

Societal and privacy aspects of using biometrics in identity documents: Towards a research agenda

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Abstract: The application of biometrics for the issuing of breeder documents is currently being advocated by different governmental and private institutions. However, the societal implications of this measure have not yet been properly assessed. The present article analyses the idea of a possible use of biometrics in breeder documents taking into consideration how biometric systems and the data management related to it could either benefit or have a negative impact on society, on specific social groups or individuals. This exploratory study is part of *Origins*, a project funded by the European Commission, and it is based on 18 interviews with Experts on biometrics, data management and human rights, conducted during 2015 and 2016. On this basis, we have developed an analysis comprising the main social concerns regarding the potential use of biometrics in breeder documents, which will serve as a research agenda in this field.

Keywords: breeder documents, biometrics, acceptability, governance, human rights.

Introduction

According to Article 7 of the *Convention on the Rights of the Child*: “The child shall be registered immediately after birth and shall have the right from birth to a name, the right to acquire a nationality and, as far as possible, the right to know and be cared for by his or her parents.” States that signed this convention should respect this mandate and adapt it to the context of national legality, in order to recognize and guarantee the right to nationality for all newborns. Therefore, having a national identity - and consequently, other citizenship rights - is internationally defined as a fundamental right that implies the creation of an official identification system that would make the individuals identified and identifiable.

Breeder documents (BDs), in their many forms and formats (birth certificates, social security licenses, etc.), comprise the instrument required in order to institute a *prima facie* claim to an identity as well as to guarantee the above mentioned rights. Besides providing identification, these documents serve also as a prerequisite for acquiring other types of IDs and personal documents. Consequently, they are the first echelon of necessary identification which binds individuals to other documents and citizen rights, such as the right to vote. In the same vein, BDs - when adulterated or falsified - can be used to avoid state identification and even penal prosecution. Particularly, the issuance of original passports using falsified BDs has been highlighted by different governments and institutions as one of the main risks and concerns [Bu13].

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Given the above referred importance of BDs, states are expected to ensure that citizens can obtain them relatively fast and easily, while at the same time they have to guarantee the application of firm security measures, reassuring that these documents cannot be effortlessly stolen, changed, misused or adulterated. After the September 11 attacks - where there were 30 state-issued forged IDs among the 19 hijackers (mainly driving licenses) - and due to other notorious cases of identity falsification in the context of terrorism and criminal activity, the need to improve the security of identity documents has been repeatedly pointed out [Di02; Gi10]. In this context, the use of biometrics within BDs has been argued for as a possible form of securing and verifying BDs and also other personal IDs that may suffer an adulteration derived from a possible falsification [So02]. However, the implementation of biometry with this aim - which has been extensively studied during the recent years [Da05; So02] - has raised serious concerns regarding potential violations of human rights, the actual proportionality of this measure in itself, social security and other socio-political implications [Ca13, Ki13].

The present article analyses a possible use of biometrics in BDs taking into consideration the different mechanisms by which biometric systems and the data management related to it could either benefit or have a negative impact on society, on specific social groups or individuals. With this aim in mind, we will first describe the main features and societal traits of BDs. Secondly, we will specify how biometrics may be applied to these IDs. Then, based on the information obtained from 18 in-depth interviews with international experts on ethics, fundamental rights and identity issues, we will discuss the societal implications of using biometrics in BDs.² On the above mentioned basis, this paper proposes a research agenda for the study of the socio-political implications arising from a potential use of biometrics in breeder documents. Our analysis will cover several social, political and technical registers, as well as various issues emerging from the processed interviews and the most relevant literature in the field. In this way, the article seeks to contribute to the current debate with potential users and academics, ensuring that choice, consent and control are accounted for.

² This fieldwork was developed in the context of ORIGINS project, funded by the European Commission and currently being carried out by a total of 18 public and private partners from 10 European countries. Project title "Recommendations for Reliable Breeder Documents Restoring e-Passport Confidence and Leveraging Extended Border Security "THEME [SEC-2013.3.4-2] [Extended border security - passport breeder document security – Coordination and Support Action (Supporting Action)] Grant agreement no: 607663. The underlying idea of ORIGINS is to improve the security and therefore to restore the confidence in the application process and issuance of e-passports, by filling the gaps in security of breeder documents.

2 Breeder documents: identification and identity

2.1 Identification and breeder documents

The establishment of nation-state was accompanied by the construction of diverse mechanisms for data collection and for its centralization, which facilitated the coordination of production, the establishment of public education and the control of social trans-border mobility [Ca01; Gr07; Ly05]. In this context, France was the first state that systematically registered births, deaths and marriages [Pa30], while, by the mid of the XIX century, most of the European countries had already established different administrations of civil registration aimed to organize public life [Ca01].

Since then, those first public systems of personal identification and individualization have expanded into complex bureaucratic structures and newborns registration has become mandatory within most national legal frameworks worldwide. National governments count with diverse documents, civil registry systems and other mechanisms oriented towards establishing, verifying and/or authenticating an applicant's identity [Ly09]. In the same vein, the continuing supranationalization of sociopolitical relations has created the need for establishing various international protocols for the delivery and verification of personal identifications, by means of setting common standards and protocols for the issuing of individuals' documents, such as passports [To00; Apostille Convention³].

The process of identifying an individual is oriented towards establishing his/her uniqueness based on objective criteria, which may guarantee a high level of individualization. BDs⁴ are the main existing instrument for this purpose, since it is precisely these documents that allow right holders to demonstrate their own identity and to obtain other documents in their place of origin (such as driver's license, an identity card, certificate of nationality, a voting card, a national health card, etc.) or in foreign countries (i.e. residence permits and new passports). These certificates usually contain information such as the date of birth, place of birth, parents' names and nationality, as well as the sex of the individual.

2.2 Identity and identification in breeder documents

The concepts of identity and identification are commonly used interchangeably. However, relevant distinctions and specifications need to be made in this regard. Since the seventies, diverse theories have emerged escaping from the primordialist tradition which had defined identity as a fixed and biologically given feature, and have

³ This convention, created in 1961, permits to certify the validity of a document issued in one of the signatory countries for legal purposes in all the other states that adopted the treaty.

⁴ Birth certificates for example are the most relevant and common type of BD.

explained the ways in which individual identity is socially constructed [Co02]. Beyond the classical and persistent theoretical debate about the tension between agency and structure, social sciences have pointed out how an individual's identity is shaped in an intersubjective process but also remains relative to diverse contextual factors, such as cultural, societal, material or symbolic constraints and conditions [Ge95; Bo91].

In this regard, one of the main elements that must be considered in our analysis is the frequent tension between the fixed character of an official identification and the changing character of our identity as such. In a world characterized by fast technological development that facilitates international relations and an increasing social mobility, some authors have commented on the fact that local and individual definition of identity becomes weak and fluctuating [Ba98; Ca09; Ur03]. Nowadays, states face the challenge of basing identification and categorization on these changing - collective or individual - identities. In some cases, this understanding of identity and the recognition of cultural diversity are gradually being translated into the law. For example, many countries allow for transgender individuals to modify their identity documents, such as a photo ID, in order to reflect their current name, gender identity and gender expression [Jo15]. Another example of this transformative character of individual identity due to societal change, are the nations that have recently conquered independence (such as Estonia, Latvia, or Slovakia), causing a national identity shift which transforms the agential perception of identity. Consequently, a general distinction between the way in which an individual identifies himself/herself and the way in which this identity is socially categorized and identified by official institutions needs to be considered⁵. This issue is particularly relevant for the application of biometrics to BDs, since the human traits linked to a particular identity at birth can limit the public recognition of identity change in the future.

3 Biometrics and breeder documents

Every single person, understood as a biological entity made up of very complex body patterns, is the only and permanent bearer of a unique, non-transferable and hard to forge data: his/her own physical and psychological traits. Biometrics consists of various systems for the statistical analysis of data related to human characteristics, mostly used in order to authenticate an individual [Ch15]. This process could either

⁵ However, it is worth mentioning that there may be legitimate reasons to hide one's identity, such as a witness protection programme, that should also be taken into account when setting any identity management system.

involve fingerprints, iris or retinal scans, ear shape, voice, handwriting, thermograms, keystrokes, facial recognition, human gait, hand geometry or even DNA, among many others. Some of these systems - such as fingerprint recognition - are already widely and effectively employed, while others are still in early stages of application, since their current level of technological development is not yet able to accurately authenticate persons from their particular traits [B115].

Over the past two decades, the use of biometrics by governments, companies and individuals has exponentially increased, particularly in the field of technologies applied to security [Ki13]. Within this context, biometrics is understood as the means by which an individual can be potentially identified by an authority having his or her (almost) unique biological traits checked and analysed. Physical characteristics are therefore used as an authentication tool that could offer a highly reliable “Evidence of Identification” (EOI) when combined with other identity verification systems (such as passports or identity cards). [IC12].

Given that biometrics is able to provide an extremely sharp picture of any individual through the gathering of his/her unique physical characteristics, its use is currently being considered as a solid option in several security fields where, by nature, a high level of trustworthiness is required. The inclusion of biometrics in BDs could also be regarded as a response to the political pressure coming from various institutions after the September 2001 terrorist attacks in the United States [Mc11; Ch10]. These stakeholders claim that a highly reliable EOI is mandatory when countering not only financial fraud, but also its ultimate aims, such as serious crime or even terrorism. After the adoption of the Enhanced Border Security and Visa Entry Reform Act (2002) in the United States, linking some biometric data (in this case, fingerprints and facial image) to an identification document is becoming an increasingly frequent policy that might affect the traits of BDs. This is also being considered in Europe, where the EP and European Council issued a joint statement in 2009 highlighting the lack of security standards for BDs and its impact in the “security chain” that goes towards the issuing of passports [EU15].

4 Study Design

This section intends to report on the design of the qualitative interview study on the ethical implications of using biometrics in BDs, that was conducted between december of 2015 and february of 2016 in the context of the project *Origins*. Given the exploratory nature of the study, we conducted 18 in-depth and semi-structured interviews with experts on ethics, fundamental rights and identity issues. The study consisted of three stages: planning, data collection and data analysis.

During the stage of *planning*, we designed a questionnaire and we selected the experts to be interviewed. The chosen method that of semi-structured interviews,

consists of an interview guide that lists the main questions to be asked to interviewees [Ro02]. Using this questionnaire, the interviewers are able to guide the interview, but they are also allowed to ask for more information when they consider it is necessary, in order to clarify certain answers or even terminology. Interviewees were selected using a combination of convenience sampling [Ro02] with maximum variation, as recommended by Patton [02]. This means that interviewees were selected with the greatest variation possible in expertise and country of residence, inside our direct and indirect collaboration network.

The *data collection* process was carried out in person and via online-conference. We interviewed 18 experts, spread along 10 countries: Belgium, Great Britain, South Africa, Japan, Hungary, Canada, Netherlands and Spain. The interviewees (11 males and 6 females) had a diverse academic background on Ethics, Law, Privacy, Biometrics and Technology. Their distribution by expertise's areas is shown in Figure 1. These were processed for analysis by manual transcription of recordings and detailed notes were taken to the best of our ability for one interview that we were not give consent to record.

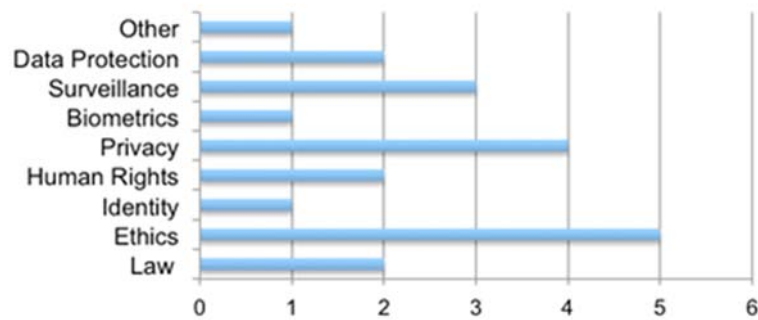


Fig. 1: Distribution of interviewees by expertise areas

The structure of the guide included three main dimensions: 1) Distinction between identity and identification, 2) Human rights and identification, 3) Implications of using biometrics for BDs. We conducted a content analysis, which allows the construction of a typology of response for the same questions of a guide (reproducible inferences) [Kr91]. The realization of parallel questions for all respondents was triangulated with field notes and contrasting sources [Me05]. This scheme has allowed us to build a consistent and coherent analysis, as it has been proven to provide stable results [Ke02].

5 Interviews analysis

In this section, we will present the main issues arising from the interviews, regarding the application of biometrics to BDs in Europe - as already anticipated in the context

of *ORIGINS* project - by following the structure of analysis based on our interview design and the subsequent categories and concepts.

5.1 Social and political concerns regarding the application of biometrics to BDs

During the interviews conducted for this research, the experts frequently considered that an easy access of citizens to their IDs is a right of citizenship attached to the above mentioned documents and associated rights. Nevertheless, the lack of security of current BD models was also pointed out, as well as the importance for them to be securely designed. Thus, security on the one hand and individual rights to privacy and freedom on the other were rising as two necessities in-tension:

“My main concern about a BD is that it should not be too difficult to obtain, ever, but it should also not be easily stolen, changed, misused or adulterated. It is something that you get easily and is not easy to forge, to change, nor to reproduce.” (Interviewee 3).

When asked about the application of biometrics to BDs as an option to address these security issues, the experts articulated different concerns. First of all, they widely expressed doubts regarding proportionality and the need of using biometric with this purpose. Accordingly, some of them mentioned that ways to enhance BDs reliability without using biometrics do exist⁶, and should be considered.

“More resources and more discussions on the real necessity and proportionality are needed. Because you can acknowledge that a lot of the aims are positive in themselves, it is a matter of how we do it. And do we sometimes give the alternative a chance? Or do we always say “biometrics are the future”? And then, 10 years later, “multibiometrics are the future”. The question is: Are there alternatives? And do we give them a chance to prove which one is the best?” (Interviewee 11).

“The whole anxiety around BDs is not scientific. How many out of the total population are unreliable? What is the necessity? The samples regarding this issue are broken, therefore I would like to see a properly random sample (not police records, not immigration).” (Interviewee 13).

However, beyond these shared proportionality concerns, the potential relevance of using biometrics for the securitization of BDs is commonly related to

⁶ See for example [Di02].

passports' reliability. In the following sections, different aspects specified by the experts concerning this lack of balance between enhancing documents' reliability and fundamental rights, as well as their proposals to tackle it, will be explained in detail.

Governance consequences of adding biometric data to BDs

The interviewees stressed several political and administrative elements that might represent problems and risks arising from the application of biometric to BDs. In this regard, the creation of new databases and the consequent centralization of information by governments are widely defined as measures that could entail diverse threats for privacy and, in this context, also considered as processes that might favour the violation of human rights.

“The systems can be misused when political context changes and on the other hand we have the retroactive change of law. The more the government knows about you, the more the government is the arbiter of what your identity is by saying the identity is only ascertainable by the government identification” (Interviewee 1).

In the same vein, the interviewees consider that, in case biometrics systems were applied to BDs, potential governmental and private personal data misuses should be considered and accounted for as well, since merging databases “would create a single point of failure” (Interviewee 4).

“If you add any biometric data, it would not be kept only on the birth certificate, so you do need a central database of biometrics stored in a breeder document. That would just mean, de facto, allowing for collecting this data, and for accessing this data, and definitely for exchanging data. So I am very, very sceptical from a fundamental rights perspective about the inclusion of any biometrics in a child certificate. If you do that, the risk assessment should be carried very carefully” (Interviewee 9).

The interviewees also emphasized that managing all the involved personal data might require a complex governance and a great effort of intergovernmental coordination, for which the harmonization of all the national systems across Europe would be required, while also guaranteeing some flexibility for the autonomous information management within national frameworks. Furthermore, the experts pointed out that all these administrative matters could also involve an important social rejection.

Individual rights and the use of biometrics in BDs

The sensitive character of biometric information was not only assessed from a governance standpoint, but also as an issue with considerable impact on individual rights, emphasizing in various occasions the intrusiveness of gathering newborn babies' data. In this vein, it was stated that "From a human rights point of view, that would not be advisable" (Interviewee 7) and that it could entail diverse negative impacts in an individual's' life, such as a potential "gene based discrimination" for example (Interviewee 10).

Secondly, the interviewees manifested fundamental rights' concerns about the lack of choice or consent of newborns in processing their biometric data. In the same vein, it was mentioned that citizens should be able to choose the way in which they prefer to be identified.

"You are taking the sample without babies' consent. Since you ask the parents, the baby never has any choice. Once they grow up they have the chance to remove it or not, which makes the database unreliable, and undermines the purpose of it." (Interviewee 15).

It was stated that newborns are not able to provide their consent nor can we be sure that parents would actually comply with the legal mandate of registering their newborns if biometrics were mandatory. If that would be the case, other risks could arise such as the creation of identification barriers that would undermine national registering systems. For example, as indicated by BM, "if an individual does not have personal identification he/she cannot be under surveillance", which could entail policing problems. In order to tackle these issues, a more thorough study of how would people obtain and access their documents is needed.

5.2 Reducing risks and negative implications of biometrics in BDs

Considering the previous elements, most of the interviewees are critical about the application of biometrics to BDs. However, the experts have also pointed out or suggested some possible measures in order to tackle the cited concerns when embedding biometrics to these documents.

In general terms, the experts recommended that the design of biometric BDs should embed ethical and privacy elements. Purpose limitation in the architecture of the system was highlighted as a fundamental requirement when preventing the above mentioned potential negative effects. In this regard, both cryptography and the possibility of choosing a biometric that is difficult to be collected inadvertently were mentioned.

Potential action for securing biometric systems when applied to BDs could also include the development of appropriate security protocols for data management. This should involve an accurate control over data collection, guaranteeing consent and settling strong mechanisms for the limitation of function creep, such as effective controls of data repurposing, sharing, storage and deleting in due time.

6 Conclusive remarks

Contrarily to the coordination of interstate systems established for the verification of passports, BDs do not have common international foundations and they can be repeatedly obtained. In fact, there is not even interoperability between national systems, which could –if existing- contribute to improve its security standards [Co11]. This could de facto turn BDs into “the weakest point in the passport issuance process” [Bu13]. Therefore, the use of biometrics in BDs has been presented as a mechanism for securing the “documentation chain” that goes from BDs to passports, as well as for controlling the criminal threats derived from potential adulteration. Particularly, both the European Parliament and the European Council regard “these documents [to] have less security features than the passport in itself, and [to be] more likely subjected to forgery and counterfeiting” [EU15]. This implies the assumption that “this chain will only be as secure as its weakest link” [EU15].

This article has explored acceptability and desirability, that is to say the diverse layers and levels of social consent to the proposed solution and the proportionality of the measure, which permit to consider possible legal or political reforms prior to their establishment. From a societal standpoint, the proposed measures may have diverse implication for collective and individual rights.

On the one hand, the right to be identified is bound to the exercise of citizenship, so any change on the provision of BDs could have a direct impact on the individual’s right to be identifiable and on the mechanisms of public social control. Consequently, this supposes a potential risk both for individual and collective privacy derived from potential function creep, whether this is coming from governments or private actors. Furthermore, the use of biometrics for newborns implies the violation of the human right to informed consent when obtaining and managing their personal data, which may also have diverse implications for personal identification when becoming an adult.

In another register, the implementation of this policy may imply the elaboration of a database for newborns at EU scale, which would necessarily contain biometric data. This entails several problems regarding the construction of a multilevel governance for the management of this identification system. Its coordination and functioning should require a harmonization of national legal frameworks and the establishment of common administrative protocols, as well the

enforcement of stricter controls concerning data management in order to assure that the solution will not imply more significant problems for citizen security. However, we need to take into consideration that reliability is not a simple matter, something that could be easily enhanced just by acting on strong political will. On the contrary, it is much more complex than that and it depends on several levels and layers that constitute an intricate “matrix of confidence” (Interviewee 10), which can prove very difficult to sharpen. This is why any attempt to enhance BDs confidentiality could be considered as an opportunity to make this chain stronger, as long as the societal and managerial aspects aroused in this article are properly considered and accounted for.

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