

There are large disparities between the achievements, behaviour and aspirations of children in different neighbourhoods – but does this mean that the place where you grow up determines your later life outcomes? **Steve Gibbons, Olmo Silva and Felix Weinhardt** outline the findings of a series of CEP studies of ‘neighbourhood effects’.

# Everybody needs good neighbours?

**H**ow much should parents be concerned about the influence of their children’s neighbourhood peer group? If they have read past research on so-called ‘neighbourhood effects’, they might be very worried about the potential impact of other families in the area. Many of these studies show a correlation between the kind of neighbours with whom a child grows up and their subsequent behaviour and educational achievement.

Such findings have been very influential on policy-makers. Many area-based policies – measures to encourage mixed communities, for example – are predicated on the idea that young people’s outcomes can be causally linked to the characteristics of their neighbourhood and to their social interactions with the children and adolescents who live around them. If such effects are real, neighbourhood segregation – in which rich and poor families live in largely separate communities – could imply a long-term process of increasing inequality and reduced social mobility.

But our recent research on the effects of neighbours on pupil performance in England’s schools tells a very different

story (Gibbons et al, 2013). It turns out that the characteristics of neighbourhood peers make no difference at all to how well children perform at school: their test score progression in secondary education is unrelated to changes in the social composition of the place where they live. Neighbours seem to have some impact on children’s attitude towards school and their propensity for anti-social behaviour, but the effects are very small and weak.

The study is the latest in a longstanding research programme at CEP and the Spatial Economics Research Centre (SERC), which explores the links between place of residence, neighbourhood environment and individual outcomes in England. The overall conclusion of this body of work is that neighbourhood segregation

is the outcome – not the cause – of inequalities in income and wealth. It is individual characteristics and ‘sorting’ of people across space that explain these inequalities.

The implication is that if the policy goal is to reduce spatial inequalities, it should be done by targeting resources at individuals or households – or the institutions that can bring about changes at the individual and household level. This could be done, for example, by improving schools and, later in life, by providing better adult education opportunities. Trying to address spatial inequalities by directly targeting places and manipulating neighbourhood composition is unlikely to have any long-term effects.

## Detecting neighbourhood effects

Why is so much previous evidence based on correlation best taken with a pinch of salt? Because detecting the causal link between neighbourhoods and individual outcomes presents serious challenges. First, it is well-established that parents ‘sort’ into neighbourhoods according to both their preferences and, most importantly, their incomes.

Differences in housing costs across neighbourhoods mean that this leads to

The quality of your neighbours makes no difference to your child’s educational outcomes



segregation in a variety of socio-economic dimensions. The central problem in finding evidence of 'neighbourhood effects' on children's outcomes is that the observed correlation between neighbourhood characteristics and household characteristics is just a statistical artefact resulting from this general segregation.

This correlation leads in turn to a correlation between neighbourhood characteristics and educational outcomes, because children's achievements are very dependent on parental background and income. Parental sorting will hence automatically produce some degree of segregation in children's outcomes. Empirical research has to control carefully for this selection to make claims about causality.

Research on neighbourhood effects is further complicated by ambiguity about what constitutes a neighbourhood. Empirical studies have used very different spatial aggregations to define the unit of analysis, ranging from blocks of a few houses with only a handful of people in each area to census tracts of over 4,000 inhabitants.

It is unclear how changing the spatial scale of analysis affects estimates of neighbourhood effects. And even after

## Neighbours may make some difference to children's attitude to school and their propensity for anti-social behaviour

defining the unit of analysis, we do not know whether everyone in that area is relevant: are social interactions and possible role-model effects driven just by other children of a similar age or by the general characteristics of adults in the neighbourhood?

It is also important to distinguish between direct effects – those originating in the neighbourhood and stemming from interactions with a child's neighbourhood friends and role models – and other effects related to having access to a good school, a good library and other local services, where residential location matters to a lesser extent.

School quality, for example, becomes

an issue if where you live determines which school you can attend. Oversubscribed schools in England can select pupils based on how close they live to the school, so children living near good schools will, on average, have better educational outcomes. This is another source of correlation between neighbourhood characteristics and children's outcomes.

But parents in England still have some degree of school choice and this weakens the link between residential location and school quality. The link is far looser than in some other countries, such as the United States, where children in the same neighbourhood all tend to go to the same school.

For example, the average secondary school in England enrolls children from each of 65 different 'census output areas' (small neighbourhoods) in any given admissions year. The five or so children in each of these neighbourhoods who are in the same school year typically enrol in two to three different secondary schools. These institutional features mean that there is some scope for studying the separate effects of neighbourhoods and school quality in England.

With these issues in mind, CEP and SERC researchers have examined the influence of neighbourhoods on children in great depth.

### Neighbourhoods and social mobility

CEP researchers pioneered the investigation of neighbourhood effects on children's educational outcomes, producing one of the first studies to look at the implications for social mobility between generations in England. An early study (Gibbons, 2002) used data on a cohort of children born in 1958, who had been followed at four to ten year intervals over their lifetime, to examine whether the characteristics of their childhood neighbourhood had affected their final level of qualifications.

The research looked particularly at the effects of neighbours on children in social housing, because the parents of these children were likely to have had relatively little choice about exactly where they lived, and income differences would have made little difference to the quality of their neighbourhood. Using this approach, the study found some evidence that

neighbours' educational qualifications made a difference to children's own qualifications, but that they determined only a very small proportion of the variation in individual outcomes. Family background mattered much more.

These early results showed that teenagers from the top 10% of neighbourhoods (ranked by the proportion of adults with A-levels and higher qualifications) were five to seven percentage points more likely to get A-levels themselves than children with similar family backgrounds living in neighbourhoods ranked in the bottom 10%. This implies that children brought up in a neighbourhood ranked at the bottom of the educational hierarchy would have needed parents educated to degree level to give them the same educational opportunities as another child from an average background.

Children from educationally advantaged communities were also less likely to end up with no qualifications. These effects did not operate purely through the quality of local schooling or through association with peer-group pupils from better backgrounds attending the same school: neighbourhood had an impact above anything related to local secondary school performance.

Another early study (Overman, 2002) also found evidence of neighbourhood effects, this time on drop-out rates of Australian teenagers. In this case, there were differences in the effects according to neighbourhood size, and the effects seemed to be driven more by local labour market opportunities than by the direct influence of neighbours.

A limitation of both these cross-sectional studies is that they compared

different individuals from different families living in different neighbourhoods. This made it difficult to rule out the possibility that it was differences in family background rather than neighbourhood differences that generated the observed effects.

More recent work has refined the analysis, using a large administrative dataset on children in England – the National Pupil Database (NPD) – which makes it possible to track cohorts of individuals through their educational careers. These data also provide much greater detail on pupils' home location and which schools they attended.

### Social housing neighbourhoods

One study examines the short-term effect of living in a deprived high-density social housing neighbourhood on the educational attainment of teenagers (Weinhardt, 2013). This research uses the long waiting lists for social housing in high-demand areas to ask if there is a causal relationship between neighbourhoods and school results. The idea is that future tenants cannot directly influence the timing of their move into public housing as this depends on waiting for availability. On the other hand, children who move into social housing at some point in their education careers are very similar in terms of general characteristics, most notably family background.

The research documents the stark underperformance of children in England who move into high-density social housing neighbourhoods between the ages of 11 and 16. All of these children underperform in national tests. For example, in key stage 3 (KS3) tests at age 14, they score an average of 34.3 points across all subjects, when a score of about 50 represents average performance.

But the analysis also shows that children perform equally poorly independent of whether they have already lived in a highly deprived

neighbourhood up to three years before taking the KS3 test, or whether they moved into these neighbourhoods after the test. Since future neighbourhoods cannot causally affect the scores of teenagers who have not yet moved into them, the study concludes that none of their poor performance can be causally linked to neighbourhood quality during these formative years.

### Test scores and behaviour

Another of our recent studies uses the NPD to look at the effect of the characteristics of neighbouring children of a similar age on children's test scores and behavioural outcomes in secondary schools (Gibbons et al, 2013). Specifically, we focus on impacts on children who do not move neighbourhood between the ages of 11 and 14, investigating how their test scores and behaviour change over time as other similar-age children of different types move in and out of the neighbourhood.

We estimate the effects of changes in the mix of boys and girls, changes in the average ability of neighbours (measured by test scores at age 7) and changes in the proportion of neighbours who are on free school meals (a standard proxy for low income) or have special education needs.

The main questions we explore are first, to what extent these changes in the mix of neighbours influence a child's test score gains between the ages of 11 and 14; and second, to what extent these changes affect a child's behaviour – including attitudes towards school, truancy, drug use and anti-social behaviour?

The size of the NPD and its detail on home and school location allow us to be much more careful than previous work about the way we define neighbour groups. We can also be much more careful about the way we control for potentially confounding influences, such as school quality, other local amenities and general trends in neighbourhood status brought about by gentrification. In particular, we are better able to discern the causal influence of neighbour characteristics by looking not only at how changes in the mix of neighbours over time affect a child in a given age cohort, but also at the difference in this pattern between different cohorts.

As in previous studies, we find

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strong 'raw' associations between neighbourhood characteristics and children's outcomes. But once we move to our causal approach, all previously significant estimates become close to zero. In a nutshell, our main finding is that characteristics of neighbours do not affect the test scores of teenagers. But we find some weak evidence that neighbourhood characteristics affect behaviour. In particular, there are some differences between boys and girls in terms of their attitudes towards school and anti-social behaviour: boys are significantly more affected than girls by a worsening of the neighbourhood's social composition.

### Minimal neighbourhood effects

So what explains the discrepancy between our consistent findings of minimal neighbourhood effects and some of the previous evidence? The key reason is that people choose where to live, subject to their incomes and the cost of housing. Any correlation between children's outcomes and neighbours' characteristics comes about mainly because children from richer families live next to other children from rich families, while children from poor families live next to other children from poor families. On average, children from rich families tend to do better at school. This generates a spurious correlation between individuals' achievements and those of their neighbours.

Researchers can use statistical methods to try to 'control' for these differences using data on income and other variables predicting sorting, but this approach has previously had limited success. By looking at what happens to a given child as their neighbours move in and out over a number of years or by studying what happens to children who move into social housing before as opposed to right after national tests, our latest studies circumvent the worst of these problems.

Our research findings do not stand alone. The best evidence emerging from the United States and elsewhere using experimental methods (for example, the Moving to Opportunity experiment) leads to similar conclusions. The quality of neighbours – good or bad – makes no difference to a child's education or other

## High residential turnover may disrupt the educational achievement of local teenagers

outcomes related to economic self-sufficiency. Neighbours may, on the other hand, matter for physical health and mental wellbeing – but as yet there is limited evidence on this for England.

### Neighbourhood stability

All of these studies share a focus on some measure of 'neighbourhood quality': is it a nice, safe place to live? Are the pupils in the neighbourhood doing well at school? And do they come from a rich or poor background? The research to date has focused on these aspects to understand if there are knock-on effects from peers' characteristics and behaviour on other neighbours.

But what if it is neighbourhood stability that matters rather than the quality of the area or the characteristics of its inhabitants? If there is a great deal of mobility in and out, it will be harder to get to know your neighbours. Sociologists have long argued that neighbourhood stability is an important requirement for building up friendships, networks and ultimately the 'social capital' that is known to be important for educational and labour market outcomes.

CEP research in progress (Gibbons et al, 2014) is looking directly at the effects of neighbourhood turnover on pupil outcomes. Preliminary results indicate that high levels of mobility have detrimental effects on the test scores of teenagers who do not move themselves. In particular, pupils' test score progression in secondary school is negatively affected by a higher fraction of their peers joining and leaving the neighbourhood. This suggests that while the quality dimensions of neighbourhoods do not seem to matter much, there may be important effects associated with turnover.



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### Further reading

Steve Gibbons (2002) 'Neighbourhood Effects on Educational Achievement: Evidence from the Census and National Child Development Study', Centre for the Economics of Education Discussion Paper No. 18 (<http://cee.lse.ac.uk/ceedps/CEEDP18.pdf>).

Steve Gibbons, Olmo Silva and Felix Weinhardt (2013) 'Everybody Needs Good Neighbours? Evidence from Students' Outcomes in England', *Economic Journal* 123(571): 831-74.

Steve Gibbons, Olmo Silva and Felix Weinhardt (2014) 'I (Don't) Like the Way You Move: The Disruptive Effect of Residential Turnover on Student Attainment', mimeo, LSE.

Henry Overman (2002) 'Neighbourhood Effects in Large and Small Neighbourhoods', *Urban Studies* 39(1): 117-30; earlier version available as CEP Discussion Paper No. 481 (<http://cep.lse.ac.uk/pubs/download/DP0481.pdf>).

Felix Weinhardt (2013) 'Social Housing, Neighborhood Quality and Student Performance', IZA Discussion Paper No. 7139 (<http://ftp.iza.org/dp7139.pdf>).