘us’ and ‘them.’” Understanding the dynamics of boundary-making is closely linked to a multifaceted understanding of “everyday bordering” through ideology, cultural mediation, discourses, political institutions and attitudes (Yuval-Davis et al. 2018, p. 229). The authors emphasise that practices of bordering are “shifting and contested between individuals, groupings, and states as well as in the constructions of individual subjectivities”



(Yuval-Davis et al. 2018, p. 230). Furthermore, such constructions of borders are intimately entangled with “specific political projects of belonging, which are at the heart of contemporary political agendas” (ibid). I identify the emergence and regulation of FDP technologies as part of political projects of belonging and political agendas in Germany (and elsewhere) committed to “fear of crime” policies (Hope and Sparks 2012) together with the discursive, bureaucratic and technical production of the criminalised migrant, the “crimmigrant other” (Franko 2020).

Jasanoff (2017) identified three different modes of seeing with authority that render data both visible and actionable. These distinctive modes of collective seeing of data collections are three ideal-typical standpoints from which the collection, manipulation, or interpretation of data typically proceed. She called them the views from nowhere, everywhere and somewhere, which come with their mechanisms of legitimation, including discourses of valid seeing and practices of consensus building. I propose applying this typology of seeing data to DNA data derived from forensic genetics technologies, in particular FDP. As Jasanoff developed this typology relying on global environmental data compilations, it needs two clarifications of what “data” refers to in the context of forensic genetics and, more particularly, in the case of FDP. Forensic DNA technologies gained high scientific and public legitimacy and became “truth machines” (Lynch et al. 2008) understood as producing highly reliable and trustworthy results as long as they were applied as identification tools, e.g., comparing different DNA profiles and analysing if they were from the same person. The technology at stake here does not aim at identification but attribution – attribution about the probabilities of specific phenotypical features and, therefore, works with different scientific methods. As an emergent technology, the utility still needs to be proven in its very specific environment, the forensic culture, e.g., the epistemic cultures that collaborate in the context of the criminal justice system (Cole 2013). Forensic culture refers to a specific set of relations of epistemic authority supporting and supported by several types of knowledge that are considered to be of relevance in the social world of forensics. Furthermore, its accountability and legitimacy regarding the consequences for affected publics and to the constituency in liberal democracies need to be proven (Amelung et al. 2020). Data in the context of FDP, therefore, can be understood as the data produced by FDP technologies used to narrow down a suspect pool to guide the criminal investigation.

The three modes of seeing differ regarding their standpoints and politics (Jasanoff 2017, p. 3). First, a view from nowhere comes with the gaze of science as traditionally imagined, as objective, impartial and fact-based, from a neutral viewpoint, wherein a human bias is assumed to be absent. Legitimacy derives from claims of being outside politics and having mechanisms such as peer review in place, which create reliable and accurate knowledge. Second, a view from everywhere, instead, comes with the gaze of expert

advisory bodies in modern democracies, forms of claiming to cover and represent all relevant aspects of the problem, legitimacy is based on aggregating reasoning, and credible and inclusive discourse. Third, a view from somewhere comes with the subjective gaze of an eyewitness and is the least scientific one. Here, the experienced knower – who might have seen, but possibly also was exposed to the consequences of the problem and the acts at stake – makes claims in a first-person narrative. Legitimacy here is based on genuine experience and authenticity. It may include experiences of personal injury or damage. Jasanoff's proposal to apply a differentiated take on diverse modes of authorised seeing that make FDP-based data visible and actionable allows us to distinguish different viewpoints based on different modes of knowing and epistemic authority. Based on this, I suggest imagining differently affected publics, by knowing and assuming differently the potential risk of discrimination and racism.

### **Views from “nowhere,” “everywhere” and “somewhere” and the politics of segregating imagined affected publics**

This chapter is based on a qualitative methodology analysing policy documents of diverse stakeholders and semi-structured interviews from stakeholders. I explored documents from stakeholder organisations, in particular, the advisory opinions they provided on the draft law before its finalisation, which was in December 2019. Many of those were invited by the Federal Ministry of Justice and Consumer Protection and were made public through the ministry. However, my search was complemented by reading uninvited advisory opinions that were published in autumn 2019 by different stakeholders. As the regulation of FDP was part of a big package of police regulations not all available advisory opinions from stakeholders address FDP. The selected advisory opinions provide a wide range of supportive and critical views regarding the legalisation of FDP.

The official stakeholder advisory opinions are non-anonymised and need to be understood in the context of the articulation of public statements and positioning aiming to influence the policy discourse and the final legislation. In contrast, the additional interview material is anonymised and needs to be contextualised as background reflections, which occasionally go beyond publicly performed positioning. Therefore, the interview material provides complementary and contextualising insights into the politics of seeing and knowing the publics affected by FDP technologies. The semi-structured interviews were conducted between June 2017 and May 2018. Five of those with stakeholders in Germany I decided to use for the analysis here. I selected interviewees based on the search of German authors of scientific articles in the area of FDP, additional contacts with professionals participating in conferences and other events relevant to the field, and complemented the

selection with the snowball method applied among interviewees, asking for forensic geneticists with a known viewpoint on the matter of FDP technologies. While the sample does not represent the whole range of stakeholder views involved in the public discourse, it is sufficiently diverse to represent a variety of views and values, as well as types of expertise. The analysis comes in two parts, the first analyses the materials that are available as explicit public statements from stakeholders related to the draft law on FDP presented in 2019, which are considered to rely particularly on making claims to be considered publicly legitimate. The second part of the analysis is in regards to the semi-structured interviews undertaken with stakeholders who engaged with the regulatory process between 2016 and 2019, and which provide additional in-depth views on sensitive and controversial issues such as discrimination and racism.

### **Modes of “knowing” and “imagining” those affected by the consequences of FDP technologies**

We can identify three different standpoints relying on different modes of making public knowledge, imagining and framing differently who would be affected by the consequences of FDP technologies when drawing lines of distinction between affected publics.

First, views from forensic genetics considered as the major science behind FDP technologies represent “views from nowhere” (Jasanoff 2017), e.g., ideal-type views from science assumed to be outside of politics. Forensic geneticists’ views had received substantial attention in the media and policy discourse about the regulation of FDP and its use in criminal cases. From the beginning of the discourse until the very last moment that the legislation was debated in the German parliament, “science” was referred to as providing the reliability needed to ensure objective and valid technologies and, thus, *accuracy* became a value signifying legitimate knowledge to be taken into account (GEDNAP 2016). German state authorities asserted that their legislative deliberations were informed by expertise-based considerations and recent scientific findings: “*According to current scientific knowledge, the externally visible body characteristics can be determined by examining genetic information with sufficient predictive accuracy*” (own translation, Bundesministerium der Justiz und für Verbraucherschutz 2019).

As a consequence, “accuracy” renders data produced by FDP technologies *safe and reliable*, and co-produces imaginaries of affected publics, which should be those suspect populations that are targeted for a good reason. “Predictive accuracy” then also constitutes the notion that the publics other than those legitimately targeted should not be affected.

Yet, regarding predictive accuracy, forensic geneticists have repeatedly stressed the technical differences in type, scope and informative value of the three genetically determined properties that FDP technologies aim to predict (external body features, the so-called biogeographical origin and

the age of an unknown person). They have been cautious to disclose the different reliabilities and statistically derived probabilities of each technology. Prioritising the value of scientific accuracy, the inference of biogeographic origin is considered the most reliable, with the highest probability value in comparison to the other technologies. Based on meaningful and forensically validated DNA tests, forensic geneticists presume themselves to be able to predict whether a person originates from Europe, Africa, East Asia, Oceania or America (here the Indigenous population) with a probability of over 99.9% (GEDNAP 2016). At the lower end of accuracy, in contrast, on average, the predictions are said to be only correct 75% of the time, with black hair being 87% and blond hair only 70% (*ibid*).

Forensic geneticists' views articulated through different disciplinary organisations had been in favour of the inclusion of biogeographic ancestry. "Accuracy" was seen as the legitimacy-signifying framing of forensic genetic technologies, promoting the reliability and objectivity of scientific knowledge behind FDP technologies. As the federal draft law was published and did not include the inference of biogeographic ancestry – although it was considered the most accurate facet of the technology by the epistemic community – German forensic geneticist organisations expressed their opinion explicitly arguing in favour of including biogeographic ancestry as well:

We strongly recommend, however, making an addition concerning the prediction of the so-called biogeographic ancestry (BGA). The (sub-)continental origin of a person (e.g., Europe, Sub-Saharan Africa, East Asia, South Asia and the Indigenous populations in Oceania and America) can be predicted with high reliability based on specific DNA features.

(own translation, advisory opinion, German Society for Forensic Medicine [DGRM], the DGRM working group University Forensic Genetics and the German-speaking working group of the International Society for Forensic Genetics [ISFG] 2019)

Reacting to and anticipating possible criticism linked to racism and ethnic discrimination, forensic geneticists have tried to draw lines of distinction between biogeographical descriptors deriving from the prediction of biogeographical ancestry, and ethnicity and race as cultural and traditional concepts:

Biogeographic ancestry does not in any way correspond to such concepts as ethnic origin or "race"; ethnicity and "race" are shaped by a multitude of factors that are not genetic. For the same reason, biogeographic ancestry cannot be equated with language, religion, or other manifestations of culture or tradition. It solely concerns the geographical region(s) from which a person's biological ancestors originated.

(Schneider et al. 2019, p. 877)

The technology to predict the biogeographic ancestry provides a glance at how population groups become considered as distinguished along the genetically identified continental origin of persons. However, these assertions of accurate, reliable technologies that build on objective, scientific knowledge, on the one hand, and boundary-making to decouple FDP technologies from the assumption of racism built into the technologies, on the other, seem to command public trust from some, but not from others.

Second, the consultation process of the federal government attempted to assemble diverse stakeholders' views on the draft law version. Therefore, the consultation process is assumed to provide the range of expert advice that Jasanoff referred to as "views from everywhere," the expert advice invited as a form of representing diverse affected positions and providing authorised knowledge through the logic of plausible reasoning. From the opinions articulated through the consultation process, I pick here selected statements from criminal justice actors' associations – criminal investigators, judges and lawyers – to typify additional imaginaries of affected publics of those professionals working with FDP technologies. To understand their positioning towards forensic science technologies, it is important to situate the criminal justice system in a specific context of what Simon Cole calls "forensic culture." Cole (2013, p. 42) considers the criminal justice system as extremely welcoming to forensic science methods and results, with no commitment to the "principle of organized skepticism, with no technical ability to scrutinize or question methods or results, which views forensic science as an extremely useful tool with which to further their own goals of efficiently delivering justice." Although there is a multiplicity of different and contradictory views regarding technologies and forms of prioritising different imaginaries of affected publics, those views all argue within the same criminal justice logic of reasoning.

Among them, the Association of German Criminal Investigators articulated its support for FDP technologies. It comes as no surprise that the police welcome additional tools that are assumed to benefit the criminal investigation process. Cole (2013, p. 42) stated that police are inclined to view and use forensic results as helpful for building a case but, therefore, also might be rather uncritical about forensic results presented to them, including the potential harm. The support of FDP technologies is legitimised and normalised through sequating such technologies with other already established criminal investigation tools (ranging from photographs to mass screening). Thereby, the potentially assumed risks focusing on the issue of privacy became relativised:

The expansion of the possibilities for DNA analysis required by the BDK (Association of German Criminal Investigators) at an earlier point in time is harmless and can be seen on any photo of the person

concerned at any time. It only affects the external features that everyone sees and are also not attributable to privacy.

(own translation, advisory opinion, Association of German Criminal Investigators 2019)

Furthermore, the association's statement frames FDP technologies as potentially protecting the rights of wrongfully suspected persons:

The extension also protects the fundamental rights of other people, as it may no longer be necessary to investigate people who, for example, live near the crime scene or have stayed there. The same applies to mass saliva tests and mass evaluation of cell phone data. Incorrectly suspected persons could also be exonerated immediately.

(own translation, advisory opinion, Association of German Criminal Investigators 2019)

Similarly to the Association of German Criminal Investigators, the German Judges' Association supported the legislative initiative, assuming that it would advance the criminal investigation process overall. Based on the reference to proportionality, they argued that the case-by-case decision would help to ensure the proportionate application of FDP technologies:

The planned extension of the DNA analysis to determine the hair, eye and skin colour [...] will open up new investigative approaches to investigate the crime, which will lead to a higher degree of crime investigation. The measures are suitable for advancing the investigation and clarifying facts and are, therefore, also welcomed. It will also be ensured in the future that a proportionality test must also be carried out in each specific case.

(own translation, advisory opinion, Association of German Judges 2019)

We might be confronted here with what Cole (2013) detected in US judges' favour for forensic science. He assumed that this might be driven by public safety concerns, which result in a view considering "forensic science as crucial for protecting the public from crime" (Cole 2013, p. 42). Judges may also constitute an extremely receptive audience for forensic science in Germany as they favour an imaginary of the protected majority public over minority publics' concerns.

As a third professional organisation, the German Bar Association's expert opinion deserves a closer look. Different from the previous two professional organisations, it expresses a more sceptical view of the legislative proposal. The association did not articulate concerns about age determination but

considered the inference of the colour of eyes, hair and skin as a disproportionate examination of the coding region of the genome. Thereby, it acknowledges the common legal ground as established in the 2008 judgment of the European Court of Human Rights on the so-called “S. and Marper” case. The latter draws the line between the coding and non-coding or “un-informative” regions of the genome and requires the consideration of the principle of proportionality when sampling, profiling and storing DNA profiles with respective information (Wienroth et al. 2014). The association raised concerns with regards to the threats to the fundamental right to informational self-determination when information regarding the genetically defined outer appearance would be at stake. The determination and storage of these DNA identification patterns, it understood as interfering with this fundamental right:

The external features that the investigation is to cover are readily visible to everyone, which is why the project could be considered unproblematic. However, the problem lies with the material and how the information is obtained – not just by looking. The examination of coding regions of the DNA molecule for certain features of the appearance of a person would be breaking a taboo. So far, the requirements of the constitutional requirements have been met by the fact that the investigations have been limited to non-coding sections. It is known today that information can also be read from non-coding sections (such as diseases), but it is the coding sections that lead to the “transparent human being.” If the taboo breach is to be proportionate (= necessary) and, thus, legally permissible, it must be offset by substantial income for the investigative work. However, there can be no question of that: there is practically no yield at all.

(own translation, advisory opinion, German Bar Association 2019)

While the German Judges’ Association does not mention potential issues of discrimination of minorities, the German Bar Association speaks of a minority in the context of the assumed missing investigative value – which follows the rationale of the forensic culture the association is embedded in – of targeting “phenotypical minorities” with FDP technologies. Thereby, indirectly, the proportionality of the impact on “phenotypical minorities” occurs as an issue, without explicitly addressing the potential discriminatory risk of FDP technologies.

These three opinions of professional organisations presented above, although differing with regards to their supportive or sceptic standpoint, all share two logics of referencing value systems in their ways of reasoning to establish their expert viewpoints: legalistic value sets and criminal investigative value sets. Legalistic value sets include general principles of law such as the proportionality principle, civil rights such as the informational



self-determination and privacy. Criminal investigative value sets assemble efficiency/speed and efficacy of the criminal investigation process and the value of investigative leads.

The argument that FDP technologies also could help exonerate otherwise suspicious persons deserves further reflection. Most actors in the criminal justice system agree that FDP technologies are most effective if they distinguish major collectives of shared characteristics from minor collectives of shared characteristics. Thus, the ontological premises driving imaginaries of affected publics of actors in the criminal justice system segregate along the categories of suspicious and non-suspicious population groups, on the one hand. On the other hand, however, the separation of imagined affected publics along outer appearance distinguishes between phenotypic majority and minority groups. The latent semantic structure in those arguments goes along the normalisation of typifying population groups along with their outer appearance, also because it is assumed to be already a given practice with other forensic measures. Taken-for-granted examples are interviewing eyewitnesses or photographs that are considered legitimate forms of forensic evidence. When reflecting on the right of informational self-determination and privacy, opinions diverge and the racist discriminatory potential tends to remain assumed to be absent in the first two opinions, or to be of a slippery nature and what M'Charek et al. (2014) have called an “absent present” in particular in the last opinion, appearing on the surface and then hiding underground.

Arguments from experience, what Jasanoff (2017) called “views from somewhere,” likewise carried some weight in the policy debate. On the one hand, victims of crime, e.g., represented by the organisation *Weisser Ring*, expressed their support for the regulation of FDP (Weisser Ring 2019). On the other hand, those exposed to discrimination, like people belonging to “minority groups,” expressed critiques about the planned regulation through their organisation of representation, the Central Council of German Sinti and Roma. They have pointed to the practical use of FDP technologies, which, in their view, puts minority groups under the spotlight of criminal investigation:

Examinations of DNA material for external characteristics of trace material, which is secured at a crime scene, cannot give valid conclusions for the identification of suspects, but focuses on minorities with certain characteristics in the investigation. DNA phenotyping, as it is now supposed to be enshrined in law, discriminates, particularly against minorities. This is because only minority members have a higher – only statistical – probability of identifying a particular genetic trait, whereas genetic traits of the majority population are inherent in almost all members of the majority.

(Own translation, advisory opinion, Central Council of Sinti and Roma 2019)

The issue of a potential threat to the protection of personal integrity, either in the form of the right to privacy or prevention of discrimination of minority groups has found diverse supporters across different standpoints. The “viewpoints from somewhere” in this case are so diverse as to represent victims of crime as well as minority groups that potentially could become suspect populations. While the former is in favour of expansive measures for punitive reasons and to protect victims of crime in the most extensive forms, the latter problematises the measures that shift the focus of criminal investigation with higher probabilities to minorities due to their own lived experience of structural discrimination, including the type displayed by the police. What both viewpoints have in common is that they built their opinions on – albeit different – imaginaries of marginalised and neglected affected publics, stressing specific experienced and potential harms and injuries. The latter builds on the distinction of phenotypic majority versus minority groups, and this collides with the minority group, which is, by historical experience, structurally confronted with racial discrimination. The additional distinction that the last opinion emphasises goes beyond the phenotypic minority and majority distinction in the way that it fears harm based on the distinction of genetic characteristics of minorities versus genetic characteristics of the majority.

The various views in this section assemble different implicit imaginaries of affected publics. A central observation deriving from this analysis is that the present imaginaries constitute dichotomies of affected publics, ranging from (1) suspicious versus non-suspicious population groups, (2) majority populations to be protected from crime versus minority populations whose civil rights might be suspended if that is in line with the proportionality principle to investigate crimes, (3) phenotypic majority populations versus phenotypic minority populations, (4) a majority population that has not experienced specific harm versus a minority population that has experienced specific injuries (as victims of crime, experiences of structural discrimination, etc.) and (5) majority populations with shared genetic traits versus minority populations with specific genetic traits. This collection of binary dichotomies is the outset to advance the analysis of the politics of (non)belonging that enact specific boundaries and distinctions to imagine belonging versus non-belonging affected publics.

### **Politics of (non)belonging and enacting imaginaries of affected publics**

Yuval-Davis (2006) referred to the boundary-making, which the politics of (non)belonging constitute in the political community of belonging, as the boundaries that separate the world population into “us” and “them.” To better understand these forms of boundary-making and segregating population groups and how boundaries materialise in specific ways, I focus in this

subsection on forms of assigning non-belonging and disadvantage to specific minorities, which easily may coincide with prejudices against racial and ethnic minorities. Ruha Benjamin (2019) has problematised technological designs as discriminatory, which confirm social divisions along previously existing segregation lines. In this part of the analysis, I investigate stakeholder views provided in interviews to explore, in the sense of Benjamin, forms of enacting specific imaginaries of affected publics, in alienation from others, on the one hand, and as the accumulation of different – partially pre-existing – segregating boundaries between affected publics, on the other hand.

The first form of the politics of (non)belonging I will explore here is about the media's and policymakers' framing and creating entry points that invite science to answer specific framed problems with technologies. As Jong and M'Charek (2017) have suggested, crime cases can be "fire objects," which, through their travel through media, reveal presences and absences of issues. Here, I likewise find in the analysis that criminal cases can invoke differently (in)visibilities, but their relevance is in particular about the timing and framing of a problem in which a regulatory solution is presented as the adequate fit for resolution. Furthermore, it illustrates how different imaginaries of affected publics overlap with each other and coincide with previously existing boundaries of (non)belonging and social exclusion. Framing a problem to fit a policy solution is known in policy studies. Kingdon (1984, 215) observed, "[A]dvocacy of solutions often precedes the highlighting of problems to which they are attached." The first quotation relates to the momentum when the Freiburg murder case served as a reference to frame a problem deeply entangled with the so-called migration crisis in Germany. FDP then is suggested as a solution for a setting involving a suspicious migrant, a member of a minority group with distinct external visible characteristics:

I think the general public – in Germany you can say that the police are very much making use of highlighting crime cases. There have been two criminal cases in Southern Germany, in Freiburg, at the end of 2016 where two young women were murdered, and these cases were different from another which was not known at the beginning. So, it then came out one was a migrant and the other one was a truck driver who was operating in that area. So, one was an asylum seeker, one was a truck driver, who randomly attacked and killed young women after raping them. And so – and there was kind of hysteria in the population because it was – everybody was like guessing that with the first murder this was a migrant and then the second murder happened and he's operating everywhere, we have to stop him. And then the police came with the idea of like DNA phenotyping and then the people were thinking like, yeah, this could be the idea to solve it.

(O04)

The quotation on the Freiburg murder case illustrates how the search for suspicious population groups mobilised certain types and lines of knowledge that coincided with pre-existing resentment against migrants and the idea of an effective forensic tool to better protect the wider public in the future, while other types of knowledges were strategically ignored. The particular way in which pre-existing segregation lines were confirmed rendered the framing of a problem in a way that the FDP technologies presented the specific solution. As the “problem” already built on two us/them dichotomies (non-suspicious population versus suspicious population group; majority non-migrant versus minority migrant groups) the “solution” then corresponded to those segregation lines. Manifesting the belonging/non-belonging distinction, the “solution” presented a technology that can distinguish between phenotypic majority and minority population groups.

The following quotation portrays how spectacular crime cases, its media representation and imagined public expectations push policymakers to act:

And then, of course, which in Germany, of course, always influences or shapes criminal policy very strongly, is ultimately spectacular individual cases or at least cases that are perceived as spectacular by the public. In this area, I see classic sexual offenses, where I usually have DNA of the offender but maybe not the culprit. But of course, if one had the opportunity to identify or find the perpetrator of the DNA left by the perpetrator, then of course this is always an approach where politicians are more or less forced by public opinion, then to allow police and prosecutors to have this opportunity. [...] And so I think these are certainly also factors that affect the politicians and then subsequently the ministry administrations, that there are simply inquiries from the press or press coverage that you have to do something against such horrible individual cases and that one then uses everything and there is the DNA as one of many investigative possibilities.

(O14)

The criminal case is perceived to serve as the inciting incident to perform advocacy for a specific law enforcement policy response. Crime cases are understood to support a policy dramaturgy of urgency with regards to the temporal correspondence between matching a solution to a problem. By chasing the “problem,” the initial situation gets framed in a particular way – collective stigmatisation of all people deemed to fit racialised notions of group similarity to a suspect (Toom et al. 2016; Skinner 2018) – to fit the solution, regardless of the complex nature of the problem to which the technological solution might be applied. Promoters of specific policy/technology solutions then present them as a “technological fix” but, in doing so, chasing their problems to legitimise the solution. As I have shown here, the first form

of the politics of (non)belonging deals with the enactment and reinforcement of racialising and stigmatising imaginaries of suspect populations that derive from media representations of a criminal case and regulatory repercussions proposing FDP technologies. FDP technologies thereby become charged with the meaning of having the potential to become technologies of (non)belonging.

The second form of the politics of (non)belonging is about experiences and knowledge of racialising and stigmatising cultural repertoires in policing and how these could contribute to enacting FDP technologies in ways that coincide with pre-existing segregation lines that affect minority groups in particular. The selected interviewee's quotations assemble views from stakeholders with different viewpoints, concerned and working with data protection and forensic genetics. Concerns articulated by the interviewees range from "racial profiling" to "institutional racism" through the police, which all relate to over-policing members of minorities and putting them under greater surveillance (Skinner 2018, p. 12). The interviewee explains their concerns by differentiating between the genetic information (below the body's surface) and the "external appearance" (above the body's surface). The risk of discrimination is assumed to be linked with the mobilising of prejudice associated with outer appearance. Thus, the body as an object to the technology reveals the code for the phenotypic information that could transform into the risk of becoming a target of "racial profiling":

What I believe is a recurring motive is, on the one hand, this possibility of discrimination based on genetic information, what is then perhaps called racial profiling or discrimination based on external appearance. And I also believe the fear that this technology will be used, so to speak, in everyday life for everyday small crimes. That would also be a point where I share these concerns.

(O10)

The following interviewee argues that probability assessments involved in FDP technologies would not be a major problem for the police, as uncertainties are part of other tools of criminal investigation as well:

So, probability statements are a completely normal standard in police investigations. When we are dealing with a radio cell query or who knows what, there are references to a perpetrator or an act or a victim everywhere and these are not 100% reliable indications but are indications associated with a certain degree of uncertainty. So, in this respect it is nothing special, the special thing is that the criminal investigation authorities do not yet have the experience [to work with FDP technologies], i.e., can effectively assess this, that is one point. And then there are certain risks of discrimination, the second problem is that very

specific social prejudices, which of course are also represented in the police, then have an impact on these investigations because they will be reinforced.

(O07)

Rather, what turns out to be a problem, according to the interviewee, is the insufficient experience with a probability prediction of phenotypic information based on genetic technology. The interviewee assumes that resentments and stigmatisation of phenotypic minority population groups deemed criminal could drive the use of FDP technologies in the criminal investigation. In this scenario, FDP technologies would “provide points of stabilization that enable the enactment of difference and belonging and the exploitation of group differences” (Skinner 2018, p. 18). Reflecting on a history of single, publicly documented cases of police racism the interviewee problematises the lack of scientific research on the institutional racism of the police:<sup>2</sup>

The other issue is that there are currently many open questions about institutional racism in everyday police practice in Germany. And there are many examples, unfortunately in Germany, [...] there is no, so to speak, scientifically recognized general research that provides a state of the art, but there is much criticism of many individual measures and the basic attitude too and that can be illustrated with many, many, very many examples. I agree. And that’s why we are against this differentiated prediction of DNA.

(O03)

The interviewee is concerned with the potential of institutional racism, which may turn FDP technologies into an instrument reinforcing segregation lines that could “over-police” phenotypic and genetic minorities and exponentiate the risk of discrimination. Yuval-Davis stated that “politics of belonging comprise specific political projects aimed at construction belonging to particular collectivity/ies, which are themselves being assembled in these projects, within specified boundaries” (Yuval-Davis et al. 2018, p. 230). While the inference of biogeographic ancestry was not included in the federal legislation on FDP, concerns empathising with the “views from somewhere,” regarding the discriminatory potential of the remaining FDP technologies predicting hair, eye and skin colour have been marginalised in the regulatory debate. This guides me to reflect on how actors involved in the politics of non-belonging together co-constitute specific imaginaries of affected publics, which reinforce existing social divisions disadvantaging specific minority groups as “non-belonging.” Weber (2020, p. 71) has suggested that the police, in conjunction with other social actors and institutions, may act with discriminatory policing “as potentially powerful agents of ‘governmental belonging.’” While the media, together with policymakers,

de facto mobilised and used racialising fears against minorities to promote FDP technologies, those imaginaries of suspect populations have been more dominantly reinforced in the regulatory debate. Instead, concerns raised by some stakeholder interviewees about the police enforcing pre-existing resentments and harming minority groups once they used FDP technologies in practice have remained disregarded. FDP technologies, in one way or another, remain meaningfully charged with dichotomies of imaginaries of affected publics, benefitting the racialised reading of either suspicious minority population groups, or of overpoliced and discriminated minority groups.

## Conclusion

This chapter took Jasanoff's approach of differentiated regimes of sight as an inspiration to portray controversial issues such as the potential risks linked with the regulation of FDP technologies in Germany from different viewpoints, explaining them from their contingent modes of knowing. With this chapter, I aimed to answer the questions: What are different modes of *knowing* the consequences of FDP technologies for *imaginaries of the affected publics*? Whose knowing and viewpoint count, under which rules of the game and what gets relegated to the margins of invisibility and inaction?

Exploring the different viewpoints on FDP technologies – views from nowhere, views from everywhere and views from somewhere – not only illustrates the relevance of all three stylised regimes in the context of forensic technologies and criminal justice policies of envisioning information produced by FDP technologies, but also helps highlight the value commitments involved in each, which influence how affected publics are imagined and distinguished. Taking a closer look at the different viewpoints articulated throughout the regulatory process, we were confronted with enacted multiple imaginaries of affected publics. More precisely, the different standpoints assembled here have in common segregated and often binary divisions over affected publics. Furthermore, this analytical distinction brings into perspective the marginalised views concerned with discrimination and racism that were not incorporated into the final political considerations of FDP and legal decision-making in Germany.

The analysis demonstrated how some epistemic regimes dominated the public discourse, which attributed epistemic authority to the expertise and legitimising discourses and practices of specific forensic scientific and specific criminal justice stakeholder expertise. Thereby, the epistemic authority of the subjective views of knowing was hardly recognised. Knowing through experience and personal exposure to structural discrimination falls together with being potentially affected by a higher probability of FDP's risk of discrimination. Furthermore, the analysis reveals the politics of seeing, knowing, and imagining (non)-belonging publics affected by FDP. Finally, the



analysis reveals how specific modes of knowing and imagining affected publics are prioritised over others through specific forms of politics: (a) enacting FDP technologies as a solution to racialised framings of political problems, and (b) marginalising subjective modes of knowing, which emphasise the potential harm of FDP technologies, based on pre-existing experiences of discrimination.

The politics of (non)belonging (Yuval-Davis 2006) are here embedded in a series of prior assumptions and value commitments that affect what we know, how we put knowledge to work in assuming technologies' consequences and, in turn, how we imagine affected publics. Racialised discriminatory practices may be applied in the context of FDP technologies following imaginaries of targeted/affected publics. Thereby, such practices may reinforce boundaries of pre-existing social divisions segregating suspicious, phenotypic, genetic minority groups by agents being part of an arrangement of actors together exercising "governmental belonging" against "non-belonging" publics.<sup>3</sup>

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## Notes

- 1 For the notion of imaginaries, I take inspiration from Yaron Ezrahi who prominently stated: "The structure of the political order is always in a process of becoming, of dialectical and ambiguous relations to the imaginaries that sustain it

- and to the actual or potential imaginaries that subvert it” (Ezrahi 2012: 4). Ezrahi’s political imaginaries – and imaginaries of affected publics are variations of them – and their performative power to produce social and political facts is key to understanding the relevance of exploring the imaginaries of segregated affected publics. Such imaginaries appear as “fictions, metaphors, ideas, images, or conceptions” (Ezrahi 2012: 3), but are composed and may be negotiated, and be enacted through FDP technologies.
- 2 In Germany’s recent history, the so-called case of the “Phantom of Heilbronn” (Samuel & Prainsack 2019, p. 32), illustrates a prominent example of ambiguous trust relationship with forensic genetic technologies in the country and the seemingly racial sensitivities in Germany’s criminal justice system and in wider public perceptions (Samuel & Prainsack 2019, p. 32). The case demonstrated the problematic entanglement of the media, the institutional prejudice of investigators and forensic DNA-based investigation methods in the construction of high-profile crime cases (Lipphardt 2018; Samuel & Prainsack 2019). In the “Phantom of Heilbronn” case, following a series of murders in Heilbronn in 2007, the DNA from the same person was linked to 40 crimes perpetrated between 1993 and 2009 in several countries including Germany. The DNA analysis suggested that the suspect was an Eastern European female, and criminal investigators took this as implicating the Sinti and Roma community (Samuel & Prainsack 2019, p. 32). After acknowledging a case of DNA contamination caused by a Polish factory worker packaging cotton swabs that were then used in different forensic labs across Europe for the investigation of crime-scene stains, in 2012, the Minister of the Interior for the German Federal State of Baden-Württemberg apologised to the Sinti and Roma community for the police’s bungled interpretation of DNA evidence after the Heilbronn murders (Lipphardt et al. 2016). The case revealed the “potential for over-investment in or misunderstanding of test results in the context of existing stigmatisation of minority groups” (Skinner 2018, p. 4). Overall, the trust in the technologies itself was less affected than the trust in criminal justice actors applying them.
  - 3 In the author’s view, reducing the risk of discrimination against minorities in a structurally racist society, the (probabilistic) prediction of skin color can lead to discrimination, as can statements about the likely biogeographical origin of the person. To ensure the responsible handling of this type of information in the context of criminal investigations, far-reaching measures are required to effectively counteract the risk of discriminatory use. Measures should include the systematic evaluation of the effects of the extended DNA analysis on the actual detection rate of crimes as well as on the rights and interests of individuals and groups of people (especially minorities in society). Additionally, possibilities for systematic and democratic and civil society control should be installed. Intensive training of the professionals using the informative value of the extended DNA analysis is required. To date, there has been no sufficient democratic and civil society control of the application of the technology installed.

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