Intelligence Unit *Technical Note*

Education Outcomes for Children in Care

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Thanks are owed to Dick Wiggins, at the Institute of Education, University of London, for pointing to recent work by George Leckie on pupil mobility.

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Contents page

1. Why a *Technical Note*?

The *Technical Note* spells out some of the details that would enable others to replicate or develop further parts of the full Briefing at some point in the future. It includes information on terms used, sources of information, and how calculations were made, that were important to the full *Briefing,* but which would have broken the flow of reasoning if the full details had been included there.

It is assumed that the reader has already read the *Briefing*, and is familiar with terms such as ' SSDA 903 survey' that were explained there. As in the main *Briefing*, references to information in the supplementary *Descriptive Statistics* have the prefix 'Ref DS' followed by a number, for example 'Ref DS1' refers to the first worksheet in that file. Figures and Tables in the *Note* are prefixed with the letter 'T' to distinguish then from Figures and Tables in the main *Briefing*.

2. Looked After Children not on roll in maintained primary, secondary or secondary schools in 2008

There are discrepancies between the number of Looked After Children recorded in the 2008 National Pupil Database and the number shown in the then Department for Children, Schools and Families (DCSF) Statistical First Release (SFR) 23 2008 and based on local authority SSDA 903 survey of all Looked After Children. On balance, figures from the NPD are below the SSDA 903 count and, for the sake of brevity, this is referred to here as the NPD 'undercount'.

Table T1 shows regional headcount figures, and the NPD 'undercount' is shown in Table T2. The SFR count was based on numbers of young people at 31st March 2008, and the NPD count was of children on roll in schools on 17th January with age calculated as it would have been at 31st March. This difference in the survey dates will produce some discrepancies in the numbers shown, but they should be minor.

Additionally, the way in which the figures have been grouped *may* itself produce discrepancies. The SFR groups local authorities into regions while the NPD data has been used to group pupils by home region based on their home postcode record in the NPD, and approximately 500 Looked After pupils nationally could not be matched to a home area in this way. Further, some twenty Looked After Children with records in the NPD lived outside England in Wales, Scotland or Northern Ireland. Taken as part of the

whole, aside from those children who are not of compulsory school age, the discrepancies should be small. As Table T2 shows, in 2008 those discrepancies were not always small, particularly in London. The figures are also shown graphically in percentage terms in Figure T1.

There may also be discrepancies because some Looked After Children in the SSDA record will be young and will not have started school, while others will have passed the end of compulsory education and will have left school. Predictably, the NPD count for young people outside the compulsory school age range is consistently much lower than the head count from the SSDA 903 survey. However, the NPD school record is also lower than the social worker record in the majority of instances for pupils in the 'five to 15' compulsory education age range.

Table T1. Headcount of Looked After Children by age group. 2008

		Age at 31 March 2008 (years)			
	All children looked after at 31 March 2008	1 to 4	5 to 9	10 to 15	16 and over
DCSF SFR 28 2008					
North East	3,260	580	610	1,370	490
North West	10,300	1,830	2,090	4,200	1,680
Yorkshire and The Humber	6,550	1,180	1,210	2,600	1,220
East Midlands	3,750	610	640	1,530	770
West Midlands	7,430	1,170	1,460	3,080	1,370
East of England	5,660	820	980	2,530	1,070
London	10,680	1,230	1,570	4,360	3,080
South East	7,420	1,020	1,130	3,200	1,730
South West	4,500	620	720	2,080	870
England	59,500	9,000	10,400	24,900	12,300

		Age at 31 March 2008 (years)			
	All children looked after on 17th January 2008	1 to 4	5 to 9	10 to 15	16 and over
January 2008 National Pupil Dataset					
North East	2,184	120	593	1,258	213
North West	6,358	300	1,938	3,487	633
Yorkshire and the Humber	4,047	183	1,060	2,292	512
East Midlands	2,461	95	683	1,386	297
West Midlands	4,308	167	1,290	2,386	465
East of England	3,627	117	999	2,123	388
London	4,745	166	1,279	2,559	741
South East of England	5,374	122	1,335	3,159	758
South West of England	3,056	64	790	1,825	377
England sub-total	36,160	1,334	9,967	20,475	4,384
All 2008 NPD	36,710	1,350	10,086	20,815	4,459

Source:Table LA5 associated with SFR 23 2008 and January 2008 NPD. NPD age is recalculated as at 31st March 2008

Table T2. NPD 'undercount' of Looked After Children, 2008, derived from T1

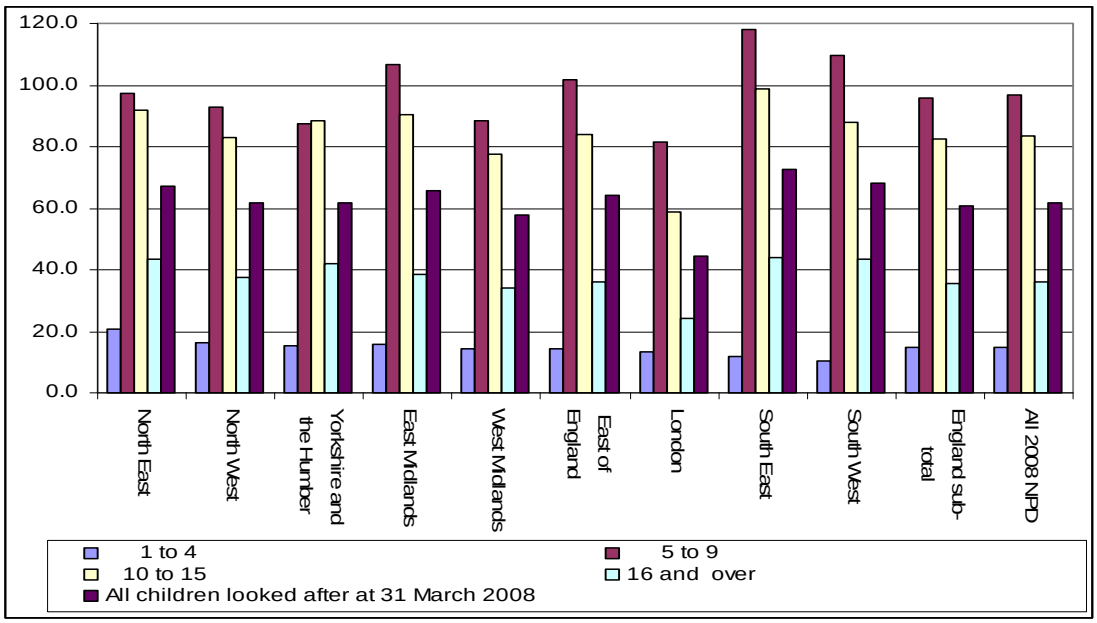
		Ages as at 31st March 2008			
	All children looked after at 31 March 2008	1 to 4	5 to 9	10 to 15	16 and over
North East	1,076	460	17	112	277
North West	3,942	1,530	152	713	1,047
Yorkshire and the Humber	2,503	997	150	308	708
East Midlands	1,289	515	-43	144	473
West Midlands	3,122	1,003	170	694	905
East of England	2,033	703	-19	407	682
London	5,935	1,064	291	1,801	2,339
South East	2,046	898	-205	41	972
South West	1,444	556	-70	255	493
England sub-total	23,340	7,666	433	4,425	7,916
All 2008 NPD	22,790	7,650	314	4,085	7,841

Table T3. NPD 'headcount' of Looked After Children as a percentage of totals based on the separate SSDA 903 survey, 2008 by age group.

	All children looked after at 31 March 2008	1 to 4	5 to 9	10 to 15	16 and over
North East	67.0	20.7	97.2	91.8	43.5
North West	61.7	16.4	92.7	83.0	37.7
Yorkshire and the Humber	61.8	15.5	87.6	88.2	42.0
East Midlands	65.6	15.6	106.7	90.6	38.6
West Midlands	58.0	14.3	88.4	77.5	33.9
East of England	64.1	14.3	101.9	83.9	36.3
London	44.4	13.5	81.5	58.7	24.1
South East	72.4	12.0	118.1	98.7	43.8
South West	67.9	10.3	109.7	87.7	43.3
England sub-total	60.8	14.8	95.8	82.2	35.6
All 2008 NPD	61.7	15.0	97.0	83.6	36.3

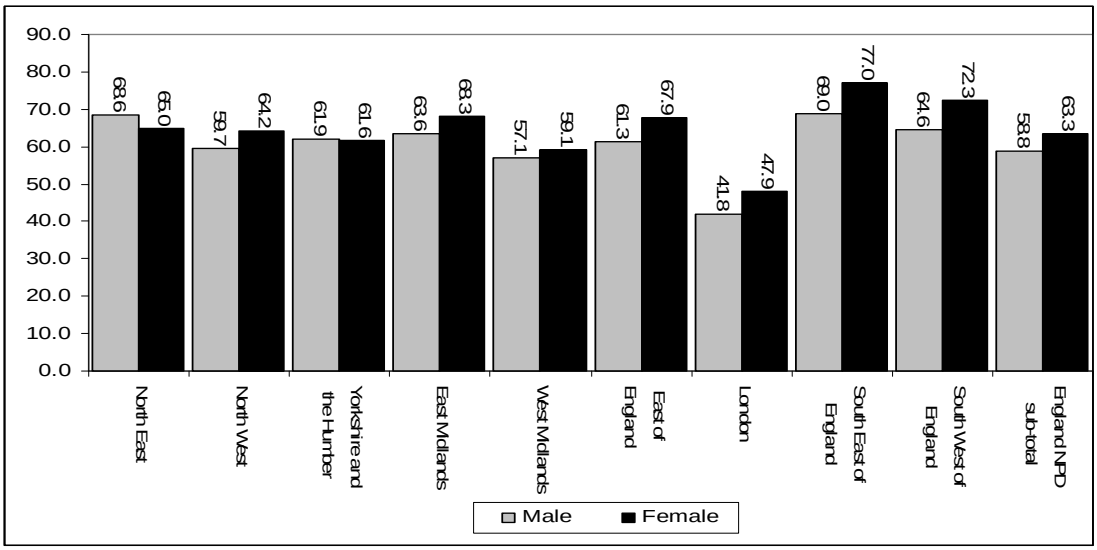
Source: 2008 (January) National Pupil Dataset extract and Department for Children, Schools and Families Statistical First Release 23 2008

Figure T1. NPD 2008 'headcount' of Looked After Children as a percentage the DfE SFR 23 2008 SSDA 903 'headcount' of Looked After Children, by age group.[Ref DS1d]



While a gap between the social work and teacher record of young people exists in all regions, the size of that gap varies. In particular, the teacher record as a percentage of the social worker record is lowest in London in each of the age groups shown, with the main shortfall (1,801) being in the secondary school age range. Further, the 'undercount' in the NPD record is gender biased, with the NPD count for boys being larger than the undercount for girls.

Figure T2. 2008 NPD headcount of Looked After males and females as a percentage of the male and female headcount based on the 2008 SSDA 903 survey[Ref DS1e]



Nonetheless, this NPD 'undercount' may reflect the number of young people in Care who are in alternative education (which was not covered in the data collection exercises for the 2008 NPD). The Department for Education describes alternative education as follows

> *Education outside of school, when it is arranged by LAs or schools, is called alternative provision. It can range from pupil referral units (PRUs) and further education colleges to voluntary or private-sector projects.*
>
> *'Alternative provision', 'alternative education' and 'alternative education provision' are all ways to describe provision for pupils outside mainstream and special school……..*
>
> *The LA's duty to provide suitable education may be met by contracting out education to the voluntary or private sector, including independent schools and work-based learning providers. However, the LA remains accountable for the quality of education. It should satisfy itself that the quality of provision is of a good standard and it should establish robust systems to monitor the arrangements.*
>
> Departmentfor Education *What is alternative education?* Available at the time of writing at http://www.education.gov.uk/schools/pupilsupport/inclusionandlearnersupport/a0010414/what-is-alternative-provision

Table T4 shows available information on the number of young people receiving alternative education in January 2011, with age as it would have been at 31st August 2010.

Table T4. Numbers in Alternative Education in 2011, by age group

	Grouped age as at 31st August 2010			
	2 to 4	5 to 9	10 to 15	16 and over
North East	5	55	485	150
North West	40	160	2,935	545
Yorkshire and The Humber	5	65	1,075	170
East Midlands	40	95	980	280
West Midlands	170	75	1,700	205
East of England	15	200	1,575	300
London				
South East	325	390	2,295	660
South West	40	185	1,180	560
England	950	1,745	16,560	3,765

Source: derived from local authority web table 9f associated with Schools, Pupils and their Characteristics, January 2011 Department for Education Statistical First Release 12 2011 (SFR 12 2011)

This is the first year for which those figures were released from the Alternative Provision Census. Departmental advice detailing the census is available at the time of writing at http://www.education.gov.uk/schools/adminandfinance/schooladmin/ims/datacollections/altprovisioncensus and Tom Ogg and Emily Kaill in *A New Secret Garden? Alternative Provision, Exclusion and Children's Rights* (Civitas 2010) give a view of issues raised by alternative education which may be interest to those who are new to this field.

The age groups in Table T4 are not identical to those used in SFRs on Looked After Children. More importantly the figures count Looked After and other children together. That being so, the currently available information does not allow us to say how many Looked After Children are catered for in alternative education, or whether the NPD 'undercount' is more apparent than real.

On the other hand, the inconsistencies between the record of Looked After Children in the NPD and the published record based on the 2008 SSDA 903 survey are not random. The 'undercount' in the NPD leaves open the possibility that some Looked After Children have no school place, that some schools may not be aware of the full number of Looked After Children, and that the issue may be more pressing for boys than girls. The available information does not explain why this is so, and the non-random nature of the discrepancies suggests that there would be value in the Department for Education cross-referencing records from the NPD with records from alternative education returns and the separate local authority Looked After Children database/s, to identify and report on possible gaps in provision.

Additionally, experimental statistics released with DfE SFR 01 2011, shown in Table T5, points to a marked tendency towards very low levels of attainment by pupils who are in alternative education. The DfE review suggested above could well also cover the educational attainment of Looked After Children in alternative provision, *with information on what that provision amounts to in terms of the curriculum offered, and the amount of contact time young people have with educational providers.*

Table T5. Experimental statistics. Attainment of pupils in alternative provision in London and in England, and the attainment of pupils in schools generally in England. End of Key Stage 4, summer 2010.

		Percentage of pupils at the end of Key Stage 4 achieving					Average GCSE and equivalents point score per pupil at the end of Key Stage 4
	Number of end of Key Stage 4 pupils	5+ A*-C inc. English & mathematics GCSEs	5+ GCSE at A*-G or equivalent	Level 2 English and maths skills	Level 1 English and maths skills	A pass in any qualification	
Pupils in alternative provision							
London	2,825	2.1	17.9	5.5	37.0	69.7	73.6
England	11,594	1.4	15.9	5.1	37.9	72.8	71.1
All pupils in English schools	639,744	53.4	92.8	57.4	91.1	99.0	438.5

Source: local authority web table P1 associated with *GCSE and Equivalent Results in England, 2009/10 (Revised)* Department for Education Statistical First Release 01 2011 (DfE SFR 01 2011)

3. 2008 school records of Looked After Children's home area

A further question is how far the information on where Looked After Children on roll in schools live is accurate. The NPD cannot be used to answer that question directly, but it can indicate whether there is an issue that needs to be explored further. The NPD came into being as an annually updated dataset in 2002 (see section 4 below) and a record of pupil home postcode, which can be matched to home area, has been required from the outset, and can in principle be matched to a home area, such as a local government ward.

The years to 2008 provided time for schools to check their records for accuracy and completeness, and the record has improved over time. The percentage of pupil home postcode records that could not be matched to a home area fell from slightly less than three per cent in London in 2002 to 0.7 per cent in England in 2008. Table 2 shows the number and percentage of Looked After and other pupils with unmatched home postcodes in 2008 by the region of the school attended.

The number of Looked After Children whose home postcode record cannot be matched to a home area is *comparatively* small, never more than 100 in any English region and is proportionally highest in London. Nonetheless, the percentage of pupils with unmatched home postcodes is consistently higher for Looked After than for other children, and it is not clear why this is so. That consistency across England confirms that the issue is not confined to one local authority or group of schools. For a small minority of pupils in all regions, there is a problem identifying an accurate home postcode, and

that problem needs to be understood if it is to be resolved. In the meantime it is not clear whether, in these cases, schools have a way of contacting a child's carers if that needs to be done urgently as, for example, in the case of an unexpected absence from school which is when child safety issues arise. It remains a small, but therefore manageable, area for investigation by schools, local authorities and/or OfSTED.

Table T6. Number and percentage of Looked After and Other Children with home postcodes that could not be matched to a home ward area, 2008

	Pupil in Care			Pupil not in Care		
School region	Postcode matched to a home area	Postcode not matched to a home area	Total	Postcode matched to a home area	Postcode not matched to a home area	Total
Number						
North East	2,178	30	2,208	384,581	1,847	386,428
North West	6,388	92	6,480	1,034,026	6,521	1,040,547
Yorkshire and the Humber	4,078	41	4,119	776,890	4,241	781,131
East Midlands	2,427	27	2,454	653,213	3,765	656,978
West Midlands	4,295	54	4,349	839,600	4,963	844,563
East of England	3,620	68	3,688	821,049	9,779	830,828
London	4,737	91	4,828	1,076,065	9,877	1,085,942
South East	5,395	85	5,480	1,141,863	7,067	1,148,930
South West	3,060	44	3,104	697,823	3,066	700,889
Total	36,178	532	36,710	7,425,110	51,126	7,476,236
Percentage						
North East	98.6	1.4	100.0	99.5	0.5	100.0
North West	98.6	1.4	100.0	99.4	0.6	100.0
Yorkshire and the Humber	99.0	1.0	100.0	99.5	0.5	100.0
East Midlands	98.9	1.1	100.0	99.4	0.6	100.0
West Midlands	98.8	1.2	100.0	99.4	0.6	100.0
East of England	98.2	1.8	100.0	98.8	1.2	100.0
London	98.1	1.9	100.0	99.1	0.9	100.0
South East	98.4	1.6	100.0	99.4	0.6	100.0
South West	98.6	1.4	100.0	99.6	0.4	100.0
Total	98.6	1.4	100.0	99.3	0.7	100.0

Source: 2008 NP

4. The National Pupil Database – what is it?

The key point about the National Pupil Database (NPD) is that it contains individual records of individual children attending all maintained (state) nursery, primary, secondary, special and Academy schools in England. A child's record for one year can be linked to the record for the same child in earlier or later years to provide a picture of progress and change over time. On that view the NPD can, potentially, provide a

longi8tudinal as well as a cross-sectional view of education in England. For any one point in time there will be some 7.5 million individual pupil records in the NPD, and given their nature, the records are highly confidential. Access to them is via the Department for Education (and specifically *not* via the GLA), and is governed by the Department's own terms and conditions, by central government terms and conditions, and also by the terms of Statutory Instrument (SI) 1563 2009. Apart from a limited number of agencies listed in the SI which use data for administrative purposes (and which does not include the GLA) access is restricted at present to those carrying out

- specified research
- into pupil achievement
- which the researcher can demonstrate requires access to individual pupil records rather than the summary data already published by the DfE.

The NPD came into being in 2002, with the Pupil Level Annual School Census (PLASC) as one key element. PLASC gathered a wide range of information on each pupil, including home address, date of birth, date admitted to the current school, gender, ethnicity and entitlement to free school meals. The NPD also drew together existing 'data streams' involving individual pupil national curriculum assessments and public examinations records. (Some assessment records are for each subject entered by a pupil. For example the dataset containing information on subjects entered at GCSE, and the results, will have ten separate records for a pupil entered for ten different subjects.) The term 'PLASC' is still used by some as a shorthand term for the multiple data collection exercises that feed what is actually a data warehouse rather than a single dataset. At the outset the NPD did not cover Pupil Referral Units (PRUs), thought it does now, but there is still is no equivalent information for pupils attending independent (private) schools. The NPD has expanded since 2002 and information is now collected three times a year.

At the time of writing, a NPD researcher and research user web site hosted by Bristol University can be reached at http://www.bris.ac.uk/cmpo/plug/ and a range of publications using the NPD is available on that web site at http://www.bristol.ac.uk/cmpo/plug/publications/ These include a 2005 introduction (not a user manual) to the NPD for researchers and research users, as well as a number of education research and statistics reports focussing on London.

5. The Children Act 1989 - categories of need

A copy of the original Children Act 1989 is available at the time of writing at http://www.legislation.gov.uk/ukpga/1989/41/contents

Under Section 17 (10) of the Act, a child is a Child in Need if:

s/he is unlikely to achieve or maintain, or have the opportunity of achieving or maintaining, a reasonable standard of health or development without the provision for him/her of services by a local authority;

his/her health or development is likely to be significantly impaired, or further impaired, without the provision for him/her of such services; or

he/she is a disabled child.

The categories of need are:

a. *Significant Harm*: Children who have suffered significant harm

b. *Disabled Children*: Children with physical disabilities, sensory disabilities, learning disabilities or emotional and behavioural disabilities

c. *Parental Illness/Disability*: Alcohol or drug misusing parents, acutely ill parents (short term), chronically disabled parents, chronically mentally ill parents, children assuming responsibility for chronically ill, addicted, or disabled parents

d. *Family in Acute Stress*: Homeless family, unsupported single parent, death of carer

e. *Family Dysfunction*: Domestic violence, inconsistent parenting, family breakdown

f. *Socially Unacceptable Behaviour*: Disorderly behaviour, offending, truancy, unsafe sexual behaviour

g. *Low Income*: Asylum seeking families, non-habitually resident status, independent young people

h. *Absent Parenting*: Parents died, unaccompanied child asylum seekers, children Privately Fostered

i. *Other*: Step-parent adoptions, inter country adoptions, court Reports, historical allegations and/or complaints.

6. Odds ratios

Odds ratios are commonly used in analyses of social mobility, including the analysis of educational outcomes by individual's class of origin. A short worked example is given in John Goldthorpe's presentation to a 2009 conference on Socio-economic Status, Social Class and Education, and is available from David Ewens on request. A further (brief) account of odds ratios is given in Adam Swift and Stephen Roberts *Against the Odds?*

Social Class and Social Justice in Industrial Societies (Oxford University Press 2002 pages 192 to 200).

Taking work on social mobility as a starting point, Britain's social class structure changed considerably over the course of the 20th century with

i a decrease in unskilled and skilled manual occupations in long-standing textile, heavy manufacturing and mining industries
ii an increase followed by a decrease in manufacturing associated with a consumer economy including, for example, car manufacturing
iii an increase in skilled service professional occupations, including teaching in schools and universities
iv an increase in the number of skilled IT workers, for example computer hardware and software designers
v an increase in unskilled and often part-time service sector work, the routinisation of associate professional work and a growth in the number of managers
vi a geographical concentration of some activities, particular in the financial sector and in the 'new media', in London and adjacent areas.

Because the numbers in some classes fell while the number in others rose over time, simply comparing the number of students with a particular class background in higher education (HE) at different points in time does not give a picture of either

- whether the proportion of people with that class background going on to HE changed or
- whether their chances of going on to HE have changed relative to the chances of individuals with a different class background going on to HE.

In essence, determining whether there has been a change in chances of the children of the working class going on to higher education relative to those of the children of the middle class at different points in time requires information on

a the number of middle class individuals going to HE at different points in time
b. as a proportion of the total number in the middle class population of the same age/s at those points in time

relative to

c. the number of working class individuals going on to HE at different points in time
d. as a proportion of the total number in the working class population of the same age/s at the same points in time.

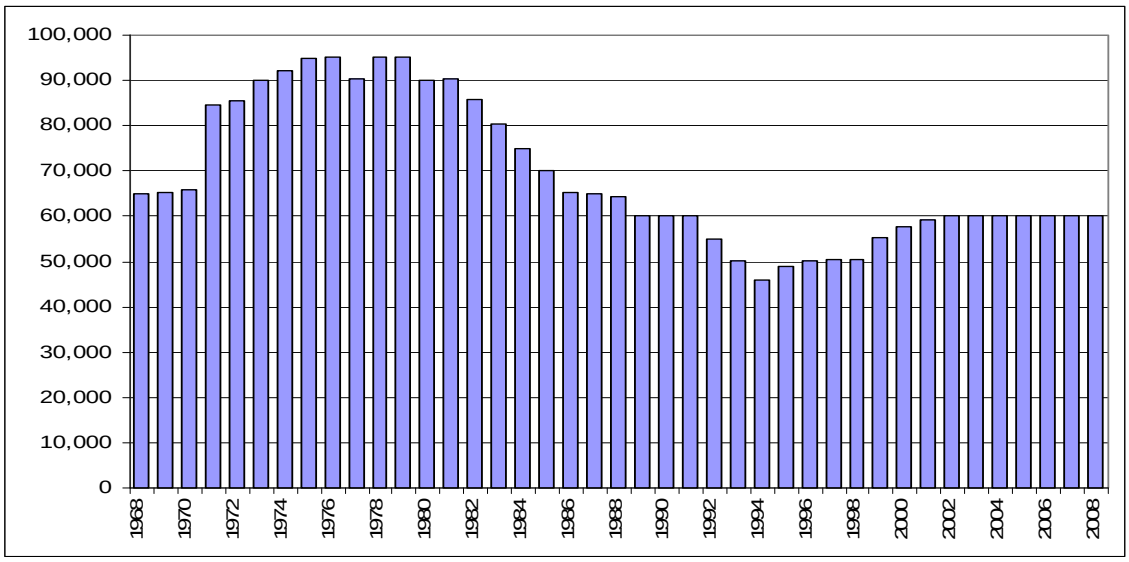
The calculation of the odds of working class young people going on to higher education compared middle class children is

$$\frac{\text{the percentage of middle class young people going on to higher education divided by the percentage of middle class young people not going on to higher education}}{\text{the percentage of working class young people going on to higher education divided by the percentage of working class young people not going on to higher education}}$$

The odds ratio would be 1 if young people had equal chances of going on to higher education regardless of class background. The greater the odds ratio is above 1, the greater the inequality between the two classes in accessing higher education.

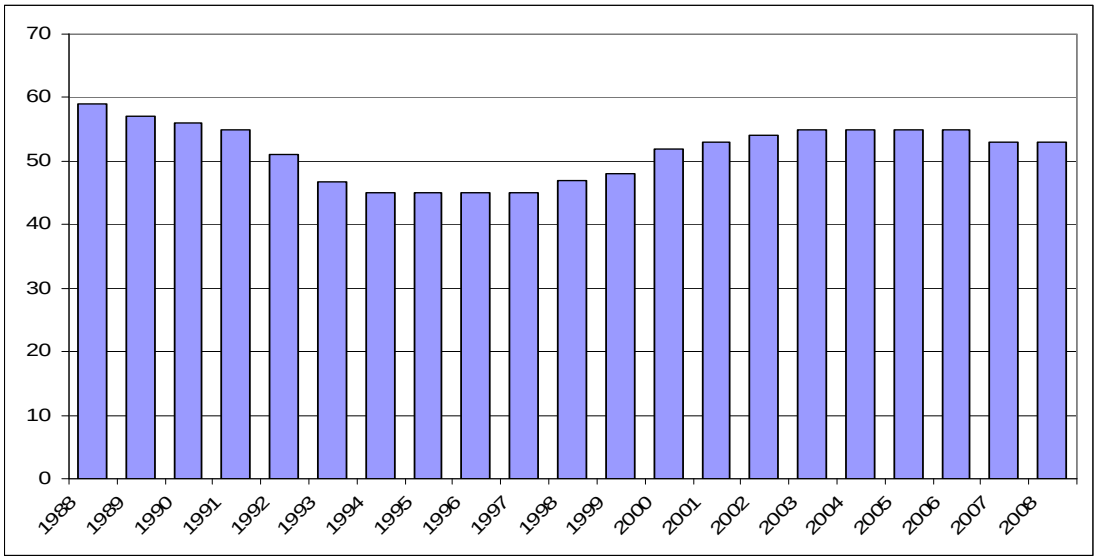
As with numbers in different social classes and proportions going on to higher education, the number and proportion of Looked After Children can also change over time, as the two graphs below show.

Figure TN1. Number of Looked After Children in England, 31st March in each year 1968 to 2008



Source: derived from Figure 1 in the *House of Commons Children, Schools and Families Committee Looked-after Children Third Report of Session 2008-09, Volume 1* The Stationery Office 2009, page 21. This is available at the time of writing at http://www.publications.parliament.uk/pa/cm200809/cmselect/cmchilsch/cmchilsch.htm

Figure TN 2. Looked After young people per 10,000 young people, 1988 to 2008



Source: derived from Figure 2 in the *House of Commons Children, Schools and Families Committee Looked-after Children Third Report of Session 2008-09, Volume 1* The Stationery Office 2009, page 21. This is available at the time of writing at http://www.publications.parliament.uk/pa/cm200809/cmselect/cmchilsch/cmchilsch.htm

Until 2009, information published by the Department for Education on the attainment of Looked After Children provided a comparison with all children, rather than with children who were not Looked After. However, Looked After Children form a comparatively small proportion of the total, and calculating the chances (i.e. the odds ratios) of Looked After Children reaching national benchmarks in attainment at key stages 1 to 4 compared with all those at the end of each key stage once again uses the formula

(a divided by b) divided by (c divided by d) i.e. (a/b)/(c/d)

Where

a is the proportion of all pupils reaching national bench marks in educational attainment
b is the proportion of all pupils not reaching national benchmarks in educational attainment
c is the proportion of looked after children (LAC) reaching national benchmarks in educational attainment
and
d is the proportion of looked after children (LAC) not reaching national benchmarks in educational attainment.

The, perhaps more familiar, percentage point change in children reaching those national benchmarks is included in the supplementary Tables accompanying the Briefing and the

Technical note by way of comparison (and to show that the odds ratios involve fewer numbers and columns).

The supplementary tables accompanying the Briefing/Update include figures for Children in Need, who are more numerous than Looked After Children. It is likely that children will be somewhere along a continuum of one or more dimensions of need, which cannot be captured by the binary measures 'in need/not in need' or 'in care/not in care'. Arguably, the same point applies to how we record and analyse pupil attainment. Do we know why the '5+ A* to C' measure is used? Does it actually predict anything about future achievement or, in identifying those pupils with five GCSE C grades, are we really identifying a higher level of attainment compared with that of a pupil who achieves four A* grades and one D grade? It is worth bearing in mind that odds ratios are, along other forms of binary analysis, most meaningful when applied to situations 'out there' which can realistically be conceptualised in binary terms.

7. Inward pupil mobility

Teachers are likely to agree that high levels of pupil mobility has a negative impact on attainment. In the case of Looked After Children mobility may well be associated with disrupted education and periods of time out of school. The measure of pupil mobility used in the main text is a measure of *inward* mobility. It uses each pupil's admission date to his or her current school to identify those pupils who were admitted to their school's roll either August or September or in another month. The main text of the Briefing points out that this only gives a preliminary view of pupil mobility, and more complete views of pupil mobility would also classify as mobile those pupils admitted 'within phase', that is those who when admitted were older than the youngest age group the school normally catered for. For example, in maintained schools, though not in independent schools, secondary schooling usually begins at age 11. On a broader measure of pupil mobility than the one used in *Education outcomes for Children in Care*, pupils admitted to maintained secondary schools at age 12 or 13 would also be counted as mobile regardless of the month admitted.

However, even on the 'preliminary' measure used here, further care is needed. Amongst the 3 million plus pupils aged five to 10 who were on roll in maintained schools in January 2008, some 735,600 (24 per cent) where aged four or less when first admitted to their current school. It is common for schools and local authorities outside London to

operate 'staggered admissions' policies for children who are below compulsory school age (below age 5 at the start of the school year) when first admitted to a school. A staggered admissions policy means that pupils are admitted during the course of the school year rather than at the beginning. In other words, in 2008 some pupils admitted at age four or less would have been admitted during rather than at the start of the school year because of local policy. For those pupils a 'within year' admission date would remain with them until they left the school (potentially up to seven years later). Classifying those pupils as 'mobile' would artificially inflate mobility rates.

Two steps have been taken to avoid this. Firstly, pupils aged four and under in 2008 were excluded from the mobility calculation. Secondly, pupils who had been admitted before the age of 5, and who were on roll in their current school at the beginning of Year 1 were not classed as mobile.

This reduces the risk of inflating the number of mobile pupils, but it also means that genuine pupil mobility amongst children aged less than five will be missed. This is a particular issue in London where staggered admissions of four year olds to Reception classes is the exception rather than the rule (though it does happen) and the preliminary measure of pupil mobility is, from a London point of view, also a conservative measure of mobility. It is notable that, even on this conservative measure, rates of inward mobility on the measure used in the main *Briefing* are higher in London than in any other English region.

Janet Dobson and Claire Pooley in their work *Mobility, Equality, Diversity: a study of pupil mobility in the secondary school system (*Department of Geography, University College London, 2004) take the matter one step further and include pupils leaving school at non-standard times to provide a wider picture of 'churn' in the school system.

The GLA DMAG Briefing *Moving Home and Changing School – 1. Widening the Concept of Pupil Mobility*, available from David Ewens, also pointed to the impact on attainment of a child moving home, and recent work by George Leckie confirms earlier pointers the number and type of schools attended by pupils in the past and the number and type of home neighbourhoods pupils had lived in previously will have an impact on attainment. (See George Leckie *The complexity of school and neighbourhood effects and movements of pupils on school differences in models of educational achievement* Journal of the Royal Statistical society Volume 172 Issue 3 pages 537 to 554 June

2009. An earlier version is available at the time of writing at http://eprints.ncrm.ac.uk/551/1/GL-jan-09.pdf). That approach requires longitudinal data rather than the cross-sectional type of pupil level data used in *Education outcomes for Children in Care*. In essence, there is a need for further work on child mobility using, as the main Briefing notes, longitudinal data.

8. Home district, school district and straight-line distance between home and school

Records in the 2008 (English) National Pupil Dataset had previously been matched on pupil home postcode and school postcode to identify pupil home district and school district. In terms of administrative geography, each London borough and unitary authority such as Thurrock is a 'district' and each English county is also divided into districts. By way of illustration Figure TN3 shows the 'districts' in and around London. County districts, such as Sevenoaks in Kent are geographically larger than London boroughs, but they are closer in size to them than the whole county is. From a London point of view, comparing movement across district borders makes more sense in this instance than comparing movement across L(E)A borders.

Distance is calculated as straight line distance between two points using Ordnance Survey grid references called Northings and Easting, which accompany postcode records provided by colleagues in the GLA Intelligence Unit's Geographic Information Systems (GIS) Team, whose work is acknowledged here. The calculation is explained in Section 21 of *A Threshold Guide to Readying Data for Analysis in SPSS*, which is available at the time of writing at http://www.bristol.ac.uk/cmpo/plug/publications/

Figure 14 in the main text refers to pupils in mainstream schools. It does not include information for pupils on roll in special schools, since special schools can be at a considerable distance from a pupil's home, and their inclusion would distort the picture of 'typical' home-school distance. The same point may apply if the school attended is a maintained (state) boarding school.

Figure TN3. London boroughs and county districts and unitary authorities around London

There will be instances when straight-line distance between two points will be misleading. The following is from an Education Research and Statistics 2009 User Guide to readying data for analysis in SPSS

> *Clearly there will be cases where the simple straight line distance as measured between two points on a map is not necessarily very useful, other than by way of providing a comparison with the actual distance* (people need to travel) *to reach hospitals/ shops/schools and so on. A cursory glance at the road and rail maps of the more mountainous regions of Britain will confirm that this is so. For example, a journey wholly by rail from Mallaig (on the north west Scottish coast and opposite Skye) to the Kyle of Lochalsh (a little to the north east but still next to Skye) would involve a journey via Perth (on Scotland's east coast) and Inverness (on Scotland's north east coast). Scotland). If you need complex measures of distance you are advised to seek advice from a Geographic Information Systems (GIS) specialist.*
>
> David Ewens *A threshold guide to readying data for analysis in SPSS* page 87 and currently available at http://www.bristol.ac.uk/cmpo/plug/publications/

There are means of calculating distance travelled by road between two points, and transport companies *may* have developed means of measuring distance travelled by public transport between two points. The advice remains the same as that given in the threshold guide: where local knowledge confirms that measuring straight line distance between two points would be misleading, consult a GIS specialist on the available options.