

## **An Inheritance of Exclusion: Roma education, genetics and the turn to biosocial solutions**

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### **Abstract**

Since the 1990s an increasing body of genetic studies of Roma people has been conducted and used to understand their lives. This includes research on health issues such as genetic predispositions to obesity or high cholesterol levels and the migration of European Roma from the Indian subcontinent. Such work needs to be contextualised within the wide-ranging historical oppression of Roma people including their enslavement, the Holocaust, denial of human rights and a lack of access to education. Aligning genetics research to educational policy has often been problematic in the context of discredited, 'race' science; recently more nuanced arguments have promoted 'post-genomic' solutions, such as biosocial strategies, that address social justice issues. This article argues that an economy of knowledge emerges in the 'postgenomic era' that privileges predominantly White European, majority populations and this is particularly apparent in the context of the Roma. The promotion of educational solutions framed by genetics research underpins how cultural capital, in this case scientific knowledge and its framing within social theory such as Deleuzian *assemblage* will, in all likelihood, maintain the *status quo* for the Roma.

## **An Inheritance of Exclusion: Roma education, genetics and the turn to biosocial solutions**

### **1. Introduction**

'Roma' is one of many contested terms, including Gypsies and Travellers, for the minority ethnic group who migrated to Europe in the early fourteenth century and believed to have originated in the Indian subcontinent (Liegeois and Gheorghe, 1995). Law and Kovats provide a comprehensive discussion of the absence of any consensus, 'on which an inclusive political definition of Roma can be based' (2018:39). Although the largest ethnic minority in Europe there is no reliable data on the numbers of Roma people; the EU estimate between 10-12 Million Roma in Europe, of whom 6 million live in EU states (FRA/UNDP, 2014). The largest populations of Roma people are to be found in Central and Eastern European countries including Romania, Bulgaria and Hungary (Migration Watch, 2013). They experience some of the worst educational outcomes of any ethnic group across Europe (EC, 2012).

Using the example of Roma experiences of education in Europe this article suggests that a turn towards educational strategies premised on addressing genetic or biological traits is problematic. This is less an argument about the use of discredited 'race' science in education (Gillborn, 2016) or the efficacy of more recent and liberally framed biosocial solutions, in which changes to environment, (e.g. a less stressful classroom or a healthier lifestyle), may be moulded to impact on individual gene expression to improve educational outcomes (Youdell, 2017). Rather it is an argument about the production of knowledge and its translation into policy-making and popular discourse. Noting a myriad of difficulties facing the promotion of biosocial solutions to educational inequalities Youdell (2017) argues they may still have currency within Deleuzian (Deleuze and Guattari, 1988) understandings of *assemblage (agencement)*; that is within a grassroots constellation of strategies and behaviours designed to improve educational opportunities. This article argues this is an unlikely outcome for Roma pupils whose lives are confined within what Liegeois and Gheorghe (1995) describe as a *politics of negation* in which, 'policies towards Roma/Gypsies have always constituted, in one form or another, a negation of the people, their culture and their language' (1995:8) by processes of exclusion, containment and assimilation. Even when such policies are intended to 'capacitate communities', they often 'risk reproducing

perceived differences and culturally essentialist perceptions that impede genuine autonomy' (Cools *et al*, 2018:373).

Education policies for Roma have often been characterised by the promotion of factually incorrect or misleading racist narratives (FRA/UNDP, 2014; Bhopal and Myers, 2009). The emergence of genetically imagined or biosocial solutions for Roma pupils runs the risk of reimagining the production of stigmatising knowledge about Roma to inform ill-conceived policy-making that maintains rather than challenges the *status quo*. This article argues that where genetic studies of the Roma have influenced educational policies this has tended to reinforce widespread patterns of discrimination. More generally, the Roma experience highlights how the high cultural and economic value of some scientific knowledge creates economies in which education policy based on a deficit model persists rather than addressing systemic inequalities.

## **2. Roma, genealogies and policy**

Academic scholarship exploring Roma lives in Europe has often been hamstrung within acrimonious debates about who the Roma people are (see Acton, 2004, 2016; Okely, 2017; Law and Kovats, 2018). The significance of a heritage linked to the Indian sub-continent and later migration to Europe often contrasted against accounts of socially constructed identities shaped by settlement and engagement with indigenous populations (Acton, 2004). Since the 1990s a, 'rather extensive genetic literature on Roms', has corroborated longstanding linguistic scholarship that, 'proves an Indian origin, subsequent splits and the founding of groupings by limited number of ancestors and often limited mixture with outsiders' (Bakker, 2012:91). The focus of genetic studies of Roma has been twofold: exploring both ancestral, genealogical links to India and also genetic health disorders and potential interventions. Both strands of work are often linked; so immunogenetics research from the 1990s exploring low rates of Multiple Sclerosis in Bulgarian Roma populations (Kalman *et al*, 1991) and the prevalence of Bipolar Affective Disorder in isolated Roma populations (Kaneva *et al*, 1998) is later cited in work exploring the genetic diversity and origins of the Roma (Gresham *et al*, 2001). Increasingly more detailed accounts of the specific regions and populations within the Indian subcontinent to which different Roma

people have genetic links are emerging (Mendizabal et al, 2011; Pamjav et al, 2011; Martínez-Cruz et al, 2016; Melegh et al, 2017).

Kalaydjieva, Gresham and Calafell (2001) suggest the 'track record' of genetic studies of the Roma has been problematic. In Germany during the Third Reich it was used to provide scientific evidence to support the holocaust; and the latter half of the twentieth-century saw an excessive focus on Indian origin narratives at the expense of addressing health issues such as genetic disorders prevalent amongst Roma communities. In a later review of genetic studies conducted in the late 1990s and early 2000s, Kalaydjieva *et al* (2005) detail the founder effects that result from a small group breaking away from a larger population and note, 'the strong evidence of the common descent of all Gypsies regardless of declared group identity, country of residence and rules of endogamy' (2005: 1086). In terms of public health this signals the prevalence of Mendelian disorders, and the effectiveness of implementing 'community-based carrier testing programs' (2005:1090). Understanding this genetic research in the context of a wider social history of European Gypsies characterised by slavery, persecution and isolation, Kalaydjieva *et al* observe this narrative, 'is the genetic image of xenophobia, the fate of an Asian people fractured and dispersed among Europeans and responding to hostility with a labyrinth of walls of endogamy' (2005:1092).

These debates foreground populist narratives depicting the Roma in confusing, stereotypical and racist terms (Liegeois and Gheorghe, 1995; Izsák, 2015). Across Europe generic stereotypes about Roma include their criminality, itinerancy and dirtiness; these are often reworked in particular contexts e.g. in relation to place, the romanticisation of Gypsies living simple lives close to nature in rural settings (Sibley, 1995); or gender, the sexualisation of Roma women as an exotic other (Hancock, 2008); or education, that Roma students are problematic and their culture resists formal, sedentary education (Myers, 2018).

For Roma groups, often defined by their non-territoriality (Acton, 2006; Myers, 2018), the development of genetic markers related to a national or geographical point of origin is significant. It provides evidence of the *routes* and *roots* of a migratory passage. It is potentially useful within political advocacy identifying and campaigning for rights to accrue to the Roma as a singular body of people (e.g. Ian Hancock's (2010) work). It may be less helpful in neo-liberal political climates shaped by right-wing nationalism and populism, in which European development policies ostensibly designed to address social inequalities

faced by Roma, “tend to socially isolate particularly the poorest among them and contribute more to governing their poverty than to improving their living circumstances” (van Baar, 2018:443). It may also mistakenly assume a convergence of generic interests amongst people whose lives have been shaped differently; including differences between the economic, social and political experiences of Roma in western European countries compared to eastern Europe; different impacts derived from the initial creation and later dissolution of communist states; and, the impact of EU membership (Gheorghe and Mirga, 1997; Law and Kovats, 2018). The political response of Roma communities, intellectuals, and elites has tended to reflect the divergent threats and challenges encountered at national and local level. Debates about a wider territorialism, national identity or political strategies for social change reflect these local conditions; often distinguishing between strategies to acquire generic rights associated with national citizenship or the recognition of protected characteristics of an ethnic minority (Gheorghe and Mirga, 1997).

Some individual states are seeking to impose repressive anti-Roma legislation (Izsák, 2015). In 2018, Italian Interior Minister, Matteo Salvini, received considerable popular support for a national census of Roma with a view to expelling non-Italian Roma (Kirchgaessner, 2018), a move foreshadowed a decade earlier in legislation to fingerprint all Roma living in Italy (Colacicchi, 2008). Such measures of social control are not unique to Italy (Muigai, 2011); in 2013 it was revealed Swedish police compiled a genealogical database of 4029 Roma (Reuters, 2013), and there are historic precedents of fingerprinting Roma in Hungary in the 1930s (Schmidt, 2016) and ethnic cleansing during the Nazi holocaust (Kenrick, 2010). One characteristic of European neo-liberal policy-making has been the deterritorialisation or denationalisation of populations like the Roma considered problematic; they become reclassified as no longer citizens within state borders. This process of excising populations from nation states increasingly less easily defined by natural or physical borders but rather by more fluid or imaginary borders is described by van Baar (2017) as ‘evictability’.

Beyond individual state borders M’charek, Schramm, & Skinner (2014) describe the emergence of a ‘*phenotypic other*’ in which observable characteristics are constituted through the legal and technological management of DNA and genetic data by the state. Using the example of different EU (European Union) databases, they note the tendency for these processes to criminalise and discriminate on the basis of race at the technological

borders of nations. Similarly Amoore (2006) describes how understandings of 'biometric borders' have become commonplace, in which 'the body itself is inscribed with, and demarcates, a continual crossing of multiple encoded borders - social, legal, gendered, racialized and so on' (2006:337). Surdu and Kovats argue Roma identity has been 'fabricated by scholars, experts and bureaucrats' (2015:7) to encompass people previously known as Gypsies within a political dialogue. The capacity for nation states to encompass biological understandings of race within social and cultural reframing of ethnicity makes the non-territorial otherness of Roma a particular vulnerability when borders are defined in terms of bodies. Roma are configured as an unwanted mobile population stripped of rights and duties associated with citizenship; understandings of Roma culture, including 'mobility', are consistently misinterpreted within educational policies (D'Arcy, 2017; Myers 2018).

### **3. Roma, Education and Genetics**

Across Europe, educational opportunities for Roma have been systemically blighted by the association of characteristics and traits about Roma often based on centuries old stereotypes (FRA/UNDP, 2014). Such stigmatisation bears little relation to actual lives but is readily supported within political and media discourses (Richardson, 2014; Kroon et al, 2016). Surveying 20 years of research, Lauritzen & Nodeland (2018) note that Roma education is often problematized in deficit terms and that cultural problems are prioritised over socio-economic issues. Aikman *et al* (2016) also note the tendency for educational researchers and policy makers to promote deficit models of education in which, 'nomadic peoples are referred to as 'hard to reach' with formal education and in need of being educated into sedentary 'modern' ways of life' (2016:314). The characterisation of Roma as a 'hard to reach' community often fails to reflect the visibility and accessibility of many communities characterised in part by an imagined mobility or ill-defined nomadism (Myers, 2015; Law and Kovats, 2018).

A range of common concerns have been identified across European countries including Roma pupils not attending school or only attending in earlier years (Rosário et al. 2017); achieving less well than non-Roma pupils (Wilkin et al. 2010; FRA/UNDP, 2014); not progressing into Higher Education (D'Arcy and Galloway, 2018); experiencing bullying or

racism from other pupils and teachers (Bhopal, 2011a); being taught in a culturally insensitive fashion and consequent loss of Roma culture (Bhopal, 2011b; Myers et al. 2010); and, education policy and practice that misrepresents Roma identity and interests (Bereményi & Carrasco, 2015; Myers, 2018). EU membership requires national states to implement laws ensuring compulsory education for school-aged children. However, the European Commission's (EC) own National Roma Integration Strategies require states to meet a significantly lower threshold of only ensuring, 'that all Roma children complete at least primary school' (EC, 2011:5); a target the EC themselves identify as remaining largely unmet (EC, 2012).

### ***Genetics and nation-building***

The impact of genetic studies upon educational opportunities for the Roma is evidenced through the widespread segregation of pupils in 'special schools' where Roma pupils are taught alongside pupils with mental disabilities rather than with the general school population (Miskovik, 2009; O'Nions, 2010). A 2001 Save the Children report quotes extensively from educationalists and psychologists commenting on the over-representation of Roma in such schools both acknowledging the inaccuracy of testing regimes for Roma children and conflating these with the impact of environmental, socio-economic inequalities and inherent genetic predispositions (Pinnock, 2001). Whilst segregation in East European countries is widely acknowledged, similar evidence suggests Roma are routinely classified as requiring 'special educational needs' in Western European countries including the UK (Wilkin et al, 2010), often against the wishes of parents (Bhopal and Myers, 2016). Such segregation can be traced back to historic genetic classification of Roma as mentally deficient; an argument that surfaced recently within Slovakian educational policy that defended such segregation based on the misrepresentation of Roma as incestuous (ERRC, 2017). The Slovakian case resulted in European Commission infringement proceedings; but, Amnesty International highlighted this official policy reflected widely held beliefs amongst Slovakian teachers working in 'special' schools (Amnesty International/ERRC, 2017).

Systemic failings across different countries with different educational practice and policy approaches are well-evidenced and in some cases can be linked to 'race' science eugenics. Schmidt (2016) describes how inter-war nation-building policy making in Czechoslovakia founded on eugenics identified how a 'direct relationship between the life style of the population and the health of nation substantiated the vision of disease as public health danger, requiring the special intervention of state and society' (2016:7). A narrative emerged in which irresponsible parenting, poor children's ill-discipline and behavioural issues, criminality and disability coalesced as requiring state interventions.

Contemporaneously the visibility of increasing numbers of migrant Roma within Czech society led to their identification as a problematic population characterised by domestic violence, promiscuity, criminality and itinerancy/nomadism. Legislation requiring their constant surveillance and control was introduced in which 'common prejudices' were reframed within scientific knowledge and 'eugenics played a significant role in creating an abusive discourse against them and substantiating the necessity of systematic control of their families and children' (2016:15). This included mass surveys of school students linking physical development to parental morality and criminality and the identification of sterilisation as a humanistic response to groups identified as 'low-value'. For Roma specifically, it saw the forced separation of children from parents to be educated in state institutions; and, the introduction of compulsory records including fingerprints and 'detailed information about relatives and previous places of temporal and permanent living' (2016:12). Schmidt (2016) argues that eugenic arguments from the 1930s laid the groundwork for policies of segregation of Roma children and disabled children that have persisted to the present day and informs current professional practice of social workers and teachers under the banner of special education.

The Czech example is one that is repeated elsewhere both within evidence of Roma and disabled children being segregated and educated together (O'Nions, 2010) and also within policy making that draws upon eugenically understood categories (Gillborn, 2016; FRA/UNDP, 2014). The narrative of nation-building described by Schmidt (2016) mirrors contemporary arguments for using biosocial interventions as a means to improve social structures. Within both, knowledge based on genetics research is accorded high levels of



credibility when informing policy-making. Baker (2015) analyses a well-intentioned OECD report exploring the potentials for neuroscience within educational policy making, in which an ideal child emerges, 'formed within an arch Western liberal policy framework, officially secular, culturally Christian inspired' (188). This framing of an 'ideal child' excludes children from ethnic minorities or with disabilities. It is symptomatic of the types of policy, and the types of discourse shaping educational policy, that Liegeois and Gheorghe (1995) identify as negating Roma culture at different historical moments and geographical settings.

### ***Bodies, individuals, assemblage***

Guthman and Mansfield highlight the attraction of epigenetic interventions in healthcare in which the 'emphasis on permeability, plasticity, and temporality....has the potential to revolutionize how we think about relationships between environments, bodies, and human health' (2012:499). Youdell (2017) argues there is similar potential for biosocial educational policy interventions that might be understood in more radical terms of social complexity along the lines of Deleuze and Guattari's *assemblage*. Within such an imagining of educational practice, bodies within educational settings, bodies within pedagogic practice, and, genes within bodies become a holistic structure ripe for intervention. By influencing these environmental zones, although it is not possible to change DNA structure, it becomes possible to imagine the influencing of gene expression towards pathways defined as better educational outcomes.

Epigenetics research has tended to explore aspects of deprivation or stress on the body rather than more positive factors (Meloni, 2016; Youdell, 2017) leading Youdell to suggest two potentially useful interventions. Firstly identifying the plasticity of the brain in relation to stressors suggests different environments may have the potential to reverse or change epigenetic effects to the brain. Creating nurturing classroom environments could have greater significance upon students who have previously experienced more stressful environments or a lack of nurturing. Secondly, she cites nutrigenetics research which explores the positive epigenetic effects of Omega-3 dietary supplements on students in the developed world, 'in relation to general cognitive performance, reading and language

learning difficulties, autism, and attention deficit hyperactivity disorder' (Youdell, 2017:1283).

Such interventions have been championed within educational policy. In the UK for example there is cross-party and popular support for early childhood interventions such as the *1001 Critical Days* manifesto (1001CriticalDays, nd). Edwards et al. (2015) note that the alignment of such policy as a means of improving social mobility is misplaced; pushing interventions to localised, early years moments when bodies are seen as most ripe for being changed. The bodies in question being those identified as having problems or of being problematic. Often these are bodies defined in terms of pre-existing social injustices around race or disability (Mansfield and Guthman, 2015); interventions are designed to produce bodies more closely aligned with abled, White European norms.

For the Roma the dangers of a biosocial intervention relate to histories and knowledge about their unbelonging and difference defining their problematisation within policy seeking to reproduce inequitable social settings. The Deleuzian strategy of *assemblage* is potentially problematic because tonally it resembles discourses that recognise Roma in deficit terms; it is less likely to value Roma for children for who they are and more likely to insist they change to resemble a wider generic European, non-Roma body. Where interventions derived from genetic studies may be beneficial, such as delivering health education initiatives to highlight genetic disorders, these are often sidelined by academic scholarship seemingly more interested in speculative accounts of migratory patterns (Kalaydjelva *et al*, 2005).

#### **4. Race, Genetics and Cultural Capital**

Throughout the twentieth century, genetic studies linked the Roma with a range of undesirable traits, most notably resulting in the death of hundreds of thousands of Roma in the Nazi holocaust (Kalaydjieva, Gresham and Calafell, 2001; Kenrick, 2010). Less well-documented are similar exercises in discredited 'race' science conducted elsewhere in Europe; the lasting credibility accorded to criminalisation based on a genetic identity post-1945; and, more recent European adoption of similar categorisations as a means of managing Roma populations across Europe (Aubry, 2010; Robel and Herold, 2010;

Kotljarchuk, 2018). Narratives about desirable genetic traits often emphasise the value and significance of having a white skin rather than a black one. Despite the apparent absurdity of such narratives, Miller (2017), discussing ethics and race, notes their commonplace occurrence, 'in the most beaten treads of theoretical and folk wisdom regarding bodies and value' (2017:x). Miller describes the biblical genealogies of Noah's son Ham whose embodied criminality is passed on generation after generation. The account of Ham's crime is obscured and never addressed, but the repetition of his original sin evokes "an inexhaustible number of criminals, each one absolutely guilty for the entirety of the original act" (142). The gene pool of Ham is a curse in which race and ethics collide to determine the bad characteristics and dispositions of one group of people, which in more modern times finds its echo in the Althusserian 'hailing' of subjects (Althusser, 1971).

Hartigan (2008) details how hard scientific evidence of race determined genetics at the turn of the twenty-first century on closer examination reveals itself to be an interpretation or translation of genetic 'populations' into more readily understandable, (in populist and policy terms), but ultimately inaccurate, race categories. This is not necessarily evidence that race is socially constructed, but rather using Latour's (1999) arguments about *translation* and what constitutes persuasive science, Hartigan outlines this as a process of the production of knowledge. He suggests there is a recognisably distinct difference between the evidence about genes being deployed, its translation into public forums, and, public understandings of what constitutes 'race',

"reality' is not the final arbiter that resolves these controversies; rather, what counts as real is partially constituted or reconstituted in the course of such disputes.'

(Hartigan, 2008:180)

Hartigan (2008) identifies a widening circle of research, populist TV based on real life crimes and the popularity of potentially dubious genetic ancestral testing as all contributing to the renewed growth in credibility of 'race' science. He demonstrates the portability and ready transferability of such cultural capital into economic capital, giving the example of genetic scientists generating financial returns from lucrative true-life crime series on TV. Similarly, Gypsy identities drawn within traditional stereotypes bolstered by a veneer of

anthropological, ethnographical and historical perspective are used for reality TV programmes such as *My Big Fat Gypsy Wedding* in the UK and *Adventurile familiei Vijelie* (Adventures of the Vijelie Family) in Romania. Knowledge about the Roma has value as cultural capital within economies of knowledge and policy-making and one that is equally transferrable for economic capital.

A similar process of *translation* of knowledge can be identified within scholarship, policy and popular discourse about the Roma. Some work by social constructionists has suggested 'Gypsy' identity was effectively 'invented' by the eighteenth century historian Heinrich Grellman (Acton, 2004). This invention creating the illusion of a racialized genetic, ethnic group characterised by nomadism and criminality requiring policy interventions. Public discourses and state policy have historically deployed strategies linking racist identity traits to measures of control. For example, the earliest policy referring to Roma in the UK, the Egyptians Act of 1530, overtly links identity to criminality and itinerancy. Since then, European states have adapted measures to manage Roma identity reflecting social change. Following increasing industrialisation and suburbanisation, legislation is introduced to control the spaces the Roma occupy across Europe, in which knowledge about their characteristics of mobility and criminality remain a constant feature (Lucassen, 1993; Mayall, 1997; Bhopal and Myers, 2008; Myers, 2018). This partly explains the emphasis of studies of genetic disorders amongst Roma people, being cited within academic writing focussed on Indian origins to counter social constructionist accounts.

Most recently the social constructionist perspective has been reconfigured to argue that Roma identity has been reimagined or interpreted by an expert political class to reconfigure traditional stereotypes of 'Gypsies' within a new nomenclature, that of 'Roma' (Surdu and Kovats, 2015; Surdu, 2016). Surdu's (2016) account, that Roma are a real group of people but one who are defined by a political class, has been significantly disputed for failing to acknowledge the self-ascribed identities of Roma who do identify as such; for reinforcing stigmatising narratives about Roma ethnicity by ascribing them to inventions of (Roma and non-Roma) elites; and, failing to acknowledge the significance felt for primordial ancestral accounts related to the Roma (Mirga, 2018).

The *translation* of knowledge produces cultural capital that has a high value within economies of cultural capital specifically (Bourdieu, 1986); not least because there is a scarcity value to such knowledge. The credibility of scientifically legitimised knowledge of genealogical ancestries and identities defined by genetic accounts is heightened, because its production is restricted to small numbers of scientists. Such cultural capital has its own generative impetus; creating fictional accounts that in turn reinforce the value and significance of the scientific originators of that knowledge. For Roma such economies generate populist knowledge such as stereotypes of criminality, dirtiness, itinerancy, musicality, closeness to nature and illiteracy, to scientific genealogical knowledge. A racist discourse of Roma identity is given credence through genetic science and DNA that identifies the passing of traits and characteristics intergenerationally.

The deployment of capitals within social structures is a means by which the *status quo* is both reinforced and reproduced through the work of institutions and social fields that condition and reproduce *habitus*, those individual's characteristics and dispositions, shaped by past experience and engagement within social life (Bourdieu, 1990; Bourdieu and Wacquant, 1992). Knowledge *about* the Roma has a high capital value: it informs policy-making or produces a TV format. That knowledge however is not produced on a level playing-field; it is foregrounded in the reproduction of embodied characteristics of the Roma as a nomadic, criminal other with a history of disengagement from education. It is cultural capital that shapes life trajectories through the naming of Roma ethnic identity within policy-making that is a response to the identification of those characteristics as problematic.

Gillborn describes a contemporary reimagining of discredited scientific arguments about racial hereditarianism as a 'strategy of *racial inexplicitness*' (Gillborn 2016:367) in which race itself is not named and new iterations of racist science can be distanced from discredited but similar work such as eugenics. Gillborn suggests,

The new geneism adopts a colorblind, meritocratic and celebratory tone whereby 'race' is rarely mentioned at all and the supposed 'advances' are hailed as good news for everyone.' (366)

This is a strategy designed to be unchallengeable at a time when it has become less palatable to make openly racist statements. Current science promoting understandings of

the inheritability of intelligence as a basis for education policy therefore, both fails to mention race at all and simultaneously cites attempts at debating its racism as evidence of irrational ploys by liberal, non-scientists to discredit scientific knowledge. Gillborn (2016) identifies a lineage of scientists currently using such strategies that links them back to individuals and discredited racist work on race and inherited IQs. These include Richard Lynn who argues the low IQ of Serbian Roma can be linked to dysgenic fertility (Čvorović and Lynn, 2014). Whilst Lynn's work possibly bears the overt hallmark of discredited eugenics; more liberal, well-intentioned biosocial strategies run a double risk of such misrecognition. Firstly by premising the delivery of educational policy interventions on ill-conceived or discredited narratives of Roma identity. For example, by framing interventions to address characteristics that have become generally accepted as Roma 'issues', such as poor educational outcomes related to nomadism that disguise populist discourses about itinerancy, criminality and uncleanliness. Secondly identifying the characteristics of the Roma as the problem to be solved resulting in local or individual interventions rather than addressing structural failings. The argument that biosocial interventions be considered as part of an *assemblage* of techniques, embracing structural and local conditions more generally; becomes flawed when the basis for that *assemblage*, the knowledge economies that inform it are complicit in the structural inequalities shaping Roma lives.

## **6. Conclusions**

Within the field of Roma studies, genetic research is problematic on many levels, not least because it is routinely used to make arguments about identity rather than address the knowledge of genetic disorders it has produced. This article readily acknowledges it is engaged in just such practice. There is perhaps an inevitable relationship between genetic studies of the Roma and populist discourses about inherited genetic traits that readily transition into policy including educational policy. These historic discourses have portrayed Roma in racist, negative terms; and, from before the Second World War until the present have shaped education for many Roma children. Such discourses and related policy have widely been recognised as requiring change across Europe but with little evidence that change is likely to happen in the near future.

Also, within Roma studies there is some irony for social constructionists and primordialists alike when the hard science of genetics proves a point about origins, but is simultaneously deployed to suggest a flawed ethnicity. This becomes more problematic if used as the evidence for biosocial interventions taking precedence over social and economic changes to improve Roma educational outcomes. If, for example, an educational strategy of fixing individual bodies through dietary supplements took priority over economic programmes to redistribute wealth more equitably between Roma and non-Roma people, that would clearly be a retrograde measure.

Surdu (2016) argues there is a coherency within the discourses of academics, experts, journalists and policy-makers that shapes commonly held understandings of the Roma and Roma 'issues'. That consequently bodies of knowledge about the Roma remain unchallenged or unchallengeable; this seems an unavoidable conclusion when tracing the histories of educational policy and outcomes for Roma in Europe. On past evidence, the Roma will continue to be classified as inheritors of genetic characteristics that mark them as inferior in educational settings. When arguments are made that genetic research, through educational interventions, can improve educational outcomes and social mobility; that is laden with a promise of a significant change and the potential to challenge old orthodoxies. This is a promise embedded in populist knowledge that imbues scientific knowledge with high capital values when it maintains pre-existing social structures. It is not knowledge that influences economies by addressing social inequalities or structural change. The effect of such economies is to reproduce deficit models of education in which old racisms about the Roma are newly minted within the currency of contemporary scientific knowledge.

The capital value of knowledge about the Roma is still largely created by non-Roma people and this includes both the hard science of knowledge about genetics and the translation of that knowledge within populist and policy discourses. This translation of knowledge reproduces a range of racist stereotypes about Roma that have endlessly reproduced a *status quo* in which resources and opportunities remain inequitably distributed. The transfer of knowledge, including knowledge about genetics, within different economies (political, economic and social) generates greater social, cultural and economic capital for non-Roma

people. Within the multifaceted strands of relationships that bring together nations, policy-makers, schools, pupils and parents, biosocial educational strategies pose a range of problematic concerns for the Roma, linking discourse about Roma identity to means of social control. In a Europe where borders are increasingly understood in terms of fluid boundaries between social positioning rather than territoriality, the promise of biosocial education strategies are reminiscent of policy designed to reproduce rather than challenge inequalities. Identifying or classifying Roma pupils as a phenotypic 'other' mirrors previous education policy that, using the evidence of genetics, has either excluded or segregated Roma pupils within schools. There is a nagging doubt that within the social relations of *assemblage* used to justify biosocial solutions is the reconstitution of a populist and ill-informed knowledge about Roma.



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