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Explaining Inequality? Rational action theories of educational decision making

Ron Thompson

University of Huddersfield, UK

Introduction

This chapter addresses a number of important questions. Firstly, how are inequalities in educational opportunity created, and why should they remain significant in spite of social and technological progress, and the increasing meritocracy claimed by many politicians? Secondly, although stratification research shows that patterns of inequality in Western countries are more similar than dissimilar, why do countries differ in levels of inequality and the extent of change? This chapter discusses the rational action approach to social class differences in educational attainment, a perspective designed specifically to answer such questions and to explain observed patterns of stability and change. Unlike the cultural reproduction perspective associated particularly with the work of Pierre Bourdieu, rational action theory seeks micro-level explanations based on the decisions made by individual actors and their subjective evaluations of the costs, benefits and chances of successful completion associated with different educational routes.

Although greatly developed by later authors, the rational action approach derives from the methodological individualism utilised by Raymond Boudon in his *Education, Opportunity and Social Inequality* (1974). Writing some time later, Boudon describes the centrality of individual behaviour to this work:

[I]n order to analyse the system of macroscopic data which social mobility represents, it was vital to take it for what it in fact *is* – the statistical imprint of the juxtaposition of a host of individual acts ... [by] individuals who are socially *situated*, in other words people who are part of a family and other social groups, and who have resources which are cultural as well as economic. Moreover, the choices which these individuals face are not abstract, but are choices the terms of which are fixed by specific institutions – for example, in the field of education; or by constraints – for example, the supply of and demand for skills in the context of career choices. (Boudon 1989: 6-7)

Whilst the degree to which its theoretical constructs are supported by empirical evidence is contested, rational action theory has the potential to offer an elegant and parsimonious explanation for many of the observed features of persistent – and nonpersistent – inequality.

Inequality of educational opportunity in comparative perspective

Educational attainment differs between groups of people defined in many different ways; for example, according to ‘race’, gender, disability, or looked-after status. However, in the literature discussed in this chapter, inequality of educational opportunity (IEO) refers specifically to “differences in level of educational attainment according to social background” (Boudon 1974, p.xi). In the theoretical literature, social background is usually understood in terms of class, enabling a focus on patterns of difference between categories with specific social meanings, but in empirical studies background variables such as parental education, occupational status or family income may be used in place of or in addition to social class.

Two further methodological questions arise: what measure of educational attainment to adopt, and how best to represent the differences in attainment that emerge from the analysis. Attainment may be thought of in various ways, for example highest level of education reached or qualifications achieved. For many years, statistical models of completed years of schooling, or the transition probabilities between one level of education and the next, were used to analyse social inequalities in education. However, as Mare (1980, 1981) has shown, these approaches are deficient in periods of educational expansion. The way in which years of schooling or transition probabilities change with social background depends on both the ‘pure’ relationship between educational attainment and social background and the average length of schooling (or transition probability) in society. To allow for educational expansion, it is necessary to develop models which are unaffected by overall increases in participation rates. This requirement is satisfied by statistical models of transition propensities at successive levels of education which take the so-called ‘log-odds’ of making a transition¹ as the dependent variable.

Following Mare’s work, this approach and its variants came to dominate research on IEO (Breen & Jonsson 2005), and odds ratios at specified transition points² became the standard way of representing differences in attainment between classes. The transition points typically

studied include entry to lower secondary, upper secondary and tertiary education levels. Although lower secondary education became almost universal as the twentieth century progressed, in countries such as Germany where early selection into different educational tracks takes place, the transition to lower secondary education remains of great interest, not least for its impact on access to higher education (Neugebauer & Schindler 2012).

The first major comparative study to use the Mare model was aptly entitled *Persistent Inequality* (Shavit & Blossfeld 1993). Based on analyses of thirteen industrial countries, the effects of social origin on educational attainment appeared stable, with only two countries – Sweden and the Netherlands – showing a reduction in the strength of association between origin and attainment. However, subsequent analyses show that some equalisation occurred in several countries, particularly in the years between 1930 and 1970 and typically at lower transition points (Breen & Jonsson 2005, pp.226-7). More recent studies provide an increasingly detailed picture of continuity and change. A study of cohorts born in the first two-thirds of the 20th century in eight European countries found notable decreases in educational inequality, largely for children born in a period of around 30 years in the middle of the century (Breen et al. 2009). Again, equalisation tended mainly to affect earlier transitions, with a substantial reduction in class origin effects at the transition to lower secondary education whilst inequalities in the transition to tertiary education remained unchanged.

Comparisons of the magnitude of IEO across countries and over time, particularly between different studies, are often difficult to make because of variations in the sample sizes and data collection methods used, together with differences in how social background and educational attainment are captured. For this reason, the work of Breen et al. (2009) is helpful in providing a relatively uniform analysis across the countries studied. Log odds ratios³ between highest and lowest social classes in countries with relatively high levels of IEO, such as Germany, France and Italy, have reduced from around 3.0 (greater in the case of Italy) for children born in the period 1925-34, to around 2.5 for children born in the period 1955-64. In Great Britain, Sweden and the Netherlands, these ratios were around 2.0-2.5 for the earlier cohort, reducing to around 1.5 for Great Britain and 2.0 for Sweden and the Netherlands (Breen et al. 2009, p.1510). A systematic comparison across eight countries for more recent birth cohorts is provided by Jackson & Jonsson (2013, p.319), indicating a sharp decline in class origin effects between early transitions and the transition to higher education. For

example, in England log odds ratios fall from around 1.25 for the transition to A-level courses to 0.4 for the transition to a university degree course, whilst in France the fall is even greater: from around 1.85 to 0.25. By contrast, in the United States the log odds increase, from approximately 1.3 to 1.6.

The relationship between stratified educational systems and IEO is well documented. In particular, systems with ‘dead-end’ pathways, curriculum differentiation and a lack of mobility between educational tracks are likely to result in persistent inequality, especially when allocation to different pathways occurs early in the educational career (Pfeffer 2008; van de Werfhorst & Mijs 2010; Burger 2016). There is also evidence that higher levels of parental choice, allowing working-class children to be diverted into less-prestigious vocational pathways, tend to increase IEO (Becker & Hecken 2009a; Dollmann 2015). In higher education, stratification also tends to maintain or increase IEO, as working-class candidates are more likely to avoid prestigious institutions and courses (Ianelli 2007; Boliver 2011; Blossfeld et al. 2015; Thomsen 2015).

Inequalities in access to higher education have shown considerable resistance to change. For example, Halsey, Heath & Ridge (1980) found that, whilst working-class participation in England and Wales more than tripled across four cohorts born between 1913 and 1952, the actual growth – from 0.9 per cent to 3.1 per cent – was dwarfed by the increase in participation of young people from the highest social classes – from 7.2 per cent to 26.4 per cent. Over this period, the odds ratio between middle class and working class young people actually increased in favour of the middle class. Ianelli (2007) finds little change for later cohorts in England and Wales, with odds ratios roughly constant for entry to higher education in both 1987 and 1993, albeit reducing to some extent by 2000. Boliver (2011) finds that during two periods of expansion, in the 1960s and the 1990s, class differentials between working and service class⁴ positions decreased only in the first expansion period. Although measures vary, similar inequalities by social origin exist across OECD countries in spite of the expansion that has taken place.

The persistence of inequalities in access to higher levels of education is often discussed in terms of *maximally maintained inequality* (Raftery & Hout 1993). This term describes a situation in which the less advantaged lose out in the process of educational expansion because their more advantaged peers are better placed to take up new educational

opportunities. Relative transition rates or odds ratios therefore remain constant, even during periods of educational expansion, unless enrolments increase so much that demand for more education from higher social classes is saturated. More specifically, maximally maintained inequality would be an appropriate description in any of three cases: (a) expansion keeps pace with increased demand due to population growth generally or a growing middle class – in this case there is no trend towards universality of the educational level in question and transition rates show little change; (b) expansion exceeds this basic level of demand – transition rates increase across all social classes, but odds ratios are preserved or even increased because educational demand grows more rapidly in higher classes; (c) demand is saturated (approaching full participation) for higher social classes – in this case transition rates for lower social classes increase more rapidly than those for higher classes, and odds ratios decrease.

If a particular level of education becomes accessible to the majority of people, the social meaning of education at this level changes and it no longer offers positional advantage to its recipients. However, this does not imply that the contest for advantage moves elsewhere. The thesis of *effectively maintained inequality* (Lucas 2001) states that “socioeconomically advantaged actors secure for themselves and their children some degree of advantage wherever advantages are commonly possible” (p.1652). Thus, as universality is approached, higher social classes will exploit qualitative differences in education to maintain their advantage. For example, stratified curricular or institutional structures offer strategic opportunities to these classes, who will seek to appropriate the more prestigious strata. Even though universality is some way off, effectively maintained inequality (EMI) has obvious implications for informally stratified systems of higher education such as in the UK. Several studies offer support to the EMI thesis (Boliver 2011; Thomsen 2015), although it is unclear whether the exploitation of qualitative differences is intensifying, as EMI would predict (Reimer & Pollack 2010; Ianneli et al. 2015).

Primary and secondary effects of social stratification

The distinction between primary and secondary effects has a relatively long history (Jackson 2013, pp.5-8), originating in studies showing that the impact of social class on academic performance could not fully explain class differences in the transition to secondary education (Boalt & Jansen 1953; Girard & Bastide 1963). However, Boudon (1974) was the first to

integrate the distinction within a systematic sociological explanation of inequalities in educational attainment. In his formulation, the *primary effects* of social stratification are class differences in academic performance generated by cultural inequalities; *secondary effects* are the impact of social class on educational attainment, after taking into account differences in performance⁵. Here, the term ‘cultural inequalities’ is to be taken as referring to theoretical explanations for class differences in school performance which attribute these differences to the cultural advantages possessed by those from higher class backgrounds. Boudon accepts that these advantages will be responsible for producing class differences in the ability to thrive in educational settings. However, he does not regard cultural advantage as being the full story. Boudon proposed that secondary effects take place through social class differences in the educational decisions made by children with similar levels of performance, and that these decisions are influenced by differences in objective conditions, not cultural differences between classes.

Unlike Bourdieu, for whom IEO results from a unitary cultural process in which the interaction between habitus and field conditions one’s whole experience of education, Boudon regards the processes responsible for primary and secondary effects as being essentially different in nature:

IEO is generated by a two-component process. One component is related mainly to the cultural effects of the stratification system. The other introduces the assumption that even with other factors being equal, people will make different choices according to their position in the stratification system. In other words, it is assumed (1) that people behave rationally in the economic sense ... but that (2) they also behave within decision fields whose parameters are a function of their position in the stratification system. (Boudon 1974: 36)

For Boudon, distinguishing between primary and secondary effects was intended to show that, whilst cultural inequalities are of great consequence in producing IEO, they are not the only factor involved, or even necessarily the most significant: he argues that, whilst primary effects tend to die away for those surviving to higher levels of education, secondary effects “assert themselves repeatedly throughout the life of a cohort” (1974, p.86). The relative contribution of primary and secondary effects to overall levels of IEO is therefore an important subject of empirical research.

The standard approach to estimating the magnitude of secondary effects is based on so-called ‘counterfactual’ reasoning, in which observed data is used to construct distributions, specific to each social class, of (a) academic performance, and (b) transition propensities conditional on performance. These distributions are then interchanged in various ways to produce synthesised transition probabilities combining the performance and choice characteristics of paired social classes. For example, if we are interested in the proportion of IEO between social classes S_1 (higher) and S_2 (lower) that can be attributed to secondary effects, we replace the performance distribution for S_2 by the performance distribution for the higher-performing class S_1 , while keeping the transition distribution the same. Combining the two distributions allows us to predict the proportion of children from S_2 who would have made the transition *if* there were no class difference in performance but the class difference in transition propensity remained.

One problem with decomposing primary and secondary effects in this way is that, when interpreted as a distinction between performance and choice, it assumes a causal model in which pathways between class, performance and attainment are not compromised by intervening unobserved variables. Following Erikson et al. (2005), the contribution of primary and secondary effects to IEO may be represented by the diagram in Figure 3a. In this diagram, S stands for social class, P for academic performance, and A for educational attainment. As the diagram shows, social class affects achievement in two ways: indirectly, through its effects on performance, which in turn affects attainment; and directly, through processes unrelated to performance. Thus (perhaps slightly confusingly) primary effects are the *indirect* effects of social stratification on educational attainment, and secondary effects are the *direct* effects.

Unobserved variables may lead to estimates of secondary effects that are too high or too low. Erikson et al. (2005) point out that anticipatory decisions, where students reduce their efforts some time before a transition point because they have already decided not to prolong their educational careers, may lead to underestimates of secondary effects. This is because the resulting lower performance would be absorbed into estimates of the primary effect, even though it arose from an educational decision (see Figure 3b).

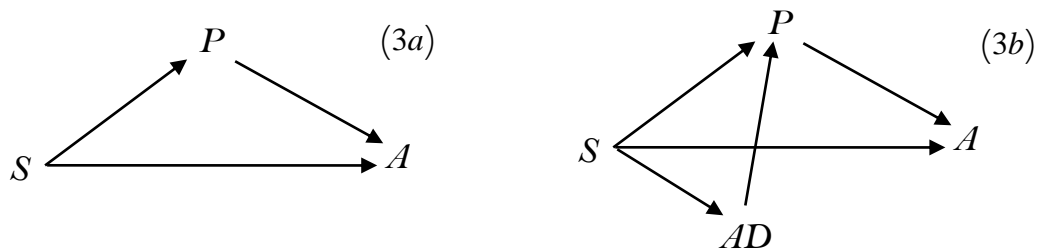


Figure 3: Causal pathways implied by models of primary and secondary effects (adapted from Erikson et al. 2005; Morgan 2012).

However, Morgan (2012) argues that a more complex causal model is required to understand how incorrect estimates of secondary effects may emerge. In Figure 4, U is one or more unobserved variables which may affect attainment indirectly through performance or directly, where U is determined by the exogenous variable X , which also directly influences the social background variable S , performance P and educational attainment A .

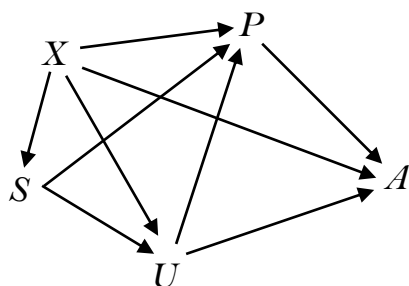


Figure 4: Causal network for primary and secondary effects involving an exogenous variable X (adapted from Morgan 2012, p.35).

This kind of causal structure could also lead to erroneous estimates of secondary effects. Race would perhaps be the most obvious candidate for an exogenous variable, but other possibilities may include place of residence (Morgan 2012, p.33). Either way, the argument suggests that unobserved variables could have more complex effects than the anticipatory decision in Figure 2b.

These variables in U then must have effects on both prior performance ... as well as direct effects on college entry ... Such causal pathways cannot be considered mechanistic elaborations of Boudon's choice-theoretic conception of the secondary effects of stratification. They are instead a separate component of the

net association between class and college entry that is best attributed to a broad structural interpretation. (Morgan 2012, p.33)

More general criticisms of the distinction between primary and secondary effects have been made, largely aimed at the characterisation of secondary effects as mainly due to a separate set of processes structuring educational choice and the theoretical adequacy of rational action frameworks stemming from Boudon's distinction (Nash 2005, 2006; Hatcher 1998). These criticisms will be discussed later, in the context of critiques of rational action itself.

Rational action theories and educational decision making

The rational action theory of educational decisions is part of the broader enterprise of rational action (or rational choice) sociology. This tradition, stemming from the work of Hayek and Popper, is an often controversial project whose critics regard it as at best reductionist, at worst simply wrong. For its advocates, rational choice sociology provides analytical precision, high empirical content and testable hypotheses. In general, rational action theories assume that actors consider the costs and benefits of alternative courses of action, selecting the one which maximises utility, where utility is defined in relation to specified preferences and goals. Although terms such as maximisation suggest the quantitative-economic approach with which some critics equate rational choice sociology, in recent decades a wider conception has emerged in which preferences can derive from softer motivations including identity and values. Moreover, 'rationality' does not imply that actors have perfect knowledge of their situation:

I would recognize that departures from the standard of 'perfect' rationality are very frequent. I make no assumption that actors are always entirely clear about their goals, are always aware of the optimal means of pursuing them, or in the end do always follow the course of action that they know to be rational. (Goldthorpe 1996, p.485)

The introduction of rational choice sociology to the study of educational opportunity is closely associated with the work of Raymond Boudon, and his explanation of secondary effects (Boudon 1974, pp.29-31) contains a number of features evident in later work. Firstly, educational systems are conceptualised as a sequence of branching points where students choose between alternatives with different costs and benefits (social as well as economic), which vary according to social origin. Secondly, social classes are regarded as essentially similar in the way that they think about educational decisions. For all classes, the probability

of choosing a particular alternative increases with its utility, which in turn increases with the benefit-cost difference. Rejecting the 'value' theory that working-class families desire less education, Boudon adopted a counter-argument proposed by Keller & Zavalloni (1964, p.60): the problem is not that working-class families have lower levels of aspiration, but that the social distance they must traverse to reach higher educational levels is greater. Indeed, for a working-class child to reach university requires *greater* aspiration than for a middle-class child. Downward mobility is feared by all classes, but to avoid it children from higher social classes require more education: this is why class similarities in aspiration give rise to class differences in behaviour. Based on these assumptions, Boudon develops a simulation model of an ideal-typical society which, he claims, reproduces observed patterns of IEO.

Although an impressive achievement, Boudon's model was less influential than might be thought, particularly in the sociology of education where Pierre Bourdieu and Basil Bernstein are better known as theorists of IEO. This was in part due to a review of *Education, Opportunity and Social Inequality* that was entirely unsympathetic to Boudon's arithmetical simulation approach (Hauser 1976). Nevertheless, the distinction between primary and secondary effects received serious attention from some researchers. Halsey, Heath & Ridge (1980) noted its potential for understanding IEO, although they concluded that a 'primary effects only' model appeared closer to reality than one with only secondary effects (p.134). These authors also constructed a model of school choice in some respects similar to the rational action models developed in the mid-1990s by Erikson & Jonsson (1996b), Goldthorpe (1996) and Breen & Goldthorpe (1997). In the remainder of this section, the Breen-Goldthorpe model, which has since been the focus of extensive empirical testing, will be discussed in detail.

The Breen-Goldthorpe model was developed as a formalisation of the rational action framework proposed by Goldthorpe (1996) to explain stability or change in IEO, as well as between-country variation. Like Boudon, Breen & Goldthorpe (1997) construct a model of educational decision making in which individuals must choose between various options at certain branching points. Assume that the options are to stay in education and aim for the next level, or to leave education and enter the labour market. For those who remain, the next level may be successfully completed, or not. A more complex model could involve a differentiated educational level, in which one pathway gives high rewards but carries high risk of failure, whilst another is less risky but leads to smaller rewards (Erikson & Jonsson 1996b, p.15).

Three factors are taken to be significant in making a decision: the cost of remaining in education, including opportunity costs such as lost income; the (subjective) likelihood of success at the next level; and the benefits attached by the individual and their family to each of the three possible outcomes of the decision. These benefits are expressed through the subjective probabilities of gaining access to one of three ordered social classes – a service class, a working class, and an underclass of precarious workers and the unemployed. Classes of origin are assumed to differ in only two ways: through average academic ability, that is, through the primary effects of social stratification; and through the different levels of resources they can draw on to meet the costs of remaining in education.

Three mechanisms through which class differentials in educational decisions may arise are proposed. Firstly, *relative risk aversion* postulates that families from all social classes wish to avoid downward mobility for their children; families from higher social classes desire more education because in a (partly, at least) meritocratic society this is a pre-requisite of maintaining their higher social position. By contrast, children from working-class families need less education to be reasonably confident of maintaining their position. Middle-class children settling for modest educational qualifications run a higher risk of downward mobility than working-class children gaining the same qualifications, hence the term *relative risk aversion*. Secondly, class differences in the subjective probability of success at higher levels of education will exist, partly because they correspond to objective differences and partly because a higher subjective probability of success may be required for working-class children to commit to the next stage. Finally, differences in economic resources are likely to mean that the cost burden of education – even when confined to foregone earnings – will weigh relatively more heavily on working class families. The cultural resources of parents may also be important, in terms of differences in strategic knowledge about the educational system and the ability to offer help with schooling (Erikson & Jonsson 1996b, p.26).

Constructing a formal mathematical model from their assumptions, Breen & Goldthorpe (1997, pp.294-95) show that as costs at a particular level of education decrease and participation expands, IEO as measured by odds ratios remains roughly constant, as observed for most countries in Shavit & Blossfeld (1993). Between-country variations are explained through variations in the class distribution of resources and the balance between costs and benefits. Note that costs may decrease not just because certain levels of education are made free or grants/loans are provided; opportunity costs may decrease because labour market entry

may not be an effective option, due to high youth unemployment or increases in the school-leaving age. Breen and Goldthorpe also claim that the model helps to explain maximally maintained inequality: once costs have reduced to the level at which all children from higher class backgrounds may continue in education should they wish – the saturation condition – further cost reductions will have no impact on this class, but participation rates for lower social classes will continue to increase and odds ratios will decrease. Effectively maintained inequality can also be explained, provided that qualitative differences within an educational level are associated with an element of risk, for example through variations in academic challenge or social selectivity, or entail different cost burdens.

The Breen-Goldthorpe model claims to account not only for persistent inequality in educational attainment but also for the decline in gender-based differentials which has occurred in virtually all Western nations. Because formerly the returns to education for women were structured differently, including flatter gradients in returns for higher levels of attainment, the proportion of women remaining in education at each transition point would be expected to be smaller than for men, as would class differentials in educational attainment between women. More recently, the pattern of returns to education for women has changed as labour market participation rates, especially for married women, have increased and as the financial contribution of a woman's own employment has acquired greater significance to her family (Breen & Goldthorpe 1997, p.297). In the Breen-Goldthorpe model, therefore, gender differentials in education should decrease. Class differences among women should increase, or at least diminish less, unless other factors intervene. This argument is partly, although not wholly, supported by empirical evidence; certainly, gender differentials in educational attainment have declined, but across countries there appears to be no pattern of higher or lower class differences between men and women, and amongst women class differentials have decreased over time in the same way as men (Breen et al. 2010, pp.44-45).

Breen & Goldthorpe (1997, p.293) identify relative risk aversion as the key feature of their model: its ability to generate observed empirical patterns comes largely from the element of risk, in terms of destination class, attached to making more ambitious educational decisions, and its unequal distribution across origin classes. However, the relationship between individual attitudes to risk and relative risk aversion is not fully explored. More recently, Breen et al. (2014) have developed a rational action model in which, as well as costs and benefits, the utility of educational choices is made to depend on students' individual level of

risk aversion and the weight they assign to future rather than immediate returns (time discounting) in an uncertain world. This suggests two possible mechanisms through which social background may produce class differentiation in educational choices: *socioeconomic mediation*, in which students from different class backgrounds actually differ on average in terms of risk aversion and time discounting, and *socioeconomic heterogeneity*, in which the distribution of risk aversion and time discounting is the same for all class backgrounds but their impact on educational decisions differs. For example, individual students from advantaged backgrounds may be highly risk averse but still pursue high-stakes educational tracks because in the event of failure they can draw on parental resources for support. Socioeconomic heterogeneity can therefore produce the class phenomenon of relative risk aversion, because irrespective of risk tolerance more advantaged students disproportionately choose the forms of education most likely to result in reproducing their class position (Breen et al. 2014, p.9).

Empirical tests of the Breen-Goldthorpe model

The empirical testing of rational action theories in sociology has centred around two strategies (Jaeger 2007; Kroneberg & Kalter 2012). The first involves direct measurement of the subjective preferences motivating individual behaviour, usually by means of rating scales. In the case of the Breen-Goldthorpe model, these variables would include the desire to avoid downward mobility, alongside subjective evaluations of costs, benefits and success probabilities. Hypotheses involving these subjective preferences, for example that the desire for status maintenance should be independent of social class, are then tested. This strategy has been the subject of various criticisms, including the validity of capturing subjective preferences through rating scales, the practicalities of gathering the relevant data, and – perhaps most telling – that the direct method distracts attention from an actor’s objective situation (Goldthorpe 1998).

The second strategy, revealed preference analysis (Jaeger 2007), tests theory indirectly by using it to make behavioural predictions relating to more easily observed data, for example in the present context the actual educational choices made by students (Breen & Yaish 2006). The main difficulty with this approach is its theoretical ambiguity – that is, it is difficult to

construct hypotheses that are so specific to rational action theory that they are not consistent with other, competing theories. An example of this problem appears in Davies et al. (2002), who argue that relative risk aversion implies a relationship between social background, transition probability and educational level that is inconsistent with standard human capital theory. However, although their data supports relative risk aversion on this basis, they note that other variants of human capital theory could still explain their findings.

A further difficulty in testing the Breen-Goldthorpe model is its complexity. Lucas (2009) identifies three separable components, each containing a number of subordinate propositions: a relational model of opportunity structures in education and the labour market; a model of how student beliefs about these opportunity structures are produced, both subjectively and inter-subjectively; and mechanisms generating patterns of class-differentiated behaviour that produce an association between class and educational attainment. Along with class differences in average ability and economic resources, relative risk aversion, the model's key principle, is just one element of this third component.

Given these challenges, it is not surprising that the status of the Breen-Goldthorpe model is still uncertain. Nevertheless, qualified support from a range of studies, involving both direct and indirect measures, has emerged. Relative risk aversion has been tested a number of times, across different countries and contexts, leading to quite a complex picture. Holm & Jaeger (2005) find strong support for the principle, and more recently Jaeger & Holm (2012) find that it explains part of the social class gradient in educational outcomes. By contrast, Gabay-Egozi et al. (2010) in Israel find that class maintenance motivations do not affect educational choice. For the Netherlands, using a direct measure of the desire to avoid downward mobility, Van de Werfhorst & Hofstede (2007) found near-constancy of relative risk aversion across social classes. However, German data analysed by Stocké (2007), which involved a comprehensive set of direct measures as well as revealed preferences, indicated that parents from lower social classes attached greater importance to avoiding downward mobility than did parents in service class positions.

Breen & Yaish (2006) find that the unskilled working class showed the greatest propensity to early school-leaving, despite the impossibility of downward mobility for this class. Jaeger & Holm (2012) modify relative risk aversion to allow for some heterogeneity in the desire to avoid downward mobility, finding that although the majority of young people wish to reach

at least the class position of their parents, a minority reject this aspiration. In a study of transitions in Denmark, Breen et al. (2014) found that higher individual risk aversion did not reduce the probability of choosing the academic route for the most privileged students, whereas such a relationship did exist for students from disadvantaged and middle socioeconomic backgrounds. Higher risk aversion in lower classes is also reported by Obermeier & Schneider (2015) in Denmark.

Beliefs about opportunity structures have also been tested, and class differences in subjective evaluations of costs, benefits and success probabilities are reported by Stocké (2007), Becker & Hecken (2009b) and Gabay-Egozi et al. (2010). Hansen (2008) reports a significant impact of parental economic resources on educational attainment, after controlling for parental education and other independent variables. However, although several key aspects of the Breen-Goldthorpe model are supported by these studies, their analyses differ in their evaluation of the model as an explanation for social class differences in educational attainment. Becker & Hecken (2009b) conclude that their results support the Breen-Goldthorpe model; however, they also support the subjectively-expected utility model of Esser (1999), and Stocké (2007, p.515) found that the Breen-Goldthorpe model did not fully explain the secondary effects of class on educational decisions.

In summary, then, it appears that several individual features of the Breen-Goldthorpe model are supported by studies across a range of national and institutional contexts. These include the key principle of relative risk aversion, although it is likely that some variation between social classes must be allowed in the desire to avoid downward mobility. The anomalous position of the unskilled working class (Breen & Yaish 2006) also requires explanation. It also appears that the Breen-Goldthorpe model, and by implication other forms of rational action theory, can explain at least part of the secondary effects of social stratification on educational attainment. However, as the careful analysis by Stocké (2007) makes clear, not all of these effects are accounted for by this model. Finally, the theoretical ambiguity associated with indirect tests based on student behaviours is a continuing obstacle to drawing conclusions about the superiority of rational action theory over competing accounts of IEO.

Conclusion

The explanations of IEO which have hitherto been most influential in the sociology of education, notably Bourdieu's cultural reproduction, find it difficult to escape accusations of determinism, essentialising working-class deficiency, or both. Rational action theories, which place agency at the centre of their account and emphasise that class differences in behaviour arise from the socially situated nature of the decisions behind them, offer significant advantages in all phases of education and perhaps most particularly in the context of higher education. Not only does university entry lie at the end of a sequence of educational transition points, highlighting the cumulative impact of secondary effects; in addition, the estimation of costs and benefits in relation to family resources surely has critical weight at the transition to the various strata of higher education encountered in Western industrial nations.

As we have seen, rational action theory – particularly in the form given to it by Breen & Goldthorpe (1997) and later Breen et al. (2014) – can successfully account for observed trends in IEO such as the relatively persistent inequality seen in numerous countries, the behaviour of IEO as participation by higher social classes approaches saturation, and the decline in IEO as economic inequality or the costs of education are reduced. It can also explain some features of *decreasing* gender inequality in education. However, rational action theories in general suffer from the serious problem of theoretical ambiguity: where they rely on macro-level behaviour for verification, it is impossible to exclude other explanations, and even when the individual motivations underlying behaviour are made empirically accessible, it can still be difficult to differentiate rational action explanations from other theories. Although an impressive body of evidence has been accumulated in favour of the Breen-Goldthorpe model in particular, it is by no means conclusive and more empirical research is needed.

These challenges are particularly important in view of certain criticisms made largely from within the Bourdieusian tradition. This critique accepts that the distinction between primary and secondary effects may be useful methodologically, in highlighting the fact that class differences in educational attainment remain after controlling for performance (Nash 2005, 2006). However, it disputes the proposition that primary and secondary effects arise from distinct processes, or that 'choice' can be conceptualised apart from the field relations of dominance and subordination that produce primary effects. Furthermore, separating primary effects from a unitary theory of schooling in class society allows a deficit account to re-

emerge. To interpret the distinction between primary and secondary effects as anything more than an analytical device would therefore have little meaning, and perhaps be ill-considered.

Turning to the micro-processes of rational action theory, Hatcher (1998, p.20) argues that “real-life choices ... cannot be reduced to utilitarian calculations of costs, benefits and probabilities”. Drawing on studies which highlight diverse individual responses to educational opportunities, he sees rational action theories as applying a reductionist economic model of the individual and counterposing rational choice to culture rather than uniting them. This is, perhaps, to misrepresent rational action, which does not claim to be a model of social behaviour in its full complexity, but in its average effects: “We ... assume that, *in their central tendencies*, these patterns of educational choice reflect action on the part of children and their parents that can be understood as rational” (Breen & Goldthorpe 1997, p.277, original emphasis). However, such disputes do not imply that cultural reproduction and rational action theory are necessarily incompatible. Hatcher (1998) points out that Bourdieu has acknowledged that rational action may supersede the operation of habitus in certain circumstances. More recently, Van de Werfhorst & Hostede (2007) have used both cultural capital and relative risk aversion to investigate educational choices, whilst Glaesser & Cooper (2013) argue that habitus and relative risk aversion can be complementary, with habitus providing boundaries for an essentially subjective rationality.

Rational action theory should, in any case, be judged in terms of explanatory power, and from this point of view, its potential for informing policy is considerable. The decomposition of IEO into primary and secondary effects indicates different kinds of policy intervention that would be relevant, and their possible impact on equality (Jackson 2013, p.5). For example, Neugebauer & Schindler (2012) find that neutralising secondary effects at the transition to upper secondary school would be the single most effective means to increase participation rates in tertiary education among working-class students. However, rational action theory warns that initiatives to raise working-class aspirations in pursuit of this aim need to be interpreted carefully in the light of objective barriers such as opportunity costs, together with positional competition from more advantaged families who can draw on greater resources to ensure that their children maximise their academic potential. Finally, it underlines the point that slogans such as choice and excellence come at a cost, providing further opportunities for higher social classes to consolidate their advantage.

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Notes

¹ Odds and odds ratios between social classes (or other social background categories) for an educational transition are calculated from the observed proportions in each class making the transition. If p_1 is the probability of making the transition for children in class S_1 , and p_2 the corresponding probability for class S_2 , the odds for class S_1 are $p_1/(1 - p_1)$. The log-odds for the transition are obtained by taking the natural logarithm of this quantity, that is $\ln [p_1/(1 - p_1)]$. The odds ratio between the two classes, taking S_1 as the reference class, is the ratio between the odds for S_1 and the odds for S_2 , that is $[p_1(1 - p_2)/ p_2(1 - p_1)]$.

² Some studies use as their measure of attainment the completion of specified stages of education rather than having made the transition from one stage to the next; see Breen et al. (2009).

³ The following table may be helpful in illustrating the relationship between odds ratios and participation rates. Because odds ratios are independent of overall participation rates there is no unique correspondence, but the table gives three illustrations of educational systems with ‘low’, ‘medium’ and ‘high’ participation.

Log odds	Odds ratio	W (%)		
		Low participation system ($S = 20\%$)	Medium participation system ($S = 50\%$)	High participation system ($S = 90\%$)
0	1.0	20.0	50.0	90.0
0.5	1.6	13.2	37.8	84.5
1.0	2.7	8.4	26.9	76.8
1.5	4.5	5.3	18.2	66.8
2.0	7.4	3.3	11.9	54.9
2.5	12.2	2.0	7.6	42.5
3.0	20.1	1.2	4.7	30.9

Table 1: Odds ratios and corresponding ‘working class’ participation rates W when compared with ‘service class’ participation rates S of 20, 50 and 90 per cent (see note 4 below).

⁴ The ill-defined nature of the term ‘middle class’ leads some authors to specify class in terms of the labour process. In this context, ‘service class’ or ‘salaried’ refers to individuals with a service-contract relationship implying greater autonomy and security, and more flexible working conditions, as opposed to a labour-contract relationship associated with working-class employment.

⁵ Some authors consider also the tertiary effects of social stratification; that is, the effect of social background on the evaluations of students’ performance by teachers and educational institutions. See Blossfeld et al. (2015).