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Forgone, not Forgotten: Reinstating Britain’s Pilot Study of DNA Profiling for Migration Control in the History of Genetic Profiling

**Abstract:** DNA profiling has become a culturally ubiquitous technology. Its use, whether in forensic investigations, genetic databases, biomedical research, international border-making, or popular genealogy, has been familiarized through political debates, media and cultural representations and commercialization. DNA profiling has also attracted considerable scholarly attention across this terrain. However, scant attention has been paid to the key role played by legal migration in driving DNA profiling’s initial translation from lab bench discovery to ‘truth machine’ and identity token. Here, I discuss the first state-sponsored use of DNA profiling, as a tool for establishing kinship relations among legal but racialized migrants on Britain’s borders in the mid-1980s. I argue that this early “experiment” conditioned the commercialization and future uses of the technology at and beyond border zones. Reinstating migration as the origin context for DNA profiling, and retracing the postcolonial routes by which it entered the biopolitical sphere sheds light on the conjoined naturalization and racialization of genetic technologies of identity and identification, whether at or beyond national borders.
Forgone, not Forgotten: Reinstating Britain’s Pilot Study of DNA Profiling for Migration Control in the History of Genetic Profiling

In 2009-2010, the United Kingdom’s Border Agency (UKBA) launched the Human Provenance Pilot Project (HPPP). The HPPP was an experimental scheme intended to test the potential of new genomic and isotope screening methods for establishing and fixing the national origins of individuals applying for asylum in Britain. When the HPPP was exposed to public scrutiny, researchers from a range of genetic and genomic disciplines immediately protested on both scientific and ethical grounds. Initially paused by the UKBA, then reinvented as a smaller scale anonymized trial project, and finally cancelled, the HPPP has become a useful example for scholars in science and technology, migration, and border studies seeking to understand and challenge the technobordering regimes of ‘Fortress Europe’. Some (Tutton et al. 2014) have argued that the HPPP demonstrates a deeply flawed search for (ultimately unattainable) ‘objective’ tools that would allow states to read - or as Ruha Benjamin (2015) has aptly put it, to ‘diagnose’ -- social identities from human biological substrates, and to privilege them over ‘subjective’ narratives and corruptible cultural artefacts like identity documentation or interview transcripts. Like other biometric border surveillance regimes (Aas, 2011; Scheel, 2019), HPPP also sought to inscribe those identities, and the human bodies from which they were extracted, with the fixed and unalterable meanings that are commonly assumed to inhere to physical substances.

The incorporation of genetics and genomics into the suite of border biometric controls is commonly understood as a response to the asylum crises of the 1990s, and the ‘war on terror’, especially after 9/11 (Amoore, 2006). It certainly exemplifies the intersections between cultures of suspicion and technophilic quests for control that have
shaped border zones in this period. However, the HPPP was not Britain’s first foray into diagnosing identity genetically. Nor was the prompt for DNA’s translation at the UK’s expansive borderlands (internal and external, domestic and foreign) either terrorism or asylum seeking. In fact Britain, the first state to successfully deploy genetic evidence in the appellate and criminal courtrooms, applied genetic profiling to postcolonial migrants even before the technique was used forensically. Since “immigration” in Britain – and across Europe – became virtually synonymous with the inward movement of ‘racial’ Others in the post-war period (Erel et al. 2016; Garner, 2007), “DNA fingerprinting” (strategically so named by inventor Dr Alex Jeffreys) as a technology of identification was thus effectively racialized before it was criminalized – and the acceptance of the former smoothed the way for the latter, legally, culturally and commercially.

Here, I will scrutinize the UK Home Office’s DNA Profiling Pilot Trial [DNAPPT], conceived in 1985 and delivered in 1987 to explore what the underused archive documenting the inception of one pluripotent technology, genetic profiling, can tell us about the complicated intersection between state and migrant agency, criminal and familial identity, technology and (im)mobility – and about the history and historiography of DNA profiling itself. Plans for the trial were forged within months of the first publication positioning DNA profiling as a tool for individual human identification, and generated significant national and international media coverage. By examining the ways in which the further development – scientific, commercial, and operational – of DNA profiling was shaped by its early use to screen family reunification migrants, I will argue that this trial and its reception conditioned enduring public and bureaucratic expectations about the translation and implementation of new genetic and genomic technologies of identification and screening at the UK’s borders, and beyond.
This in turn raises interesting questions about why the DNAPPT has been largely ignored by scholars of the DNA ‘truth machine’. Critically, many scholars have pointed out the criminological roots of biosurveillance technologies, and the racialized forensic circuits which have powered their adoption by national and supranational border agencies (Aas, 2006; Skinner, 2012, 54). Along with wider cultural discourses that routinely depict migrants and asylum seekers as suspect, the choice of these particular tools to manage migration demonstrate the subjection of migrants’ identities to a “hermeneutic of suspicion” (Tutton et al. 2014, 739). Biometric border technologies, researchers agree, not only reflect the criminalisation of certain kinds of human movement (Kubal, 2014), but criminalize the very identities that they produce, tainting even those whom they vindicated. And certainly they are “carceral” (Benjamin 2016a, 145) in their impacts, effectively immobilising migrants, or compelling them to grant the state both powers and personal information which less vulnerable populations can reserve to themselves.

I argue elsewhere that the use of biosurveillant techniques on postcolonial migrants was naturalized especially swiftly in the UK precisely because colonial spaces and colonized people long served as experimental spaces and subjects for British (and other) imperial science. This is certainly true in relation to efforts to fix individual identities to particular bodies, as witnessed by the imperial history of fingerprinting in India (Sengoopta, 2003; Anderson, 2004). But migrant populations, especially those framed, in M’charek, Schramm, and Skinner’s useful phrase (2014, 471), as the “phenotypic other”, have consistently proven uniquely susceptible to experimental technologies of categorization and control. In the United States, for example, it was the arrival of large numbers of migrants from China that prompted the adoption of fingerprints as marks of identity (Cole, 2002, 121-127). Immigration drove a sense of urgency that in turn militated for the adoption of a ‘simple’,
even if not fully tested, technology to meet the demand for mass identification and
surveillance. In fact, in moving from civil to criminal law, DNA fingerprinting neatly follows
the innovation/diffusion pathway of its namesake.

So why does the literature on DNA profiling so rarely integrate analysis of its use in
border zones with its use in other zones of control, whether carceral or medical? I suggest
that the naturalisation of biometric and biosurveillant regimes of all kinds at national
borders has led to a scholarly blind-spot. Because we are accustomed to seeing migrant
bodies excluded or disciplined by “science at the borders” (Fairchild, 2003), we have been
inattentive to the distinctive role played by migration in the early use and marketing of DNA
‘fingerprinting’ commercially and as a source of probative truth.

The existence of the DNAPPT is not unknown. While Alec Jeffreys’ archive of the pilot
trial has only recently become available (c. 2018), he gave numerous interviews about this
work to journalists and interested scholars, beginning in the late 1980s. Parliamentary,
journalistic, and scientific coverage of the pilot was substantial at the time (and remains
readily accessible through digitization), and the official report of the pilot has been cited
regularly in the literature on applications of genetics since the 1980s. The British state’s
archives documenting uptake of the technique began to open in 2005, culminating in 2017
with the release of the pilot trial documents themselves.

Britain’s DNA fingerprinting pilot programme has correspondingly garnered passing
mentions in a number of influential studies of genetic profiling. However, these extended
accounts of forensic science, popular genealogy, and legal wrangling (Cole, 2002; Aronson
2007; Lynch, 2008) forgo analysis of the DNAPPT’s impact. Similarly, those studying how
patients’ groups have leveraged shared genetics to imagine and configure new counter-
hegemonic communities of “genetic citizenship” have forgone consideration of the
precedents set by DNA profiling in generating or erasing legal citizenship at and beyond the
UK’s borders (e.g. Heath et al 2007; but exceptionally, Weiss, 2011 13-15). Only legal
scholars (from White and Greenwood, 1988 to Kritzman-Amir, 2021) and more recently
researchers in migration studies (e.g. Weiss, 2011; Heinemann et al., 2013; Hélen, 2014)
have engaged seriously with this literal genetic citizenship; neither group has yet explored
the ways in which DNAPPT structured and continues to inform later ‘bordering’ applications
of genetics.

Instead, researchers interested in genetics and genomics have been drawn to
criminal DNA, and captured by the implications of genetic technologies for ‘our’ families,
fellow citizens, and the medicolegal systems in which we are ourselves enmeshed. Some of
this work has valuably explored the role of (presumed or possible) ethnic differences in
genetic profile between populations in legal challenges to statistical frequency calculations;
in undermining the applicability and representativeness of criminal genetic databases; and
in structuring such databases around a reified model of biological ‘race’ (M’charek, 2000;
Gannett, 2004). But neglecting the imperial, liminal, and racialized roots of DNA profiling
beyond forensic settings limits the analytical traction available for understanding its
pervasiveness. This lacuna illustrates the power of our own exposure to the global media:
whether we accept or dispute it, we struggle not to reflect the culturally selective,
commercially-curated vision of the present that focuses our perceptions of what ‘matters’ in
the everyday. In relation to genetic profiling, the media has overwhelmingly shown us the
forensic use of DNA in domestic crime and international terrorism; the apparent ability of
genetic genealogy to recover ‘true’ personal pasts; and genetic medicine. It is unsurprising,
then, that these uses have also been foregrounded in the literature as what ‘matters’ about
DNA profiling.
“Complex and often ambiguous”: Migration matters and border relations

In the 1970s and 1980s, migration certainly ‘mattered’ in Britain’s everyday. However, the border-crossings of concern were not ‘illegal’ or ‘irregular’ but uncontrolably legal: the historically entitled movement of former imperial subjects between former territories of empire; and the newly entitled movement of European workers around the expanding European Economic Community [EEC]. Britain experienced a complicated, politicized and mediatized re-envisioning of national identity and citizenship. As politics and economics drew Britain ever-closer to continental Europe, older ties to its former colonies in the Global South weakened. A global economic slow-down and the rapid decline of its manufacturing base reduced the UK’s need for imported industrial workers, though not its demand for both labourers and professional employees to staff its welfare, food production and service sectors (Ruhs and Anderson, 2010).

The UK’s admission to the EEC in 1973 transformed the citizens of all EEC member countries from excludable ‘aliens’ to belongers entitled to migrate freely for work. It is no coincidence that the restrictive and ethnically discriminatory 1971 Immigration Act [IA71] came into effect the same year. IA71 was intended to halt primary migration to the UK from African, Caribbean and South Asian Commonwealth nations without explicitly establishing a colour bar or alienating the white descendants of recent British emigrants to Canada, Australia and New Zealand. From 1973, it restricted the automatic ‘right of abode’ in the UK to those who could claim ‘patriality’: a direct connection to the British Isles through parental or grandparental ancestry or legal settlement. As recession deepened and unemployment rose across the 1970s, Margaret Thatcher’s election victory in 1979 legitimated and
amplified popular anti-immigrationism, supported by her government’s ideological commitments to individualism, self-help, and the retrenchment of the state (Taylor, 2021).

Ten years after the implementation of ‘patriality’, the British Nationality Act of 1981 [BNA81] finally created an exclusively geographical British citizenship, converting the existing (partial) ‘right of abode’ into *jus sanguis* citizenship. However, BNA81 did not -- and, in a period of intercommunal racial tensions and rising sensitivity to institutional racism (Peplow, 2019) -- politically could not strip certain key rights from Commonwealth migrants who had gained legal settled status in Britain before 1973. Chief among these was the settlers’ right, granted and preserved on humanitarian grounds and to improve ‘integration’, to sponsor close family members’ migration to the UK. A feature of UK im/migration law from the 1962 Commonwealth Immigration Act, the right to family reunification enabled continued migration from the Global South to the UK despite increasingly exclusionary legislation and immigration rules. This ‘uncontrolled’ migration was routinely depicted in UK politics and the media as medically suspect and peculiarly prone to fraud and subversion (Smith and Marmo, 2014; Bivins, 2015).

By the late 1970s, Pakistani and Bangladeshi relatives dominated would-be reunification migration. Thus, they were the groups most severely affected by the increasingly restrictive combination of immigration laws, rules, medical and documentary inspection regimes, and ideological climate post 1971. Despite their legal entitlement to join settled family members in the UK, by 1985 some 30,000 Bangladeshi children and their mothers had been denied visas because that they were unable to persuade immigration authorities that they were “related as claimed.” While excluded migrants could appeal their refusals, or re-apply for entry clearance, the ‘queues’ in which both appellants and re-applicants awaited re-consideration could be years long, and any new evidence they
produced faced deeply suspicious official scrutiny informed by overt racial/ethnic bias
(Ihenacho, 1991 7-20; Wray, 2016).

The migrants did not silently accept UK migration policy and practices that deprived them of legally enshrined rights. Instead, settlers formed high profile groups like the Bangladesh Divided Families Campaign. They also worked with established pro-migration organisations, legislators, clerics, journalists and the growing Community Law Centre movement to actively challenge both the structural bias of the UK’s immigration procedures and their own individual outcomes. Consequently, previously hidden practices of exclusion at the UK’s externalized borders (produced and policed by the UK Foreign and Commonwealth Office’s [FCO] diplomatic outposts across the Global South) and its geographical borders (generated by Home Office [HO] immigration officials and to a lesser degree Department of Health and Social Security [DHSS] medical inspectors) were rendered visible and even scandalous (Bivins, 2021; Evans and Marmo, 2014).

“Fingerprinting” families: The Home Office DNA Fingerprinting Pilot Programme

Besieged by bad publicity and legal challenges, over-stretched and over-spent in resisting persistently high demand for entry visas, and battered by the fickle winds of British politics, the two Whitehall departments charged with managing migration and policing the UK’s borders were eager for ‘simple’ technological solutions to automate and neutralize the process of exclusion. In March 1985, exactly such a solution appeared on the horizon. British genetics researchers Alec Jeffreys, Victoria Wilson and Swee Lay Thein (1985) claimed in the prestigious journal *Nature* that they had developed a technique for providing “individual-specific DNA ‘fingerprint[s]’” and complete family “pedigrees.” Less than a week later, the left-leaning *Guardian* newspaper put the technique on its front page, specifically linking it to
migration and to unravelling the fused biological and social reproductivity of families of South Asian communities (Veitch, 1985). In May, civil servants within the Home Office eagerly discussed the possibilities presented by the technique for “resolving” family reunification cases. By June, migrants themselves were already leveraging DNA profiling to preserve their legal mobility and right to reunification. Jeffreys, at the request of lawyer Sheona York of the Hammersmith and Fulham Community Law Centre, prepared and submitted a series of “genetic fingerprints” to an immigration appeals tribunal on behalf of a family of African heritage. The profiles showed that Andrew Gyimah, a thirteen year old boy under threat of deportation, was incontrovertibly the biological son of his legally settled Ghanaian mother, and thus a British citizen from birth. While the novel DNA evidence didn’t determine the outcome of the appeal, it did prompt the Home Office to withdraw its case to avoid a precedent-setting defeat.

Subsequently, the HO, FCO, Jeffreys and his institutional partners enthusiastically planned an “experimental” pilot test of DNA fingerprinting to be based in the then-epicentre of reunification migration: the Bangladeshi capital of Dhaka. They intended to enrol 40 families, all active immigration cases, as (voluntary) test subjects and donors of clinical material. The samples would be taken under the watchful gaze of FCO staff in Dhaka, and sent by diplomatic pouch to Jeffreys’ laboratory at the University of Leicester, where they would be joined by samples taken from the sponsoring family member by approved NHS haematologists. Jeffreys would sequence the sampled DNA, calculate its meaning for kinship probabilistically, and report his findings to the HO. So far, so imperial: these procedures replicated the familiar practices of colonial science almost exactly – perhaps the reason that this model for the trial could be so swiftly and smoothly agreed by all on Whitehall. The Home Office encouraged Jeffreys to hire further researchers to increase his
lab’s screening capacity, and Tim Eggars, a junior FCO minister, blithely announced the proposed experiment as a fait accompli during a press conference at Dhaka Airport in January 1986.

The Government of Bangladesh and a significant portion of the Bangladeshi public reacted angrily to the proposed use of their fellow-citizens as “guinea pigs” for a trial that presumed their marriages and children were “bogus”, and in which blood samples would be taken and interpreted entirely without local control or scrutiny.iii It took over a year of negotiations and compromises before the pilot trial was finally approved by all sides.

Screening in Bangladesh, Pakistan and the UK began in March 1987. The final report, based on tests of 37 families, was released only in July 1988 (HO, 1988). It assessed not only the biological kinship of individual families, but the accuracy of DNA profiling itself as compared to conventional (and much cheaper) blood group screening, and the practicality of transnational arrangements for securing, sharing, and screening DNA samples as a tool for identification and border control.

The trial also brings an additional aspect of the use of DNA profiling under the microscope: the practicality, viability and cost of outsourcing state-sponsored or DNA testing to a commercial entity. By the time the DNAPPT began, Jeffreys had been providing ad hoc screening for desperate migrants and their sponsors for over 18 months, in cases that sometimes achieved wide publicity. He and his funding body, the Lister Institute (patent holders for his DNA fingerprinting technique) had also established a commercial relationship with Imperial Chemical Industries [ICI].iv ICI and its subsidiary, Cellmark, held exclusive rights to use the technique and probes Jeffreys had developed in immigration and ‘affiliation’ (paternity) cases, and for mass public screenings related to unsolved crimes.v
Marketing Genetic Meaning: Implications of the DNAPPT

Even with the delays which plagued delivery of the DNAPPT, the broader translation of this particular piece of bleeding-edge science into a proto-truth machine and its incorporation into normally glacial UK legal and governmental procedures occurred with blinding speed. Indeed, this haste attracted comments from Jeffreys’ scientific contemporaries. Reviewing a draft of Jeffrey’s subsequent *Nature* article reporting the Gyimah case, one peer remarked: “it has usually proved to be a long battle to get new markers accepted by the courts, so the mention that this very experimental type of evidence has already been accepted by the Immigration service – though apparently informally – might provoke some comment.” The wider literature on the history of forensic DNA profiling (Aronson, 2005, 2007; Lynch et al., 2008) confirms that the use of DNA evidence in criminal law was contested particularly in the US, with acceptance emerging slowly in comparison to civil and appellate law (Mnookin, 2001).

Yet there has been little critical exploration of the UK’s divergence from the normally cautious patterns of technological translation and adoption in Anglo-American law. Those scholars who have considered why DNA evidence gained rapid acceptance in the UK have written it off as a result of ‘the drama of two early cases’ (Aronson 2005, 130) or uncritical acceptance of its inventor’s bold claims for its accuracy (Lynch et al., 2008, 50-51). Failure to appreciate the UK context -- in which legal migration for the racialized subjects of its former empire depended on specific kinship claims contested by a hostile state, raising the stakes of familial ‘certainty’ for both sides -- is further demonstrated by a tendency to conflate the earliest cases, all tests of familial relationships for immigration appeals, with paternity testing. In fact, the famous Gyimah case pivoted on a state challenge to maternity. Other
cases in the South Asian community looked at wider familial relationships, since the Home Office was particularly suspicious that Pakistani and Bangladeshi traditions of first cousin marriage encouraged fraudulent efforts to pass off nieces and nephews as daughters and sons. In this section, I will argue that closer scrutiny of this developmental context for “DNA fingerprinting” as a tool for the restriction or enablement of legal but controversial postcolonial migration offers greater traction not just on the UK’s rapid and thoroughgoing uptake of DNA identification technologies but on DNA profiling’s commercial and operational development more generally.

Alec Jeffreys developed “genetic fingerprinting” at the University of Leicester, a research university located at the heart of a city that had become home to a large and diverse population of South Asian origin or heritage. Importantly, by the 1980s, Leicester’s South Asian population was dominated by relatively recent arrivals: refugees from the Africanization of Kenya and Uganda in the late 1968 and early 1970s; and Pakistani and Bangladeshi migrants migrating for work, or to escape the disruption that surrounded the emergence of an independent Bangladesh in 1971. The latter mainly followed the traditional pattern of chain migration: single or married men came first, established homes, and then sought to reunite their families. Men (and only later women) who had gained legal settlement before the 1971 Commonwealth Immigrants Act came into effect in 1973 had an absolute right to bring their fiancé(e)s, spouses and minor children to join them. Those who gained settled status after 1973 shared that right, but only if they could meet restrictive economic criteria ostensibly designed to ensure that they could support their families without recourse to public funds. Both groups faced a structurally hostile migration management system that prevented or delayed family reunification, often for years. As a result, Leicester was an early hub for activism around the ‘divided families’ issue. Migrant
campaigning on the issue attracted significant attention in the city, and when Alec Jeffreys went home after a session of brainstorming uses for “DNA fingerprints” with his research team, Sue Jeffreys immediately added migration disputes to the list (Jeffreys, 2005).

Jeffreys and the Lister Institute swiftly realized that there was substantial unmet demand for a technique that could establish with virtual certainty exact —implicitly biological— parentage and kinship relations across extended (even consanguineous) family groups among migrant communities. As early as July 1985, market research commissioned by the Lister demonstrated demand for a ‘DNA Analysis Service’. By August that year, the Lister had received ‘promising requests… for collaboration’ from the US firms LifeCodes Corp., (which would become ICI/Cellmark’s most significant competitor for the vast US marketplace) and Roche Biomedical Laboratories, Inc., and were in talks with ICI and Amersham International.

Crucially, these discussions reveal that Jeffreys, Lister, and Lister’s eventual industrial partner, ICI, saw familial relationship testing as an area in which they could gain a vital commercial advantage precisely because the Home Office was already ‘extremely interested’ in discussing Jeffreys’ invention in conjunction with border control. The Home Office’s proposed DNA pilot experiment for would-be reunification migrants gave ICI advanced knowledge and influence over the protocols that would govern DNA profiling for immigration, and the fees chargeable for such services. Even before its completion, the DNAPPT set the state’s imprimatur to the new and untried technique, a benefit ICI recognized and deployed in early advertising. As the Home Office acknowledged internally, “establishing links with the Home Office (even informal ones)” offered ICI “a significant advantage” in establishing themselves as “market leaders” before competitors could enter the marketplace. And if successful, the DNAPPT would establish a guaranteed
market for ICI’s DNA profiling services among a ‘captive’ client population. Desperate families for whom genetic proof of kinship was often the last throw of the dice before deportation, or the final route of appeal against FCO and HO rejections of social evidence of kinship would absorb the high cost of developing a commercial testing service, and maintaining it as other markets at home and abroad matured.

Moreover, both the Gyimah case and Eggar’s misstep in Dhaka generated national and international reporting on the technique itself. Later, the FCO and HO deliberately attracted media attention to the benefits of DNA testing for migrants, leveraging the Government of Bangladesh’s consent to the DNAPPT by generating demand for the technique among Bangladeshi divided families.\textsuperscript{x} By the time the trial results were officially published in 1988, almost a year after ICI/Cellmark had launched their own commercial DNA profiling service, immigration-related testing had become a mainstay of their business, featuring prominently in their advertising materials. Notably, while their brochures represented paternity testing (still only available for “personal” use) through images of a White nuclear family, the images that accompanied descriptions of “human relationships” testing was heavily racialized, showing South Asian women and children, often in a generic holding area.\textsuperscript{xi} Once DNA testing was state-approved as a means by which divided families could establish their “true” relatedness, ICI/Cellmark confidently predicted “increased demand estimated at 50-60% over projected 1989 business.”\textsuperscript{xii}

Commercially and legally, selling DNA profiling services to migrants presented a sharp contrast with selling forensic DNA profiling to the state; or paternity testing to the family law courts. The Home Office’s Forensic Science Service [FSS], was entitled to take control of Jeffreys’ technique in service of “the public good” without compensation. It was evident that the Home Office was likely to take this action in relation to forensic analysis as
early as October 1985, to the dismay of the Lister Institute’s patent advisors. Jeffreys and the Lister recognized the commercial potential of DNA-based paternity testing, given the significant market already served by conventional blood group and HLA testing services. However, in the UK, half of all such blood tests were ordered by the courts and funded by state. Court-ordered tests could only be provided by state-recognized blood testers, and official recognition was in the gift of the Home Office, which could withhold it almost indefinitely. ICI/Cellmark would not be recognized to provide court-ordered blood testing until 1988, almost a year after they began to provide DNA profiling on a commercial basis in the UK and entered the US market. They were only granted recognition then because Home Office officials feared further denial might prompt a legal challenge.

These well-anticipated limitations on the commercial roll-out of DNA profiling services only amplify the importance to DNA profiling’s early history of the one market that Home Office publicly supported – indeed, actively created through its highly adversarial treatment of entitled migrants -- but over which they did not attempt to exert market control: family reunification testing. Here, they explicitly recognized and enabled the high cost of commercial DNA profiling to act as an economic barrier to migrants who could not otherwise be lawfully excluded. Consequently, early media and legal attention to “DNA fingerprinting,” like early Cellmark advertising both in the UK and the US, stressed its value for establishing “true” kinship. Moreover, these first trials of the new technology occurred in a context where it produced clear benefits for users as well as for the state which spoiled their social identities and made them reliant on biological ones (White and Greenwood, 1988). The early use of DNA profiling by migrants positioned it not only as the gold standard for defining ‘true’ kinship and ancestry – conditioning its future successes in popular
genealogy -- but as Jeffreys himself observed, as a tool of restorative justice, reuniting cruelly separated families (Aronson, 2005, 128).

Immigration and the Always-Already of Racialization in DNA Profiling

Above, I have shown that role of the DNAPPT in the early commercialisation of “DNA fingerprinting” exposes the previously unacknowledged impact of postcolonial migration on the marketisation, and indeed privatisation (Kritzman-Amir, 2021) of genetic ‘certainty’. In the following section, I will argue that presumptions about race, ethnicity and cultures of kinship became embedded in DNA profiling from the very beginning because of its early association with a racialized and suspect class of migrants. This is evident both in the UK state’s active encouragement of DNA “fingerprinting” for familial migrants – but not for existing citizens – while the technique itself was still on trial; and in the preconditions set for the analysis of DNAPPT migrants’ test results. DNA screening was naturalized for “guinea pig” migrants because suspicion had already silenced their social testimony, while cultural stereotypes rooted in empire reduced Asian women in particular to passive reproductive ciphers.\textsuperscript{xvii}

Home Office files covering the DNA pilot trial clearly demonstrate an internal culture of hostility and suspicion towards racialized migrants that profoundly conditioned the practices and meanings of DNA profiling. For instance, at a seminar arranged in April 1986 by the FCO to attract support for the DNA pilot programme, Jeffreys took questions from within the HO and FCO migration management divisions. Their conviction that (routinely exoticized) levels of consanguinity would allow Bangladeshi families to deceive even a genetic test drove a question about whether DNA profiling would work in cases of what they termed “in-breeding”. Rejecting both the doubts about his technique and the implicit
animalization of its proposed migrant subjects, Jeffreys noted that, to invalidate the screening, “inbreeding would have to be of a level commensurate with animal in-breeding and all but impossible in human terms.”

Later, as DNAPPT results confirming migrants’ claimed family relationships began to accumulate, HO official Gabriel Denvir sought to distinguish between interpretations of the DNA results that rested on “social judgement” and those backed by “statistical or scientific” evidence. Jeffreys responded to what he clearly recognized as an artificial distinction by carefully demonstrating the extent to which these categories could not be disentangled, precisely because both relied heavily on racialized cultural assumptions. To make his case, Jeffreys used the example of a Bangladeshi family in which one child was clearly demonstrated by DNA fingerprinting to be the biological offspring of both claimed parents, while an older child’s DNA was equally likely to have been inherited from the claimed mother or from a maternal aunt. Jeffreys’ analysis of the case for the Home office had interpreted these results as indicating a true biological relationship, an assumption that Denvir took to be “social” and thus implicitly suspect. However, as Jeffreys explained, while the test results were “equally compatible” with either relationship in the abstract, the simple realities of family life made one far more probable:

In our probability calculations, we assume that the prior probabilities of each possible relationship … are all equal… In practice this assumption is invalid, and operates against proving genuine relationships. Suppose, for example, that 99% of families presenting for immigration in Bangladesh were completely genuine. If we now found a family where the “mother” was either the mother or aunt with ...

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ratio would be greater than 100:1 in favour of maternity, since “families” comprised of father, children and the mother’s sister would be rare ... the fact that many claimed families are genuine will lead to our probability estimates for genuine relationship being underestimated.xx

After working through the specific example in detail, Jeffreys summarized: “in this population, genuine relationships are common... whereas mixed families having children by two sisters... must be relatively scarce.” Jeffreys’ argument illustrates how the HO’s insistence that all possible relationships between adults and children in these groups be treated statistically as equally likely biased the purportedly objective pilot trial against the migrants ab initio. This bias was deeply imbued with familiar cultural and racial assumptions about South Asian migrants – that they were prone to fraud and deception, that their phenotypic similarities made them visually almost indistinguishable, and that their sometimes-consanguineous family relationships violated the normative standards of Britishness (Wilson, 1978; Shaw, 2009; Smith and Marmo, 2014).

Jeffreys’ interim reports to the HO mitigated against the bias embedded in the trial’s assumptions by interpreting the raw statistical data produced through a different cultural lens. He replaced the FCO and HO’s presumed “web of deceit” (Waddington, 1985, 144) with a presumption that kinship operated in much the same way in African and Asian families as in British ones. Nonetheless, Jeffreys took pains to reassure HO officialdom that his technique could parse suspect biological relationships between intermarrying cousins, and identify any illicit child substitutions within a given cousinage.xxi Subsequent summary reports on each family’s results show repeated clashes and challenges around these conditioning assumptions. These indicate the HO’s reluctance, even faced with DNA
evidence that proved most families were related as claimed, to accept Jeffreys’ preferred assumption that the majority of families in South Asia raised children who were the biological offspring of their declared parents. HO obduracy on this point is particularly ironic given that the HO and FCO elsewhere presumed familial relations on the subcontinent to be frozen in a feudal past of dominating patriarchy, female virginity at marriage, and complete female sexual fidelity and hyperfertility within it (Smith and Marmo, 2014).

The British government’s decision to implement DNA profiling first to “control” and ideally immobilize a racialized population was not coincidental but specifically tailored to address assumptions about South Asian (and later African) counter-normative embodiment and habitus. The DNAPPT traded on their position as socially suspect to establish the translational value of ‘DNA fingerprinting’. Yet consistent with Scheell (2019)’s plea to strip away “control bias”, it also shows that the very “certainty” DNA testing established initially offered migrants a new channel though which to exercise their autonomy of migration, much to the government’s chagrin. Nonetheless, while the DNAPPT disrupted government expectations by conclusively proving most migrants’ claims to entitlement, the state was able to retool and reclaim that certainty. They did so through legislation (the 1988 Immigration Act) that replaced kinship testing with means-testing as the barrier to entry for legal familial migrants; and though accepting the marketization of familial DNA testing at a price point that rendered its “certainty” economically unattainable to the least desired migrants (Platt, 1988).

Recent scholarship examining biometric systems of border management and surveillance posits that the convergence of two previously distinct areas of law and governance – “crime control and immigration enforcement” -- is an emergent practice,
dependent on the rise of biometrics which either criminalize or certify bodies as the objects of “abject or privileged” civic identities (Aas, 2011, 337-341). What the DNAPPT shows is that both the suspect-ness and the abjection of wholly legal migrants was in fact central to the development and state-capture of DNA profiling. Only after DNA’s utility was proven on migrant bodies, and the new certainty it created was successfully captured by the state was it adopted (rather uncritically in the UK) for use in the detection of crime and identification of criminals, on one hand, and the exploration of citizens’ kinship and ancestry on the other.

The UK media swiftly exchanged reports about the impact of DNA profiling on a marginalized and racialized population for those celebrating DNA’s power for solving the crimes threatening the majority population; or identifying “feckless fathers” who undermined the government’s responsibilizing vision of traditional nuclear families, economically support their children (Lewis, 2009, 137-142). This cultural bias toward the concerns of Agamben’s 

**bios** perhaps explains why the scholarly literature on DNA profiling has not recognized migration and migrants’ deprecated autonomy of mobility as the origin problem, and postcoloniality as the origin context, of state-sponsored DNA profiling. Only since migration seized the media centre stage in the late 1990s and 2000s have we begun to take the DNA profiling of migrant families as seriously as the profiling of criminals or medicalized citizens. Our collective intense focus on DNA profiling in forensics (especially as it emerged in the US) has skewed understandings of the technique. In particular, it has erased the deep colonial roots – roots shared with the original process of fingerprinting on which its inventor capitalized – which fed DNA profiling’s commercial and governmental translation. Moreover, it has mislaid DNA profiling’s initial framing as a tool for liberation, and one used, albeit in extremis, by agentic migrants, rather than imposed by a surveillant state, seeing this as arising only later with projects focused on rehabilitating the
biocitizenship of the ill or falsely imprisoned. DNAPPT shows us that the use of DNA to build
or re-affirm “genetic citizenship” denied by the state emerged before, and not after the
‘DNA wars’, the “Innocence projects”, and the activism of medicalized individuals and
groups.

This has implications for more than just our scholarship. In fact, looking at the
Human Provenance Pilot Project with which this article opened, it is evident that the British
government’s first experiment with genetic profiling as a tool for border truth-making
conditioned this far less successful Home Office venture. In the concluding section of this
article, I will explore what closer attention to the DNAPPT adds to analyses of more recent
state-sponsored exercises of genetic identification and enclosure, looking at the failed HPPP
“experiment”.

Decolonizing DNA’s History

Like most European nations, the UK has a well-established record across the post-war
period of seeking to manage and restrict migration on medical grounds and by using
emerging medical technologies. From medically screening would-be migrants among the
post-war displaced populations encamped across continental Europe, to the construction of
airport radiography suites to screen migrants for tuberculosis, to the highly controversial
use of gynecological examinations (“virginity testing”), blood group analysis, and x-ray age-
determination as tools in border identity-evaluation, the UK has repeatedly shown itself
willing to deploy even scarce and expensive medical resources to restrict inward migration
(Evans and Marmo, 2014; Bivins, 2021). Situating the HPPP in this lineage of exclusionary
bio-inspection valuably balances claims that the use of molecular technologies of
identification represents a change in the nature of border controls, rather than the degree
of their penetration into and distortion of socio-legal identity. But closer examination of the
HPPP, as documented by Tutton, Hauskeller and Sturdy (2014) and Benjamin (2016), also
reveals the conditioning impact of the DNAPPT on the UK government’s model for deploying
experimental biotechnologies at its borders.

The migrant groups whose entry triggered Britain’s early adoption of disruptive
biopolitical technologies shared key features. First, in both cases where UK border
authorities planned to experimentally expose migrant groups to novel and untested genetic
examination, they assumed that their decision would be uncontested by the migrants’ own
governments. Clearly imperial assumptions about the universal availability of colonized
bodies to biopolitics have not faded since decolonization, or even since the DNAPPT.
Moreover, as well as being racialized citizens of former UK territories, both groups were the
most toxically visibilized migrants in their period. Both groups included many individuals
lacking documentation; and both were assumed by immigration authorities and segments of
the British press to be infiltrated by – if not wholly comprised of – undeserving fraudsters
‘trading on’ British humanitarianism.

Comparing the Bangladeshi and Pakistani migrants who comprised the majority of
family reunification cases in the DNAPPT with the Somali and other African migrants
targeted for novel genetic analysis by the HPPP (Aspinall and Chinouya, 2011; Tutton et al.,
2014; Benjamin, 2016b) we also see another important commonality. Both groups were in
fact entitled under the applicable laws of their day to arrive at the UK’s borders if their
identities—whether as family members or as asylum seekers -- were as claimed. Thus their
entry could not be “controlled” (that is, prevented) unless their social identities could be
undermined. Indeed, this combination of characteristics appears to be predictive of (at least
British) state decisions to ignore or strip away ‘self ascription’ (Aspinal and Chiniuyam 2011,
p. 25-87) of familial and national identity (the ethical norm for non-abject groups since at least 2001), and to replace them with observed identities that can be read from the body itself.

Comparing the DNAPPT and the HPPP also enables more accurate mapping and more nuanced interpretation of the rise of the “crimmigrant” model of unwanted human mobility. It is, I argue, important to recognize the origins of this conflation of mobility and criminality in the Home and Foreign Office’s near-obsession with identity falsification as a universal feature of family reunification migration from the Indian subcontinent. DNA profiling was first used specifically to address this presumption of guilt, rather than criminal culpability, and in the DNAPPT, it was explicitly acknowledged that innocent and legally entitled migrants and birth citizens would be caught up in and disprivileged both by suspicion and by the collective punishment of reunifying families for the civil and tax code infractions of their settled relatives.

Through the DNAPPT of 1986-7 and its immediate sequelaes, we can see an early example of the deliberate but troubled construction of what would become the “administrative objectivity” (Lynch et al., 136 n23, 245) – one could even say, in this racially charged context, the “administrative innocence” of DNA profiling. This too was evidently the intention of the HPPP. Equally, both show us the persistence and effects of cultural assumptions, embedded in empire, but enacted on migrants through bodies newly rendered legible and outspoken by genetic technologies. Comparing them also sheds new light on the costs of ‘certainty’ and ‘objectivity’ not just for the abject possessors of ‘bare life’ but for those who define the conditions of biopolitical life. Rather than evidencing one side or the other of the dichotomous views of DNA as liberatory (for those able to craft or
participate in ‘genomic citizenship’) or stigmatising (for “crimmigrants” and others who are surveilled and rendered static by these technologies), the DNAPPT and the HPPP offer clear evidence of both. Perhaps resultantly, neither ‘closure’ nor ‘control’ was attained by the British state through genetic screening. Both were only gained socially: through negotiation, legislation, and propaganda that foreclosed the benefits of ‘certainty’ for migrants seeking to access genomic citizenship, replacing it with the more familiar vision of state technovigilance mobilized against intruders. The failure of the HPPP is a mirror reflection of the DNAPPT’s success precisely because the UK government in the latter presumed that their success in controlling and narrowing certainties created with DNA profiling was transferrable to another genetic technique, rather than depending on a moment of genetic pluripotency when scientists, industry, agentic migrants, their social allies, and the state could all see value in translating a laboratory discovery into a tool of border navigation, not just border control.

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Author Biography: Roberta Bivins is a professor in the Department of History at the University of Warwick. Her research has focused on the histories of migration, medicine and the cross-cultural transmission of knowledge and expertise.

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xviii TNA HO394/810 “The DNA Seminar in FCO Friday 11 April.”


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xxii TNA HO394/850 “Pilot Study: Situation Report on Cases at 10 November 1987.”