

**Statement on three current legislative initiatives to expand the use of DNA analyses in criminal investigations (Changes to Article 81 of the German Code of Criminal Procedure [Strafprozessordnung, StPO]), June 2, 2017.<sup>1</sup>**

We are a multidisciplinary consortium of scholars from the Universities of Freiburg (DE), Newcastle (UK), and Basel (CH), and from the Free University of Berlin and the University Hospital Freiburg (both DE). In December 2016 we published an open letter critiquing proposed plans to expand the repertoire of forensic DNA analyses, plans that lack appropriate regulatory foresight and implementation.<sup>1</sup>

Three currently planned legislative initiatives propose far-reaching changes to Article 81 of the Code of Criminal Procedure (StPO). All three initiatives involve the collection, storage, and use of DNA samples and profiles in the conduct of:

[1] “familial searching“ in police DNA databases<sup>2</sup>

[2] the identification of externally visible characteristics and “biogeographical ancestry”<sup>3</sup>

[3] a substantial expansion of the databases in which the German Federal Bureau of Criminal Investigations (BKA) retains DNA identification patterns (currently, short tandem repeat [STR] profiles).

The collection, use and storage of so-called “genetic fingerprints” need to be adjusted to the use and storage of dermal ridge fingerprints (dactyloscopy) for identification purposes, the proponents of these three legislative initiatives argue. They propose that the use of an expanded repertoire of forensic DNA analyses and capacities should apply to all types of crimes, beyond what is currently allowed (i.e., in cases of serious offenses). Furthermore, practices and policies as detailed in the three initiatives would omit judicial approval and oversight as well as the obligation to provide information and to state reasons for conducting a DNA-extraction.<sup>4</sup>

If all three changes were to be approved, the legal situation would give German investigators very comprehensive rights regarding the collection, retention and use of DNA samples and STR profiles. Genetic data would not only be used to retrospectively solve crimes, but also to prospectively aim to avert dangers. German investigators would neither need to reconcile this access with independent scientific nor with legal entities. This creates the potential for considerably restricting the right to informational self-determination/privacy of all citizens of and visitors to Germany, regardless of whether they are linked to criminal offences.

We argue that key scientific, legal, and ethical aspects of such expanded DNA analyses, including their use in police investigation, have not been resolved, yet, adding uncertainty about the potential impact of such changes on constitutional democracy (Rechtsstaat) in Germany.<sup>5</sup> Statements by proponents tend to significantly overestimate the capacities of the above mentioned three forensic DNA technologies while at the same time downplay or fail to disclose potential detrimental effects, or even acknowledge that there are unknowns to expanding the legal capacities to use such technologies without appropriate checks and balances in place.

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<sup>1</sup>This is a very close, but not a verbatim translation of our original Statement written in German.

In the following, we present our concerns and our call for a multiperspective, scientifically rigorous consideration of this topic.

**1 We advise against a rushed and premature approval of the three legislative initiatives to change Article 81 StPO, which would grant investigating authorities extensive access to DNA data of the citizens of and visitors to Germany.** A thus revised legislation can lead to substantial undermining of the right to informational self-determination/privacy and ignore central legal and ethical principles currently honoured by the constitutional democracy in Germany. It can be anticipated that expanded DNA analyses would frequently be used inappropriately. This would neither contribute to increased safety, nor increase the rate at which crimes are solved.

**2 In particular, we criticize the significant weakening of data protection laws, and the right to informational self-determination, which would result from implementation of the legislative initiatives. DNA data are highly sensitive<sup>6</sup>; governmental storage and usage of DNA data is not infallible (data can get lost, stolen, or be made accessible to parties that should have no access); proposed changes in access restrictions may lead to discrimination of citizens purely based on their genetic characteristics.** Countering the unrestricted collection and use of DNA data in the field of crime prevention and prosecution does not imply protecting offenders, but rather protecting the large majority of law-abiding citizens and migrants from a profound intrusion into their privacy. Exposure of this large majority to a generalized suspicion of criminal activity could jeopardize the trust of the population in other areas using genetic data, such as scientific research and the health care system.<sup>7</sup>

**3 We point out that the uninformed use of expanded DNA analyses may lead to discrimination against minorities.** The particularly reliable predictive probabilities of DNA analyses of attributes, often cited in the legislative initiatives and in media coverage, are misleading; error rates and concrete implications for investigations are not yet sufficiently known and understood. The methods mentioned in the draft legislations are particularly unreliable when applied to cases in which minorities happen to be in the investigative focus.<sup>8</sup> However, at the same time, the methods only have a practical investigative value when used in relation to minorities.<sup>9</sup> A contradiction to Article 3 of the German Constitution (Grundgesetz [GG]) would result from implementation of draft legislation as it stands, exacerbated by the already identified scientific weaknesses of some of the proposed DNA analyses.

**4 We oppose a premature, blanket, and routine use of expanded DNA analyses in police investigations.** Expanded DNA analyses should only be applied in the investigative phase for the production of intelligence and as last resort, if all other feasible and available avenues of investigation have been exhausted. Furthermore, the proposed use of these forensic genetic analyses should be approved on a case-by-case basis.

**5 We call for a culturally sensitive and fact-based discussion of this topic in public.** A balanced, comprehensively informed, and realistic scientific and public debate is vital to decision-making about an expanded repertoire of forensic genetic analyses. Such a debate is only just emerging, and requires scientific and political actors to engage with, and publicly consider all aspects of these technologies. Indeed, political actors should take their significant

responsibility for the social, cultural and political climate of the debate and the potential implementation of the draft legislation seriously.

- 6 We call for a prudent, thorough, multifaceted, and informed revision of Article 81 StPO, which takes into account the complex scientific, legislative, social, and ethical considerations.** The political decision-making process, its understanding of the substance, and its legitimacy, will significantly benefit from a wider and multidisciplinary consultation particularly on such a sensitive issue. We call for the involvement of experts in the social study of science and technology, bioethics, data protection specialists, statisticians, computer and software scientists, and forensic and population geneticists, in expert committees: to contribute to the continuous and reflexive regulation of the application of forensic technologies, including the continuous development of guidelines and quality management, as well as for consultation in particularly complex and publicly controversial cases. Experiences with such expert committees in the Netherlands and the United Kingdom may provide useful insight for developing a societally and legally robust German regulatory infrastructure.
- 7 We call for a quality improvement campaign for forensic DNA analyses. Their scientific principles and complexity are currently insufficiently understood by those involved in investigations.** In particular, investigative authorities need to recognize the scientifically demonstrated limits of these technologies; their use has to take into account well-founded ethico-legal concerns. The implementation and use of these technologies is best advised to subscribe to the highest quality and data protection standards. To achieve this, international expertise should be sought as necessary.
- 8 We advise to engage critically with drives towards commercialization and privatization of forensic DNA analyses.** Price-dumping already negatively affects academic forensic genetic departments who have provided forensic services thus far in Germany. In conjunction with proposed changes to the regulation of DNA collection and expanded DNA analyses, this is likely to have considerably negative, even damaging consequences to the reliability of forensic analyses. The comprehensive, automated, and routine use of such complex analyses for financial reasons has to be avoided.
- 9 We call for responsible, proportionate, and ethically legitimate regulation and oversight of DNA data collection and retention.** This also applies to current practice: in several documented cases law enforcement authorities have exceeded their legal scope concerning the collection and storage of DNA samples and data.<sup>10</sup> Nevertheless, data protection authorities nor any other institution are currently continuously and systematically monitoring legal compliance in the area of forensic DNA collections and retention.
- 10 The political and public debate about Article 81 StPO has to be decoupled from the migration debate on the one hand, and individual, particularly sensational criminal cases on the other hand.** It is extremely questionable that in the cases that have so far been stated as appropriate for the use of the new technologies, the expanded repertoire of forensic DNA techniques would have meaningfully contributed to investigations. Against this background, we believe it is dubious and irresponsible to further purport that these cases could have categorically been solved quickly and cost-effectively with the new DNA analyses, and that victims and their relatives are owed the application of these technologies. Indeed, their use –

and likely failure to contribute – could contribute to seeding doubt about forensic DNA analyses per se in public audiences. We are calling all parties involved in the public debate to decouple the political discussion about the changes in the law from these criminal cases, so that relatives and friends of victims are no longer burdened by irresponsible speculation of what these technologies might have added to investigations. Instead, a thorough examination and assessment by a multidisciplinary expert committee is necessary in order to determine if a case is suitable for the use of expanded DNA analyses.

### **Open questions:**

#### **Prior to changing Article 81 StPO, a number of questions need to be addressed.**

In our view, these include the following aspects:

- In which case constellation could the use of expanded DNA analyses be appropriate? What does it mean for the implementation of these technologies if they can only be used appropriately in individual cases, and can only be adequately interpreted by professionals with a very high level of expertise?
- Who will provide the forensic service of DNA analysis; which budget will cover the costs? Who decides about the financial terms?
- Which costs may arise in addition to the cost of the analysis itself - such as training courses for investigators and others involved in the use and governance of forensic DNA analyses? Which costs may arise via the preparation and interpretation of complex expert reports with the appropriate professional expertise? How would these be reflected in the cost estimate of the legislative draft?
- Which independent institution will take on the important task of oversight and regulation of police DNA collection and use in the future? Who will ensure the right to informational self-determination of the many people not under suspicion, whose DNA-data will be collected and stored in future forensic and other identification contexts?
- What does the current basic training for investigators, judges, prosecutors, and defence lawyers in relevant fields like molecular genetics, statistics, and sociology of law etc. look like? Is there a need for clarification and improvement in this area?
- Which checks and balances are already implemented, and which would need to be introduced with the changes in legislation, to ensure that bias against minorities will not lead to arbitrary interpretations and premature conclusions by investigators, such as has happened in the case of the “Heilbronner Phantom”?
- How can investigative measures that follow expanded DNA-analyses, particularly mass screenings (also known as DNA dragnets) and collections of samples from the public at large, be organized to prevent minorities from general suspicion?
- Relating to the storage of their DNA data (in research databases, in health care, in law enforcement), what concerns do people living in Germany have, and how can we take these into account within legal regulations?
- How can we prevent potential future misuse of DNA data(bases)?

## **Concluding remarks: DNA as a campaign issue in the upcoming elections**

Both main political parties in Germany (social democrats, SPD, and conservatives, CDU) consider the inclusion of a passage about the intended legal changes in their respective election manifesto. Likely, this will be connected to the debate about security and immigration even more so than has hitherto been the case. The temptation to strike a populist note is significant. However, this highly sensitive and complex topic should not be misused as a campaign issue. We will monitor this development closely, and will comment on this publicly, as needed.

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1 We have significantly expanded upon several significant aspects of our argumentation during a presentation at the [symposium](#) of the Federal Ministry of Justice and Consumer Protection (BMJV) on 03.21.2017. In addition, a [Correspondence written by us has been published in Nature](#). Further texts and materials can be found [on our website](#).

2 [Draft law on the effective and practicable arrangement of criminal proceedings. Printed matter 18/11277.](#)

3 [Draft law on the extension of the scope of investigations on material for DNA analyses. Printed matter 117/1/17.](#)

4 [Draft law on the alignment of genetic and dactyloscopic fingerprint in criminal proceedings. Printed matter 231/17.](#)

5 Our scientific arguments concerning the predicted probability in the draft legislations can be found in short form in Nature: [Staubach F et al., \(2017\)](#). For a more comprehensive version see the [manuscript of our presentation](#) at the symposium of the BMJV, 03.21.2017.

6 For concerns about the protection of data privacy during storage of STR-profiles see [Rosenthal et al., \(2017\)](#); furthermore [Nathan Collins contribution in the Stanford News](#).

7 A similar practice of DNA collection in British law enforcement agencies was already rejected as inadmissible by the European Court of Human Rights in 2008; see *S & Marper vs The United Kingdom*, EGMR, 12.04.2008 - 30562/04, 30566/04; you can find a German media report [here](#).

8 See [the manuscript of our presentation at the symposium of the BMJV, 03.21.2017](#).

9 See [ebd.](#)

10 See an [interview with the former data protection officer of the state of Baden-Württemberg, Jörg Klingbeil](#) (S.5).