SECONDARY SCHOOL SELECTION: DECISION-THEORY AND METHODOLOGICAL CONSIDERATIONS

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ABSTRACT

The English secondary educational framework is one of public provision through a variety of different types of schools (comprehensive schools, academies, free schools) that also features private provision. Private provision appears to be a stable feature of the English education system that appears to perpetuate class differences and unequal access to educational offerings in England.

Were we to employ an institutional approach, then the question arises why the private provision exists if the economic argument identifies a social optimum resulting from state school provision. State provision is well established, available recognised, hence the question arises why private school tuition still exists. Neoclassical economics and rational choice theory do not offer sufficient answers, unless elite provision or social stratifications are explicit aims of fee paying parents. Neoclassical and mainstream economics rely heavily on concepts of monetisation of utility and/or marginal analysis which are not able to exhaustibly explain school choice patterns. Rational choice theory leaves underlying values and preferences largely unexplained in their origins. Main UK political parties have yet to attempt ground-breaking reforms to eradicate unequal access to private schools based on family income or wealth.

To understand the continued existence of private schools in England, the orthodox economic perspective needs to be broadened. Heterodox and behavioural economic ideas are here employed to attempt to shed light on the continued dual framework education system.

The theoretical tenets of analysis which are combined in this paper are:

a) Samuel's approach to institutional economics
b) Veblen's concept of status rivalries and status elevation (evolutionary economics)
c) Clarence Ayre's formation of human belief
d) Concepts of guilt aversion.

Institutionalisms is considered to be a) a US phenomenon with the "leading early figure … Richard T. Ely, Thorsten B. Veblen, Walter Hamilton, John R Commons, Wesley Mitchell and John Maurice Clark" (Medema, Samuels, 2013, p. 641) and b) a result of debates of the German Historical School (Spangenberg, 2012). It is accepted that institutional economics has built a bridge between the pure theory that explains the operation of markets and the study of how organisations act. Market operations can be subjected to further historical, psychological, sociological and social change considerations. The educational framework is a social institution as it enables a pure private good to be provided to selected groups of society (merit good). An important coordinate of the institutionlist theory is the fundamental theme that it is not markets that allocate resources but the institutional and organisational structure of the system (Medema, Samuels, 2013, p, 642). It modifies the value concept of neoclassical economics to one where value is not simply the equilibrium exchange ratio of products or factors. Instead, it encapsulates moral or other social value notions and extends exchange value notions of classical economic theory and widens the value concept to one more commensurate with classical philosophy and the natural law where intrinsic values are existent and considered. Samuel's (1989) notion of the heterodoxy of the institutional school is here relevant as a critique of mainstream economics and provides further scope for thematic considerations beyond neoclassical ones. Samuel's analyses the following six notions: (i) role of technology, (ii) nature of social change, (iii) issue of social control, (iv) power structure in society and implications for resource allocation, (v) role of the state, (vi) value concepts. For this paper's analysis, Samuel's query and wide discussion of technological influence can largely be ignored as educational institutions are assumed to remain technology neutral in their institutional framework. Instead, technology affects the delivery and educational offering within institutions but without necessary differentials between private or public ones. At the secondary school level in UK technology has not affected the pupil-teacher ratio, the timeframe of teaching hours or the place of tuition. Instead Samuel's recognition of the importance of the

remaining 5 themes can be subjected to an in-depth analysis of the educational framework of secondary schools in UK. Private school choice is thereby influenced by the institutional offerings in the educational sector. The second thematic area is Veblen's role of habit and custom. Consumption in considered as guided by the pursuit of status emulation, "this industrial basis as a competition for an increase in the comforts of life, - primarily for an increase of the physical comforts which the consumption of goods affords…" (Veblen, 1899, pXXX). Limitations of modern classical economic concepts are supplemented by an evolutionary approach and a rejection of the pursuit of a subsistence level of wealth/income in the industrialised society. Veblen saw "property as the most easily recognised evidence of a reputable degree of success" (p, XXX) which can be extended to incorporate educational attainment, a place of status and potential towards social networking. The provision of possible network effects through the private school system will be made subject to investigation. Clarence Ayre (1951) extended institutional thought to explain motivation further whereby Williamson (1975) focused on questions of opportunism. Behavioural considerations, in particular motivators such as guilt aversion (Charness and Dufwenberg, 2006, 2011) and uncertainty aversion (Epstein, 1999) are here employed to extend the institutional approach.

METHODOLOGY

The research aims to explain the motivators that favour private secondary school choice in England. The observation of reality must be supported by the epistemological consideration of economic choice. Private school choice is observed as an economic choice because it requires a transaction with related payments. Economics is neoclassically perceived as a positive science – phenomena can be captured in a direct relationship, variables are defined as dependent or independent. Positive economics relies on empirical evidence as the theoretical construct must be testable leading to a verification or falsification of the perceived construct. It assumes the formulation of theories on the basis of empirical evidence. The formulation of utility function is the basis of laws or hypotheses drawn against the behaviour of purchasers. A critical position would be to maintain that there is no absolute truth and that observations of reality are partial. This coincides largely with institutional and historical suppositions. Empirical evidence can be extended to capture causes for choice, however such evidence is more difficult to collect. Motivators are psychologically constructed so that decision-makers might only subconsciously be aware that they exist. The formulation of hypothesis is therefore largely dependent on the researcher's initial thought and application. Positive economics often reduces motivators to rational choice concepts to capture motivation. This is diminutive in an epistemological sense creating results which do not test the behavioural assumptions. The deductive methodology employs the empirical testing of a mental construct, leading to gradual evolution of knowledge and possibly paradigm shifts. The formulation of assumptions however limits knowledge formation. In social science, many behavioural observations are formulated on the basis of assumptions such as self-interest, vote maximisation and utility maximisation. These assumptions remain largely untested. They are psychological in nature and are particularly difficult to capture by economic research methods. An extension of economic research methods ought to integrate attitudes and moral constructs. Moral considerations find their orientation externally and internally, externally through the group surrounding the decision-maker, and internally through the decision-maker herself. This paper aims to identify the facets of behavioural motivation to extend the patterns of choice, here secondary school choice. Acknowledging social constructivism, decisions are made given institutional and perceived norms. Norms and values are considered as shaped by social belonging, i.e. the external group that the decision-maker belongs or feel she belongs to. The understanding of social behavioural construction allows for a more individualised understanding of choice perception and motives forming the actual choice and the resulting performance. The methodological approach must aim to capture psychological variables. The research aims to combine hypothetico-deductive with social-constructive and in parts substantivist-anthropological research. School choice is not independent of material structures as access is maintained through a payment mechanism. Socio-economic structures predefine the boundaries of possible choice and behaviour. It is important that the researcher is reflective in constructing the research question. Here, the author is aware of educational access and attainment inequalities. Materialism follows a structured and institutional approach, schools can be assessed as inferior of superior on the basis of educational provisions and attainments. The author expects group resistance to change and the existence of guilt aversion in favour of private school choice as motivational phenomena. These phenomena continue to perpetuate an unfair access system to private secondary schools in England. Such perpetuation has largely prevented system reform towards an equal system independent of parental class, wealth or privilege. The author also expects that school choice is carried out by individual agents within a dominant construct of uncertainty and incomplete information. Parents cannot

predict their child's academic abilities and educational achievements with certainty. Neither can parents be certain which role peers play in a child's educational and social development. The hypothesis is that to process the existence of uncertainty, parents might want to feel good about their choice within the pre-constructed perception of wider social structures, namely a belief system. The mind is the formulator of the view of the world, so that people construct a personalised or group focused reality within a socio-economic context. In that sense the author does not aim to identify phenomenological pattern, rather is the emphasis on the driving forces that lead to certain phenomena. Relativist perspectives that are results of personal or social experiences are considered to frame people's attitudes with uncertainty remaining a persistent feature. Uncertainty can create feelings of unease which are uncomfortable and thus wished to be minimised or avoided. It follows that both relativist and social constructivist approaches ought to be considered to understand underlying motives.

Type of questionnaire:

Quantitative research is used, pre-coded options are provided and multiple-choice questions are given. Some open-ended questions ought to allow for factors to be identified that are not pre-empted.

Research population:

Target population for the questionnaire are final year primary/preparatory school parents in the London Borough of Richmond TW9 and TW10. It is assumed that parents take the decision jointly and unanimously on the basis of shared values and aspirations. This target group has recently or is currently considering their child's further schooling and are confronted with real life scenarios. The population is not random as the targeted group per definition has to have made consideration of the underlying question statements.

Assumptions:

The return on private education (PR) is greater that the loss through payment of tuition fees (WTP). The payment is not perceived as a typical loss because tuition fees constitute a payment in the normal sense of transaction (Kahneman, Knetsch, Thaler (1990):

$PR/WTP > 1$.

The purchase of private school tuition is a normal exchange with an uncertain return. The uncertain return is dependent on the child's educational achievement in the future (EA), so that

$PR = f(EA)$.

The child's future educational achievement depends on a number of variables such as the schools' ability to enable the pupil (S_A) through inspiring teachers, small class size, teachers' ability etc, a child's innate ability (C_A), the influence of an able cohort of friends or peers (F_A), and parental influence and stimulation (P_A), so that

$EA = f(S_A, C_A, F_A, P_A)$.

Private school education provides access to higher income social groups through networking opportunities (NM) which positively influences the child's earnings potential (EP).

$EP = f(EA, NW, W, M,...)$ with W indicating work ethic and M market conditions at time of employment. Economic circumstances are accepted as potential situations, but the probability to withstand unfortunate economic circumstances is usually the better the higher the educational attainment and networking abilities are, hence there is an assumed positive correlation.

Parents are limited in their prediction of a child's academic ability and wish to minimise the associated uncertainty or maximise uncertainty aversion (UA). There are no common means to objectively know probabilities of academic progression, hence the risk associated with educational choice cannot be estimated or calculated on the basis of historical data. Risk is usually considered in the sense of objective known probabilities. There is data available that informs parents about the respective schools' academic attainment and their graduates' earnings potential, but there is no definite relationship between simply school choice and academic results.[i]

Goal: max UA

Buyers of private schooling do not experience a conventional sense of loss as a result of the transaction which is similar to typical market transactions once the child is granted access (tests, interviews. This purchase typically has opportunity costs attached, such as the forgone down payments for a flat, savings for future consumption or repeated annual holidays). It is considered that the choice in favour of private tuition is also determined by the institutional and social framework and the alternative opportunities that a state-funded education can provide. The willingness to pay (WTP) incorporates a payment for uncertainty minimisation. Alongside the aim to minimise the risk of uncertainty, parents who are able to engage in the transaction might also be guided by guilt aversion. Parents might wish to feel that they have done their best in providing the best possible start for their children. Hence, they might decide the purchase private school education to avoid guilt sensation (GS).

$$WTP = VEA + \alpha UA + \beta GS$$

The value of educational attainment (VEA) can be measured in terms of A-levels results and university access which are usually conveyed through league tables in England. The weights α and β are dependent on the individual family and their assessment. In case of a high calculation of uncertainty and risk averse behaviour and a high propensity to feel responsibility for the child's development, α and β are both high. Parents who feel certain about their child's ability and place trust into the state sector would formulate lower values for α and β. Guilt can be felt both externally and internally. External guilt shall be a sensation a person feels when s/he lets others down or leaves them disappointed. People aim to avoid the sensation of guilt. This type of aversion has been extensively analysed and tested by Charness and Dufwenberg (2006, 2011). Charness and Dufwenberg (2006) examine the idea that people feel guilt if they believe that they "let others down" (ibid, p. 1580). People are therefore influenced in their utility definition by "their beliefs about the beliefs of others". Belonging to a particular socio-economic group might be more or less self-defined, hence the relevant reciprocal perceptions within the group are given; evidently, decisions and intended actions of group members, here the respective school choices, are known to the decision-maker. Intended decisions are communicated and externally known. Applying Charness and Dufwenberg, when parents are members of social group they might not want to default on the expected status quo of school choice (weighted by α_1). However, secondary school choice is (mostly) a one-off decision for each child so that trust and cooperation might be less relevant as compared to repeated decision-making scenarios (games). Beliefs about other people's beliefs are hence expected to be more unlikely to lead to sensations of guilt in this form. As a result, this form of external guilt aversion ought to be extended by internal guilt aversion (weighted by α_2). Internal guilt is here the guilty feeling of having been able to provide for private tuition through transaction but not having provided that a child and chosen an alternative allocation. Parents might feel guilty in their not having done their best for the children by their own standards.

Questionnaire:

To test the weight of α_1: (scale of 1strong-5weak)

(1) I told my friends about the school choice for my child.
(2) My friends' choices are important to me.
(3) A) I care about what my friends think about my choice. B) I told my friends that I prefer School A to School B. But I chose School B over School A. I feel bad about that.

To test WTP:

(1) To buy: I prefer to receive the following amount rather than private secondary school education for my child. State (Yes/No) for each of the following values (= P_C)
£37,000; £18,000; £7000; £3000
(2) To sell: Your child receives private secondary school education. How much would you accept in monetary terms to sell the education and receive the money instead? State (Yes/No) for each of the following values (= P_S)
£37,000; £18,000; £7000; £3000

The respective prices are gaged at Eton's at around £37,000 (July 2016) and Cheltenham's Ladies, College (£34,200-38,670). Lowest fees for private day schools lie around £3,000 (German School London, Swedish School, Lycee).

To test the budget and endowment effect effect:

Less well-off parents should show a larger differential in seller's price (P_s) and chooser's/buyer's price (P_C). Households must be identified according to household income to analyse the existence of a budget effect, the prospect of class elevation, possible class rivalries and class perpetuation.

Socio-economic grouping

Test: divide parents into income groups:

(1) Our household belongs to the following income group:
Less than £20,000; £20,000-39,999; £40,000-59,999; £60,000-99,999; above £100,000
(2) Are you considering applying for a scholarship at a private school for your child?
(3) Does your child receive free school meals?

The income groups are chosen in line with current income group bands used by the Office for National Statistics (Carrera, Beaumont, 2010). It is hypothesised that less well-off parents show a difference in seller's price and purchase (chooser's) price. It is expected that lower income groups are more likely to accept a lower price in return for giving up private education:

$$\left(\frac{Ps}{Pc}\right)LIG < \left(\frac{Ps}{Pc}\right)HIG \text{ (Hypothesis 1)}$$

If evidenced and hypothesis 1 holds, then choosers should not have loss aversion whereas sellers might experience loss aversion.

$$\left(\frac{Ps}{Pc}\right) > 1 \text{ (Hypothesis 2)}$$

Hypothesis 2 demonstrates the endowment effect which low income groups might not experience.

Test: divide parents into groups of household wealth

(1) Do you own your house/flat owned outright?
(2) Are your assets (savings, financial and physical) worth less than 25000, less than 100000, less than 250000, less than 500000, more than 500000?

Test the number of children and educational background of parents:

(1) How many children do you have? (enter number)
(2) How many children have not yet entered or left school? (enter number)
(3) Did either mother or father or both parents attended a private school? (Yes/No)
(4) Did either mother or father or both parents attended a faith school? (Yes/No)

To test the return on private education (PR):

(1) I prefer to receive a flat worth the following amount for my child instead of private secondary school education when my child turns 18: (Yes /No)
£518,000; £414,000; £259,000; £105,000; £49,000; £21,000

The figure of £414,000 is a 60% return on the highest fee for private school education. £515,000 has a 100% return on highest fees. The higher the estimated return of private school education in relation to the WTP (identical with Pc) the lower is the consideration of uncertainty and the guilt aversion tendency. The risk of uncertainty and the guilt that purchasers wish to avoid are incorporated and compensated for in the willingness to pay. Parents who state a comparatively higher estimated return demonstrate a comparatively higher valuation of their child's earnings potential as a result of having attended a private school.

To test earnings potential (EP), uncertainty aversion (UA) and compensation for guilt aversion (GS):

(1) I expect my child to attend university after having finished school. (Yes/No)
(2) If yes to (1):
    I expect my child to earn £_____ after university graduation.
    I expect my child with private secondary school education to earn £_____ more/less than my with state school secondary education.
(3) My child will receive a better education at a private secondary school than at a state school. (Yes/No)
(4) If yes to (3)
    I would spend £_____ to make certain that my child will get the best education.
(5) I believe that I can influence my child's educational attainment through school selection. (Yes/No)
(6) II would spend £_____ to make certain I have done the best for my child.

Economic Modelling of Uncertainty and Beliefs

The standard approach to solving uncertain situations and their outcomes is one of using subjective probability which is based on axiomatic foundations. Typically, the uncertainty that parents encounter about their child's academic capability and the influence of the school environment is one of Bayesian uncertainty. The information is incomplete as empirical evidence is only of limited use - but parents have beliefs about probable outcomes, much of which relies on intuition. Only the comparison of identical people entering a given school at a certain point in time would result in the same outcomes – humans are not identical, teachers change over time etc. This makes subjective probability relevant "so that problems of decision under uncertainty are reduced to problems of decision under risk" (Gilboa, Postlewaite, Schmeidler, 2008, p. 173). Maximisation of utility is assumed in secondary school decision, however Neumann-Morgenstern's classical consumer theory is based on assumed quantification of uncertainty and probabilities leaving us to assume subjective probabilities in Savage's (1954) extension. The von Neumann-Morgenstern utility function equates utility with expected utility for the rational individual, so that the decision-maker equates objective probabilities to the known objective one (Harsanyi, 1983). The traditional axiomatic foundations of transitivity and completeness of preferences if applied to secondary school choice would leave parents ordering combinations of let's say "saved tuition fees" and" academic attainment" within a framework of unchanged tastes. This appears restrictive as it assumes the construction of a utility function for the respective outcomes: here the utility of "saved tuition fees" is distinct and quantifiable but the outcome of "educational attainment" might not be conceived as monetarily juxtaposed to the "saved tuition fees". Hence Savage's extension is relevant: parents wish to maximise the expected utility with respect to a subjective probability measure without the existence of prior objective measures. It has also been argued that the Bayesian theory of subjective probabilities ought to be supplemented by a "theory of tentative acceptance of empirical hypotheses" (Harsanyi, 1983, p. 342). Harsanyi's approach to the acceptance of empirical hypotheses is relevant as it can allow an insight into the formation of beliefs. Here, parents make decisions on the basis of available empirical data on the one hand, and on the other hand on the basis of beliefs. Secondary school choice is much guided by subjective probability due to incomplete information and uncertainty about one's child development. The subjective probability depends much on prior beliefs which can be explained partly via a) past empirical evidence, b) intuition, and c) via norms and notions that have been created through a given institutional framework. The institutional framework allows a formation of social capital that comprises resources based on social connections and/or group affiliations (Mayrhofer et al., 2004). Cultural capital can take three forms: i) embodied capital such as mannerisms, dress codes and mastery of language refers to properties of one's self that are both acquired and inherited from the family through socialization, ii) objectified cultural capital consists of physical objects that are owned, and ii) institutionalized cultural capital includes credentials or titles (Bourdieu, 1990, 1986). Institutionalised cultural capital is of particular relevance when formulating prior beliefs. Benson et al argue that school choice "transcend[s] the institutional structures that are often assumed to frame it" (2015, p. 27). No weights shall be attached to either of belief parameters which are designed to capture attitude.

Ellsberg (1961) demonstrates that people prefer games/bets with known probabilities over games/bets with probabilities that are unknown. Parents tend to observe school results and derive estimated probabilities for educational attainment. As a result the Ellsberg rule would infer an inferior ordering of a new school with no or little past/historical outcome data. As a result parents are likely to prefer established schools, establishing a bias for the status-quo. Furthermore, we might identify a parent group that does not have well-established preferences, i.e. there is no clear preference from a moral/value position between state and private schools. This group has no clear preference order, hence the completeness axiom does not hold. Another group of

parents might express and hold complete preferences in a generalist moral form (prefer a state school in principle) but decide against this principle (opt for private school). This might occur if the expected outcome for the individual child might be jeopardised by a decision made on moral principle. What follows is a separation of preferences or even conflict. The choice in favour of a private school despite a "utopian" preference for a state school system might be the result of the institutional framework putting the parents' principal preference in question and creating a belief that the child might do better in a private school environment. What we might find as a result are first order and second order preferences:
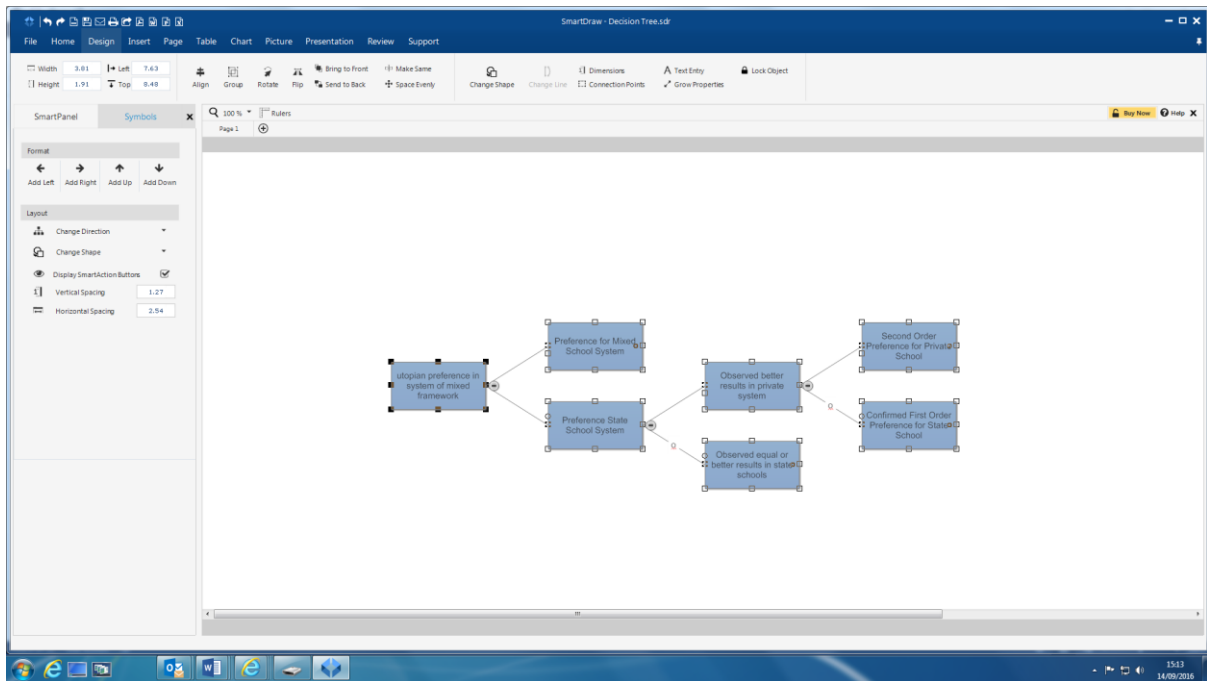
Parents are unlikely to be agnostic as they have to make a choice. It is also unlikely that parents will be irrational decision-makers, as we can usually assume that they wish their child to be happy. The determinants of happiness can be mental well-being, social integration, social integration, material well-being, all of which are transposed into the future.

Test: Ask parents to assign probabilities to expected educational outcomes:

Divide the probability of a child with good academic ability achieving top A-level results and gaining access to a top university (100% total)

Private School: _____%

State School: _____%

Total   100 %

It appears logical to assume that parents have beliefs about probabilities prior to their decision-making. This supports Gilboa and Schmeidler's multiple prior model which allows for intuition and beliefs (1989). It could be useful to ask for active responses from parents to identify beliefs:

Question:

Which factors enhance your child's educational achievements?

CONCLUSION

Firstly, it might be argued that beliefs guide decision-making in situations of uncertainty. Secondly, beliefs may originate from past and institutional experience. Empirical data cannot be directly related to one's own child so that parents have to rely on generalised data such as league tables (forming objective probabilities) and their beliefs. It is necessary to go beyond subjective utility valuation in a marginal sense of Menger,

Walras, and Jevons. The aim is to model the formation of beliefs based on observations gathered through the use of the above set of questions. This allows an extension of orthodox utility models which are restricted by the inference from the abstract. Acknowledging the subjective nature of decision-making, once evidenced, these observations can help to objectivise decision-making patterns which allow to inform education policy against the chosen educational social aims.

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