Knowledge, Policy and Practice in Education and the Struggle for Social Justice

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Introduction

In this chapter we explore what it is possible to say in and about education in our current sociopolitical conditions, drawing on the rich legacy of the sociology of knowledge in education and education engagements with Judith Butler’s writing on the ‘domain of the sayable’.

We demonstrate the insight that this analytical lens can offer by applying it to the broad field of education, in relation to schools and higher education institutions. We then go on to apply this lens specifically to understand the current enthusiasm, ambivalence and contestation over the developing field of biosocial education. We explore what the historical refutation of biology within the field of sociology means for the sociology of education’s capacity for and mode of engagement with new knowledges being generated by contemporary biological sciences, in particular those drawing on genetic and molecular technologies.

This consideration is driven by three key currents. The first is the rapid developments in fields such as molecular biology, analytical chemistry, epigenetics and neuroscience that are generating new knowledge of the body and demonstrating the influence that environmental factors have on the body’s functioning. The second is the popular and policy interest in this work, in particular genetic science and neuroscience, and how these might be put to work in education. The third is the tendency within critical sociology of education to respond to these
knowledges as a threat or danger and analyse policymakers’ advocacy of these as ‘bio-molecular rationalities of governance’ (Gulson and Webb 2017). Despite the compelling arguments put forward by such critiques, we have been convinced of the importance of holding a distinction, albeit slippery, between scientific knowledge and the uses made of this in policy, politics or popular rhetoric, and, in turn, of engaging in productive dialogue and collaboration between sociology of education and these biological sciences (Youdell et al. 2017).

Through our analysis we make a case for sociology of education to take great care in refuting fields of knowledge. We propose transdisciplinary approaches that are alert to the potential problems of old and new manifestations of biological determinism, but which recognize the creative and potentially equalizing possibilities of biosocial education research. Such biosocial education research, we argue, should be informed by an understanding of the enfolded nature of the social and the biological, offering analyses built on social and biological insights into the body’s plasticity and the body’s openness to social influence. Sociology of education and broader critical studies in education should recognize that we are biosocial.

**Powerful knowledge, dangerous knowledge, power-knowledge, politics of knowledge**

In order to explore what constitutes knowledge in contemporary education and in sociology of education in particular, and understand the reluctance in the field of sociology of education and social sciences more broadly to engage with the new biological sciences, we borrow key insights from the sociology of knowledge, in particular work by Geoff Whitty, as well as from Foucauldian understandings of knowledge and its operations, and Judith Butler’s work on the domain of the sayable. Our current dilemma, then, is located in the continuities and shifts of the politics of knowledge.

We argue, ultimately, that the Foucauldian readings of power/knowledge and governmentality in education that have been so generative now also constitute a new orthodoxy in the sociology of education. This leads to a somewhat paradoxical situation when the radical and subjugated knowledges of Left/postmodern critique act to censor science in this domain, a refusal that Maurizio Meloni (2016) identifies as being at the very heart of the discipline of sociology.
This is highly situationally and temporally specific, of course. While biopolitics may constitute a new orthodoxy in sociology of education, in the wider domains of politics, popular understanding and government and private investment this is certainly not the case. As the sociology of knowledge teaches us, knowledges are multiple and their status – as truths, as disavowed, as reviled – are multiple, mobile and contingent.

For instance, through the efforts of genetic research and government and private investment we see huge international biobanks and big data projects taking shape that have the potential to transform the way we understand ourselves (Williamson et al. 2017; Baker 2015) as well as the way we engage with medicine and, potentially, education (Williamson 2019; Plomin 2018). It is already possible to buy personalized genomic profiling and ‘polygenic scores’ that set out our propensity for all sorts of things, from character traits to diseases and learning ‘disorders’. This genomic medicine and direct-to-consumer genomic testing demonstrate how new biosciences such as behavioural genetics might be identified as new modalities of governance or, indeed, the regimes of truth of this moment. We must, then, be careful and precise about the ways in which we engage biosciences and the claims we make for and about education in the light of these engagements.

The sociology of school knowledge

The sociology of school knowledge has brought the sociological interrogation of knowledge into the context of education to respond to the persistent issue of who knowledge serves (Apple 1990). This work demonstrates that knowledge is neither universal nor neutral but, rather, is always social and ideological (Berger and Luckmann 1966) and provides important interrogations of the ‘selection, organization and distribution of knowledge in the school curriculum’ (Whitty 1985: 12).

Furthermore, and perhaps most significantly, the sociology of knowledge demonstrates how different forms of knowledge become attached to particular social groups and institutions such that there is identifiable ‘elite knowledge’ that is distinguishable from, for example, ‘working-class knowledge’. This recognition underscores the fact that the curriculum is social, reflects choices regarding inclusions and exclusions and is non-necessary (Bernstein 1977; Young 1971). It is historically situated and loaded with historically embedded content (Williams 1965). And when particular forms of knowledge are either centred in or proscribed by the curriculum, this makes education a space of recognition and success for some students (e.g. elite students).
and a space of exclusion for others (e.g. working-class and minoritized students).

In turn this recognition generates a debate, ongoing since the 1970s, over which knowledges should properly form the curriculum – Michael Apple gets to the kernel of this with the question of ‘whose knowledge counts?’ (Apple 2000). This debate pivots around the matter of whether the school curriculum should be comprised of ‘elite’ knowledge or ‘relevant’ knowledge. And, by extension, how educators can intervene in and change the curriculum and its role in the reproduction of social relations.

While the sociology of school knowledge of the 1970s and 1980s often advocated a shift from elite to relevant knowledge in the curriculum, Whitty was concerned that this may be a ‘naïve possibilitarianism’ (Whitty 1974, cited in Whitty 2010) that would not transform society and, indeed, might serve to reproduce existing hierarchies and inequities. His work problematized knowledge in general and advocated taking all knowledge as the object of enquiry. Whitty (1985) cites Musgrove (1968) to argue that we should:

examine [curriculum] subjects within school and in the nation at large as social systems sustained by communication networks, material endowments and ideologies. Within a school and within a wider society [curriculum] subjects are communities of people, competing and collaborating with one another, defining and defending their binaries, demanding allegiance from their members and conferring a sense of identity upon them. (Musgrove 1968: 101, cited in Whitty 1985: 12–13)

In this vein, Whitty led a major study into the possibilities and limits of embedding themes across the curriculum to deliver potentially empowering social education for young people (Whitty et al. 1994), and when Deborah worked with him in the early 1990s he was leading (with Peter Aggleton) the Health and Education Research Unit at the Institute of Education, London, whose work was centred on what at that time was the ‘dangerous’ knowledges of sex, drugs and HIV/AIDS education. What this highlights is that knowledge might simultaneously be elite, relevant, dangerous or reviled, and the same knowledge might be differently positioned across different contexts – the reviled knowledge of the condom in ‘polite company’ is valuable knowledge in a sexual encounter.

Scholars such as Geoff Whitty, Michael Apple and Michael Young, then, turned the attention of the sociology of school knowledge to
‘powerful knowledge’, asking what knowledge is powerful, for whom and in what circumstances, and how this powerful knowledge can be put to work for social justice (Apple 1990, 2000). In his more recent work Michael Young emphasizes that in the context of the school formal curriculum ‘difficult, off-putting knowledge’ may well also be ‘powerful knowledge’ and that access to this powerful knowledge is especially important for minoritized students who may not have had access to it (Young 2008, cited in Whitty 2010). If the knowledge created by the new biological sciences is powerful knowledge, then perhaps the sociology of knowledge and the wider domain of social science need to engage with it.

Power/knowledge

While the sociology of school knowledge of the 1970s and 1980s is not directly informed by the work of Michel Foucault, it is clearly influenced by that same zeitgeist. As Foucault’s wider influence in education developed, so did the recognition of the inseparability of power/knowledge in discourse and the productive effects of these. Knowledge no longer belongs to certain people to the exclusion of others; knowledge constitutes these people through the subjectivating force of discourse (Youdell 2006, 2010; Foucault 1991).

Michel Foucault’s (2002) The Order of Things explores the ordering of knowledge and its production and productivity through the sorting and classification of all manner of things, including people. The invention of ‘man’ as a human subject, Foucault argues, places man at the centre of knowledge at the same time as this knowledge enables ‘man’ to be known. For Foucault, this invention is concurrent and entangled with the ‘invention’ of ‘science’, achieved through the simultaneous production of specialist knowledge, techniques and technical specialists, which together demarcate a field and its ideas. Science, Foucault suggests, is a discourse that functions as a ‘regime of truth’ that shapes the field and the social while asserting a scientific account of the human subject.

For many social scientists, political theorists and sociologists of education this account of science has come to be widely accepted, an orthodoxy. Yet for the biological scientist authoring this paper such a claim does not reflect scientific inquiry and the knowledge it generates (Youdell and Lindley 2019). The generation of scientific knowledge is not by necessity also the subjugation of the human subject. Furthermore, science (if it ever was that way) has changed. Foucault’s contestation of the scientific account of the human strangely resonates with contemporary biological accounts of the body’s plasticity and the profound
influence of multiple environmental and social factors on the body. Foucault writes:

…we [society] believe[s], in any event, that the body obeys the exclusive laws of physiology and escapes the influence of history, but this too is false. The body is moulded by a great many distinct regimes; it is broken down by the rhythms of work, rest, and holidays; it is poisoned by food or values, through eating habits or moral laws; it constructs resistances. (Foucault 1984)

If we set this alongside contemporary epigenetics, or locate it in the context of nutrigenomics (Hussey et al. 2017), we find emerging scientific knowledge that can demonstrate and put molecular mechanisms to the body’s ‘resistances’ that Foucault speaks of. In relation to epigenetics David Moore (2015: 60–1) notes:

Because stimulation arising in the environment can affect biological activity at several levels—at the level of the neurons in our sensory organs, at the level of the hormones in our bloodstream, at the level of the genes in our cell nuclei—an essential part of how we come to be as we are will always be what we experience, that is, the contexts that our minds, bodies, cells, organs, and genes find themselves in. This perspective encourages us to think about how factors interact to produce our characteristics, and more specifically, how nongenetic factors influence genetic expression.

It is not, then, that either scientific knowledge or sociological/political knowledge should be foregrounded. Rather, these knowledges are in relationship. It is the nature of these relationship between domains of knowledge, and how these relationships vary across context, that we should attend to.

This concern with the significance of knowledge interactions is at the centre of Bernstein’s work on classification, which, Whitty notes, ‘reflects the distribution of power and the principles by which boundaries are established between categories’ (Whitty 2010: 36). Strong classification – which insists that ‘things must be kept apart’ (36) – may mark the persistence of science as a regime of truth, but it also marks the long-standing refusal of biology by the sociology of education.

Furthermore, Whitty highlights the significance of what is done with knowledge – it is not simply curriculum content that is of concern, but also the pedagogic, relational and institutional. He argues:
Whether or not particular aspects of education are ultimately reproductive or transformative in their effects is essentially a political question concerning how they are worked upon pedagogically and politically and how they become articulated with other struggles in and beyond school. (Whitty 1985: 90)

This insight into the nature of school knowledge and what is done with it and the contexts in which it circulates, is worked upon, and interacts with other forces can be extrapolated to the wider field of education, to the sociology of education and, indeed, to biological sciences.

Sociology and biology: Irreconcilable knowledges?

Science has a persistent reputation as a generator of dangerous knowledge – Mary Shelley’s consideration and partial advocacy of the pursuit of dangerous knowledge in *Frankenstein*, first published in 1818, narrates both the power and dangers of scientific exploration. Yet this is a particular, and let us not forget fictional, positioning of scientific knowledge generated at a particular historical moment of scientific work. As we have already noted, it is our intention to maintain, as far as possible, a separation of biological and sociological knowledge from the regimes and rationalities that these may or may not come to be deployed through. As Whitty notes in relation to school knowledge, it is not simply a matter of which/whose knowledge; it is a matter of what is done with it, how it interacts with other knowledges, practices and institutions. In relation to the deployments of new knowledges being generated in the biological sciences, we find biological knowledges put to work in ways that are worrying (Baker 2015), transformative (Williamson *et al.* 2017) and beneficial and potentially equalizing (Youdell and Lindley 2019; Kirby *et al.* 2010).

Maurizio Meloni’s analysis in his book *Political Biology* (2016) makes two crucial points. The first is that the discipline of sociology – that is, sociology as a body of knowledge with its own domain and expertise – emerged at least in part from a rejection of science in general and of biology specifically as an explanatory framework for understanding humans and human experience. The separation of science from sociology is, according to Meloni, embedded in the very foundation of sociology as a discipline. This, he goes on, provides some insight into the persistent and dedicated refusal of science – both methods and knowledges – in sociology.
The second crucial point that Meloni makes concerns the connection between particular knowledges and politics. Through his Foucauldian archaeology of eugenics, Meloni demonstrates how, in fields of contested emergent knowledge, particular knowledge comes to prominence and how this occurs in a dynamic and non-necessary relationship with particular political positionings and discourses. Specifically, Meloni makes the confronting case that the meanings and social functions of particular versions of ‘hard’ heredity are not intrinsic to that thinking but came to adhere to and become part of particular far-right political discourse and practice through deployment over time – a process he calls crystallization:

One of the key points of my analysis is that contingent historical events, especially in inter-war eugenics, produced the specific alignment of science and values we have assumed natural or logical. But if contingent historical events, rather than logical necessity, produced a certain crystallization of values, then things could have been very different, according to the particular scientific theories that were discarded. (Meloni 2016: 131)

Meloni illustrates how in the work of biologists such as Saleeby, a ‘nurtural eugenics’ that included the influence of heredity as well as ‘all the influences which nourish, mould, and modify the individual’, this broad project was concerned with both the biological and the social and orientated to the social good – ‘and which therefore included education, social reform, and philanthropy. These progressive projects were not, in this schema, antithetical to eugenics’ (Saleeby 1914: 24, 33, cited by Meloni 2016: 103). Furthermore, he invites us not only to engage the equalizing potential that was claimed for education informed by ‘soft’ heredity during the interwar period, but also to encounter the possibility that ‘hard’ heredity need not automatically be fascistic.

Despite these important interventions, Meloni does continue to read the political entanglement of science as unavoidable, and so perhaps provides only limited support for any desire to hold apart science knowledge and the social and political projects for which science is mobilized. Meloni argues: ‘[I]n biology no major theory (e.g., heredity, human nature, nature versus nurture) was ever elaborated without implicit or explicit reference to political factors, and, once elaborated, every scientific position becomes
a force affecting morality and politics, often in contradictory and ambivalent ways. (Meloni 2016: 15)

The growing insight into the environmental influences on epigenetic regulation of gene expression means that the prominence of understandings of hard heredity has been seriously challenged. Yet, Meloni is ambivalent about what an epigenetics-informed new ‘soft’ eugenics might be made to do and what science-political knowledge alliance might crystallize: ‘The double-edged sword of biological plasticity is as sharp as ever: Since bad experiences can turn into bad biology, is epigenetics bad news? Or is it good news because we can reverse the legacies of traumatic experiences?’ (Meloni 2016: 212).

Returning again to Whitty’s sociology of school knowledge, we are reminded that the knowledge itself is just part of the problem: ‘some of the key challenges in giving disadvantaged pupils access to powerful knowledge—and giving it meaningful and critical purchase on their everyday lives—are pedagogic ones’ (Whitty 2010: 40). What biosocial education does with biological, sociological and biosocial knowledges is, once again, key. And yet, as Foucault’s account of science as a regime of truth and of the body’s resistances show, normative knowledges and their forceful productivities are not easily set aside, even when these are shaken from within, for instance as we see in Moore’s account of epigenetic influences.

A sociology of speakability

In order to develop further our analysis of the recognition of biosocial education, we turn to Judith Butler’s work on the domain of speakability that extends analyses of the productive force of knowledge and begins to suggest what we refer to here as a sociology of speakability. Judith Butler writes:

The question is not what it is I will be able to say, but what will constitute the domain of the sayable within which I begin to speak at all. . . . To move outside of the domain of speakability is to risk one’s status as a subject. To embody the norms that govern speakability in one’s speech is to consummate one’s status as a subject of speech. (Butler 1997a: 133, original emphasis)
Here the issue is not what we are not allowed to say—a repressive force—but the parameters of what it is possible to say and make sense—a productive force. These parameters of speakability are not just in play in the content of our speech (or other forms of representation and practice) and the ideas and discourses that we deploy. These parameters of speakability also govern and constrain the recognisability of us as subjects. This suggests a particular account of intelligible subjects, one who comes into being through subjectivation: ‘subjectivation’ denoted both the becoming of the subject and the process of subjection—one inhabits the figure of autonomy only by becoming subjected to a power, a subjection which implies a radical dependency. (Butler 1997b: 83)

This simultaneous being made subject to power and being made a subject means that subjection is always situated and constrained:

Processes of subjectivation and the performatives involved in these processes have to make sense to work; they have to be ‘recognisable’ (Butler 1997b: 5) in the discourses that are circulating in the settings and moments in which they are deployed. Subject-hood and intelligibility, then, are bound together. If practices do not cite an intelligible discourse then their performatives and subjectivations will fail. While this failure might be seen as ‘freeing’ the subject from subjectivation, if this is a freedom from subject-hood then the question of whether we can ‘be’ anyone or anything if we are not subjects becomes pressing. (Youdell 2011: 42, emphasis added)

This question underscores the fundamental productivity of the force of speakability and of silence and raises the curious question of whether we can be sociologists of education or biological scientists while we engage biosocial education.

Laura Teague has offered an incisive analysis of the domain of the sayable in the primary school curriculum. She highlights an important distinction between censorship and sayability:

[This] moves us away from the notion of an external censor, refusing permission for our plans, but, rather, suggests that the plans we come up with in the first place are already censored: they are formed in the domain of the sayable. . . . it is through the moments of silence encountered when we stumble towards what is
unsayable or the seeming impossibility of speaking some words out loud that I become aware of its presence. (Teague 2017: 3–4)

Teague exposes the subtle and often unrecognized effects of speakability – for Teague we are often already constrained by the domain of speakability before we even begin to imagine, think, develop ideas or speak. Whether we can imagine biosocial education, and the particular forms of biosocial that we imagine, are constrained in this way. When we struggle to imagine quite how the biosocial will proceed, we ‘stumble towards what is unsayable’ in Teague’s terms. When we encounter resistance and refusal from the fields of sociology or biology, we encounter the limits of speakability. The injuries of foreclosures that are effected by the conditions of speakability, then, may well not be ones we rail over, we may only notice them when we find ourselves speaking and incomprehensible, our words not grasped or even reviled, ourselves on the outside. These conditions of speakability constitute and reconstitute the domains in which we operate and in which we make sense: school education, higher education, sociology of education, biological science and, indeed, the public sphere. According to Teague, ‘[t]he issue of the domain of the sayable is always political. It is about what can be said, where and by whom’ (Teague 2017: 11).

**Speakability in education**

The conditions of speakability then, have profound implications for education, from the funding models that govern the flows of money to educational institutions to the everyday educational practices inside classrooms and the sorts of subjects that can be recognized in them. The conditions of speakability limit and are the site of politics in education.

Critical education scholarship has a long-standing concern with the politics of education. Michael Apple’s account of multiple political factions and ideologies that have shaped education over the past three or more decades is useful. The domain of speakability in contemporary education is no doubt influenced substantially by those political factions and ideologies that Apple identifies: as they cross-cut, contend and coalesce, neoliberalism, neoconservatism, working-class and middle-class forms of authoritarian populism, and middle-class managerialism, all shape what is meaningful, valuable and possible in education (Apple 2006). Here we think about these factions and ideologies as discourses in an education assemblage (Youdell 2011) that has multiple elements
and productive forces. This includes the macroeconomics that underpin these ideologies, the material practices that they demand of schools and of subjects, as well as the knowledges that become hegemonic, which delineate the domain of the sayable, or, in Foucault’s terms, function as ‘regimes of truth’. Such an assemblage, and the discourses and practices that produce it, does not remain unchanged – it moves and morphs as new knowledges, technologies, subjects and other elements are incorporated. It is this mobile convergence of elements in an education assemblage that makes it possible, for instance, for ‘brain-based’ learning underpinned by cognitive load theory to become embedded as school inspection criteria, as it recently has been in the UK (Muijs 2019).

Speakability in school and higher education

What is sayable makes certain forms of speech possible (and unintelligible), and at the same time makes particularly demarcated subjects intelligible (and impossible). In contemporary education the domain of the sayable demands and makes certain sorts of subjects – the teacher who must want the best outcomes in high-stakes tests above all things; the professor who must want high impact factor publications; the parent who must want the top test results for their children.

In school education the domain of the sayable is assembled through persistent policy and political rhetoric, embedded in and through media, the concerted efforts of edu-industry, and becomes part of popular understanding among publics. The domain of the sayable demands and makes: choice, accountability, markets, performance indicators, high-stakes tests; ability and ability groupings; learning styles; intelligence; mindfulness; personalization; brain-based learning; metacognition; the knowledge curriculum. Beyond the domain of the sayable are the ideas that become derided, unspeakable, absurd and perhaps unthinkable: mixed-ability grouping and classrooms; student-directed learning; progressive education; critical pedagogies; well-resourced ‘common’ schools; learning outcomes undifferentiated by class and race; the ‘good’ teacher and ‘good’ parent who do not strive for outcomes in high-stakes tests.

In higher education this domain of the sayable is assembled through similar forces. The intensification of work and insecurity of positions mean careful calculations – from what we research to what we say publicly in meetings. These conditions of work in university mean it can no longer be relied on as the site of critical thought. In the domain of the sayable, the professor must want high impact factor publications
and, in the UK, research impact in the ‘real world’. Choosing critical-left social justice orientated research agendas, choosing to write from positions of political commitment, choosing to critique policy directions and their effects may well mean choosing to be an outlier, in conversation with oneself, on the fringes of speakability. It may be to forego performance-related pay rises, to fail to show ‘impact’ and perhaps, over time, to fail to meet the criteria of ‘excellence’ demanded of publications. It may become the reason that no more like us are hired.

Speakability: The biosocial and the sociology of education

Speakability is not simply imposed from the ‘top’ by politicians, policymakers or institutions and their senior administrators. Speakability is contextual, it shifts, what is speakable depends on the discursive constraints of the territory in which we speak and the productive forces that modulate that territory. Understanding the conditions of speakability offers useful insight into the positioning of and possibilities for biosocial thinking in education.

The domain of the sayable in education can be seen in large part to be effected by the machinery of the political Right, by the discourses of neoliberalism, neoconservatism and new managerialism, newly inflected with, for example, deployments of educational neuroscience. But speakability in education is not a singular position and what is speakable in critical education studies and the sociology of education is also constrained. In the context of the discipline of sociology of education, the old hierarchical split between science and sociology does not hold, even if policymakers seem to continue to venerate science and ignore much sociology. It is important that we do not to pretend that within the academic discipline, sociology is subordinate knowledge. More specifically, poststructural sociology of education, which was marginal and struggled for recognition two decades ago, has now established its own canon and its own status in the field. Foucauldian analyses of education policy, politics and processes is now very well established and has moved from the fringe to the disciplinary centre. Indeed, that this body of work functions as a new orthodoxy as it constitutes this domain of speakability is reflected in charges of ‘discursive determinism’ levelled at poststructural sociology of education, for instance by new materialist or Deleuzian scholars, some of who were strong proponents of Foucauldian analyses
at another time. This new materialist sociology of education in turn delineates its own domain of the sayable.

Such orientations to ideas and flows of forces do not bode well for biosocial knowledge in the sociology of education. It is already crystallizing among critical education scholars that as a tool of governance, BIOSCIENCE has acted and continues to act against the interests of minoritized and disadvantaged groups. The readings of bio-rationalities and the molecularization of governance now circulating in sociology of education are compelling, detailing as they do some potentially discriminatory and/or damaging uses that emerging biological knowledge and technologies are being put to, as well as the new intellectual, research, university, commercial and government alliances and financial flows that these entail (see, e.g., Gulson and Webb 2017; Williamson et al. 2017; Edwards et al. 2015). Yet, these often compelling accounts may also act as foreclosures. A new counter-hegemonic hegemony appears to be produced as a new set of anti-science meanings and sentiments crystallize and the domain of speakability is further delineated. These accounts render all but unspeakable orientations towards a transdisciplinary biosocial encounter in education of the sort that we are engaged in. This unspeakability is encountered in silence as well as in expressions of worry or concern over the inevitability of the biosocial going to the ends of the hegemonic alliance about which Michael Apple writes.

But why are critical sociologists of education so sure that an encounter between social and biological questions, methods and analyses in education, will inevitably contribute to inequality and the persistence of deterministic accounts of educational success and failure? Certainly, biological knowledge has been deployed in the past to these effects, and there are contemporary strands in, for instance, evolutionary genetics that continue to insist in the genetic nature of much educational difference (see Plomin 2018; Gillborn 2016). As Meloni (2016) points out, in the contemporary context it does not seem unlikely that individuals will be punished for their plastic body not being moulded in the ways demanded by the state, institutions and prevailing social norms. Yet much contemporary research in biological sciences (epigenetics, neuroscience, metabolomics) is investigating the indeterminacy of the body’s mechanisms, the influence of environment on the functioning of the body at a molecular level, and the potential of the body’s functioning to change. The environmental-biological intra-action and long-term plasticity that is at the centre of much contemporary human bioscience pushes strongly away from hard heredity and naturalized inequality. Echoing Meloni’s analysis of the political biology of eugenics, we want
to assert that there is nothing intrinsically conservative, discriminatory or deterministic about understanding the molecular mechanisms of the human body and integrating this with nuanced understandings of social and cultural processes. The meanings and uses of biosocial analyses in education are yet to crystallize and the ways in which critical educators engage with and shape these meanings and uses have the potential to influence this crystallization.

The false (or hopeful) call to interdisciplinarity

The rejection of biological sciences within much of the sociology of education and allied critical scholarship might be read as sitting in tension with a wider push for interdisciplinarity in scholarship and research. In the UK, for instance, government-driven research policy for higher education emphasizes the importance of interdisciplinarity for innovation and developing new responses to pressing challenges and this is also seen in related non-governmental funding bodies. The UK’s government-funded basic biological and economic and social research councils in 2014 put out a joint call for biosocial research and funded £8 million worth of studies, primarily in health sciences. Similarly, the current major programme of research funded by the UK government’s Department for International Development foregrounds work across disciplines. While these are notable, they are not indicative of a major shift to interdisciplinary funding. That said, in 2020 the UK’s research councils are being combined into a single body – Research Councils UK – and a key stated driver of this is the facilitation of interdisciplinarity.

Beyond major government funding, the Wellcome Trust, a major UK science research philanthropic funder has key funding streams for interdisciplinary collaborative research – though one funding stream is aimed at collaboration across natural sciences and one funding stream is aimed at collaboration across humanities and social sciences, so neither is a ready conduit for work across the natural and social sciences.

That said, the Wellcome Trust and UK government recently collaboratively funded a programme of work in neuroscience in education, delivered through the government-established but independent Education Endowment Foundation (EEF). Funding from the EEF is specifically targeted at education interventions expressly aimed at supporting the learning of the most disadvantaged students and closing socio-economic ‘gaps’ in educational outcomes. By incorporating neuroscience among its funding calls, the EEF transforms the domain of the
sayable – the ‘problem’ becomes education that is inadequately informed about the workings of the brain and the ‘solution’, tested by randomized control trials and independent evaluation, is the deployment of neuroscience-informed interventions. Neuroscience becomes the key to education. The results of this programme of work are beginning to be published, on the EEF ‘toolkit’ and in refereed journal articles. These results are equivocal, and in some instances null (EEF n.d.a; EEF n.d.b; Mason et al. 2017). This may be due in part to the particular methodology imposed on studies by the EEF, a moment in which methodological speakability becomes apparent. But it is likely that this is also because the EEF operates on an intervention-based model that pushes scientific research to make claims in particular ways and leaves unspeakable the need for circumspection, for exploration. It is also a potential driver for education interventions to get ahead of the basic science.

Our continued efforts to secure funding through social science routes to pursue interdisciplinary biosocial work in education has been met with encouragement, contempt and rejection at both large and small scale. Similarly, publications advocating such work or reporting on preliminary syntheses of research across these domains has been met with significant resistance before publication. Of course, the problem might simply be one of quality. Yet as journal board members, research grant panel members, and ethics committee members across our respective fields, as well as authors and applicants, it is clear this is not as simple as a problem of quality. Writing across domains and generating coherence across divergent conceptual framings as well as divergent data is challenging, but the key challenge is one of disciplinary knowledge and boundaries, and the explicit and implicit policing of these. The problem is one of speakability.

**Final comments**

In an education field that is fraught with injustice and singularity of meaning and possibility, we contend that we should endeavour to build transdisciplinary counter-hegemonic alliances and not render particular knowledges unspeakable. After Butler (2005), we hope that we leave the account open-ended. In this sense, we advocate and endeavour to enact collaboration while ‘degrounded’ (Youdell and Lindley 2019). Judith Butler writes:
I think we need to pursue the moments of degrounding, when we're standing in two different places at once; or we don't know exactly where we're standing; or when we've produced an aesthetic practice that shakes the ground. That's where resistance to recuperation happens. It's like a breaking through to a new set of paradigms. (Butler et al. 1994: 35)

Clearly not anything is sayable; as Butler and Spivak note, we must produce ‘efficacious speech’, and in the domain of the sayable, this is a ‘wager’ – speech is an inducement, an incitement, and it always carries uncertainty (Butler and Spivak 2007: 55). Nevertheless, it remains the case that many things can and are being done with biological knowledges, some of which may be to the benefit of disadvantaged students or to counter-hegemonic alliances. For instance, we have written recently about the potential to deploy biological research to investigate the effects that particular school practices might have on the biochemistry of bodies and, in turn, potentially challenge high-stakes tests and the chronic classroom stress they are believed to produce (Youdell et al. 2017). This is the sort of biosocial research in education towards which we hope we are heading; and, we believe, this is not simply another iteration of the ‘naïve possibilitarianism’ (Whitty 1974, cited in Whitty 2010) that Whitty was concerned about (Whitty 1985). The effects of knowledge are not intrinsic to the knowledge itself – we hope that the sociology of education does not forget this fundamental insight.

References


