Key drivers of the disadvantage gap Literature Review

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Part 2. Breaking down the gap: what does it represent?

Taken at face value, school attainment signifies academic ability. Yet, given that the 'hard' and 'soft' skills necessary to succeed at school are primarily a result of parental cultivation and investment from birth onward, facilitated by the resources to which families have access, assessment scores in large part reflect family socio-economic position. We break down the family-level factors that play a role in the attainment gap below.

Inequalities in child development

From conception onwards, factors related to disadvantage act and interact to influence development, health and well-being. Rapid brain development occurs in the first three years of life; poverty has been shown to affect the architecture of the developing brain, with the largest differences in brain structure detected in the poorest children.^{3,4} Mechanisms through which disadvantage influences early life development are reviewed here.

Perinatal factors

Epidemiological studies show that exposure to risk factors before birth can have a lifelong impact; the health of mothers before and during pregnancy is therefore highly important. While it is difficult to isolate causal effects of exposures during pregnancy given the mostly observational evidence base, there are several factors focused on in the literature:

- There is evidence that stress in pregnancy is linked to poorer foetal and cognitive development.^{5,6} Living in challenging social and economic conditions breeds chronic stress; analysis of UK-wide GP records found that the odds of deprived mothers aged 35 to 45 years experiencing antenatal depression or anxiety were more than two and a half times greater compared to non-deprived mothers, with a significant, but weaker, relationship in younger mothers.⁷
- The evidence is conclusive that **smoking** in pregnancy increases the risk of preterm birth and **low birth weight**.⁸ Low birth weight infants are at increased risk of negative long-term cognitive outcomes, including behavioural problems.⁹⁻¹¹ Expectant mothers living in deprived areas in the UK are substantially more likely to smoke; this has been attributed to higher levels of stress associated with hardship and a lack of access to support and resources to assist them in quitting when they become pregnant.¹²⁻¹⁴
- Breastfeeding has been strongly linked to better cognitive development and a range of health benefits throughout childhood and later life.¹⁵ The UK has one of the lowest global prevalence rates of breastfeeding, and the latest data shows a stark socio-economic gap in prevalence: 90 per cent of mothers in managerial and professional occupations self-reported breastfeeding compared to 74 per cent of mothers in routine and manual occupations in the latest national data (2010).¹⁶ Experts emphasise that a mother's ability to breastfeed is shaped by the environment in which she lives and support she is able to access.¹⁷ More recent studies have focused on the **role of confounders** in the apparent relationship between breastfeeding and cognitive outcomes: an evaluation of international evidence suggests that the effect is mainly accounted for by maternal socio-economic and cognitive factors.¹⁸

The physical and social home environment

The environment into which disadvantaged children are born tends to be less conducive to healthy family functioning and child development, and school readiness and performance; these pathways are explored below.

The impact of material deprivation

Lacking sufficient money has a direct impact on the resources families can access to support child development and learning. These include **basic items** like nutritious food – critical for healthy brain development - and toys and books that promote cognitive stimulation.¹⁹ Disadvantaged families are also more likely to live in poor quality or overcrowded **housing** that can negatively affect child mental and physical health.²⁰ Additionally the gap in access to **computers and internet** at home between the poorest and richest households may hamper young people's ability to complete schoolwork and maintain peer relationships; home internet access has been linked to a 10-point increase in GCSE attainment in LSYPE participants.²¹

Family stress and functioning

Child development is relational; it is a product of interactions between child and caregiver. The literature focuses on several interlinked pathways through which disadvantage leads to family stress, disrupts relationships and can result in worse outcomes for children:

- Attachment security refers to the positive expectations infants develop about themselves and others; it stems from positive and predictable interactions with the caregiver on a regular basis during the first year of life.²² In families with complex needs, up to two thirds of children may be insecurely attached; poor attachment is strongly associated with worse resilience, socio-emotional and behavioural problems, and early school leaving.^{23,24} Some evidence suggests that insecure types of attachment are just as harmful to children as maltreatment.²⁵
- The impact of toxic stress resulting from adverse childhood experiences (ACEs)ⁱⁱⁱ on children's brains is highly significant and has been shown to have a lifelong effect.^{26,27} Almost half of participants in a 2014 nationally representative English survey report experiencing at least one ACE.²⁸ While no single factor causes carers to maltreat children, challenging social and economic environments are more frequently associated with early life neglect and certain types of abuse.²⁹ Parental support and involvement have been shown to partially buffer the impact of ACEs on outcomes, yet disadvantage also tends to disrupt healthy family interactions.³⁰ In a school context, ACEs can act as a barrier to concentration and learning, causing children to withdraw from or become aggressive in the classroom.³¹ Children in contact with social services, especially those deemed to be at risk of significant harm, are at high risk of poor attainment at every assessment stage.³²
- There is particularly strong evidence supporting a causal link between socio-economic position, maternal psychological health and poor child outcomes.^{33,34} Among MCS families, moving into income poverty over time was found to increase the odds of maternal mental ill

ⁱⁱⁱ ACEs include: physical, sexual or emotional abuse, physical or emotional neglect, domestic violence, household substance abuse, household mental illness, parental separation or divorce, or an incarcerated household member.

health by 50 per cent even after employment status was taken into account.³⁵ Children of depressed mothers have been found to experience poorer parenting and attachment security, delayed development, as well as behaviour problems, worse performance, smaller achievement gains and more absences in primary school. ³⁶⁻³⁸ Regarding the impact of other chronic parental illness, findings are less clear cut: disadvantaged parents are more likely to have poorer health given the social gradient in health, yet the impact on children is likely mediated by the extent to which family functioning is disrupted.³⁹

Inter-parental conflict (IPC) is increasingly recognised as an important determinant of child outcomes. The 'family stress model' illustrates the pathway linking disadvantage to IPC: economic hardship causes emotional distress in parents, which disrupts the inter-parental relationship and leads to a worse parent-child relationship, in the form of negative parenting (harsh, uninvolved or inconsistent) resulting in worse outcomes for children.⁴⁰ Evidence suggests IPC is predictive of mental health problems in children, as well as poor academic performance.⁴¹

The home learning environment (HLE)

The evidence is conclusive that the HLE, including the extent to which children read with their parents, learn the alphabet and numbers, sing songs, play games and go on educational visits, is crucial for the **development of skills** that determine school attainment. These include reading, verbal and spelling abilities, and positive behaviour, well-being and enjoyment of school; children who experience a strong HLE also have a lower likelihood of being identified with SEND.⁴²⁻⁴⁴

In MCS families, poorer children were significantly less likely to experience a rich home learning environment, while findings from the EPPSE suggest that HLE quality is only moderately associated with parental education or occupation.^{45,46} In addition to the negative impact of deprivation on the physical home environment and quality of caregiver-child interactions, US and UK studies show that low-income parents are much more likely to **underestimate the impact they have on their child's cognitive development and learning** – and therefore may be less likely to engage in the practices listed above.^{47,48} There is evidence that other characteristics may play a role in this relationship; most notably, girls have been found to experience a higher quality HLE than boys.^{45,49,50}

Child-rearing strategies

Qualitative and quantitative evidence from the US and UK suggest socio-economic differences in parenting approaches privilege more affluent children in education.

In their landmark ethnographic study of American families, Lareau and colleagues identified a strategy of **'concerted cultivation'** among the middle-class families they followed: parents tended to encourage their children to interact with institutions and communicate with authority figures, and enrol them in enrichment activities from a young age.⁵¹ The researchers concluded that these strategies gave middle-class children an advantage in school settings. Among the disadvantaged families they studied, the researchers identified a strategy of **'natural growth,'** in which parents were less invasive and did not structure their children's daily activities.

While subsequent studies have highlighted internal class diversity in parenting practices, overall US and UK evidence supports the findings of the original study.⁵²⁻⁵⁴ In MCS children, stark social differences were found in participation in **enrichment activities**: double the proportion of

advantaged seven-year-olds participated in sports and other clubs compared with their disadvantaged peers, and 26 per cent of advantaged 11-year-olds took music lessons compared to 6 per cent of disadvantaged children.⁵⁵ The same study found an independent positive effect of sport and other organised activities on attainment at age 11.

More affluent parents are also able to buy additional academic support for their children: 11 to 16year-old pupils from richer families are twice as likely to have ever received **private tuition** (30 per cent v 15 per cent), and between a third and a half of families who do not purchase private tuition for their children cite affordability as the reason.⁵⁶ Private tuition is becoming more common in England; 26 per cent of children have had a private tutor at some point – and 40 per cent in London up from 18 per cent a decade ago. Of these children, close to two fifths were tutored specifically in preparation for a GCSE exam, and approximately a fifth for their grammar school entrance test.

The role of community disadvantage

For a more complete understanding of education outcomes, it is necessary to consider the broader context in which children grow up. However, few existing studies adequately account for the complex interplay between individual and place. There is some international evidence linking **neighbourhood poverty** to poorer child development, including worse cognitive skills and school readiness, after accounting for family socio-economic factors.⁵⁷ In the UK, area deprivation has been found to be independently associated with emotional and behavioural problems in young children; it is less clear if there is an independent impact on school attainment specifically, or whether the relationship is accounted for by family-level socio-economic factors. ^{58,59} Pathways identified in the literature include **community social capital**, or the networks, norms and institutions that shape social interaction in a community, and **resources**, including access to green space and after school programmes or other activities that promote healthy child development, as well as **school quality** in school-aged children.^{57,60}

The most compelling evidence for the effect of place on child development and life chances comes from the US. Under the 1990s Moving to Opportunities experiment, 4,600 randomly selected families were given housing vouchers to move from high-poverty housing estates to lower-poverty neighbourhoods. Reviewing the impact almost two decades later, and controlling for a range of factors, researchers found that children who moved before adolescence were **more likely to attend post-secondary education** and went on to **earn 30 per cent more** than those that were not selected.⁶¹ They noted that as outcomes were only observed for children aged four or older, it is possible that the effect would be even stronger for younger children who move given the strong and lasting impact of early life adversity. A subsequent analysis tracking over seven million families and their moves over time found that outcomes improved the longer a child spent growing up in a better neighbourhood.⁶² Conversely the impact on older children was found to be negative - moves were posited to be more disruptive for older children with established relationships in their communities.

Other longitudinal studies from the US, using advanced modelling methods, find a strong neighbourhood effect on school performance indicators. Accounting for the impact of family socioeconomic position throughout childhood as well as duration of exposure to area poverty, young people growing up in disadvantaged neighbourhoods were **significantly less likely to graduate**: among non-black children, growing up in the most deprived neighbourhoods was associated with a graduation prevalence of 87 per cent, v 95 per cent among those in the least disadvantaged areas; among black children the proportions were 76 and 96 per cent respectively.⁶³ Research also suggests an intergenerational impact of community deprivation on **cognitive ability**: a family's exposure to neighbourhood poverty across two consecutive generations was found to reduce a child's cognitive ability by more than half a standard deviation.⁶⁴ Given this, the impact of community poverty, as well as other area-level factors, on school performance in English pupils warrants further investigation.

Inequalities in school preparedness

The factors reviewed above mean that disadvantaged pupils and their more privileged counterparts do not enter school on the same footing. Our analysis shows that children eligible for the Pupil Premium start school at a level of development 4.3 months behind their more advantaged peers; MCS five-year-olds in the lowest income tertile were found to be 2.9 points higher on a measure of behaviour problems and lagged **13.5 months** behind their high-income peers in vocabulary scores.⁶⁵ The gap in school readiness has an impact on the duration of pupils' academic careers and subsequent opportunities. Given that language is the foundation of learning and social interactions, the stark disparity in language development is especially significant.

Additionally, throughout their school years, disadvantaged children and young people are disproportionately more likely to **lack the necessary precursors** – a good level of health and wellbeing, a nutritious diet, a supportive and stimulating home environment - to learn and perform in school. Across practically every health outcome, disadvantaged children are worse off; notably, MCS children from low-income families are **four times as likely to have mental health difficulties**, and evidence suggests that social inequalities in behavioural and socio-emotional difficulties have gotten worse in the UK over time.^{60,66-68} There is a strong link between poverty and special educational needs or disabilities; **over a quarter of pupils eligible for FSM are also identified with SEND**.⁶⁹

Access to high quality early years education

High quality preschool has a positive impact on all round child development, attainment and adult earnings, with disadvantaged children benefiting in particular who experience a more deprived home learning environment.⁷⁰⁻⁷² A high quality early years environment means a skilled and experienced staff, who engage in warm and responsive interactions with children, a low child-to-staff ratio, a language rich environment, age appropriate curricula and materials in a safe physical setting.^{73,74}

However recent EPI research has identified concerning trends in the sector, including an increasing **reliance on unpaid staff** and a **decline in levels of qualifications**.⁷⁵ Our research has also found that the introduction of the 30-hour childcare entitlement, Tax-Free Childcare, and Universal Credit may **worsen the socio-economic gap in access**: a two-parent family on the national living wage and earning £19,000 per year is likely to receive 20 per cent less childcare subsidy for a child aged three or four than a two-parent family with annual earnings of £100,000, meaning that those on higher incomes will likely be the main beneficiaries of these policies.

Stressors experienced by disadvantaged children in school

Once in school, disadvantaged pupils tend to have a **different experience** compared to their more affluent peers: it is more likely to be characterised by instability, lower quality teaching and curricula, and psychosocial stressors arising from the disconnect between the school and home environments. We draw out these aspects in more detail below.

Mobility

Non-compulsory moves, at times other than the transition from primary to secondary, are strongly linked to social disadvantage, and especially affect certain low-attaining groups, notably Roma, Gypsy or Traveller children.^{76,77} An analysis of school census data from 2003 found that 30 per cent of movers were eligible for FSM compared to 17 per cent of stayers.⁷⁶

The research suggests that non-compulsory moves are detrimental for attainment. A meta-analysis of the impact of school mobility on reading and maths achievement in primary school found a three to four-month lag effect, while UK evidence suggests that it is the socio-demographic factors driving school moves that lead to reduced attainment in the primary phase.^{78,79} In secondary school, the independent impact of mobility on attainment is more clear-cut: at Key Stage 4, after accounting for individual characteristics, pupils who were mobile in Years 7 to 9 were found to experience a depressed average point score of over 20 points, while pupils mobile in Year 10 saw an average score 70 points lower than their non-mobile peers.⁸⁰ In addition, the transition from primary to secondary has been shown to be particularly difficult to navigate for disadvantaged pupils.⁸¹

Social psychological factors

It is well established that so-called 'non-cognitive' factors influence how a child performs in school. The **sense of alienation** felt by disadvantaged children and young people in education has been documented since the 1960s.⁸² Interview data from the last 20 years suggests that many continue to experience 'education as failure.'² Despite increased access to higher education, 22 per cent of the most deprived state school pupils drop out of university within two years, compared to 7 per cent of the least deprived; ⁸³ young people from disadvantaged backgrounds report feeling a sense of isolation – from both the middle-class university environment as well as from their own community.⁸⁴ A body of social psychological research supports this relationship:

- From a young age, pupils are **aware of social differences** and of how they may be perceived differently because of them.^{85,86} A host of experimental studies since the 1990s, mostly from the US, have shown that individuals who are part of negatively stereotyped groups are more likely to perform poorly in a context where the stereotype is invoked a process known as **stereotype threat**.^{87,88} Two meta-analyses show that test scores systematically underestimate the academic ability of negatively stereotyped students.⁸⁹ This chimes with qualitative findings from the UK: drawing on interviews with young people across the socio-economic spectrum, Reay and colleagues concluded that 'the shame and humiliation of being thought of as stupid [was] ever present' for the disadvantaged children interviewed.²
- Findings from experimental studies suggest that a sense of belonging is one of the most important determinants of whether an individual decides to enter, continue or abandon a pursuit.⁹⁰ Belonging is associated with positive attitudes towards school, which are in turn positively predictive of attainment.^{91,92} In a 2018 study, Easterbrook and colleagues found

that, after accounting for attainment, lacking a sense of belonging and feeling that people from similar backgrounds did not usually do well in school significantly predicted lower GCSE grades, application to lower-ranked universities, worry about academic work and self-reported stress among pupils eligible for FSM.⁹³ The relationship was found to operate through **role model visibility**: individuals from disadvantaged backgrounds and communities may be less aware of people with similar backgrounds who have progressed successfully through education.

- Attitudes and aspirations are widely viewed as important drivers of the gap.⁹⁴ However, we should be wary of a simplistic interpretation of the evidence; it is necessary to consider the distinct impact of specific beliefs.⁹⁵ Much of the evidence suggests that most pupils and families have high educational and career ambitions.^{48,96-98} The evidence on the link between attainment and both aspirations and attitudes towards education is inconclusive, with a recent study of PISA data finding both an association between attitudes and achievement, and significantly more positive attitudes among first- and second-generation immigrant pupils than native children.^{98,99} The literature generally supports the notion that beliefs about their own abilities play a role in the lower attainment of disadvantaged pupils; these are likely partially a reflection of prior attainment, and also likely related to their experiences of education.¹⁰⁰⁻¹⁰² Qualitative evidence highlights the intergenerational nature of these beliefs.²
- Deprived children are less likely to feel a sense of control over their ability to affect outcomes at school – known as a lower **locus of control**.¹⁰¹ Studies show that this is a result of being under pressure to perform tasks in which they may lack confidence.¹⁰³ Evidence from the 1970 British Birth Cohort Study found locus of control at age 10 predicted educational achievement, while high-achieving disadvantaged children in the EPPSE had a stronger sense of agency than their low-achieving counterparts, however there is generally a shortage of evidence in this area.^{95,104,105}

Thus far, there is limited evidence to support the targeting of aspirations and attitudes to raise the attainment of disadvantaged pupils. There is some evidence that participation in programmes such as mentoring, service learning, outdoor adventure and social and emotional learning have been shown to have an impact on self-beliefs and other 'non-cognitive' skills that are important for school performance.¹⁰²

Differential school practices

Schools serving disadvantaged areas have more **complex needs** than those in more affluent areas. Funding premiums do not fully account for this complexity, including problems with teacher retention, low parental participation and a high prevalence of school absences that require investment in the home-school relationship. Moreover, as **volunteers and funds raised by schools themselves** become increasingly central to school activities, schools in more affluent areas stand to gain an additional advantage over those in more deprived parts of the country.¹⁰⁶

School-level factors are particularly important for the attainment of underprivileged and initially low-attaining children.^{107,108} Yet pupils from disadvantaged backgrounds are less likely to attend

good schools than their more advantaged peers.¹⁰⁹ Below we explore differences in school practices that may work to exacerbate the attainment gap.

Teaching

The most important school-level factor for pupil attainment is teacher effectiveness: evidence shows that the difference between being taught by a good versus bad teacher is equivalent to a whole year of learning for disadvantaged pupils.¹¹⁰ However, disadvantaged pupils are more likely to experience **lower quality teaching**. In schools serving disadvantaged communities, teachers, on average, are less likely to have a formal teaching qualification, have less experience, and are more likely to lack a degree in the relevant subject; these schools are also more likely to see a higher teacher turnover rate.¹¹¹ Within schools, pupils in lower sets and streams, who are disproportionately FSM-eligible, are more likely to be taught by less experienced teachers.¹¹² The **extra work** for teachers in schools with a higher intake of disadvantaged pupils, including providing emotional support, more one-on-one time with pupils with barriers to learning, and having to adapt to changing circumstances that come with high levels of mobility, may be more difficult for those with less experience.¹¹³

Additionally, schools with a higher intake of disadvantaged pupils have been shown to employ worse **classroom practices**. A study of 125 year 5 classes in the EPPSE found that schools with a higher intake of disadvantaged pupils offered fewer opportunities for pupils to practice maths problem solving and demonstrate subject knowledge in the classroom, less social support for learning eg taking every pupil's contribution seriously and using pupil error as a learning opportunity, and poorer organisation of work and classes.¹¹⁴

Unconscious bias

Furthermore, some evidence suggests disadvantaged and other minority pupil groups experience unconscious bias in the classroom. A study of teacher assessments of MCS primary school pupils' reading and maths attainment found that these varied according to family income, ethnicity, special educational needs status, spoken language and gender.¹¹⁵ An analysis of school census data found that black and poor white British pupils were **marked down in teacher assessment** relative to their Key Stage results, while Indian and Chinese pupils were marked up, after controlling for individual characteristics and school effects; discriminatory marking was found to be more pronounced in areas with fewer black or poor children, and teacher assessments were found to be partially informed by the past year's performance of members of the pupil's group.¹¹⁶ Other studies show that the allocation of pupils to 'ability' groups is often done on an inconsistent and subjective basis: disadvantaged pupils are more likely to be allocated to lower attainment groups, after controlling for prior attainment.¹¹⁷⁻¹¹⁹

The evidence is clear that there are **systemic inequities** according to socio-economic position, ethnicity and gender in how schools discipline children.¹²⁰⁻¹²² Notably, even when a comprehensive set of factors including attainment and SEND are accounted for, black Caribbean pupils are still more likely to be excluded, indicating systemic bias in how exclusions are administered.¹²³ School exclusion is one of the most important risk factors for poor attainment and later life outcomes.

Attainment grouping

Across the English education system, grouping pupils according to attainment, whether into streams, sets or within classes, is the norm. Despite this, research from the last 30 years show that these practices have a negligible impact on pupil achievement, with the Education Endowment Fund's review indicating a negative impact on the attainment of pupils in lower attainment groups – who are disproportionately disadvantaged – and a positive effect on pupils in higher attainment groups.¹²⁴⁻¹²⁶

There are several explanations for this. Aside from the evidence showing unconscious bias in how pupils are allocated into groups, placement into lower streams or sets can be **stigmatising**, and can **undermine confidence**, discourage learners' beliefs that they can affect outcomes through effort, and negatively affect attitudes and engagement in the long term.^{2,100} Moreover, pupils in low-attaining groups have been shown to be more likely to experience worse quality teaching and fewer educational opportunities.¹²⁷

Curriculum

Disadvantaged pupils tend to have less access to a **broad curriculum** compared to their advantaged peers. In Years 5 and 6, the amount of time spent teaching languages was found to be negatively related to the proportion of FSM pupils: 13 per cent of high FSM schools teach languages for less than 30 minutes per week compared to 7 per cent of low FSM schools.¹²⁸ There is also evidence that pupils in high-deprivation schools have fewer opportunities for **out-of-classroom education**.¹²⁹ A range of studies show that educational experiences outside of the classroom benefit attainment, and skills crucial to school performance, including motivation, behaviour and self-esteem – factors that have been linked to the gap.¹⁰⁴ Schools that require parental contributions to fund these experiences restrict access to children from low-income families.

Furthermore, over the last two decades, **careers advice** and **work experience** have been significantly reduced in schools, and disadvantaged pupils are currently less likely than their better-off peers to receive careers guidance.^{68,130} This may be particularly detrimental, as disadvantaged young people may lack social networks with the knowledge and contacts to replace guidance offered in school.