

Demography & the rise, apparent fall, and resurgence of eugenics

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Abstract

Demography was heavily involved in the eugenics movement of the early 20th century but, along with most other social science disciplines, largely rejected eugenic thinking in the decades after the Second World War. Eugenic ideology never entirely deserted academia, however, and in the 21st century, is re-emerging into mainstream academic discussion. This paper aims to provide a reminder of demography's early links with eugenics, and to raise awareness of this academic resurgence of eugenic ideology. The final aim of the paper is to recommend ways to counter this resurgence, which include: more active discussion of demography's eugenic past, especially when training students; greater emphasis on critical approaches in demography; and greater engagement between demographers, and other social scientists, with biologists and geneticists, in order to ensure that research which combines biological and social science is rigorous.

Introduction

I write these words on Gower Street in London, the academic birthplace of eugenics. In 1904, Francis Galton established on this street the first academic body to conduct research into eugenics: the Eugenics Record Office at University College London (UCL) (G. Jones, 1998). In the last decades of the 19th century, Galton popularised the idea that the human species can be 'improved' through selective reproduction: eugenics, in other words, a term he coined in 1883 (Gillham, 2003). Galton believed that traits such as intelligence, 'good character', criminality, mental health disorders or alcoholism were innate and passed on from parents to offspring, and so their frequency in the population could be manipulated either through 'positive' eugenics - increasing the number of children born to those deemed to have 'beneficial' traits – or through 'negative' eugenics – preventing reproduction in those with 'undesirable' traits. These ideas gained remarkable traction in Western countries, particularly early in the 20th century; traction which was likely facilitated by the establishment of the academic study of eugenics (Björkman & Widmalm, 2010).

Eugenics was integral to the development of several academic disciplines, including genetics, psychology and demography. I suspect most Western 21st century demographers are familiar, at least to some extent, with the eugenics movement and its links to demography. However, the subsequent rejection of eugenics later in the 20th century has been so powerful in demography and some other social sciences, that it may be under-appreciated just how influential, and how very intimately tied into the origins of demography, eugenics was earlier in the 20th century, and how it has retained a foothold in some academic disciplines, policy and in wider public discourse. As a recent inquiry into the history of eugenics at UCL puts it: *"This idea is perhaps more successful than we care and/or dare to admit: in one form or another, it has pervaded law, policy and practice in*

relation to immigration, family policy, welfare, health care and education"¹. In this paper, I consider links between eugenics and academic research, first by offering a reminder of how 'mainstream' eugenics was in the early 20th century and how it influenced the field of demography (concentrating largely on the UK). I then discuss how eugenics hung on as a 'fringe' interest in academia in the later 20th century, and use two examples to suggest that eugenic arguments may, in the 21st century, be emerging out of the shadows into 'mainstream' academic discussion again. I end by proposing solutions to the dangers posed by this re-emergence.

The rise and apparent fall of eugenics

Eugenics had widespread support in the early 20th century among those with power and influence (Searle, 1998). Its success may partly be due to its ideology appealing across the political spectrum, and not just to conservatives, who might be expected to favour ideology which could be used to support the existing political status quo. Eugenics was considered by some to be progressive, because it prioritised innate qualities and abilities, and therefore could also be used to justify a meritocracy whereby those who 'deserved' power and influence – such as the relatively new professional middle-classes – should be allowed to wield it, rather than just the aristocracy. William Beveridge, one of the architects of the British welfare state, was a member of the Eugenics Society, for example, an influential society set up in 1907 to promote eugenic ideology (it was set up as the Eugenics Education Society and changed its name in 1924; I'll refer to it as the Eugenics Society throughout). Progressive arguments, along with the centring of motherhood in 'positive' eugenics, may also help explain its appeal to women, including many feminists (Hall, 1998). A woman - Sybil Gotto - was an important force in the founding of the Eugenics Society, and women formed a large proportion of its membership (around half in 1914: Hall, 1998). 'Positive' eugenics requires encouraging the 'right' kind of woman to have (more) children, and coincided with a period of rising interest in the nature and status of motherhood.

Eugenicists were successful and widespread enough to turn eugenic ideology into government policies in many countries, often focused on 'negative eugenics'. Indiana has the distinction of passing the first forcible sterilisation law with eugenic aims in 1907 (Stern, 2019). This allowed the sterilisation without consent of individuals who had 'undesirable' traits, such as 'imbecility'. Subsequently, the majority of US states, some Canadian states and the Nordic countries all implemented laws which resulted in the sterilisation of 100,000s of individuals, mostly women (Broberg & Roll-Hansen, 1996). Eugenic ideology also infiltrated policies other than those which affected reproduction (Hansen & King, 2001). Some migration policies might have been influenced by the desire to selectively allow immigration only by those with 'desirable' qualities; this may have been one factor influencing the US Immigration Restriction Act of 1924, which restricted immigration more severely from regions of the world then considered 'undesirable', such as eastern and southern Europe. The UK never passed any explicitly eugenic laws – though sterilisation laws were proposed and debated in Parliament – but eugenic ideology was brought to bear on a perhaps surprisingly diverse array of policies. Voluntary military service was considered by some to be 'dysgenic', since it was thought the act of volunteering sprung from 'desirable' personality traits, but

¹ https://www.ucl.ac.uk/provost/sites/provost/files/ucl_history_of_eugenics_inquiry_report.pdf

such men would be more likely to end up on the casualty lists. Some eugenicists therefore favoured conscription during the First World War (Searle, 1998). Beveridge also argued that children's allowances were "good eugenically" because they would only affect fertility by influencing parents who took some thought over the number of children they produced, which necessarily displayed evidence of "social virtues" (Beveridge 1943, published (2007)).

The Nazi regime in Germany took eugenic policies dramatically further, ultimately not just sterilising but murdering 'undesirables' in their millions. These Nazi atrocities shook the Western world into, ostensibly, rejecting eugenic thinking. After the Second World War, explicit discussion of eugenics and (new) eugenic policies began to drop out of sight in the West. Eugenics itself did not go away, however. Many of those eugenic sterilisation policies remained in place until the 1960s or 1970s, and forcible sterilisations continued into the 21st century for certain vulnerable groups, such as incarcerated or immigrant women in the US (Fofana, 2021; Paul, 2011). Nevertheless, the taint of Nazism did make at least explicit discussion of eugenics considerably less palatable in academia and among policy-makers.

In the decades after the Second World War, academia (seemed to) largely turn its back on eugenics, to the extent that (most) social and biological sciences separated themselves entirely from one another for fear that any further discussion of the inherited nature of human characteristics may lead to another round of eugenics. The field I was trained in at postgraduate level – anthropology – by the late 20th century had separated into a dominant socio-cultural branch and a smaller biological branch, and there was frequently little to no contact between biological and social anthropologists. I spent my PhD years with other biological anthropologists in UCL's Darwin building, physically separated from UCL's social anthropologists, housed in a different building entirely.

What is eugenics?

Before discussing the relationship between eugenics and demography, I first need to define my terms. Here I define eugenics as the ideology that the human species (or national populations) can be 'improved' through selective reproduction, migration, murder, or other policies. This is a population-level definition, requiring (powerful) individuals to make judgements about whether other groups of people are 'deserving' of reproduction (or migration, or life). This type of definition is one adopted by Galton, though he himself used different formulations of it (Drouard, 1998), but differs from some more recent definitions. Early in the 21st century, the term "liberal eugenics" was coined to describe individual decisions about family-building which have been made possible through new reproductive and genetic technologies - prenatal genetic testing for certain traits, for example, and the potential for genetic engineering of embryos – and which might have the effect of influencing the health or genetic composition of subsequent populations (Agar, 1998). This broadened definition of eugenics has been used in two more recent papers apparently aimed at 'defending eugenics', published in the philosophy journal *Monash Bioethical Review* (Anomaly, 2018; Veit et al., 2021). One defines a eugenicist as: "everyone who considers pre-natal testing justifiable, or who thinks women should be free to weigh genetic information in the selection of a spouse or a sperm donor is a eugenicist" (Veit et al., 2021).

My own view is that to conflate individual decisions about family-building with state-sponsored policies is unhelpful. State-sponsored eugenic policies are motivated by the *intention* of 'improving' the (national) population, and are necessarily underpinned by the beliefs of those in positions of power that some groups are 'worthy' of reproducing (or of immigrating, or of life) whereas others are not. Individual family-building decisions are highly unlikely to be motivated by such population-level concerns, regardless of what *effect* such decisions might have on future populations. Nor are they necessarily informed by beliefs about the inherent 'inferiority' or 'superiority' of certain groups. This is not to deny the role of the state in allowing, or not, its citizens to engage in genetic testing or enhancement, nor to suggest that beliefs about group 'inferiority' or 'superiority' never play a part in family-building decisions; it is very important to keep in mind how eugenic ideology might influence the implementation of laws around genetic testing and enhancement of embryos (Rutherford, 2021). It is also important to keep in mind the potential for the state, or other powerful actors, to coerce or manipulate supposedly 'voluntary' individual decision-making (Nandagiri, this volume). But applying the blanket label of 'eugenics' to everything from an individual decision over whether to continue a pregnancy or not, to state-sponsored gas chambers aimed at exterminating an entire 'race' of people, muddies the waters to the extent that the label is in danger of becoming worthless.

I refer to eugenics as ideology because, as well as its clear political motivation, it is also not based on sound science. Even early in the 20th century, scientific concerns were raised about eugenics. As knowledge of genetics has advanced further, it has become clear that Galton's assumption that the characteristics he and other eugenicists were interested in have a simple inherited basis is false. Some of these traits – such as 'criminality', 'good character' or 'love of the sea' – are simply too ill-defined to have a genetic basis (G. E. Allen, 2001). Others – such as intelligence or certain mental health outcomes – may have some genetic basis (though not all do) but the genetics underlying such traits is highly complex (Coop, 2019; Rutherford, 2020). Such traits may be influenced by a large number of genes, individual genes may have multiple expressions, and some traits may also be linked genetically to other traits. None of these traits are simply determined by genes alone but are influenced by the environment (Hunter, 2005). Complicating the picture of inheritance further, research on 'epigenetics' suggests that changes in gene expression (how genotypes are turned into 'phenotypes', or observable characteristics) may be inherited from one generation to the next without any changes in the genotype itself (Berger, Kouzarides, Shiekhhattar, & Shilatifard, 2009). Even if it were possible to identify a simple genetic basis for a trait, humans' long generation time and relatively low fertility means any attempt at selective breeding will be a very slow process (which is particularly important given that which traits are considered 'desirable' tends to change over time). All of this means that eugenic policies will not have the consequences eugenicists assume will follow.

Eugenics is also about power. Eugenic policies require someone to decide which traits are 'desirable' and which 'undesirable'. In practice, eugenic policies are often targeted not at individuals with 'undesirable' traits, but at social groups deemed 'undesirable' by those in power. The Nazis' genocide of the Jewish population is one example, along with their targeting of Roma. In other countries too, eugenic policies were often targeted at marginalised ethnic groups: the highest number of forced sterilisations in the US was performed on Black women (Stern, 2019). In many countries, including the UK, there was a strong classist element in early 20th century eugenic discussions. A common view among eugenicists was that the socioeconomically disadvantaged were poor not because of

circumstance or environment but because of deficits in character or of intelligence, and because they imprudently had too many children (Levine & Bashford, 2010). Note that this means that eugenics is intended to subvert the process of natural selection. Natural selection tends to increase the frequency of any traits associated with successful reproduction. Eugenics was stimulated by the belief of powerful individuals that traits that *they*, not natural selection, valued were in danger of being selected out of the population, and so they should interfere with natural selection in order to artificially boost the frequency of traits they valued.

The targeting of ‘undesirable’ races or other social categories reveals more scientific flaws in eugenic arguments. The current scientific consensus is that there is no such thing as biological ‘race’, given that, while genetic variation exists in our species, this genetic variation does not map cleanly onto racial categories (Benn Torres, 2019; Van Arsdale, 2019; Wagner et al., 2017). The evolutionary biologist Richard Lewontin demonstrated there is more genetic variation within, than between, racial categories (Lewontin, 1972)(Roseman 2021). Race exists as socially defined categories, and racism associated with these categories has real world implications in terms of the health and wellbeing of marginalised groups, but these racial categories do not represent groups which are distinguishable genetically (AABA 2019). This is also true for socioeconomically disadvantaged groups, of course – they are not a genetic ‘underclass’.

As well as being bad science, eugenics is unlikely to lead to the most effective policies. Research which has tried to disentangle the effects of genes and environment on traits of interest to eugenicists, such as cognitive ability, typically finds that their heritability – the proportion of variation in a phenotypic trait which can be explained by variation in genetic factors – is relatively low (Bird, 2021; Lee et al., 2018). This means that the easiest way to ‘improve’ humanity is by changing the environment, not fiddling with genes. Both nationally and globally there are substantial inequities in access to wealth, good nutrition, good healthcare and in freedom from discrimination. Levelling these inequities would do far more towards the ‘betterment’ of national and global populations than selectively choosing who can or can’t have children. Even early in the 20th century, many scientists were critical of eugenics for exactly this reason, as this quote from Alfred Russell Wallace (the scientist who came up with the theory of natural selection alongside Charles Darwin) illustrates: *“The world does not want the eugenicist to set it straight. Give the people good conditions, improve their environment, and all will tend towards the highest type. Eugenics is simply the meddling interference of an arrogant, scientific priesthood”* (Saini, 2019).

The idea that eugenics has a sound scientific basis is no longer (and perhaps never was) tenable. Eugenic policies aimed at ‘improving stock’ (Galton, 1883) also involve coercion and the removal of reproductive autonomy, and other types of autonomy, from individuals who are deemed ‘unworthy’ by those in power. They involve the categorisation of people into inherently ‘superior’ and ‘inferior’ groups, and history is clear about the serious human rights abuses which can follow from such categorisations. History also makes clear how subjective such categorisations are. These scientific and moral concerns should encourage considerable reflection within academia, as it looks back on its role in spreading the influence of eugenics in the 20th century. The establishment of academic units for eugenic research lent the respectability of science to what was ultimately an exercise in politics. The next section focuses on the history of links between eugenics and demography, but several other academic disciplines were also heavily influenced by the eugenics movement. One of

those disciplines is psychology, because eugenicists have shown great interest in traits related to cognitive ability, particularly ‘intelligence’ (Yakushko, 2019). Research motivated by eugenic interests has focused on developing tests to measure intelligence, attempts to demonstrate that it differs between social groups, and that it’s associated with fertility. The importance of cognitive abilities in eugenic research will come up repeatedly throughout this paper.

The intimate relationship between demography and eugenics

On this occasion of the 75th anniversary of *Population Studies*, it is useful to reflect on the relationship between eugenics and demography, as a reminder of how very close this relationship was in the early 20th century. Demographic changes contributed to the emergence of widespread eugenic ideology during this period. By the early 20th century in the UK, it was clear that fertility was declining, and that this decline was more marked among socially and economically advantaged groups (R. Soloway, 2014). This led to concerns about declines in population ‘quality’. The assumption that socioeconomically advantaged groups are inherently superior to disadvantaged groups led to fears that such ‘dysgenic’ fertility would lead to the supposedly faulty traits of the poor being spread more rapidly through the population than the higher quality traits of the wealthy.

Just as demography affects eugenic ideology, so did eugenic ideology stimulate more interest in, and more data and research on, demography, arguably leading to its rise as an academic discipline (Grebenik, 1991). Eugenic interests in differentials in fertility between social groups led to the expansion of civil records on fertility. Questions were introduced into the UK’s 1911 census with the aim of investigating differences in fertility between groups, and the Population (Statistics) Act of 1938 resulted from the Eugenics Society lobbying for more detailed information to be recorded in birth registration data, such as age of mother and parity of births (Grebenik, 1991)(Hobcraft 1996). The Eugenics Society also established the Population Investigation Committee (PIC) in 1936, as a research organisation to work on population issues; the PIC is still in operation today and responsible for the publication of this journal. Amongst its other achievements, the PIC set up the 1946 UK birth cohort study – now known as the National Survey of Health and Development - one of the world’s longest running longitudinal studies and an important source of lifecourse data from which much subsequent research has been produced (Pearson, 2016).

The Eugenics Society was also closely associated with other emerging population associations in the inter-war period. Margaret Sanger, American birth control activist and member of the Eugenics Society, was the force behind the first World Population Conference in 1927, which led to the foundation of the International Union for Scientific Investigation of Population Problems in 1928 (this became the International Union for the Scientific Study of Population – IUSSP – in 1947; I’ll refer to it as the IUSSP throughout (Langford, 1998)). The IUSSP was a federation of national population organisations, of which the British chapter was the British Population Society, also established in 1928 (and unrelated to the British Society for Population Studies, not founded until 1973). The IUSSP, from the start, included in its statutes the clear statement that its activities were confined to the scientific investigation of population and would not take a stance on political or policy issues, such as policies to increase or decrease the birth rate (which Langford (1998) suggests may have disappointed Sanger). Nevertheless, there was considerable overlap in membership between the

Eugenics Society and the three population organisations - the British Population Society, the IUSSP and the PIC. For some members, eugenics was the reason for interest in population issues.

The IUSSP was located in London during some of the 1930s, for a time at the London School of Economics (LSE), which also largely hosted the PIC in its early days (and has done so permanently since the Second World War). The LSE played an important part in the development of demography in the UK (Grebenik, 1991)(Hobcraft, 1996). The founders and early Directors of LSE were all interested in eugenics and so population issues, including Beatrice and Sidney Webb, William Beveridge and Alexander Carr-Saunders. In 1930, LSE established a (short-lived) department of Social Biology, with biologist Lancelot Hogben as Chair, in order to explore the role of biology in human affairs. LSE then established what was the UK's first official academic post in demography, a Readership, taken by Robert René Kuczynski in 1938, who worked with Hogben (Schult, 2020). Academics in other university posts (particularly in biology) had contributed to the study of demography, but were typically not employed solely to work on demography (for example, the Chair in Epidemiology and Vital Statistics at the London School of Hygiene and Tropical Medicine covered demographic issues: (Langford, 1998)). Since all of this population activity also needed outlets for publication, LSE also hosted two journals: *Population*, established by the IUSSP, which only existed during the 1930s, and then the PIC established *Population Studies* in 1947. David Glass, the first editor of *Population Studies*, was a member of the Eugenics Society.

From this brief history, the influence of eugenics in improving demographic data availability, raising the profile of population issues, and perhaps even establishing the academic discipline of demography in the UK should be clear. However, not all actors in this history were eugenicists. Whatever may have been intended by setting up a department of Social Biology, Grebenik argues that it was responsible for the establishment of a field of demography *independent* of eugenics (Grebenik, 1991). Hogben, Chair of the department, was strongly opposed to eugenics, believing the importance of the environment in determining complex human traits was too great to justify eugenic ideology. Even among those who had more faith in eugenic ideology, it's worth noting there were often significant differences in opinion, including on how to achieve the 'betterment' of human population, which is perhaps not surprising given the differing political views of those interested in eugenics (R. Soloway, 1998). The Population Investigation Committee may have been established, for example, because the officers of the Eugenics Society wanted to create a new organisation with a membership they had control over (Langford, 1998). The British Population Society already existed, and might have been the obvious choice for investment in a research-focused population organisation, but included some individuals with extreme political views, such as George H.L.F. Pitt Rivers, who was interned during the Second World War as a Nazi sympathiser, and Reginald Ruggles Gates, who held controversial views on race, believing that human 'races' should be considered different species (Roberts 1964).

Another difference in opinion among eugenicists was over the role of birth control. The promotion of voluntary birth control was viewed unfavourably by, for example, an early President of the Eugenics Society, Leonard Darwin (son of Charles). He believed this would have 'dysgenic' effects: if 'desirable' cognitive abilities such as forethought and prudence were needed to use contraception effectively, then the expansion of contraceptive services would inevitably lead to smaller families only among those with such qualities (R. Soloway, 1998). After Darwin's tenure, the Eugenics Society

did adopt much greater interest in the promotion of contraception, largely due to Carlos (C.P.) Blacker's efforts, General Secretary of the Eugenics Society between 1931 and 1952 (and father to John Blacker, a demographer at the London School of Hygiene and Tropical Medicine whose bequest to LSHTM after his death still funds a 'Brass Blacker' post in demography). The Eugenics Society and the UK's National Birth Control Association even formed an alliance during the 1930s (Hall, 1998), though this may have an uneasy alliance. Some early birth control activists certainly held eugenicist views – Marie Stopes was an 'ardent eugenicist' whose birth control clinics in the UK offered contraceptives referred to as 'racial caps' (J. Carey, 2012; Debenham, 2018). Others may have more strategically used eugenic framing to promote their interests, perhaps including Margaret Sanger (R. A. Soloway, 2016) (Hodgson & Watkins, 1997) (Presser, 1997; Wardell, 2011); while still others did not buy into eugenic ideology at all but were simply motivated by the desire to ensure women's access to contraception (Hall, 1998; Rusterholz, 2020).

Blacker's tenure at the Eugenics Society coincided with a difficult period for eugenicists. In the 1930s, eugenics developed negative connotations through its association with fascism in Germany, which prompted Blacker to try, unsuccessfully, to remove the word 'eugenics' from the Eugenics Society's name in 1935 (R. Soloway, 1998). His fears about the damage that would be done to the eugenics cause by the Nazi regime were correct, and the atrocities committed by the Nazis were a significant factor in the rejection of eugenics by demography and other social science disciplines after the Second World War. This rejection did not happen overnight, which was perhaps not surprising given the widespread support eugenics had received earlier in the century. *Population Studies* published a debate in the late 40s and early 50s about the relationship between intelligence and fertility, for example (Burt, 1947; Giles-Bernardelli, 1950). Population research also continued to be published in eugenics journals. Louis Henry's foundational work on natural fertility was published in *Eugenics Quarterly* (Henry, 1961) – a journal which was only given this name in 1954 by the American Eugenics Society (though the journal existed previously as *Eugenical News*) and did not remove 'eugenics' from its name until 1969 (when the journal became *Social Biology*). The Eugenics Society kept the name of its journal, the *Eugenics Review*, until 1968 (when it became the *Journal of Biosocial Science*), and did not change its own name (to the Galton Institute) until 1989 (the society is now considering another name change²).

Nevertheless, the damage done to eugenics ideology by association with Nazism, combined with shifting interests in academia and public policy (Ramsden, 2016), did, over the next few decades, result in a swing away from explicit interest in eugenics among demographers and, in fact, from interest in combining biology or genetics with population research. There were only occasional flickerings of interest in re-uniting biology and demography during this nadir in interest of 'social biology'. For example, *Population Studies* published a paper in 1970, by geneticists, biologists (including John Maynard Smith) and demographers (including David Glass and William Brass) which argued that the social sciences really needed genetics (Thoday et al., 1970). But this paper seems to have sunk without trace: Google Scholar currently records only 4 citations. The UK's Royal Society also set up a Population Studies Group in the 1960s, which brought together biologists and social scientists to discuss population issues, but this commission was disbanded after 8 years over fears that it might be considered politically controversial, given the association of 'social biology' research

² <https://www.galtoninstitute.org.uk/>

with eugenics (Grebenik, 1991). This group did have a lasting impact on British demography, however, in that several of its members founded the British Society for Population Studies in 1973, though this Society never really recruited large numbers of biologists, which might have been the initial hope. More sustained interest in re-uniting biology and demography began in the 1980s, with the efforts of social scientists and biologists such as Jim Vaupel and Jim Carey (J. R. Carey & Vaupel, 2005; Sear, 2015b). When John Hobcraft published a paper in *Population Studies* in 2006 calling for demographers to pay more attention to biology, it attracted more interest (it has so far been cited 87 times), and an Evolutionary Demography Society was founded in 2013, though this society is comprised largely of biologists³.

Echoes of the eugenics movement in the rise and apparent fall of the population control movement

The Royal Society Population Study Group was established because of concerns about the rapid global population growth which happened in the decades after the Second World War (Grebenik, 1991). This illustrates demography's shift in interest during the latter half of the 20th century towards concern with 'overpopulation', and the rising influence of the population control movement (Connelly, 2009). The population control debate effectively extends back to Thomas Malthus' 18th century fears that human populations have an inevitable tendency to outgrow their resource base, but really rose to prominence in the mid to late 20th century (Caldwell, 1996). Eugenics and the population control movement share similar characteristics, though were stimulated by different population 'problems'. The population 'problem' that boosted the popularity of eugenics was the decline in fertility of socially advantaged groups. The population 'problem' the population control movement focuses on is 'overpopulation': the fear that the earth cannot sustain a very large human population (Ehrlich & Ehrlich, 1991). Eugenic policies were enacted at the national level, but the population control movement requires international action, proposing that the cross-national solution to 'overpopulation' is to restrict fertility in high fertility countries, which are typically those of lower income. There is, however, obvious overlap between the two movements. Both are focused on population-level 'problems'; a focus which may obscure individual human rights. Both also typically involve wealthy (often White) individuals removing reproductive autonomy from poorer (often Black and Brown) populations. In other words, the fundamental ideology that underlies eugenics – the assumption that certain social groups are inherently superior to others – is also present in the population control movement.

Like eugenics, the population control movement achieved widespread support in the mid-late 20th century among policy-makers and academics, including demographers (Connelly, 2009). As with the eugenics movement, demographers again benefited from this political interest in population. The population control movement stimulated demographic data collection and research, and resulted in the promotion of family planning services. The World Fertility Surveys (which became the Demographic and Health Surveys) were established because of interest in contraception and fertility, to collect data on these topics in contexts where data on these topics is lacking (Lightbourne, Singh, & Green, 1982). Despite its similarities with eugenics, the population control movement may have been more palatable in this period because it tends not to make explicit arguments about the genetic inferiority of social groups. Nevertheless, the population control movement always had its

³ <https://www.evodemos.org/>

critics, more so, in fact, among social than biological scientists. Social scientists such as economists Ester Boserup (1965) and Julian Simon (1981) had sufficient faith in people that they argued human ingenuity would always find solutions to any problems of overpopulation. More recently, others have argued that the solution to 'overpopulation' is to reign in the consumption of the rich and not the reproduction of the poor (Dorling, 2013).

In the last decades of the 20th century, the population control movement began to lose momentum; partly because global population growth began to slow, partly because the dramatic claims about the imminent starvation of large parts of the global population had not come to pass, but also because of the human rights abuses associated with population control. Like eugenics, population control involves coercive policies which aim to circumvent individuals' rights to choose whether to use contraception or not, culminating in forced sterilisations in some cases, such as in Indira Gandhi's India (Connelly, 2006). As a result, there was a discursive (but less than de facto) 'paradigm shift' in the 1990s, from a global focus on population control towards ensuring reproductive rights: contraception and reproductive health services were to be made available because all individuals have the right to make decisions about their family size and structure, and not because someone else has determined there are too many people on the planet (Petchesky 1995). Coercion, however, has not yet gone away in family planning programmes (Sasser, 2018)(Nandagiri, this volume; Senderowicz, 2019). 'Overpopulation' arguments too are beginning to resurface, this time justified with concerns not about whether we can 'feed the world' but about anthropogenic environmental degradation and climate change, alongside fears that the Global North may be 'swamped' with migrants from the 'over-populated' Global South. A recent paper, co-signed by 1000s of researchers – though few demographers, perhaps because they are more aware than most of the human rights abuses associated with population control (van Dalen & Henkens, 2021) – highlighted the dangers of climate change and proposed population control as one solution (Ripple et al., 2021).

There are clear echoes of the eugenics movement in the rise and apparent fall of the population control movement during the second half of the 20th century. This is likely because both are underpinned by similar ideas – that some social groups are inherently superior and others inferior – which existed long before Galton and which continue to exist even without explicit eugenic underpinning. The tenacity of these ideas likely helps explain the resurgence of both eugenic arguments and 'overpopulation' concerns in the 21st century.

The resurgence of eugenics in 'mainstream' academic discussion

Despite eugenic research having dropped out of demography journals during the later 20th century, eugenic thinking and practices never went away. Eugenic sterilisation policies remained in place until startlingly recently; for example, 1996 in Japan, and the 1970s in US and Sweden (Amy & Rowlands, 2018; Drouard, 1998). Policies aimed at encouraging socially advantaged groups of women, such as the highly educated, to have more children have been implemented in South Korea and Singapore in the late 20th and early 21st centuries (Amrith, Bashford, & Levine, 2010). Immigration policies may still be influenced by eugenic thought. Just as a switch in language from population control to reproductive rights may have concealed a continued population control agenda, it may be that the terminology of 'eugenics' among policy-makers fell in popularity after the Second World War without much change in practice. This is likely true to some extent in academia too; certainly, some

of the underlying principles of eugenics, such as implicit assumptions about the superiority or inferiority of different groups can still be seen throughout the social sciences. Explicit discussion of eugenics, and discussion of *genetically determined* group differences in traits which are still often considered 'desirable', such as intelligence, largely moved to the 'fringes' of academia, however, although they always maintained a foothold there.

While by the late 50s and 60s, journals which had previously existed to publish research on eugenics were shifting focus and changing their names, there were still academics from various disciplines who took steps to ensure eugenic ideas were kept alive. The journal *Mankind Quarterly* was set up in 1960 to provide an outlet for eugenicist research by a group of psychologists, anthropologists, biologists and statisticians, including Ruggles Gates, and Corrado Gini, of the Gini coefficient (Jackson, 2005). Gini, incidentally, had fallen out with the IUSSP in the inter-war period, when the society's plans to hold a conference in Rome under his organisation fell through; the reason may partly have been concerns over his fascist sympathies (Langford, 1998). *Mankind Quarterly* was funded by the US-based Pioneer Fund, which was established in 1937 to support the study and promotion of 'race betterment' (Kenny, 2002; Tucker, 2001). The Fund was endowed by a bequest from Wickliffe Preston Draper, who had previously shown interest in funding eugenic research within academia, and one of its founders was Henry Laughlin, the architect of some of the US forcible sterilisation laws which later influenced the Nazis' eugenic policies.

The Pioneer Fund also provided grants to academic researchers (particularly, though not only, in psychology) and continued to do so until 2018. The type of research funded was often that which could be used to promote eugenic arguments, for example, research on inherited group differences in traits such as intelligence. *The Bell Curve* (Murray & Herrnstein, 1994), a highly controversial book published in 1994 which claimed there are innate racial differences in intelligence in the US, and that policy implications should follow from this, drew heavily on Pioneer-funded research (Kenny, 2002). The publication of this book, and the controversy which followed – with many academics pointing out the flawed nature of the research it was based on – illustrates both how eugenic ideology did not go away after the Second World War but also that it had considerably less 'mainstream' support at the end, compared with the beginning, of the 20th century (Richards, 2005).

Moving into the 21st century, the last academic recipient of a Pioneer Fund grant⁴, a psychologist at the University of Arizona, used the funds partly to attend a 'London conference on Intelligence' in 2017, one of a series organised at UCL by an Honorary Lecturer and attended by several researchers with academic affiliations (Woodley of Menie et al., 2018). After concerns were raised about the content of these meetings⁵, UCL conducted an enquiry, which observed that several presentations included discussion of group differences, including 'race', sex and migrant-status differences in intelligence, discussion of genetically determined group differences, and explicit discussion of eugenics⁶. The 2016 conference included the following quote on the front page of its book of abstracts: "*Selective breeding can alter man's capacity to learn, to keep sane, to cherish justice or to*

⁴ <https://www.insidehighered.com/news/2018/09/10/arizona-psychologist-faces-scrutiny-grants-organization-founded-support-research>

⁵ <https://www.the-scientist.com/the-nutshell/secret-eugenics-conference-uncovered-at-university-college-london-30423>

⁶ https://www.ucl.ac.uk/provost/sites/provost/files/lci_final_report_plus_appendices_web.pdf

be happy. There is no more certain and economical a way to improve man's environment as to improve his nature". One person interviewed for the report had viewed videos of some of the talks and *"was of the view that they had no scientific or rational basis and they were edited in such a way that they could incite racial hatred"*. These conferences provide more evidence of the foothold research on eugenic themes maintained in academia. The controversy surrounding these conferences might suggest it is still a 'fringe' activity, regarded with considerable concern in 'mainstream' academia. However, attendees at these conferences have defended their content, arguing that many presentations involved research which has been published in the 'mainstream' academic literature (Woodley of Menie et al., 2018).

Whether you consider research on eugenic themes now to be 'mainstream' or 'fringe' might depend on your discipline. The psychologist Andrew Winston, who has researched "scientific racism" – *"the use of scientific concepts and data to create and justify ideas of an enduring, biologically based hierarchy"* (Winston, 2020a) – does refer to this type of research as 'mainstream' in psychology (see also the recent statement from the American Psychological Association acknowledging psychology's role in perpetuating beliefs in racial hierarchy: APA 2021). Winston is also of the view that scientific racism goes hand in hand with a *"vision for a "progressive" transformation of society, one in which a natural hierarchy is understood"* (Winston, 2020b): a political, policy-oriented agenda. Eugenics, in other words. In contrast, when two demographers wrote recently that *"no self-respecting academic would argue that there are marked differences in the population separating the weak from the strong in terms of mental ability which are passed on genetically to the next generation"* I suspect they are expressing the views of many social scientists outside of psychology, who are unaware that papers continue to be published in academic journals which argue just that. Or at least might consider anyone publishing such research not to be a 'self-respecting academic' and therefore on the 'fringe' of academia. The next sections aim to draw to the attention of demographers, and other social scientists, work on eugenic themes in academia, by providing two examples.

Illustrating the 'mainstreaming' of eugenic ideology part I: the case of 'national IQ' datasets

As a lecturer at LSE about 15 years ago, a colleague and I proposed a new MSc on Evolutionary Social Science. During its review, one staff member commented "this sounds like eugenics"; a comment I found very frustrating as, with the ignorance of (relative) youth, I assumed that eugenics had been relegated to a history lesson by the early 21st century. Shortly afterwards, I came across a dataset which purports to provide the 'national IQ' of nations worldwide, which has been instrumental in changing this opinion. The dataset had been used in a journal publication to make a demographic argument (Kanazawa, 2006): that people in higher income countries live longer than those in lower and middle income countries not because they are wealthier but because they are more intelligent (*"each additional point in mean IQ of a population increases the female life expectancy at birth by more than a year!"*: italics and exclamation mark used in the original). This rather startling argument attracted 6 critical commentaries (Alemayehu & Sineshaw, 2007; Der, 2007; Ellison, 2007; Marks, 2007; Wilkinson & Pickett, 2007), including one I co-authored (Dickins, Sear, & Wells, 2007). For this critique, we investigated the 'national IQ' dataset. What we found was concerning. According to this dataset, many lower- and middle-income countries had remarkably low IQs. Several were reported to have average IQs below 70, for example, which would imply the populations of these countries

are, on average, intellectually impaired: an IQ of 70-75 is used as the cut-off to identify intellectual disability (American Psychological Association, 2013).

On examining the dataset closely to find out why some countries were reported to have such absurdly low IQs, we found it was riddled with flaws, not least its sampling strategy. The dataset was based on a diverse range of published studies which had produced data on cognitive tests; from these primary sources, average 'national IQs' were calculated. As is common in psychology, many of these primary sources had small samples, and many used 'convenience' samples, selected because they were available; other samples were selected because researchers wanted to examine the cognitive ability of particular groups of individuals (migrants, those from a particular ethnic group, with a particular condition, etc). None of these samples will be even close to being representative of the national population. As an example, the 'national IQ' of Ethiopia was calculated to be the implausibly low figure of 63, yet this was based on cognitive test scores from a single sample of 250, 15 year-old immigrants to Israel (Kaniel & Fisherman, 1991). Authors of several of these primary sources, including this Ethiopian example, explicitly cautioned that their cognitive test results should not be compared with other samples or populations. It is clear from reading these primary sources, in fact, that it is impossible to generate a dataset with comparable data on 'intelligence' from all national populations. Results of cognitive tests will be affected by a wide range of factors, such as access to formal schooling, which vary substantially cross-culturally; such tests were developed in Western settings and it is simply not plausible that they will measure the same underlying construct of 'intelligence' in all communities worldwide (Anum, 2014; Dramé & Ferguson, 2019; Duckworth, Quinn, Lynam, Loeber, & Stouthamer-Loeber, 2011; Wicherts, Dolan, Carlson, & van der Maas, 2010).

Despite the many published critiques of this dataset and its flaws (e.g. Ebbesen, 2020; Volken, 2003; Wicherts, Borsboom, & Dolan, 2010), it remains publically available for download in an updated version⁷. I've examined the latest, 2019, version and the flaws described above remain (see the European Human Behaviour and Evolution Association's public statement of concern about this dataset: EHBEA 2020). The dataset still reports 'national IQs' for many countries which are implausibly low – the average IQ for the continent of sub-Saharan Africa is 70 in this version. The dataset is still largely compiled from small, unrepresentative samples: 20 countries have 'national IQs' calculated from samples of <200 individuals (Angola's 'national IQ', for example, is calculated from a sample of 19 – nineteen – individuals, about whom the only thing we know is that they did not have malaria); around two-thirds of samples only include children; and the authors' own categorisations of samples suggests only one third can be considered 'national' (which they define as "*individuals originated from all or a large part of the country's total area which spans across more than only a single county, municipality, governmental area*" (Lynn & Becker, 2019)). Data are still included from primary sources which explicitly state their data cannot be used in comparative work (Alderman et al., 2014; Anum, 2014; Boivin & Giordani, 1993). Given that the sampling problems are more severe in some regions than others, particularly lower income countries, the dataset is also systematically biased.

⁷ https://viewoniq.org/?page_id=9

So the dataset does not provide accurate and unbiased data on cognitive ability worldwide; yet, it has been influential. The authors of the original version of the dataset – Richard Lynn and Tatu Vanhanen – first described it in their 2002 book *'IQ and the Wealth of Nations'* (Lynn & Vanhanen, 2002); a book which had been cited 1017 times, by 29 October 2021, according to Google Scholar. These citations have accumulated despite the increasingly explicit eugenic arguments which the dataset has been used to support. In *IQ and the Wealth of Nations*, Lynn and Vanhanen make the claim that lower- and middle-income countries are less economically developed than higher income countries because their populations are genetically less intelligent than those in higher income countries. In subsequent publications, Lynn has used these 'national IQ' data to argue that race and skin pigmentation is associated with 'intelligence', with Black populations having lower IQs (Lynn, 2006; Lynn & Meisenberg, 2010). In the publication describing the most recent version of this dataset (*The Intelligence of Nations*), Lynn and his new co-author, David Becker, are quite explicit that these data should be used to inform eugenic policies. The final chapter of *The Intelligence of Nations* (Lynn & Becker, 2019) discusses the potential implications of this dataset for 'positive eugenics' and 'negative eugenics', without any consideration of the flawed science underlying eugenic policies nor of the history of, and potential for, human rights abuses associated with such policies. It may come as little comfort that the authors are somewhat pessimistic about the possibility of actually implementing some eugenic policies, as they write: *"it seems unlikely much can be done to increase fertility among women who have been educated out of their reproductive function"*.

Richard Lynn may now be considered a 'fringe' figure in academia. He held an academic post at Ulster University until his retirement, but has recently had his emeritus status removed by that university over concerns about his views⁸; he is also currently editor-in-chief of *Mankind Quarterly*, and has received financial support from, and acted as director of, the Pioneer Fund. But the dataset itself has been widely used by other researchers, in >100 academic publications. While some of these are in 'fringe' journals, such as *Mankind Quarterly* (e.g. Kirkegaard, 2013; Koljevic, 2020), research using the dataset has also appeared in journals which are published by mainstream academic publishers, such as *Intelligence* (Barber, 2005; Shatz, 2008) and *Personality and Individual Differences* (Meisenberg, 2012), both Elsevier journals, and in *Evolutionary Psychological Science* (Figueroa, Hertler, & Peñaherrera-Aguirre, 2020), a Springer journal, as well as in mainstream journals which demographers may have published in, such as the *Journal of Biosocial Science* (Kanazawa, 2009). The dataset was also used in a Harvard PhD thesis, to argue for restricted immigration into the US from countries with 'low IQ' (Richwine, 2009), by a researcher who was appointed to a US government post in 2018⁹. In their 2019 book, Lynn & Becker write: *"in the course of twelve years my [sic] national IQs had made the transition from "technically inadequate... and meaningless" to mainstream acceptance"* [p10]. While such a statement may be influenced both by wishful thinking and a desire to convince others of its validity, the publication of so many articles in mainstream journals – which will have involved a large number of researchers not just as authors but as peer reviewers and editors – does support this claim. Regardless of whether these

⁸ <https://www.bbc.co.uk/news/uk-northern-ireland-43768132#:~:text=Ulster%20University%20has%20withdrawn%20the,higher%20average%20IQ%20than%20women.>

⁹ <https://www.science.org/news/2020/11/proponent-using-iq-tests-screen-immigrants-named-senior-nist-post>

researchers are actively trying to promote eugenic thinking or whether they simply have not examined the dataset closely enough to be aware of its flaws, publications in mainstream academic journals lend scientific credibility to a (deeply flawed) dataset which promotes the idea of a genetically-determined racial hierarchy.

Illustrating the 'mainstreaming' of eugenic ideology part II: the case of differential-K theory

In the 1990s, the psychologist J Philippe Rushton, developed 'differential-K' theory which rank-ordered three human 'races' (Black, White and Asian) along a continuum (Rushton, 1996). He drew on language from evolutionary biologists, who had observed that particular growth and demographic rates tended to cluster together in different species, and seemed to co-vary with the population density of those species: referred to as 'r-selected' and 'K-selected' species (MacArthur & Wilson, 1967). Rushton used this language to claim that human 'races' showed clustering of a very wide range of traits, including cognitive and behavioural traits, and that this clustering could be placed on a continuum with the Black 'race' at the 'r' end of the continuum, and the White and Asian races at the 'K' end. In this theory, the Black 'race' is less intelligent, more aggressive, less law-abiding and has larger penises than the White or Asian 'races' (Rushton, 1990). White and Asian 'races', Rushton claimed, evolved a different cluster of traits, including greater intelligence, because they had to deal with 'cold winters' after our species migrated out of Africa, and such hardships created a different set of selection pressures to those experienced by the Black 'race', still living in sunny Africa. Clearly, this theory appears to owe far more to racist narratives developed to justify slavery than to evolutionary biology. The evolutionary justification for this theory is deeply flawed on multiple counts, not least because 'races' are not genetically distinct, and Rushton's work has been extensively critiqued on scientific grounds (G. Allen, Eriksson, Fellman, Poinzi, & Vandenberg, 1992; Anderson, 1991; Cain & Vanderwolf, 1990; Cernovsky, 1990; Kamin, 2006; Zuckerman & Brody, 1988).

Rushton could also be described as a 'fringe' figure in academia. He was funded by, and acted as director of, the Pioneer Fund, and, when I first became aware of his work as a graduate student, I also became aware of his reputation as a 'crank' from those academics I respected; not a rigorous scientist but someone producing poor quality work with the apparent aim of promoting a political agenda. I therefore assumed his work would gain little traction. But despite his lack of scientific rigour, he was nevertheless employed as an academic psychologist, and one who promoted his work widely - I was one of many individuals who were mailed a copy of his book on differential-K theory, 'Race, Evolution and Behavior', in the late 90s (Rushton, 1996), a mailing funded by the Pioneer Fund. His work was published in several mainstream journals, and he was given the opportunity to present his work at academic conferences. I was once surprised to see him presenting a poster at a Human Behavior and Evolution Society conference I attended while a graduate student - surprised because I then assumed academic conferences exerted quality control over who was given presentation slots; though a senior figure in that Society subsequently told me he did not believe the Society should make quality judgements about its members' work. This reluctance to engage in criticism of poor quality work seems to characterise some sections of the evolutionary social sciences, and likely helped Rushton's work gain considerable traction: as of 29 October 2021, Rushton's H-index on Google Scholar was 77 and his work had attracted 21,834 citations.

There has been some recent recognition that Rushton's work is highly problematic: since 2020, six of his papers have been retracted from two psychology journals for their scientific flaws and their promotion of a racist agenda¹⁰. Last year, the academic department he worked in until his death in 2012, at the University of Western Ontario in Canada, also took the unusual step of producing a statement rejecting his work as scientifically valid¹¹. Unfortunately, Rushton's differential-K theory seems likely to thrive in the mainstream literature for some time to come, because it has been given a new name (Sear, 2020). Life history theory is a framework developed in evolutionary biology about how energy is allocated over an individual's life course to the life history traits of growth, reproduction and survival (Stearns, 1992). It has been used successfully in biology to understand growth and demographic processes in non-human species (Stearns, 2000), and has also been incorporated into evolutionary anthropology, medicine and public health (Hill & Hurtado 1996; Wells et al, 2017). But a group of evolutionary psychologists (including the last academic recipient of Pioneer Fund funding), have used the name 'life history theory' for what is effectively a re-imagination of Rushton's differential-K theory (Figueredo, Vásquez, Brumbach, & Schneider, 2004; Figueredo et al., 2014). This 'psychometric approach to life history strategy' assumes that all humans can be lined up along a single, genetically-inherited continuum of 'life history strategies' (the 'K-factor'), which encompasses a wide range of behavioural and cognitive traits, including cooperativeness, sexual behaviour and intelligence. This approach bears little resemblance to life history theory in evolutionary biology, which focuses exclusively on explaining growth, reproduction and survival and does not include behavioural or cognitive traits; nor does life history theory assume that within-species variation in life history patterns is genetically inherited (Sear, 2020; Stearns & Rodrigues, 2020).

This new version of differential-K theory has become popular, and widely published, in psychology and the evolutionary social sciences, and is beginning to appear in journals outside of these disciplines, such as *PNAS* (Maner et al 2017) and *PeerJ* (Manson, 2018). So far, the approach has more often been applied to explaining variation between social classes in 'life history strategy' rather than race differences (but see Figueredo et al 2020). A common assumption in this literature is that people living in 'harsh' environments – often operationalised as socioeconomic disadvantage – are 'fast' life history strategists, which equates to the 'r' end of Rushton's differential-K continuum. Fast life history strategies supposedly involve 'promiscuous' sexual behaviour and low cooperativeness (Figueredo et al., 2006), 'dark triad' (anti-social) personality traits (Jonason & Tost, 2010), reduced cognitive 'executive function' (Figueredo & Jacobs, 2011) and lower intelligence (Dunkel, van der Linden, & Holler, 2021). It is not difficult to see how such research could be used to promote political narratives about the genetic 'inferiority' of socioeconomically disadvantaged groups. Using the terminology of 'life history theory' – a standard biological theory – for an approach which instead involves the assumption that social groups can be rank-ordered along an inherited continuum of cognitive and behavioural traits, including intelligence, effectively 'mainstreams' such eugenic ideology (whether or not that is the intention of the many researchers who have now used the psychometric approach to life history strategy). Again, this example illustrates how deeply

¹⁰ <https://journals.sagepub.com/doi/10.1177/003329412111042507>
<https://journals.sagepub.com/doi/10.1177/0033294120982774>
<https://www.sciencedirect.com/science/article/pii/S0191886912000840>
¹¹ <https://psychology.uwo.ca/people/faculty/remembrance/rushton.html>

flawed work which uses the language of science to justify innate hierarchies of social groups is far from eradicated in the mainstream academic literature.

What can be done to counter the resurgence of eugenic thinking in the academic literature

My first recommendation is that demographers and other social scientists should engage more with genetic and biological research, and vice versa. The lack of interaction between the social and biological sciences may well be part of the reason for the resurgence of eugenic ideas in mainstream academia. This lack of integration can partly be blamed on academic structures, which actively discourage interdisciplinary research, to the detriment of all research. But it is also at least partly influenced by the reluctance of both sides to engage with the other, for reasons beyond the structure of academia. Many social scientists, including some in demography, largely rejected, not just eugenic thinking in the decades after the Second World War, but pretty much all discussion of genetic or biological explanations in the social sciences, at least partly because of the taint of eugenics: *"Our shared disciplinary [social science] immune systems recognize biological explanation of behavior as an infection, and reject it"* (Udry, 1999).

Many biologists too steered clear of engaging with social science, for similar reasons, at least until the new discipline of sociobiology – which involves the assumption that behaviour evolves just as physiology does – emerged in the 1970s (Segerstrale, 2000; Wilson, 1975). The evolutionary social sciences, which assume that a full understanding of our species requires input from biological research, has since grown to be an established, if small, part of academia. Unfortunately, a sizeable branch of this field has proved reluctant to engage with the (non-evolutionary) social sciences. The 'Santa Barbara school' of Evolutionary Psychology (Laland & Brown, 2002), established in the 1990s, views the social sciences to have *"profoundly misleading"* [p23] theoretical underpinnings, based on a 'blank slate' model of the human mind (Tooby & Cosmides, 1992).

This mutual rejection of biology by (many) social scientists and of social science by (many) evolutionary scientists, may have facilitated the resurgence in eugenic ideology by allowing disciplinary silos of poor quality, sometimes explicitly politically-motivated, research to develop, in which many assumptions were not thoroughly examined and critiqued. Greater integration across disciplines would help expose researchers to a range of different viewpoints, and prevent the emergence of pockets of research in which it is possible to believe impossible things, such as that the population of an entire continent is, on average, on the verge of intellectual disability. Advances in genetics in the late 20th and 21st centuries have the potential to improve our understanding of how genes, epigenetics and the environment interact to produce complex human traits. They also have the potential to be misused to promote political ideologies. To counter the threat of resurging 'scientific' justification for innate hierarchies of social groups, the social and biological sciences are stronger together.

Demography is a social science in which there has been growing, if still small, interest in incorporating biology and genetics (Carey and Vaupel, 2005; Hobcraft, 2006; Sear, 2015; Mills et al., 2018; Herd, Mills & Dowd, 2018). So this recommendation is really a call to continue and expand this work crossing the biological and social science divide, including making further efforts to incorporate biology into demographic training programmes. Just as one example, life history theory (from

evolutionary biology) is a useful theoretical framework which can help improve understanding of human demography and health (Gibson & Lawson, 2014; Mattison & Shenk, n.d.; Wells et al., 2017). It is very compatible with social science research, as it has been used to inform research on how environmental variation induces behavioural differences, with associated consequences for demographic outcomes (Nettle, Gibson, Lawson, & Sear, 2013). Such research in higher income contexts can help explain why health inequalities exist; research, incidentally, which shows how cognition responds flexibly to the environment, providing more evidence against assuming that the same cognitive traits can be easily measured across different contexts (Frankenhuis & Nettle, 2020; Pepper & Nettle, 2017; Sheehy-Skeffington, 2020). Such research in lower income contexts has the potential to help inform development initiatives, and has been used to explain some unintended demographic consequences of development interventions (Gibson & Mace, 2006; Gibson & Lawson, 2014).

My second recommendation is that demography should incorporate more critical approaches. By 'critical' I mean two things. Firstly, examining more closely research which uses demography, including that published in other disciplines. Many poor quality articles succeed in being published in mainstream academic journals. When these papers are those which reinforce social hierarchies, or explicitly promote eugenic ideology, this gives a sheen of scientific respectability to such work. The other meaning of 'critical' is that used in several papers in this special issue: to consider how bias, politics and power influence the production of demographic research. While explicit promotion of eugenic ideology is, hopefully, the preserve of a relatively small number of academics, many others may help facilitate the spread of this ideology by not sufficiently interrogating their own biases. Sigle's article makes an excellent case for why the discipline will be improved by greater interest in how demographic data and research is produced, who produces it and why; Nandagiri's and Graham's papers emphasise similar points. Such a critical approach is clearly highly relevant when it comes to research which – consciously or unconsciously – aims to promote ideas about the inherent superiority or inferiority of social groups.

My final recommendation is that demography should engage in more active discussion about its eugenic past, and how elements of eugenic ideology (such as beliefs in the inherent 'superiority' or 'inferiority' of certain groups, even if explicit discussion of genes is absent) might linger on in contemporary demography. We need to understand the past in order to stop repeating the same mistakes in the present (see also Reid, this volume), particularly as academic research builds incrementally on what has gone before (Sigle, this volume). Yet discussion of eugenic ideology does not take up much space in demographic training or journals. A detailed early history of demography in the UK was published in *Population Studies* in 1991 by Eugene Grebenik (Grebenik, 1991), the second editor of the journal, but this paper seems to have been curiously neglected, having attracted only 29 citations, according to Google Scholar, by 29 October 2021 (Grebenik, incidentally, preferred the nickname 'Grebby', because of his dislike of the echoes of eugenics in the name Eugene (Obituary, 2002)). While citations don't necessarily track readership, the lack of citations might suggest (British) demographers are not particularly prone to reflecting on their history. There is considerable scholarship on the history of eugenics and its influence on demography, including after the Second World War, largely produced by historians, which could be drawn on to facilitate such reflection. Crossing disciplinary boundaries should incorporate the humanities as well as the biological and social sciences.

Conclusion

In 2019, demographer Lesley Root wrote an article in the Washington Post with the headline ‘Racist terrorists are obsessed with demographics, let’s not give them talking points’ (Root, 2019). The aim of this article is to make a similar point: given the great political and personal significance of demography, demographers should be aware of, and should critically reflect on, how demographic research is produced and used even beyond the confines of their own discipline, in other areas of academia and in wider policy and public discussions. Recommendations to reduce the possibility of the misuse of demography include continuing, and extending, engagement between demography and other disciplines, particularly biological disciplines. There should be greater attention given to the eugenic roots of demography – in teaching, but perhaps in other venues, such as conferences and in publications. There should also be greater attention given to how we might actively strive to avoid repeating those mistakes again – such as taking a more critical approach to demography, re-evaluating the assumptions used in demographic research, and training students to think critically not just about the methodological quality of research but about who produces demographic data and research, and what biases might be involved in its production.

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