

Friendship networks and young people's aspirations

How important are friends in shaping young people's aspirations to do well in school and go on to future career success? CMPO's director Simon Burgess and colleagues explore this question using data on the friendship networks of disadvantaged and middle-income adolescents in and around the city of Bristol.

By all accounts, the visit of Michelle Obama to the Elizabeth Garrett Anderson school in London in 2009 had a profound effect on the students¹. She drew parallels between her life and their lives: "There was nothing in my story that would land me here. I wasn't raised with wealth or resources or any social standing to speak of."

She also told them how she had made it to Harvard Law School and a leading Chicago law firm: "If you want to know the reason why I'm standing here, it's because of education. I never cut class. I liked being smart. I loved being on time. I loved getting my work done. I thought being smart was cooler than anything in the world."

Obama met the students again two years later in the hall of Christ Church College in Oxford, a well-chosen setting: "It's important that you know this. All of us believe that you belong here." *The Guardian* reported that this had a powerful effect on the aspirations and intentions of the students². One said: "We're coming here. There's no doubt in my mind. I don't care what anyone says. I'm going to go to Oxford University. I'm going to work *really* hard. Believe me. I am going to work so hard."

Aspirations in education

Few would dispute that aspirations matter, particularly in education. For students who do not find school fun, there has to be something to get them through chemistry homework on a cold night in November. The thought that this matters and will lead to greater things does that job.

It has become increasingly fashionable for policy-makers to cite low aspirations as one factor behind poor educational performance. There are certainly substantial differences in stated educational aspirations: for example, white boys from disadvantaged backgrounds generally have the lowest fraction wanting to stay in education beyond the minimum compulsory time. Studies also show that high aspirations are associated with high attainment in school, though establishing causality is not straightforward (see, for example, Gregg and Washbrook, 2011).

Given this background, there is a search for policies to raise aspirations as one route to raise attainment. But this is not easy, as we do not have a fully articulated model of the formation of aspirations. Understanding the forces that influence aspirations may help the formation of better policies to raise the sights of students.

We know that there are big ethnic differences in educational aspirations. The first big decision taken is whether to stay in school. For 14 year old girls, there is a ten percentage point gap between white students at 85% and South Asian and black Caribbean students at 94% or 95%. The proportion of black African girls wanting to stay in school is even higher, at 99%.

There is a similar pattern for boys across ethnic groups. Again, over 90% of students in the South Asian and black African groups want to stay on, and again, the proportion of white students wanting to stay on is the lowest of all the ethnic groups at only 73%. Black Caribbean boys display a slightly higher proportion on average, at 81%.

It is important to note that these aspirations are not just pipe dreams. What survey respondents say largely reflects the actual decisions of a previous cohort at the age of 16: a higher percentage of students of Indian, Bangladeshi, Pakistani and black African heritage stay in school than do white students. Very similar large ethnic differences are found in students' views about how likely it is that they will apply to university.

Disadvantaged adolescents with friends from wealthier families have higher educational aspirations

Formation of aspirations

How are aspirations formed? Why do some students have higher aspirations than others? Clearly, a full answer to this would involve a number of approaches, including at least psychology and sociology as well as economics. Research evidence, including our own, suggests that students' prior attainment matters: the more able have higher aspirations, and vice versa. More broadly, students' perceptions of their talent matters: this is called 'academic self-concept'.

Some aspects of family circumstances matter too. For example, the qualifications of parents are correlated with their children's aspirations, and some studies find that community or neighbourhood factors also matter. But the most important single factor is the aspirations of students' parents. Parental aspirations are a very strong correlate: 89% of students whose parents want them to stay in school express the same wish.

Friendship networks

As children get older, time spent with their parents falls and is increasingly replaced by time spent with their friends. By adolescence, much of daily life is transacted with friends and these are a major potential source of receiving (and giving) influence.

The growing body of research on social networks emphasises that networks are transmitters of information and values (Calvo-Armengol and Jackson, 2009; Jackson, 2010; Jackson and Yariv, 2010). Social networks are ubiquitous and powerful: these are the 'people with whom we interact ... [they] influence our beliefs, decisions and behaviours' (Jackson, 2010).

Recent CMPO research uses new data on friendship networks to test a possible source of influence on aspirations (Burgess and Umaña-Aponte, 2011). This is an adolescent friendship network of almost 7,000 friendship links in and around the city of Bristol.

1. <http://www.guardian.co.uk/education/2009/apr/05/michelle-obama-school-london>

2. <http://www.guardian.co.uk/world/2011/may/29/michelle-obama-elizabeth-garrett-anderson-school>

There are numerous advantages to this data. It is a longitudinal dataset that has been collected since the individuals were born. We therefore have several measures of the respondents' academic achievement, ability, personality, behaviour, aspirations and socio-economic status of their families.

The dataset also contains detailed information of the relationships and interactions of friends, such as whether they were going to the same school, the place where they met, the length of their friendship, how much time they spend together and their tastes, activities and conversation topics. For aspirations, they were asked at the age of 14 whether they wished to, and whether they expected to, stay in full-time education after they finished compulsory schooling two years later.

We use friendship links that were formed in primary school – at least three years before the question on aspirations was asked and, in many cases, five or more years before. It seems implausible to argue that 8 and 9 year old children are forming friendships strategically to aid their future prospects. And while it is not implausible to suggest that their parents help them to form links that they believe are 'useful' for life, we can control for a range of attributes of both sets of parents – that is, the focus child's parents and the focus child's friend's parents – including their aspirations for their children.

We focus our attention on children from disadvantaged and middle-income backgrounds, and ask whether those with friends from a wealthier background have higher aspirations than otherwise similar children without such links. The results suggest that there are such effects. They are not very precisely measured but they are robust to the inclusion of a broad set of controls concerning the child, his or her parents and the parents of the friend.

We find that young people from low-income families with friends from high-income families have higher educational expectations and aspirations than similar young people from low-income families without such friends. This effect is quantitatively and statistically significant.

Young people's aspirations are amenable to change, especially from the influence of good friends

We also show that for a young person, the aspirations of their friend's mother matter too (even conditional on their own mother's aspirations). Individuals from a lower-income background have raised aspirations by being friends with someone from a high-income family. This is especially true for middle-income students who are 9.3 percentage points more likely to wish and 12 percentage points more likely to expect to stay in full-time education after they finish compulsory school.

Similarly, the expectations of low-income children to continue in full-time education are higher by 15.2 percentage points when they



Family income and parents' occupational class seem not to matter for young people making friendships

have at least one friend from a high-income family. Their desire to stay in full-time education also seems to be higher.

Formation of friendship networks in schools

But where do friendships come from and what is the basis on which they are formed? One of the most widely discussed ideas about friendship networks is that of 'homophily' – that people form friendships with people like themselves in some way. Often these are very simple demographic markers such as gender or ethnicity. Homophily is also closely linked to the ideas of separation and segregation. High levels of homophily imply high segregation.

In the context of a large friendship network of adolescents, the effects of homophily seem particularly important. These individuals are making a transition between childhood and adulthood and their emerging attitudes and beliefs will be affected by their friendships. More transiently, but of great practical importance, is the spread of information and views around the network, for example, about future education and careers, or about risky behaviours.

The degree of homophily in a network affects the speed of contagion across a network – for example, the spread of beliefs or behaviours. Recent research shows that homophily actually slows down the speed at which a society reaches a global consensus: while information moves very quickly within homophilic groups, it is much harder for information or beliefs to 'jump' across groups to cover the whole society (Golub and Jackson, 2011).

These researchers argue that understanding homophily is crucial to understanding the functioning of a society. In the case of our

dataset of friendship networks at school, that society is adolescents on the brink of adulthood and making important decisions on their future life chances. We have used that dataset to study the nature of homophily in the adolescent friendship network (Burgess et al, 2011).

We find that adolescents are very similar to their friends in their academic achievement (especially in key stage 2 and 3 test scores), total IQ, popularity, bad behaviour (such as arriving at school late and missing classes) and their mothers' education. In addition, some dimensions of personality, such as extraversion, locus of control and intensity seeking, are very important in the process of friendship formation for teenagers.

It could be objected that since we are largely looking at friends in schools, the sorting of students across schools will by itself generate a correlation of ability, even in a comprehensive system. We deal with this issue in a number of ways, but one technique is to generate 'simulated friends'.

For each student in our data, we randomly generate a set of 'friends' for them from other students in her school and compare the 'aliveness' of these simulated friends to the focus student. We do this many times and take the average of these simulations.

The results for the degree of homophily for the IQ measure are shown in Figure 1. The relationship between a student's own IQ score and that of his or her friends is much closer than that for his or her simulated friends. So this does seem to be a real phenomenon, not just driven by the school admissions system.

One perhaps surprising finding is that family income and parents' occupational class do not seem to be relevant characteristics for establishing friendships. Socio-economic status homophily is relatively low. Whether this is unique to Bristol or a more general finding we cannot yet say.

Conclusions

Not every school in England can be visited by Michelle Obama. But these results do suggest that young people's aspirations are amenable to change. The circumstances and values of their good (long-lasting) friends do appear to modify their own aspirations.

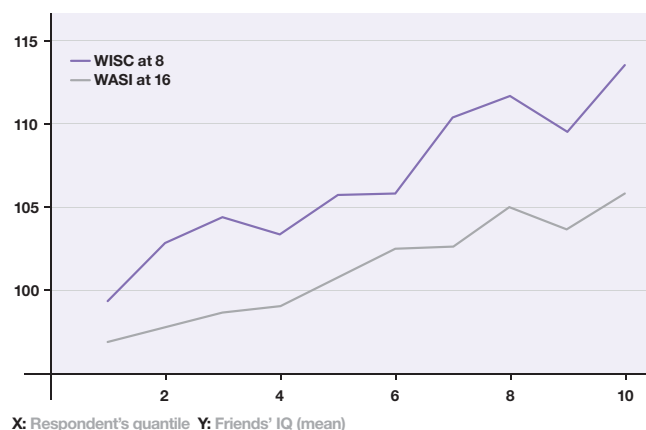
Broadening this out, it seems that messages from trusted sources (which are probably implicit) do matter. While it seems unlikely that there are direct policy implications in terms of influencing friendship formation, the results do provide some hope that messages on aspirations might have weight if carefully crafted.

Finally, the results suggest that providing contexts, in this case schools, where children of different social classes can meet and potentially befriend each other may have implications for the aspirations of disadvantaged children. This is part of the case for comprehensive schools and the case against selective or otherwise segregated schools.

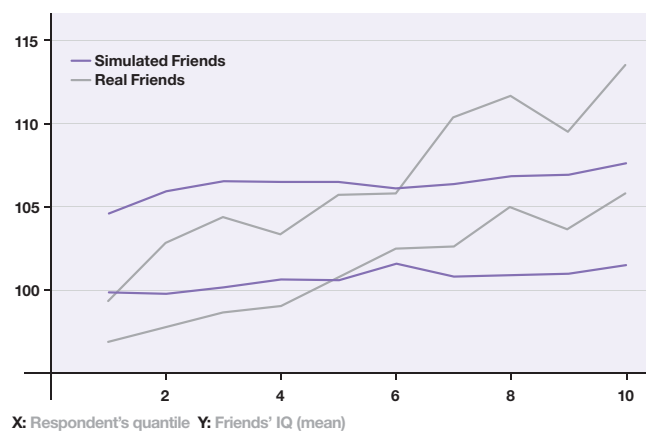
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Figure 1
Real friends and simulated friends

A: Real friends



B: Simulated friends



Further reading

Simon Burgess, Eleanor Sanderson and Marcela Umaña-Aponte (2011) 'School Ties: An Analysis of Homophily in an Adolescent Friendship Network', CMPO Working Paper No. 11/267 (<http://www.bristol.ac.uk/cmipo/publications/papers/2011/wp267.pdf>).

Simon Burgess and Marcela Umaña-Aponte (2011) 'Raising your Sights: The Impact of Friendship Networks on Educational Aspirations', CMPO Working Paper No. 11/271 (<http://www.bristol.ac.uk/cmipo/publications/papers/2011/wp271.pdf>).

Antoni Calvo-Armengol and Matthew Jackson (2009) 'Like Father, Like Son: Social Network Externalities and Parent-child Correlation in Behavior', *American Economic Journal: Microeconomics* 1(1): 124-50.

Benjamin Golub and Matthew Jackson (2011) 'Network Structure and the Speed of Learning: Measuring Homophily based on its Consequences', *Annals of Economics and Statistics*.

Paul Gregg and Elizabeth Washbrook (2011) 'The Role of Attitudes and Behaviours in Explaining Socio-economic Differences in Attainment at Age 11', *Longitudinal and Life Course Studies: International Journal* 2(1): 41-58.

Matthew Jackson (2010) 'An Overview of Social Networks and Economic Applications', in *Handbook of Social Economics* edited by Jess Benhabib, Alberto Bisin and Matthew Jackson, North Holland.

Matthew Jackson and Leeat Yariv (2010) 'Diffusion, Strategic Interaction, and Social Structure', in *Handbook of Social Economics* edited by Jess Benhabib, Alberto Bisin and Matthew Jackson, North Holland.