The role of aspiration levels in educational choices: an economic foundation[1]

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Introduction

The social contract of modern democratic societies relies on several principles. One of them is the equality of opportunity. Rejecting the rules of aristocracy which grants some rights to individuals depending on their lineage, democratic societies rely on the principle that anybody must have the same opportunity to succeed, whatever his or her social origin is. Success should only be dependent on talent and merit, not on social origin.

The school is the place where individuals are first trained and selected for their professional occupation. For this very reason, it is the object of major preoccupation in modern democracy for its alleged role of giving an equal opportunity to every child. The debates in sociology about the existence of an equality of opportunity in education took a major place in the academic debate in the second part of the 20th century for this very reason. Beyond the study of an empirical fact—the role of social origin in educational success—the sociology of education was the field of a fierce debate over the nature of our modern democratic societies.

For several critical sociologists, the social inequalities stemming from the educational system were revealing the shallow nature of the democratic promise: behind the liberal principles of democracy, the basic mechanisms of society were working toward the reproduction of the social hierarchy. Radical and Marxist intellectuals seized the issue of the "social reproduction of inequalities" at school as a leading theme to denounce the false promise of liberal democracy. The society had lost its aristocratic nature only in appearance, making it simply harder to criticise.

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It is in this context of societal debate going far beyond the simple empirical study of the educational system that Raymond Boudon wrote his first major contribution to the sociological literature : *L'inégalité des chances* (Education, opportunity and social inequality, 1973). Boudon's book came up as polemical piece when it was published and was accused by radical intellectuals to aim at justifying the existing social inequalities. This attack however certainly misses the point. While Boudon was certainly taking a liberal stance in the overarching debate about the nature of society, his book was before all a scientific contribution, and arguably the only one to have survived the test of time.

Trained at the individualistic and quantitative approach to sociology in the US by Lazarsfeld, Boudon proposed to look at the educational system and its outcome by looking at its primary actors, the pupils and families who invest resources into education and have to make several choices along the way. To understand the characteristics of the educational systems and in particular the existence of a tendency for social inequalities to be "reproduced", one has to understand the actors and the situations in which they make their decisions.

One of the most contentious point in Boudon's book is that he argued that pupils (or families) from lower social background actually *choose* not to follow long studies. One of the reasons for doing so was that they have lower aspiration levels. An important part of social inequalities in education therefore comes from the choices of poor families. This idea is certainly one of those which have been the most contentious in his book. Critics accused Boudon of making social inequalities legitimate by making poor families responsible for their fate.

The present paper shows that the idea that aspiration levels may produce a reproduction of inequalities can actually be supported by the principles of economic theory. All along the way, it also provides a translation of the sociological debate in economic terms. The first section will present the model of Boudon and what it meant relative to the other explanations presented at that time. Section 2 will explain how the principle of Economics can now give a clear foundation to the mechanisms described by R. Boudon. Section 3 presents some experimental evidence about this. Finally, section 4 concludes and provides some discussion about the philosophical meaning of such an idea.

The context in sociology of education before Boudon

Children from different social background do not have on average the same success at school. Those from a better social origin tend to succeed better than those from a lower background. This simple fact appeared to be in contradiction with the principle of "equality of opportunity" allegedly at the basis of the educational system.

This puzzling fact received mainly two types of explanation in the sociological literature preceding Boudon's book. Following Hyman (1953), culturalists assumed that children from lower social background had different values, and that these values were not giving to education a great importance. Children from working families did not follow long studies because, for them, this was not something especially desirable. From a modern economic point of view, one would say that culturalists assumed that children from different social origin had different *utility functions* determining their preferences over the different options. It is completely possible for individuals to have different utility functions, however economists are reluctant to opt for such an explanation as falling too easily in the ad hoc category. Any differences in behaviour between individuals could be explained by posing appropriate differences in utility function. Economists prefer therefore to avoid such a hypothesis unless there is some strong reason not to do so. In the case of class cultures, one would wonder: why would individuals from different classes have systematically different preferences? Why would it be acceptable to assume that the distribution of preferences differs between classes while the distribution of abilities does not? And even more: why would such differences persist while they actually penalise individuals from a poor social background? The culturalist approach is somehow too easy an explanation to be satisfying.

The other main stream of analysis of social inequalities in education came from radical and Marxist intellectuals (Bourdieu and Passeron 1964, 1970, Althusser 1972, Bowles and Gintis 1976) who were seeing the education system as a discrimination tool allowing the ruling class to reproduce and legitimate its supremacy by claiming that the system was fair and meritocratic. Slight differences existed between authors, with some emphasising the role of the ruling class in the design of such an educational system (Althusser 1972, Bowles and Gintis 1976) and some others seeing this as a more mechanical phenomenon arising from the law of society (Bourdieu and Passeron 1964, 1970). The French sociologists Bourdieu and Passeron had the specificity to also look at the subjectivity of the children and families having to make choices between long and short studies. For Bourdieu and Passeron (1970), the school and its curriculum advantage privileged class and their culture. Not only does this play against children and families from poor social background who do not compete on a level ground, but individuals from poor social backgrounds are somewhat alienated in a Marxist sense: they do think that school success is not for them and that they will not be able to succeed. They chose for this reason not to continue at the University level as much as children from higher social background. Bourdieu used his famous notion of "habitus" to describe this way of thinking which is forged by ones' position in the "social field". Boudon repeatedly criticised this notion of habitus as a black box with an explanatory power "which is more or less the same as that of opium's *vis dormitiva*" (Boudon and Bourricaud, 1990). Like "cultural values", the habitus seems an easy solution to explain any difference in behaviour empirically observed.

Contrary to what is sometimes thought, the radical view is not completely meaningless from an economic point of view. It presents three main ideas. First, like the culturalist approach, it posits that individuals from poor social background have different preferences. The difference with the culturalist approach is that these preferences which disadvantage them are imposed by the social system. While it is not clear how a social system can influence individual preferences in such a way, it is not something that economists have dismissed outright (Sen 1985, Bisin and Verdier 2001). However, without a clear theory about the formation of preferences, such an explanation does not escape the criticism of ad hocness.

Second, radical sociologists argued that the system is unequal and that it systematically disadvantages pupils from lower social background. Such a view is not completely excluded from the economic literature. The idea that institutions may be biased in favour of one group is common in political economy and the idea that wealthier citizens may have a higher weight in the design of institutions has also been modelled in economics (Benabou, 1997). However, the radical approach presents two problems on this point. First, it neglects the agency problem by sometimes assuming a coherent ruling class designing institutions. Members from higher social background certainly belong to different subgroups with divergent interests and, for this reason, the design of unequal institutions cannot derive from a conscious plan from the ruling class; it must emerge from the sometimes conflicting interests of members of higher social classes. Second, it does not consider that wealthier members of society may actually benefit from limiting social inequality since higher inequality would increase violence and eventually lead to political turmoil or revolution (Acemoglu and Robinson 2000).

Finally, Bourdieu and Passeron (1970) have suggested that pupils from lower social background are underestimating their probability of success in education. This is not a completely incredible idea; however, it is not clear why such a systematic bias would appear. There is no reason for children from poor families to adopt beliefs undermining their interest. The only way to explain such a situation would be to propose a model where the local type of information they received tends to influence their belief in a systematic way. Such an idea is actually developed by Piketty (1995) who proposes a model of self-fulfilling prophecy where individuals from a poor background do not believe that education will give them an opportunity of social mobility, and as a consequence the society shows a systematic reproduction of inequality confirming their belief. While such an idea is acceptable, it would need much more empirical evidence to be considered as a major contender for explaining the reproduction of social inequalities.

Overall, the main problem with the culturalist and radical ideas is not their holistic nature. As we argued, these ideas can be easily translated into the modern economic debate. Their main problem is that they did not present a fully satisfying explanation of the phenomenon. This is certainly due to the fact that they were not just scientific, but also political,

arguments motivated by the desire to denounce the liberal society. As argued by Weber the non respect of axiological neutrality is one of the main causes of scientific mistakes. Political motivation often lead scientists to support theories beyond what the sheer empirical evidence would suggest.

Boudon's rational action theory

Boudon's approach in *L'inégalité des chances* was different. Boudon did not propose a top down theory of society to explain how the education system works. He looked into a bottom up analysis of the school system and its actors. Using simple principles about rational individual behaviour, Boudon argued that all of the observed inequality can be explained by individual choices.

The initial opposition between Boudon and other analysts of education, in particular between Boudon and Bourdieu, became a classical opposition in French sociology. While the debate was presented as opposing individualism versus holism, this is somewhat misleading. Fundamentally, the radical approach was not intrinsically holistic since individual actors were facing constraints, had preferences and beliefs which might easily be integrated into an individualistic model. The main problem was that the radicals' belief in the primacy of social constraints led them away from the rigorous and meticulous study of the primary unit of decision, the individual. While their argumentation was not a-individualistic *per se*, their lack of theory of individual decision was a main shortcoming. In contrast, Boudon's proposal was specifically to look at educational choices with a proper decision theory inspired by the economic theory of rational choice. This explanation is now familiar to economists but it seemed quite provoking when Boudon proposed it in 1973.

To explain why children originating from different social backgrounds made different educational choices, Boudon proposed to look at all factors which might influence individual choices: anticipated gains and costs of education, and the uncertainty surrounding choices. Among the principles put forward in his 1973 book for understanding education inequality, three refer to this point:

1. *In every educational system, the individual and/or the family have to take, at some points in the curriculum, decisions about staying/not staying at school. […]*

2. For each of these situations of choice, there are, for each social background, costs and benefits to expect from each alternative.

3. In addition, for each of these situations of choice and for each social background, there is a degree of risk associated with the choice to be made.

Clearly, these factors are not the same for pupils from different social backgrounds and, thus, their choices will not be the same. Two main reasons were put forward by Boudon. First, the economic cost of education is higher for families from a low social background[4]. This is exactly the unequal opportunity assumption made by Becker (1967) in his classical economic analysis of the problem. Second, the *subjective* benefits of education are not the same for pupils from different social backgrounds.

At this point, Boudon departed from economic analysis. While an economist would have measured objective benefits by the *absolute* measure of gains derived from educational investments (Becker 1964), Boudon (1973) adhered to a psycho-sociological tradition of relating subjective benefits with the position of individuals *relative* to their initial level of *aspirations*. Specifically, he divided scholastic achievements in two categories, success and failure, depending on whether pupils' aspirations were fulfilled or not. In addition, following Keller and Zavalloni (1964), he assumed that pupils' aspiration level is determined by the social status they have in their family as a child. Since individuals do not have the same initial status, they will not make the same decisions. Moreover, the same average level of school achievement would be categorised as a success by low-status children (social promotion) or as a failure by high-status children (social demotion).

Boudon simply assumed that individuals try to avoid a social demotion and to reach a social promotion. Thus, he said, higher education levels are more valuable to pupils from a high social origin than to pupils from a low social origin since a high level is required by the former pupil for just avoiding social demotion while an intermediate level would be enough to reach the same goal for a pupil of a lower origin.

In his later work (Boudon and Bourricaud, 1990), Boudon relied essentially on the role of aspiration levels to explain the social differences in educational choices. This explanation has been quite successful in the sociology of education favouring a rationalist approach because it is so intuitive. However, the behavioural hypothesis under this explanation is most often overlooked. It was stated by Boudon (1973) as follows:

« The expected benefit from reaching an incremental level of education […] is higher for an individual whose social position is closest to the highest levels of the social stratification system and lower for individuals whose social position is closest to the lowest levels. ».

It is very simple to represent this idea graphically (Figure 1).A close look at this hypothesis shows that it is actually so simple that it is, as such, undistinguishable from the culturalists' hypothesis that children from higher social background just like education more. While the

[4] He also included in his 1973 book the idea that poor families face a psychological cost when their children are socially promoted and leave the family background. However, this idea, inspired by Parsons (1944), has not received much support since and Boudon did not use it in later works.

intuition about aspirations and the risk of demotion is intuitive, we may feel that it is not fully captured by this representation. For instance, the aspiration level appears nowhere in Figure 1.

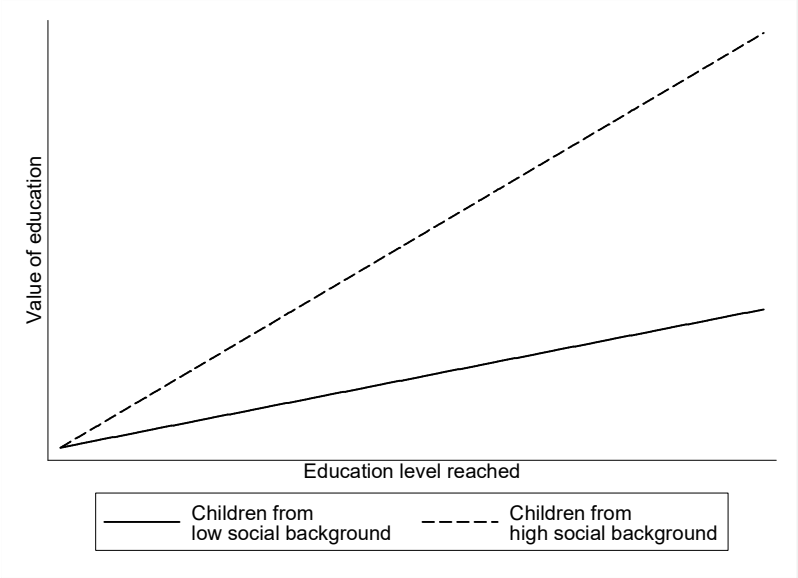

Figure 1

Later on, followers of Boudon's approach have proposed another interpretation of the role of aspiration levels. Breen and Goldthorpe (1997: 283) suggest the following role for aspiration levels:

"We begin with an assumption regarding aspirations: that is, that families in both classes alike seek to ensure, so far as they can, that their children acquire a class position at least as advantageous as that from which they originate or, in other words, they seek to avoid downward social mobility".

More precisely, they assumed that families attempt to maximise the probability for their children to reach the same level of social status as they have. Such a hypothesis implies a utility function with one step at the aspiration level, as depicted on Figure 2.

This hypothesis now gives a clear role to the aspiration level. However, it still is not clear why families would have such a peculiar value function. For instance, if the aspiration level of one family were secondary education, this family would be indifferent between no education at all and primary education and it would also be indifferent between secondary education and higher education. Any utility derived from education boils down to a jump at the aspiration level.

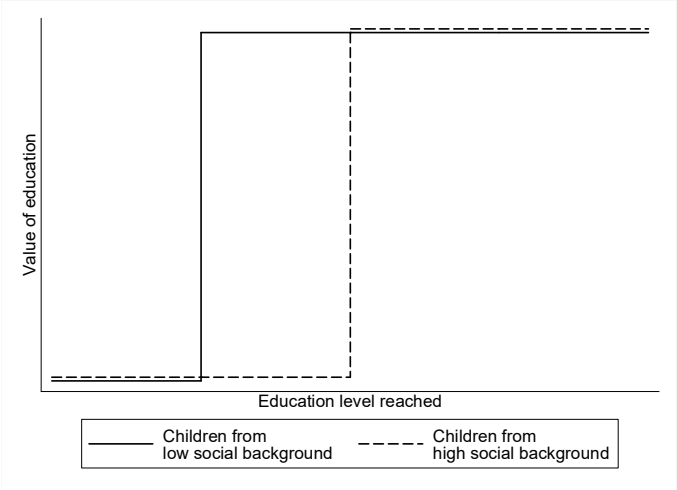

Figure 2

A close look at the behavioural foundation of the rational action theory proposed by Boudon leaves therefore the reader a bit unsatisfied. While very intuitive, when formulating the principle of his theory, it is not clear how the utility functions implicitly postulated by Boudon and later by Breen and Goldthorpe avoid the issue of the ad hoc criticism.

In what follows, we show how new developments in the economic theory of decision, which were not available when Boudon wrote *L'Inégalité des Chances*, can provide a strong foundation to the Rational Action Theory linking social origin, aspiration levels and educational achievement.

The economic foundation

In the 1970s, the economic science lacked a proper framework to integrate the notion of aspiration. The idea that the satisfaction derived from a given level of education depended on social origin would have been met with scepticism by most economists. Since the 70s, however, economics has adopted many insights from psychology in its mainstream. By means of simple experiments, two psychologists, Kahneman and Tversky, succeeded in persuading economists that some basic economic predictions of rational behaviour were systematically refuted and they proposed a coherent framework, called Prospect Theory, to explain most of the observed anomalies. Daniel Kahneman received the Nobel Prize in economics in 2002[5] for his work on human decision, and his seminal paper with Amos Tversky (Kahneman and Tversky 1979) is one of the four most quoted articles in Economics. The notion of "aspiration level" directly derives from the "reference point" assumption

[5] Amos Tversky died in 1996.

which they brought to economics. Decision-makers, they say, do not value absolute outcomes but gains and losses relative to their reference point. An obvious illustration is given by Kahneman (2003) in his Nobel Lecture:

> *Two persons get their monthly report from a broker:*
> *A is told that her wealth went from 4M to 3M*
> *B is told that her wealth went from 1M to 1.1M*
> *"Who of the two individuals has more reason to be satisfied with her financial situation?"*
> *"Who is happier today?"*

It is evident for every standard reader that person B is most likely to be happier today than A since B experienced a gain while A suffered a loss. However, such an assertion is in contradiction with the standard assumption in economics which posits that individuals consider their whole wealth to determine their level of well being. With such an assumption, A should be happier as he/she is still wealthier than B by a wide margin. Over years the evidence of the relativity of satisfaction has become more and more predominant in economic studies. It has been shown for instance that workers may be happier if they have a low pay in a company where they are in the top range of the scale than with a high pay in a company where they are in the low range of the scale. Furthermore, recent work by Rayo and Becker (2007) shows that the existence of a reference point as an aspiration level is optimal on an evolutionary point of view as individuals with aspiration levels will be more successful than those with a more standard utility function.

The "discovery" of aspiration levels in economics may seem a priori quite ludicrous for other social scientists who had been talking about this concept for a long time. However, the strength of the work of Kahneman and Tversky was to propose a clear (and testable) framework to study the role of reference points in decision making. Specifically, the existence of a reference point is associated with two postulates:

- Diminishing marginal sensitivity around the reference point: the utility function is concave above the reference point and convex below. This is due to the diminishing marginal sensitivity both to gains and to losses.
- Loss aversion: a loss is subjectively more costly than a gain (for a similar change in the outcome).

These two principles yield the famous pattern of the value function postulated by Prospect theory around the reference point:

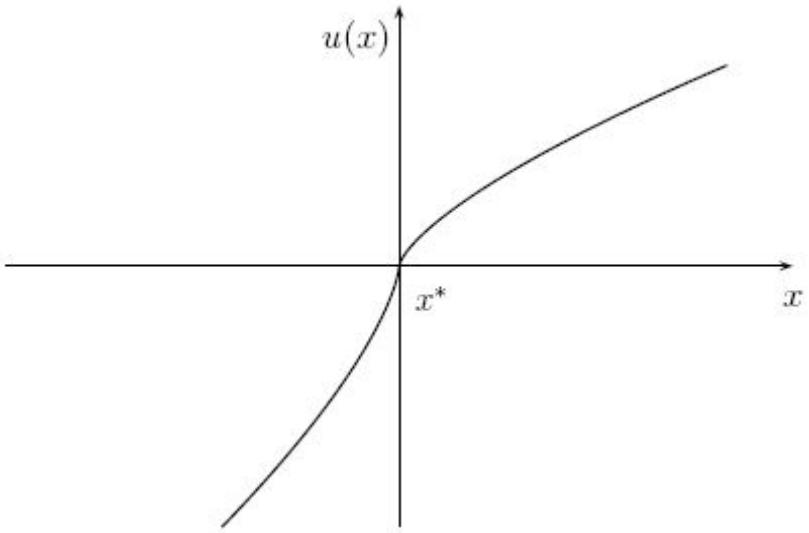

Figure 3

Within such a framework, it becomes possible to give an economic foundation to the observed social difference in educational choices. If pupils from different social backgrounds have different aspiration levels, like Boudon assumed (following Keller and Zavalloni, 1964), then they will make different decisions when faced with a risky choice in education. The difference in choice will stem from the fact that the difference of curvature in the value function, which is concave for gains and convex for losses, automatically implies a difference in the attitude toward risk. A concave utility function is associated with an aversion toward risky options while a convex utility function is associated with an inclination to opt for risky options. In other words, people who face a large probability, but no certainty, of winning a large prize make conservative choices not to jeopardize their winning situation, whereas people who face a large probability, but no certainty, of losing a large sum take risks in an attempt to avoid losing.

Now let's consider two pupils A and B equally skilled. A is from a low social origin and B from a high social origin. When they finish high school, both A and B may opt, either for university or for a short professional training. University is quite rewarding if they are successful, but a failure would leave them without a diploma on the job market. On the other hand, professional training offers lower salary, but bears almost no risk of failure.

Although the choice faced by pupils A and B is objectively identical, their subjective aspirations are very different. Having succeeded in high school is already felt as a positive achievement for A, who comes from a low origin; but staying there looks like a failure to B, who, coming from a high origin, aspires to get a university level. Therefore, Prospect theory predicts that in such a situation A will be risk averse and happy to be assured of earning a decent wage. On the other hand, B will be risk seeking and unhappy to get anything else than the highest wage in spite of the risk of failure.

Prospect theory yields a clear theoretical support to Boudon's intuition regarding the role of aspiration levels in education. In this explanation, individual uncertainty and (reference-dependent) attitudes toward risk play a central role. As a simple corollary, differences in aspiration levels should exert a stronger effect on pupils whose chance of success at later stages in education is uncertain. Indeed, very good pupils do not face any risk of failure, and very weak pupils do not have a chance to succeed. Therefore, when the outcome of a choice to continue further in education is pretty certain, risk attitudes will not play any role in their choice.

This prediction receives empirical support from Figure 4 below, extracted from Erikson and Jonsson (1996), showing the social differences in educational choices in Sweden at the age of 15. The bell curves represent the distribution of grades for pupils of upper classes (UpCl) and pupils from lower classes (LwCl). The S-shaped curves represent the probability to choose the general curriculum leading to university. Figure 1 shows that pupils from higher social background are not only more likely to have higher grades, for a given grade they are more likely to opt for long studies. As suggested by the influence of risk attitude on educational choice, when pupils have either a very low or a very high Grade Point Average (GPA), social differences induce only small variation in choices. In contrast, choices diverge widely at intermediary levels of the GPA.

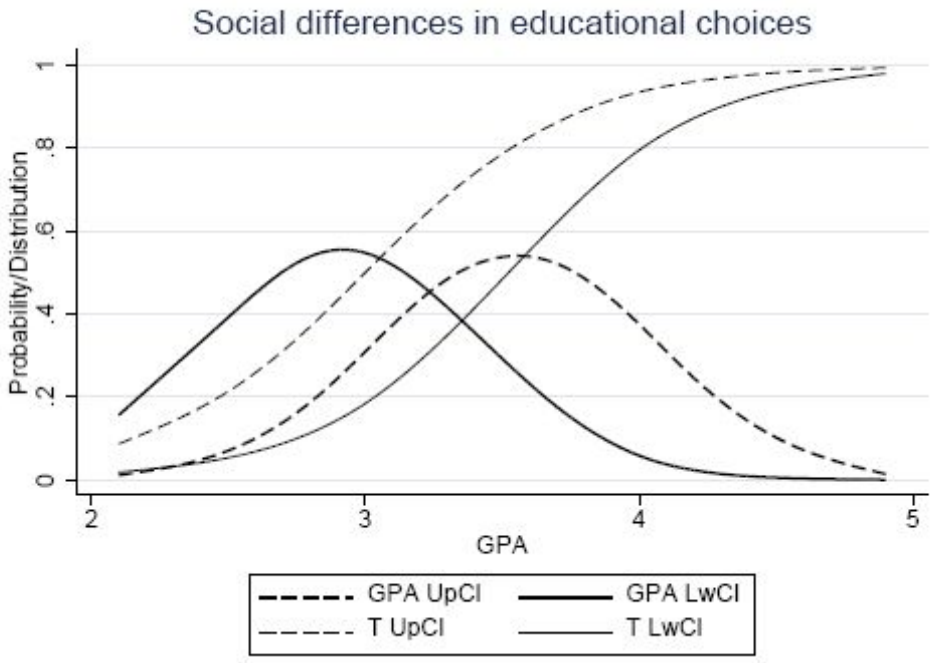

Figure 4

The experimental evidence

The hypothesis that aspiration levels differ and play a role on educational choices is intuitive. It is, however, difficult to test empirically. The studies by Davies et al. (2002) and Holm and Jaeger (2006) present results in agreement with the RAT explanation: pupils from lower social origin make different choices even when ability is controlled for. However, the aspiration level explanation is not the only one. Economists argue for instance that families from lower social background face a credit constraint which may prevent them to pay for education. Pupils from higher social background could also have better opportunities later on the job market thanks to the social capital of their families. For this reason, the rate of return of their investment in education would be higher (see Lévy-Garboua 1973, for evidence in the French case).

The main problem with testing the aspirations-hypothesis is naturally that individual aspirations are not directly observable. It is therefore hard to assess the causal role of aspiration levels in situations of choice. While some empirical studies ask pupils or families about their "aspirations" regarding educational achievement, the correspondence of answers with their theoretical meaning is not clear. In Prospect theory, aspiration levels represent individual reference points, which would reflect past achievements of parents adjusted for intergenerational changes of economic conditions and the child's ability. In empirical studies, the "aspirations" are more likely to describe the social position that parents "dream" for their child in the future, which is higher than a rational expectation of school level dividing success and failure. Furthermore, even if aspiration levels were correctly measured, a spurious correlation between choices and aspirations might be observed, merely because unobservable characteristics determine both reported aspiration and educational choices. In econometrics (the branch of economics dedicated to empirical statistical studies), this problem is referred to as "endogeneity".

This endogeneity problem is very hard to solve. Ideally, it would take an observable situation in which some pupils form higher aspirations for almost random reasons. Obviously, this type of occurrence is rare. Most of the observed variations in aspirations are linked with changes in characteristics that also directly affect educational choices (good grades, change in peers, success of a family member).

Therefore, an experimental design may prove useful. The main features of the educational choice model can be reproduced in an experimental setting in which the variables affecting individual choices are strictly controlled. As a further advantage of such procedure, the empirical literature on prospect theory has shown that it is easy to manipulate individuals' reference points by appropriate framing of their initial situation.

In our experiment, we reproduced three main features of educational choices: (i) investment in time, effort and money in tasks which increase the individual's wealth; (ii) recurrent choices of stopping or continuing; (iii) riskiness of choices associated with failure

in performing tasks of increasing difficulty. However, the parallel with education was never mentioned explicitly during the experiment. 129 subjects participated to this experiment in eight sessions, four in Paris and four in Montreal. They received a fixed fee for their voluntary participation plus a variable gain which depended on their decisions and success in the game. A detailed report of the experiment and results can be found in Page, Lévy-Garboua and Montmarquette (2007).

The educational system was simulated experimentally by relating earnings with the successful attainment of three levels, which could be thought of as primary, secondary and higher education. Each level was divided in a number of stages which mimic the number of years required by each education level: 9 stages for level 1, and 3 stages for both level 2 and 3. Completion of all stages was compulsory at level 1, and optional for subsequent levels. At each stage, participants had to perform a painstaking and difficult task (solving a level-dependent number of anagrams -6, 9, and 12 respectively- in 8 minutes). At the end of one level, participants who had solved less than two-thirds of the required anagrams failed and were eliminated. Successful participants were given the choice to stop there or to continue to the next level[6]. This is an uncertain choice since there is a (subjective) probability of failure at the next level. When stopping now, the participant received a reward which increased with his/her performance so far. However, the participant had to pay a cost to continue at the higher level and this investment was lost in case of failure. The cost of participation was set to zero for the first level and increased with the level.

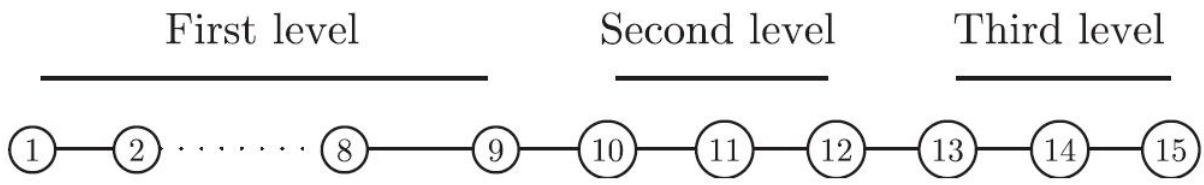

Figure 5

[6] There was no possibility to continue after level 3.

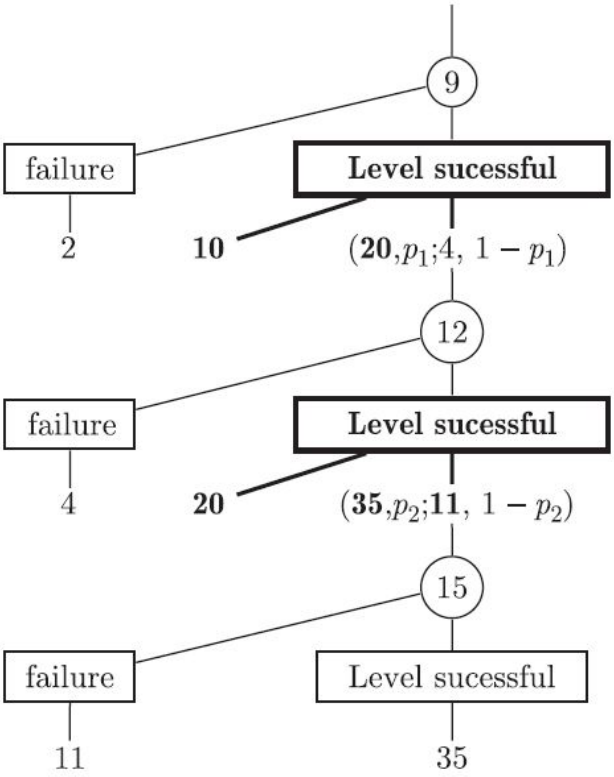

Figure 6

We used a framing method to manipulate the reference point-aspiration level of participants. To induce a low aspiration level, we presented to a first treatment group any progress in the experiment as a gain. Starting with an outcome of zero, any progress in the game would yield a positive reward. On the other hand, to induce a high aspiration level, we presented to a second group of participants the fact to stop before the end as causing losses. To do so, we endowed them at the beginning of the experiment with an amount of Can$35 (28€). However, one part of this endowment would be withdrawn if they were to finish before the end of the experiment.

Importantly, the structure of payments was the same in both treatments as Table 1 shows. Only the presentation differed. In pure monetary gains, passing from one level to another gives exactly the same amount of money. However, we hypothesised that the subjective value given by participants to the difference between two levels would differ across treatments due to the difference in framing.

Payments framing for the two treatments

	Initial endowment	Level successfully passed			
		None	1	2	3
Treatment "Gains"	None	$2	$10	$20	$35
Treatment "Losses"	$35	−$33	−$25	−$15	$0

Table 1

Figure 7 shows the main result of the experiment. Participants in the loss framing treatment (LF) on average chose more often to continue in the experiment and to take the risk of going to the next level than participants from the gain framing treatment (GF).

This experiment therefore suggests that the mechanism described intuitively by Raymond Boudon about the effect of aspiration levels on educational choices could well be at work, with individuals having reference-dependent utility functions such as the one described by Prospect theory with their initial social origin as a reference point.

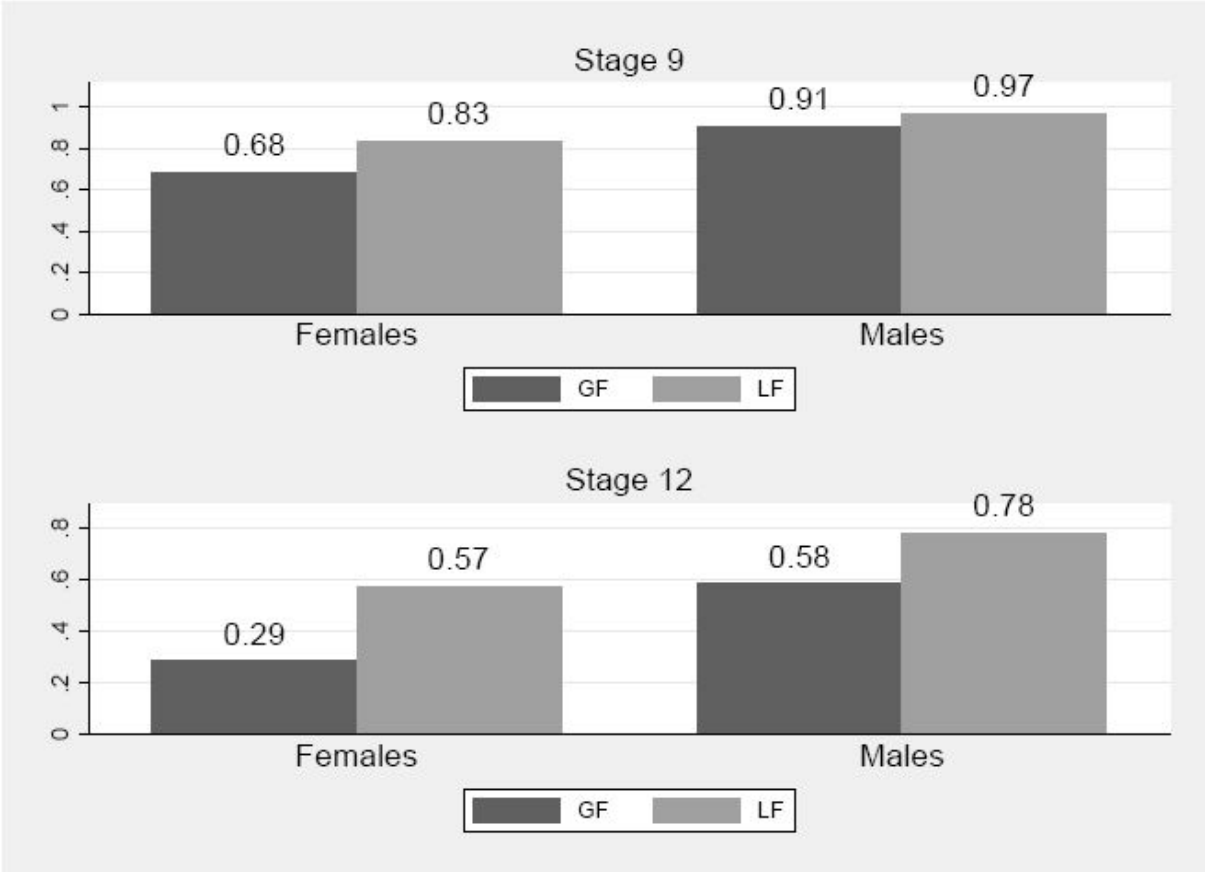

Figure 7

Discussion

Recent developments in the economics and psychology of decision make it possible to give a theoretical underpinning to the argumentation of Raymond Boudon about the role of aspiration levels in education. Interestingly, the mechanisms are not exactly those initially assumed by Raymond Boudon. The effect of aspirations on choices does not stem from differences in slopes of the value function (an increase in educational achievement being more valuable for a child from a high social background), as described by Figure 1. It requires a change in risk aversion caused by the concavity of the utility function around the reference point. However, the broad assumption that aspirations matter in educational choices and that pupils with different aspiration levels could end up from their own volition with different levels of education makes sense in a renewed economic framework in which aspiration levels are reference points. Prospect theory allows proper modelling of the role of aspirations on choices. However, all specific assumptions of Prospect theory are not necessary for understanding this mechanism and a gain in theoretical parsimony seems possible. The two crucial assumptions are the reference-dependence of value or utility, and the concavity (risk aversion) of this function around the reference point.

An important point to notice is that fundamentally this new explanation of the role of aspiration levels rely, as for the culturalists and the initial Boudon's theory, on the hypothesis that individual from different social background have different preferences toward education. Differences in reference points are indeed difference in preferences. As a consequence, one may still wonder if the new utility function suggested by the Prospect Theory escape the criticism of ad hocness.

The answer is clearly yes. First, the shape of the utility function comes from a theoretical framework which has received a very large support outside the field of education. Second, regarding the hypothesis of differences in reference points, it is certainly reasonable to assume that pupils from low social background have, on average, lower reference points than pupils from high social background. The level of wealth to which they are accustomed in their family is a likely "status quo" relative to which they will judge their future social achievement either as a success or a failure.

The proposed foundation to the RAT explanation of social inequalities in education warrants further research to improve our understanding of the practical mechanisms of choice of pupils. The present framework paves the way to more theoretical and empirical work on the decision processes of pupils and their role in the crystallisation of social inequalities. The issue of peer effects, for instance, is of particular interest since peers with high (low) aspirations may partly substitute for parents with low (high) aspirations in the reference-dependent utility model.

Finally, regarding the debate on the fairness of inequalities in education, one should stress that showing that inequalities in education largely stem from individual choices is not equivalent to justifying them. In the present case where we assume that preferences are determined by social positions the usual assumption that situations which stem from individual choices are fair can be questioned (Sen 1985). In any case, any debate on the fairness of educational inequalities should rely on an accurate explanation of their formation.

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