



# Education, Well-Being and Aspirations ; a Capability based Analysis of the Secondary Schooling System in France

Robin Vos

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Par Robin Vos

**Education, Well-Being and Aspirations; a Capability based Analysis of the Secondary Schooling System in France.**

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$$\boldsymbol{\phi}$$

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## Education, Well-Being and Aspirations; a Capability based Analysis of the Secondary Schooling System in France.

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### *Abstract*

This thesis proposes to explore the academic inquiries of economic science into education by focusing on its evolution over time and the associated theoretical implications. It will then provide a chronological study of the notions of well-being and aspirations from the standpoint of economic theory while attaching importance to highlight when these notions meet each other in these theoretical formulations (Part I). Findings of Economics of Education and its disregard of pupils well-being and aspirations will lead to the exploration of the Capability Approach as an alternative theoretical framework (Part II). Finally, this thesis proposes an application of the Capability Approach to the French secondary schooling system. It does so by constructing a questionnaire through focus groups and evaluating its outcomes with multidimensional statistics (Part III). This operationalization allows establishing a link between well-being and school-related aspirations through a new methodology.

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**Keywords:** Education, Well-Being, Aspirations, Capability Approach, France

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Éducation, Bien-être et Aspirations : une analyse par les capacités du système d'éducation secondaire en France.

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### *Résumé*

Cette thèse propose d'explorer la conceptualisation de l'éducation dans la science économique en se concentrant sur son évolution dans le temps et les implications théoriques associées. Elle effectuera ensuite une exploration chronologique des notions de bien-être et d'aspirations du point de vue de la théorie économique, tout en cherchant à mettre en exergue lorsque ces notions se rencontrent dans leurs formulations théoriques (Partie I). L'économie de l'éducation, et sa négligence du bien-être et des aspirations des élèves, mènera à l'exploration de l'approche par les capacités comme un cadre théorique alternatif (Partie II). Enfin, cette thèse propose d'appliquer l'approche par les capacités au système d'éducation secondaire en France. Elle le fait en construisant un questionnaire à l'aide de groupes de discussion et en évaluant les résultats grâce à des statistiques multidimensionnelles (Partie III). Cette opérationnalisation permet d'identifier un lien entre le bien-être et les aspirations liés à l'école à travers une méthodologie nouvelle.

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**Mots-clés :** Éducation, Bien-Être, Aspirations, Approche par les Capacités, France

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# Chapter 1

## Introduction

What can I know?  
What should I do?  
What may I hope?

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Kant 1922, p. 646

THESE three questions reflect the scope of Kantian philosophy. His *Critique of Pure Reason* attempts to bring elements of a response to these interrogations. They are even now, three centuries after this philosopher has first formulated them, astonishingly accurate and pertinent. Despite the fact that they seem to be simple and concise interrogations, they give way to both interesting and concrete answers. Their short and simple formulation allows many to relate to any of these three questions and thus identify with Kant's philosophy. In the context of this thesis, the German philosopher's questions seem to be an appropriate starting point. He will also accompany the reader in a vast majority of the epigraphs, reflecting the wide scope of his philosophical inquiries.

The first question is described as “purely speculative” by Kant (Kant 1922, p. 646). He considers that this question is only a means to an end. This end is the two more “practical” questions that follow. Moreover, he clearly indicated that “knowledge can never fall to our lot” (Kant 1922, p. 646), in other words, knowledge will never be entirely acquired as such. Knowledge will thus have an instrumental, yet determinant role in the answering of the two following questions. When considering education to be a way to acquire knowledge, it may be understood as a vector, a means to be more able to answer correctly to the practical and concrete questions that follow. Contrary to the first interrogation, Kant specifies the second question to be “purely practical” (Kant 1922, p. 646) and related to morality, a code of conduct to be adopted. He understands

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morality, or “law of morality” as the rule that “dictates how we ought to conduct ourselves in order to deserve happiness.” (Kant 1922, p. 647).

The third and last question offers a particularly interesting insight for this thesis. This question is double-fold for Kant; he explains that this question “is at the same time practical and theoretical, the practical serving as a guidance to the answer to the theoretical and, in its highest form, speculative question; for all hoping is directed towards happiness and is, with regard to practical interests and the law of morality, the same as knowing and the law of nature, with regard to the theoretical cognition of things.” (Kant 1922, p. 647). Two central notions of this thesis are thus mentioned by Kant in the development of his last question. He develops the notion of hope, which can be understood, at least partially, as aspiring. He explains that every aspiration is oriented towards happiness, which we can reformulate, in a certain manner, to well-being.

These very brief explorations of Kant’s fundamental questions allow to bring forth the linkages which I will attempt to further shed light on in this thesis. Kant’s questions show that there exists a certain relationship between aspirations and well-being since any aspiration is “directed towards happiness” (Kant 1922, p. 647). They also allow for the “practical serving as a guidance” (Kant 1922, p. 647). The practical is indeed what motivated the writing of this thesis, stemming directly from experiences as a volunteer, an educational assistant, and a teacher. More specifically, the importance of aspirations, the reflection of pupils on their schooling experience and what they expect from school has always been a major practical drive for the further exploration of this specific theme within school. As a volunteer with children in difficult situations relating to school (either persistently lower grades, behavior or because they did not speak french), a colleague appeared to be particularly resigned. He found that our efforts to assist these pupils were often in vain, and one day said to me: “there is no point in attempting to make a donkey drink if it is not thirsty”. This metaphor is very similar in form and probably identical in content to the English proverb which says that “you can lead a horse to water, but you can’t make it drink”. It is difficult to disagree with such a statement but appears to me as placing the focus on the wrong objective. I responded by saying that “we should not try to make the donkey drink, we should figure out how to make it thirsty”.

This discussion then sparked my curiosity and coupled with the discovery of economics of education, it appeared that a wide-ranged field of inquiry lay open for exploration. Economics of education does indeed not appear to mention any form of ‘aspiration’ that would drive a pupil to invest in their own education. Besides the hope of a ‘good’, well-paid job, economic analysis does not tie any importance to other intrinsic values of education. Many pupils I have had the opportunity to work with were unable to understand the point of studying mathematics, physics or other languages. As a consequence,

some of them entirely discarded any form of interest in school, and would rather just start working to earn money directly. Economics of education may to some extent integrate this and would interpret such a decision as a non-willingness to ‘invest’ in education. Nevertheless, a variety of reasons may motivate a pupil to skip school entirely and start working. The diversity of such reasons and their pertinence are left aside by economic theory.

The difficulty to properly shape and fulfill their aspirations appears to extend beyond secondary education for a considerable amount of students. While writing this thesis I taught several promotions of first-year students, whom I all asked to introduce themselves<sup>1</sup>. A vast majority of these students were there for one of two reasons. The predominant one, was them being there ‘by default’. This relates to students who were there because they had no other *idea* of what they wanted to do, without displaying a specific motivation to do something else. The second reason was that the student getting rejected from another path. When coupling this with the extremely low success rates of those first year’s students (hovering somewhere between 20-25%), it appeared to me that there was a major issue with the shaping and achievement of these student’s true aspirations.

All of these experiences motivated this thesis greatly and underlined the pertinence of the questions that drove this study. They also contribute to the application of the theoretical findings to the French secondary schooling system. As discussed further, very few adaptations of the capability approach have been made for France. Alongside the previously exposed hypotheses and intuitions, France emerges as a field in which the reconsideration of elements of its secondary schooling system, in the light of the capability approach, may shed light on some of its shortcomings.

It appears crucial to consider the pertinence of the exploration of such hypotheses in the scope of economic science. Economics provides a relatively solid and simple answer to the question of ‘why education?’ . In a nutshell, the more ‘traditional’ scholars consider that education is justified in economic terms through the finding that more education accounts for higher productivity. This, in turn, allows higher salaries and therefore, a more booming economy. In such a manner, education has a quite direct and positive translation into economic aggregates, namely wages, and Gross Domestic Product for example. Despite this illustration being oversimplified, it does convey the fact that economists do find an economic justification for education (and have extensively researched it under the economic lens) but it also shows that economists do not appear to ask any follow-up questions. This thesis then proposes to expand the inquiry of economists beyond the sole

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<sup>1</sup>The conclusions I draw from this experience have no statistical power whatsoever and are evidently completely circumstantial.

## INTRODUCTION

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aggregates which are conservatively approved by their science. By enhancing the inquiry of education, and the associated notions of aspirations and well-being, it may also be found that increasing education *qualitatively*, can lead to an increase in economic aggregates. In such a manner, expanding on the importance of aspirations and well-being as impacting academic performance, may result in these notions to have (in)direct economic consequences.

This gives place to the first set of questions this thesis will focus on. To what extent does economic theory allow to understand and transcribe the diversity of attitudes, decisions, and aspirations pupils may have regarding school? Moreover, do economics of education provide adequate modelization to achieve its own objectives?

Part I will then explore and attempt to show the inefficacy of ‘traditional’ economic theory with regard to its own objectives. It will do so by reviewing economic theory, specifically economics of education, while also exploring the notions of aspirations and well-being. By adding these two notions, traditionally absent from economic theory, this thesis will attempt to provide insight into some of the missing dimensions when considering education. As mentioned, the absence of these notions may result in an inefficient manner of considering education, even if it merely attempts to evaluate its outcomes in terms of economic aggregates. Throughout the chronological review of economics of education, attempts will be made to find periods where economic theory incorporates the notions of well-being and aspirations. The following chapters will then delve deeper into these latter two concepts.

This first part will also permit to shed light on the underlying theoretical considerations on education, well-being, and aspirations from other social sciences. As economic science is (arguably) a *social* science, psychology, sociology, and anthropology may provide constructive insights into the complex notions that will be explored. The inquiry into these neighboring sciences will further conclude to some of the shortcomings of economic theory with regards to education and the necessity to find a more appropriate, comprehensive framework for a better understanding of education.

Secondly, importance will be attached to finding an appropriate theoretical framework for the marriage of these three complex notions, while remaining consistent with economic theory. Part II will explore the capability approach as initially coined by Amartya Sen and further developed by many scholars. This approach contrasts starkly with classical economic viewpoints on education, well-being, and aspirations. Nevertheless, this framework appears to be a pertinent one since it originates from economic literature. Sen’s background as an economist, and as a laureate of the Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel, makes the foundation of his framework very much

economic. With its roots spanning from development economics to social choice theory, the capability approach has found applications in a variety of fields, ranging beyond the borders of sole economics.

Where education is an abundantly discussed notion in economic literature, identifying it's widespread repercussions, the concept of aspirations is largely abandoned. The shift from mainstream economic literature to that of the capability approach will, therefore, allow reinstating a meaningful understanding of well-being. The exploration of this framework for the evaluation of education and the associated concepts of well-being and aspirations will be done throughout Part II. The underlying questions that drive this second part will expand upon the first set of questions. Can the links between education, well-being, and aspirations be comprehensively theorized? If so, to what extent does education impact well-being and aspirations, and furthermore, do aspirations impact education? Finally, if this framework appears to identify these linkages, can they be measured, and if so, how?

Thirdly and finally, I will adapt the theoretical framework of the capability approach to a case study. As such, the last part will be dedicated to the operationalization of the approach with French high school youngsters. I will draw on existing studies from Biggeri et al. 2006 and Hart 2012 to implement focus groups in French high schools. These purely qualitative inquiries will then result in a questionnaire adapted to the specifics of French high schools. These questionnaires will yield an ordinal qualitative database which will then be analyzed using two distinct, yet complementary methodologies of multidimensional statistics. The usage of multiple cluster analysis, complemented with hierarchical cluster analysis, provide insight into the data without determining an *a priori* model and thus allow the identification of relations without a pre-existent model. This initial exploration will allow answering the question: are there any empirically verifiable links between education, well-being, and aspirations? Once some links identified and verified, Part III will propose a final econometric model in order to verify and strengthen the initially exposed relationships. This last model then gives deeper insight into the impact of different dimensions in the questionnaire on school-related aspirations.



## **Part I**

**Education, Well-Being, and  
Aspirations; defining the concepts**



## Chapter 2

# The Role of Education in Economic Science

Man can become man through education only. He is only what education makes him.

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*Kant 1904, p. 107*

EDUCATION has been subject to research for a considerable amount of time. Forms of formal education have been identified in France since the 5<sup>th</sup> century Before the Common Era (Rouche 2003). These systems were complete with an entire cast of teachers and specific teachings. The complexity and the considerable evolution of educational practices, institutions and studies have kept it a field of interest very much alive amongst scholars. It is not only a domain of interest for educationalists and historians but also rallies philosophers, sociologists, and economists who reflect upon it. All these academic inquiries have been very much present in human societies, under one form or another.

The word education as we understand it nowadays can be led back to several origins. One reference is that of *educatio*, found in classical Latin, which is the verb for ‘raise’ or ‘breed’. Closer to our understanding of education in the 21st century, we also find in classic Latin *ducere*. It is the composition of two words, *e* which means ‘out’ and *ducere* which stands for ‘lead’ or ‘drawing’. Close to the Kantian understanding of uneducated human beings who are “naturally wild (...) [and] raw.” (Kant 1904, p. 225) the etymology seems to contain the very purpose of the word. Education is thus to be understood as a necessary stage in the life of a human being.

This chapter will be dedicated to the exploration of *how* economic science has taken up the term of education and introduced it into its theorization. This will lead me to conclude to a staggering lack of understanding of economists of the very role and purpose of education. An attempt will then be made to delve into other social sciences and humanities to gain insight for economic theory as to the way education is to be theorized. As I move through the different phases of development of the field of economics of education, I will attempt to draw links to the notions of well-being and aspirations and assess their position with regards to education in economic science.

## 2.1 Economics of Education, a chronological review

Economics of education as such is a relatively young field of inquiry in economics. This is particularly true when one considers the ancient Greek roots of economics as initiated by Aristotle. This was thus only an embryo of modern economics which encompasses many more domains of research than the sole household management.

When referring to economics of education in modern economics, many authors limit their explorations to the hegemonic human capital theory. This is illustrated by a seminal book by Mark Blaug “Economics of Education” in which he attempts to “define the nature and scope of (...) economics of education.” (Blaug 1966, p. vii). In this “Selected Annotated Bibliography” Blaug’s earliest reference is from 1841 (Mann 1841). In this paper, Mann testifies “to the superior productivity of educated over uneducated workers in similar occupations, and, also, touches on most of the now-familiar “indirect benefits” of education” (Blaug 1966, p. 6). This is a very clear foreshadowing of the rise of human capital, 120 years before it’s time. George Psacharopoulos adds that economics of education “only formally appeared as such in the literature in the early 1960’s” (Psacharopoulos 1987, p. xv) thus referring to human capital theory.

This vision has been more clearly specified by Woodhall who delimits economics of education to the studies of “the contribution of education to economic growth, the profitability of investment in education (including estimates of the social and private returns to education), the role of educated manpower in economic development (including attempts to forecast manpower requirements), the costs of education (including questions of cost-effectiveness and productivity), the finance of education and more recently studies of the effects of education on the distribution of income and wealth.” (Woodhall, in Psacharopoulos 1987, p. 1). It is to be noted now that economics of education have not been identified as such by the earlier authors I will discuss here. Their contributions mainly lie in their studies of the contributions of manpower and labor to economic devel-

opment. This field overlaps very largely with modern labor economics but it nevertheless lays the foundations for what will be called economics of education centuries later.

I argue that economics of education finds its roots long before the formalization of human capital. Despite these rich roots, human capital theory has since the early 1960's monopolized the landscape of economics of education. This has led many scholars and institutions to be unable to see beyond its theoretical scope. In this section, I will attempt to draw upon some of the few authors who have analyzed economics of education as a larger concept than mere human capital. This will allow reinstating this field of inquiry in its full magnitude. Moreover, it will give a more complete understanding of the shortcomings of the hegemonic human capital models. This starts with an exploration of writings which precede classical economics leading to human capital. From there I will attempt to move beyond this theoretical framework by incorporating elements of other social sciences and humanities.

### 2.1.1 Mercantilism

As noted by De Meulemeester, the earliest author who can be associated with economics of education is William Petty (De Meulemeester 2007). Petty attempts to measure “the value of a human life by assimilating it to the salaries earned during a working-life” (De Meulemeester 2007, p. 91, own translation). The idea that De Meulemeester conveys here is that Petty is the first to study the importance of the labor force.

In his correspondence, William Petty clearly states one of his ambitions for his essays in political arithmetic. Among other points, he declares that he intends to expose “what the value of people are in England (...) with a method how to estimate the same, in any other country or colony.” (Petty 1899a, p. 115). As foreshadowed by De Meulemeester, Petty uses a mixture of national accounts and demography to calculate a per capita “value of people”. He firstly calculates the national income as the sum of the people’s expenses, the rent of lands and the “profit of all personal estate”. From here he deduces that:

“the Labour of the People must have supplyed (...) Twenty Six Millions, the which multiplied by Twenty (the Mass of Mankind being worth Twenty Years purchase as well as Land) makes Five Hundred and Twenty Millions, as the value of the whole People: which number divided by Six Millions, makes above 80 l. Sterling<sup>1</sup>, to be valued of each Head of Man, Woman, and Child, and of adult Persons twice as much” (Petty 1899b, p. 267)

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<sup>1</sup> “l. Sterling”, sometimes only “l.” stands for livres Sterling.

In this specific passage, William Petty is calculating the losses suffered by England during war. To do so, he proceeds by identifying the monetary values of each individual who died in the conflict. He does not solely apply the results to citizens killed in combat but generalizes this to “compute the loss we have sustained by the Plague, by the Slaughter of Men in War, and by the sending them abroad into the Service of Foreign Princes.” (Petty 1899b, p. 267). Proceeding as such, William Petty introduces a numeric value to evaluate the contribution of each person to national wealth, even before the classical economists.

This is the only reference in Petty’s writings to a clearly identified and detailed method. In other parts, he simply states values ranging from 60 to 80 livres Sterling. Such a result very largely foreshadows the techniques that will be developed centuries later by scholars within the field of economics of education. Nevertheless, the method of calculation appears arbitrary, since no justification whatsoever is provided by the author. In concordance with the delineations of this field of inquiry, as drawn by Woodhall (Woodhall, in Psacharopoulos 1987, p. 1), Petty attempts to estimate the contribution of labor to economic development on a national level.

The vector through which labor is a contributing factor to national wealth is not described by Petty, he nevertheless attempts to differentiate the levels of contribution by dividing the population into different groups. Drawing on the example of an Irish rebellion in 1641<sup>2</sup> Petty calculates the losses to national wealth in terms of land, housing, livestock, food, and people. He differentiates between soldiers<sup>3</sup>, men, women, children, and slaves. He thus indicates that “the Charge (...), Train of Artillery, and General Officers included, cannot be less than 15 l. per Head” (Petty 1899b, p. 152) which are to be contrasted with “Slaves and Negroes [who] are usually rated, viz. at about 15 l. one with another; Men being sold for 25 l. and Children 5 l. each”. In another context he pursues his explanation by declaring that “wives and children (...), sick and impotent people, idle beggars and vagrants” whom he considers to be a “burden to the public, consuming annually so much as would be otherwise added to the nation’s general stock.” (Petty 2003, p. 65).

As Petty provides a clear cut separation between groups of the population, he does not provide an objective method in his proceedings. What these selected passages reveal is wisely applied calculus to demographics. In doing so, the author is able to provide numerical and mathematically verifiable answers to his questions of losses led by the country due to war, epidemics or even trade of slaves. He does not provide an exploration of the determinants that constitute the actual “value” he initially attributes to individuals.

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<sup>2</sup>This was a rebellion opposing Irish Catholics to the English government due to a feeling of oppression and discrimination on religious grounds.

<sup>3</sup>This is likely to be the example De Meulemeester drew his conclusions upon.

In this line of reasoning, Petty lacks to provide further insight into the role of education as an economic factor. He more specifically relies on his vision of how individuals can contribute to material production. With his reference to slaves, he estimates returns from men to be threefold bigger than that of children. When considering women and children, he values their production to be nonexistent. This denies the very value of both domestic work and education.

Nevertheless, the result that this author provides – i.e. the attribution of numeric values of contribution to national wealth – does resemble modern human capital outcomes. As I will explore in the following subsections, human capital attempts to measure the monetary revenue generated by education, by estimating Gross Domestic Product Per Capita, for example. In this sense, William Petty may be viewed as an early precursor of human capital.

### 2.1.2 Classic

Classical economics bring about a vision of economics of education that paved the way for the hegemonic human capital framework. Mainly Adam Smith is commonly cited to have initiated the study of humans as contributing to national economic development (Sweetland 1996). Smith is very clear in the opening paragraphs of his seminal *Inquiry* about the fundamental role played by men and their skills in the economic wealth of a country.

“The annual labor of every nation is the fund which originally supplies it with all the necessaries and conveniences of life which it annually consumes, and which consist always either in the immediate produce of that labor, or in what is purchased with that produce from other nations.” (Smith 1902, p. 39)

As such, Adam Smith foreshadows modern calculations of Gross Domestic Product. In line with Petty, he identifies the country’s ability to produce to be the backbone of its wealth. Moreover, Smith goes further into his inquiry into the nature of labor. Where Petty considers it from a quantitative perspective by aggregating the values of human beings on a national scale, Smith also considers a qualitative aspect. He states that the ability of a nation to enrich itself relies not only on the number of people who work but also on the “the skill, dexterity, and judgment with which its labor is generally applied” (Smith 1902, p. 39). This constitutes an elaboration on Petty’s mere quantitative argument by incorporating the idea that the quantitative output of labor might differ from one person to another, given qualitative factors.

This can be viewed as an enhancement of the informational basis from which economists of education draw to account for the national wealth. Nevertheless, it has to be noticed that the point of view has not shifted. Smith, as founding father of classical economics, presages the course of his school of thought; the qualitative aspect of labor is to be considered from a macroeconomic point of view. This implies that the identification of these non-quantitative inputs is a mere means to an end, the end being the wealth of the nation. The individual, her or his well-being, wishes or aspirations are not mentioned nor do they seem to have an importance in Adam Smith's consideration.

John Stuart Mill made a large contribution to the understanding of labor to national wealth. He attempts in his *Principles of political economy* to formalize the notion of productivity, finding that “many writers have been unwilling to class any labour as productive, unless its result is palpable in some material object” (Mill 1848, p. 44). In identifying this flaw in his predecessor’s account for national wealth, Mill opens the path to ways of measuring national wealth which is still accurate nowadays. Forms of labor such as housework – which have only been recently recognized as productive (Stiglitz, Sen, and Fitoussi 2009, p. 44) – may be considered productive. Nevertheless, Mill has a prudent stand concerning the valuation of skills:

“Thus, labour expended in the acquisition of manufacturing skill, I class as productive, not in virtue of the skill itself, but of the manufactured products created by the skill, and to the creation of which the labour of learning the trade is essentially conducive. The labour of officers of government in affording the protection which afforded in some manner or other, is indispensable to the prosperity of industry, must be classed as productive even of material wealth, because without it, material wealth, in anything like its present abundance, could not exist. Such labour may be said to be productive indirectly or immediately, in opposition to the labour of the ploughman and the cotton-spinner, which are productive immediately. They are all alike in this, that they leave the community richer in material products than they found it; they increase, or tend to increase, material wealth.” (Mill 1848, pp. 48–49)

Mill introduces here the importance of skills and accounts for them influencing the material output of labor. He does maintain clearly that the skill of the artisan can only be measured with regard to the material wealth it has allowed to produce. Therefore, when considering a baker, he does not value the baker as the person she or he is, nor the skills they possess, but values the bread they can make. A second aspect to be retained from Mill’s writings is that he also introduces the importance of “indirect” productive labor. These forms of labor may include activities previously rejected as being productive. This

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was the case with all labor that had no direct material output which could be valued in monetary terms. In introducing these “mediate” forms of labor, Mill opens the way for services to be considered as profitable for society. Following his argument, one may understand that services such as protection (e.g. the police or the army) but also education as dispensed by teachers, is to be considered as productive. As such, services as education can be introduced in economic analysis with its own, intrinsic value.

By introducing the importance of skills in the level of physical production Mill makes a step towards our contemporary understanding of economics of education. This goes along the lines that were drawn by Adam Smith, who also identified the importance of “the skill” and of the “dexterity” with which labor is provided. The importance of Mill’s contribution to the elaboration of the field of economics of education lies not only in the recognition of the importance of skills. He more specifically introduces the very importance of education itself:

“the labour being (...) employed in conferring on human beings qualities which render them serviceable to themselves and others. To this class belongs the labour of all concerned in education; not only schoolmasters, tutors, and professors, but governments, so far as they aim successfully at the improvement of the people; moralists, and clergymen, as far as productive of benefit; the labour of physicians, as far as instrumental in preserving life and physical or mental efficiency; of the teachers of bodily exercises, and of the various trades, sciences, and arts, together with the labour of the learners in acquiring them; and all labour bestowed by any persons, throughout life, in improving the knowledge or cultivating the bodily or mental faculties of themselves or others.” (Mill 1848, p. 136)

This passage forebodes two separate sub-domains of economics of education that are still actively researched in the 20<sup>th</sup> and 21<sup>st</sup> centuries. First of all, he highlights that education in itself has a market value. Identifying education as a vector to raise material production puts it in a central position to improve national wealth. This seems to be an enhancement of Smith’s analysis, who recognized the importance of skill but did not discern education as a central canal to improve this latter. By linking economics and education directly, Mill explicitly lays the foundation of modern economics of education. As I will be exploring in the following sections, the connection between education and economics as presented here by John Stuart Mill in 1848 is still very much explored in modern considerations of economics of education. In other words, scholars do nowadays still consider education as a vector to developing national wealth.

Secondly, Mill notes the importance of a physically and mentally healthy labor force. He appears to note that ill workers lack “efficiency” and thus their production of physical goods – which is the only virtue of labor according to this author – is decreased. This is a very clear addition to the field of economics of education as it has been developed by the mercantilistic and classic economists so far. Mill’s point is not that of improving human well-being as such, since his argument lies with economic outcomes. Nevertheless, it opens the way to a new informational basis that could lead to the identification of new vectors to influence on the materialistic output of labor. Surprisingly, and contrary to the first link drawn by Mill in the previous quote, this aspect of the labor force has been neglected by inquirers in the field of economics of education. The following sections will reveal the fascination of these scholars with the economic returns of education but will leave aside this crucial point that Mill was able to identify more than two and a half centuries ago.

John Stuart Mill considerably contributes to the formalization of the field of economics of education specifically by setting its goals close to those still pursued nowadays. Moreover, his vision of the importance of a form of well-being – described by him as “physical or mental efficiency” – is a considerable leap forward in the exploration I attempt to make in this thesis. It is still only remotely linked to the notion of well-being I will be adopting in the following sections, but the very mention of this notion represents a solid root to build a consolidated framework of economics of education and well-being.

### 2.1.3 Neoclassic

Neoclassical economics brings formalization and reformulation of previous visions of economics of education. Alfred Marshall has greatly influenced the course of thought on economics of education and more specifically, that on human capital. His vision of this notion has been subject to controversy (Kiker 1966, Blandy 1967, Kiker 1968) by expressing a “pluralistic conception of human capital” (Sweetland 1996, p. 344). This difficulty to interpret the exact vision of this economist might be due to the evolution of his definitions over time.

This scholar quarrel was mainly discussing whether Marshall discarded the notion of human capital as such. Blandy brings insight by highlighting Marshall’s difficulty with the notion of human capital, thus posing a terminological issue rather than a conceptual one. Indeed, in the different versions of Marshall’s *Principles*, many passages can be found which attempt to delineate the notion of capital. Initially confining it to material wealth, Marshall finds it problematic to consider a human being as constituent of capital

as such. The following passage gives insight into the terminological issue that hindered Marshall from a clear cut definition. This is further developed by the author himself in the following passage, in the fifth edition of his *Principles*:

“We have already defined Personal wealth to consist firstly of those energies, faculties and habits which directly contribute to making people industrially efficient (...) if they are to be reckoned as wealth at all, they are also to be reckoned as capital. This Personal wealth and Personal capital are convertible; and it seems best to follow here the same course as in the case of wealth, (...) to raise no objection to an occasional broad use of the term [capital], in which it is explicitly stated to include Personal capital.” (Marshall, quoted by Blandy in Blandy 1967, p. 874)

A slightly different terminology from that of modern human capital is employed. Nevertheless, the notion of an inherent capital to human beings is present in his analysis. On the other hand, Marshall does not evoke the state of well-being of the considered individuals in any manner. In other words, his framework does not examine whether there is an individual gain from having a higher “Personal wealth”. Marshall’s *Principles* introduces another distinctive feature. In the following passage, he underlines the role of education, thus aligning his position on that of Mill.

“The motives which induce a man to accumulate personal capital in his son’s education, are similar to those which control his accumulation of material capital for his son. There is a continuous transition from the father who works and waits in order that he may bequeath, to his son a rich and firmly-established normal manufacturing or trading business, to one who works and waits in order to support his son while he is slowly acquiring a thorough medical education, and ultimately to buy for him a lucrative practice.” (Marshall 1961, p. 549)

In this passage, Marshall operates two main shifts in the analysis of education. Firstly, he analyses the matter of education not solely from a macroeconomic standpoint but also introduces a microeconomic one. So far, authors who have discussed the importance of education discussed it as a factor contributing to the total national wealth. They valued education, not for its intrinsic value, but found it to be a contributing factor to national wealth. Following Marshall, we find that education can also be valued on the individual level. More specifically, he finds education to contribute to personal wealth and thus adding to individual welfare.

Secondly, Marshall introduces the idea of the importance of legacy from parents to their children. In doing so, he indirectly describes a major component of aspirations as defined by psychologists centuries later. As I will discuss in the section dealing with aspirations, these latter may be composed of aspirations one has for himself, but also of those which are projected upon him. This idea is translated by Marshall in the concept of legacy as he describes it here. He finds that a parent may aspire to a certain standard of living for his child, more precisely a “lucrative” one. This consolidates the idea that education has an intrinsic and individual *monetary* value which may be pursued by individuals. In projecting their aspirations for their children, Marshall finds that parents may commit to a form of investment. This investment takes the shape of the “accumulation of personal capital”. This idea had previously been foreshadowed by Ernst Engel (Engel 1883). He offers a formula that is aimed to estimate the value of human beings according to what they cost to their parents for their upbringing:

$$C_x = c_0(1 + x + k \frac{x(x+1)}{2}) \quad (2.1)$$

where  $C_x$  represents the total cost for the “production” of a human being at age  $x$ ,  $c_0$  stands for the cost before birth and  $k$  is the annual percentage of increase in cost.

This formalization proposed by Engel foreshadows both Marshall’s position on education, and also that of more recent Human Capital theory. In operating this formalization, he draws a parallel between human beings - here, children - and economical investments. In providing a cost function for the upbringing of children, Engel hints at the idea according to which education is an investment. No explicit reference made to schooling or education in this cost function. In that perspective, it may prelude human capital, but falls short when accounting for education.

The authors I have discussed so far are not commonly discussed with regards to economics of education. They do present insight into understanding how the importance of education has been progressively acknowledged by economists. Their work provides insight as to which role may be played by education in economic growth, mainly. It is only with Marshall that - without any specific mention - timid progress is made towards the consideration of the importance of education on a microeconomic level. Although the specific terms of *well-being* and *aspirations* – or any relating terms – are never employed by these authors in the context of education and economic science, Marshall hints at an economic role for these notions.

## 2.2 Human Capital; Education at its peak in Economic Science

### 2.2.1 The Early Days: Exogenous Growth and Production-Function approach

Before discussing human capital and its formalization in the following subsection, it seems important to explore the economic background against which it has been painted. Only several years before the seminal contributions of Theodore Schultz and Garry Becker settling human capital as the hegemonic way of considering education in economics, economists were struggling with growth theory. These growth theories – similarly to the previously exposed historic of considering education – did not consider education to be an integral part of the puzzle. Education is then merely viewed as a minor contributing factor to productivity. This is the stance adopted by exogenous growth theory. In opposition to endogenous growth theory, this corpus of literature does not consider any contributing factors to growth beyond labor and capital. The contribution of Robert Solow has sacred this vision in his 1956 paper (Solow 1956), cited tens of thousands of times since then. In this paper he presents his output function as follows:

$$Y = F(K, L) \quad (2.2)$$

where Y stands for the single commodity output and K and L represent respectively capital and labor.

As one may notice, there is no consideration whatsoever for any further contributing factors to the production of Y. Taken as such, this equation will relate how much bread a baker will be able to produce, given the monetary amount invested in ovens, and the amount of time spent preparing and baking the bread. Whether this baker is a talented bread-maker with a great amount of experience and knowledge about his tools or an apprentice on his first day of work, is not relevant. To partially respond to this, Solow introduces “Neutral Technological Change” in his model. He does so by introducing a “kind of technological change (...) which simply multiplies the production function by an increasing scale factor” (Solow 1956):

$$Y = A(t)F(K, L) \quad (2.3)$$

where Y stands for the single commodity output, K and L represent respectively capital and labor and A(t) represents the technological change over time.

By considering technological progress as an external multiplying factor, Solow's production function may safely be labeled an *Exogenous* Growth function. In this situation, technological change only occurs from the outside and independently from capital and/or labor. As such, education can only be represented as an outside factor influencing the productivity of the workers. This seems to be in direct contradiction with previously discussed economists, who – despite only attributing a secondary role to educations specifically – considered education to an inherent part in labor productivity through skills, for example.

According to Blaug (Blaug 1966), the locus classicus of what is referred to as the Production-Function Approach was by Denison in 1962 (Denison 1962). Regarding this new way of integrating education in economic analysis, Blaug declares that “Denison introduced education explicitly into an aggregate production-function model of the American economy” (Blaug 1966, p. 9). Despite Denison not formulating a specific formula as Solow did, he does decompose historical data of American growth rates and attempts to identify its sources. In doing so he comes to the conclusion “that from 1929 to 1957 the increase of education raised the average quality of the labor force at an average annual rate of 0.93 per cent a year.”<sup>4</sup> (Denison 1962, p. 113). A decade later, Denison suggests a classification of sources of growth, in which he explicitly lists “formal education” (Denison 1972, p. 21), once more confirming the direct contribution of education to national income.

These two approaches are both macroeconomic and do not consider education from an individual standpoint. They also have in common the fact that they solely attempt to account for the explanation of growth rates using education as an instrumental variable. Their contribution is major nevertheless; they seem to have contributed to the acknowledgment that education has a role to play in economic analysis.

### 2.2.2 Human Capital and its Formalization

Human Capital has been very largely attributed to Theodore Schultz, notably by Blaug who referred to him as “the father of the concept of human capital” (Blaug 1966, p. 12). However, Blaug acknowledged that Gary Becker’s 1964 “Human Capital” was “the leading theoretical work on this subject” (Blaug 1966, p. 16). In 1993, Gary Becker edits the third version of his already seminal “Human Capital” by adding “A Special Reference to Education” (Becker 1964). This edition occurs only one year after Becker

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<sup>4</sup>The table in which Denison decomposes the sources of American growth can be found in Appendix A. Line 11 of this table shows Denison's direct integration of education as a source of national income.

## 2.2. HUMAN CAPITAL; EDUCATION AT ITS PEAK IN ECONOMIC SCIENCE

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being awarded The Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel. He insists on the importance of distinguishing between *traditional* – i.e. physical – capital as discussed previously and *human* capital. He finds that:

“it is fully keeping with the capital concept as traditionally defined to say that expenditures on education, training, medical care etc., are investments in capital. However, these produce human, not physical or financial, capital because you cannot separate a person from his or her knowledge, skills, health, or values the way it is possible to move financial and physical assets while the owner stays put.” (Becker 1964, pp. 15–16).

In defining human capital as such, it is to be noted that Becker goes beyond “mere” education. He opens the analysis to experience, be it as an autodidact or obtained by training. Moreover, he makes a specific reference to the importance of the worker being healthy. In this line of thought, human capital theory broadens the scope of considered dimensions considerably. Despite the importance of his contribution, the previously discussed notion of human well-being – in the Benthamite sense of the term – nor the idea of aspirations are discussed by Becker. After this promising discussion, Becker narrows down the perspectives considerably when formalizing his analysis:

$$d = \sum_{j=1}^n \frac{k_j}{(1+i)^j} - C \quad (2.4)$$

where n is the number of considered periods, i is the market depreciation of human capital, and where

$$k_j = (Y_j - X_j) \quad (2.5)$$

where  $Y_j$  are net revenues in period j, and  $X_j$  are opportunity costs, and where

$$C = Y_0 - X_0 \quad (2.6)$$

As such, d in equation (2.4) represents the benefits of investment in human capital for the considered individual. This value will be negative as long as the opportunity costs  $X_j$  – i.e. salaries that could have been received had the individual decided not to invest in human capital – are positive. In the long run, for example when the individual has finished her or his education,  $X_j$  will be equal to zero and  $Y_j$  will substantially rise.

One critic that may be addressed to this formalization, specifically with regard to education, is the place given to fixed costs, represented here by  $C$ . These fixed costs are calculated as a *one time* cost, at period  $j=0$ . As such, this cost does not account for the evolution of the educational system. For example, tuition fees for higher education do not seem to be part of this equation, whereas they represent a considerable weight in the decision of attending a university, or not.

By considering human capital according to this formalization, Gary Becker seems to place the focus on monetary interests in human capital. The outcome, represented here by  $d$ , is valued in monetary terms, exclusively. Despite being aware of this, none of his applications account for the larger scope of impact of education<sup>5</sup>. As discussed previously, Becker had already expressed the wider scope of analysis of human capital. Nevertheless, this formalization appears to be more restrictive than the theorization foreshadows. He seems to be aware of this and notes in the last edition of this seminal “Human Capital”:

“My friends in the humanities like Dick Stern may complain that so far I have only mentioned “money”, or they might say “mere money”. Is there any place in human capital theory for education to appreciate literature, culture and the good life? Fortunately, nothing in the concept of human capital implies that monetary incentives need be more important than cultural and nonmonetary ones.” (Becker 1964, p. 21).

Despite the author expressing the *possibility* of human capital accounting for non-monetary valuations, the formalization in equations (2.4) to (2.6) are specifically designed to account for salaries and monetary costs.

Theodore Schultz provides deeper insight into the nature of human capital and how it is to be defined:

“(a) An individual’s stock of human capital cannot be sold, nor can it be given to someone else. It goes with the individual wherever he or she may go. If an individual were to migrate to another country, the government cannot confiscate that person’s human capital. Jews and other ethnic groups facing discrimination and the danger of being expelled have known this fact for ages.  
(b) To take advantage of human capital, an individual must do it in person.

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<sup>5</sup>An econometric application in his 1993 edition of “Human Capital” can be found in appendix B. In this regression table, Becker shows the impact of years of schooling on earnings. He finds a positive relationship between these two dimensions.

## 2.2. HUMAN CAPITAL; EDUCATION AT ITS PEAK IN ECONOMIC SCIENCE

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- (c) The duration of the value of an individual's human capital cannot exceed his or her life span.
  - (d) In acquiring human capital the individual must invest some of his or her own time along with other resources, for example, in acquiring an education and the services of instructors.
  - (e) It is efficient to invest in human capital during the period of youth because the value of time is less than it is when the individual grows older and because there will be a greater number of years in which to benefit from the acquired human capital.
  - (f) Human capital depreciates over time as does physical capital. Some forms become obsolete in a short time because of changing circumstances. Other forms have a long life even as circumstances change. It is exceedingly important to distinguish between short and long life investments, especially so in the case of education.
  - (g) Women, for good reasons, invest in somewhat different forms of human capital than men."
- (Schultz 1987, p. 12)

In this typology, Schultz enhances Becker's delineation of human capital by not only making this form of capital *human* – in opposition to physical or financial capital – but he also makes it an exclusively *personal* form of capital. In other words, Schultz finds that this form of capital cannot be alienated from its owner (points a to c). He also finds that human capital cannot be acquired as one would acquire a machine by simply buying it; according to him, time is a prerequisite to obtaining this form of capital. He specifies this may apply particularly to education, and cannot be acquired as the Wachowski (at the time) brothers imagined it in *The Matrix* film trilogy, by uploading knowledge to a human brain. Furthermore, he identifies the necessity of "other resources"; these might very well refer to the monetary ones like tuition fees, omitted in Becker's formalization (point d). Schultz finds the importance to make these investments in human capital during young age, following many other economists in point (e) (see for example Heckman 2009, Heckman 2012). On the other hand, Schultz reinforces Becker's equations (equations (2.4) to (2.6)) when referring in his point (f) to the depreciation of human capital over time. As mentioned previously, this is translated through the introduction of factor i.

The line of thought of Gary Becker when calculating rates of return to education is furthermore developed by George Psacharopoulos, bringing human capital to an institutional level. As head of education research at the World Bank from 1981 to 1998, he adopted this approach as the leading theory to analyze education and effects on productivity as well as its return to private investment. His contribution to making human

capital theory a hegemonic approach to education lies probably in the fact that he published over 500 papers and books during his scholar activity. His impact goes so far as to have a paper dedicated to analyzing his legacy within economics of education, while still active as a scholar (Jimenez and Patrinos 2003). Along the lines of Becker's analysis of rates of return to education, Psacharopoulos finds that "private returns are higher than 'social' returns" and that "overall, the average rate of return to another year of schooling is 10%" (Psacharopoulos and Patrinos 2004, p. 112) when considering 98 countries<sup>6</sup>.

A distinction is made between the private and the social return to education by Psacharopoulos in appendix C. So far, with Becker and Schultz notably, I have only discussed the impact of private returns to education. Throughout the more recent studies on human capital, many authors differentiate between these two types of returns. The social returns are considered many fold with analyses accounting for effects of education on crime (see for example Lochner and Moretti 2004) on citizenship (see for example Milligan, Moretti, and Oreopoulos 2004) and on health (see for example Currie and Moretti 2003). With these studies and many alike, education is found to impact society as a whole on a larger scale than productivity and an increase in salaries.

### 2.2.3 Further developments in Economics of Education

Despite this considerable evolution of the role of education in economic science, economists still fail to recognize the intrinsic value of education. This can be illustrated by the "fascination with screening" that Klees evokes in 1991 (Klees 1991, p. 722). This screening hypothesis, also called the filter hypothesis (Arrow 1973), is rooted in the progressive acceptance of imperfect information on economic markets. Specifically, an employer has virtually no way to know which skills applicant exactly posses. In its early shapes, human capital theory accounted for worker's skills with years of schooling or diplomas. The screening hypothesis argues that a diploma does not account for all the skills of the applying worker, but acts merely as a screen. The employer uses the diploma to filter candidates to hire, hoping that their diplomas will proxy their skills. The screening hypothesis, therefore, questions the idea that schooling has an impact on skills and therefore productivity. This line of thought has destabilized the hegemonic position of human capital theory through formalization (see for example, Spence 1974 and Stiglitz 1975, among others). Blaug declares that the "implications of the screening hypothesis [make] the empirical status of human capital theory seem much less secure." (Blaug 1989, p. 334). Despite this strong imperfection in the formulation of human capital

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<sup>6</sup>The table of these countries and their returns to education by level of country income can be found in appendix C. This table also presents the studies accounting for these results.

## 2.2. HUMAN CAPITAL; EDUCATION AT ITS PEAK IN ECONOMIC SCIENCE

theory, many mainstream economists fail to acknowledge it, and few to no attempts are made to address it (Klees 1991).

As such, when De Meulemeester wonders in the title of his article “Does Economics of Education Progress?” (De Meulemeester 2007, own translation) and with regards to the exploration that I just proposed, a skeptical answer seems to be in order. It is remarkable how scholars in the field of economics of education have been discussing the same notions since the 17th century. This can be attributed to a larger hegemonic set-up of economic science. With specific reference to education and after an in-depth analysis of the historic literature on human capital theory, Klees finds that “neoclassical economics refuses to consider seriously the destructive consequences of its own criticisms.” (Klees 1991, p. 731). These criticism include notably the screening hypothesis in economics of education and the lack to consider other social sciences.

The conclusion drawn by Klees in 1991 is made with special reference to economics of education, focusing on human capital theory and should be put in perspective. In parallel, research has been conducted on non-monetary benefits of education which “represent positive impacts on utility which are not captured by traditional economic measures.” (Vila 2000, p. 28). This line of research has many ramifications and attempts to highlight the impacts of education which are not traditionally measured in the neoclassical approach to education. In his paper, Villa identifies multiple dimensions which are positively impacted by increased education levels:

- (a) Health benefits
- (b) Fertility benefits
- (c) Benefits for children
- (d) Occupational benefits
- (e) Benefits related to consumption and savings
- (f) Distributive benefits
- (g) Stability of social structures

Previously to Villa, a paper from 1984 by Haveman and Wolfe already highlighted the importance of non-market effects of education<sup>7</sup>. These authors – among many others – show that the scope of analysis of economics of education is not as narrow as Klees put it in 1991. Nevertheless, this vast literature is rarely called upon in the more traditional, neoclassical approach, of economics of education. The gist of this exploration can be captured in Klees’s milder phrasing when he says:

“If education yields increased satisfaction from listening to music or a better

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<sup>7</sup>The table that synthesizes the literature in Haveman and Wolfe 1984 can be found in appendix D.

functioning democracy provides many with diffuse benefits, these outcomes are as integral a part of understanding the efficiency of education as the increased ability to produce automobiles.”

(Klees 1991, p. 728)

Following the “traditional” economics of education, and even the more recent research previously discussed, it can be noted that education has been regarded solely as an *input*. As such, it has only been treated as a means to an end. This is illustrated by human capital theory, but also the later research which attempts to identify a larger scope of impact of education on society. In this sense, one must conclude that economics does not view education as a standalone end to achieve. Moreover, explicit research on the impact of education on individual well-being or ties with aspirations is non-existent in the literature discussed so far. This conclusion is to be put into perspective with more recent work undertaken by economists who broaden their field of analysis to other social sciences.

This standpoint is adopted by James Heckman and several of his co-authors, starting mainly in the early 2000s. Their focus is not solely on pure economics but attempts to draw on psychology and sociology to expand the understanding of education. This allows these authors to consider education as a vector for far-reaching ends, such as physical and mental health<sup>8</sup>. These dimensions are not new as such to the economic analysis of education, as discussed previously. One entirely new aspect that has been introduced by Heckman nevertheless, lies in the taking into account of non-cognitive skill formation. The cognitive skills are the only ones that have been discussed so far and translate in the increase in the individual’s ability to be more productive, for example. When considering the screening hypothesis specifically, the employer screens individuals for cognitive skills which provide him with greater productivity. Following Heckman, taking into account the non-cognitive skills could permit to overcome the issue posed by the screening hypothesis.

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<sup>8</sup>An example of this can be found in appendix E. This specific illustration of Heckman’s work shows how education influences hourly wage, employment, and regular exercise positively and obesity poor health, depression and daily smoking negatively.

# Chapter 3

## Well-Being

Happiness, therefore, in exact proportion with the morality of rational beings who are made worthy of happiness by it, constitutes alone the supreme good of a world into which we must necessarily place ourselves according to the commands of pure but practical reason.

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*Kant 1922, p. 653*

THE compound name well-being contains the gerundive of *be* and *wel*, a term from the early 17th century. It then has a meaning similar to the understanding we have of the word ‘well’ nowadays; ‘in a satisfactory manner’. It also appears across north-western Europe, in languages such as Saxon (*wela*), Norse (*vel*), Frisian (*wel*), Dutch (*wel*) and High German (*wela*), with a Proto-Germanic root signifying ‘abundance’. This first interpretation will remind an economist of neo-classical theory in which the individual will gain more utility from consuming more goods. When we rephrase this, we may say the consumer gains more well-being from abundance. On the other hand, the Proto-Indo-European root *wel* slightly diverges, meaning something along the lines of ‘to wish’. We may, therefore, without any claim to scientificity, draw a parallel with the notion of aspiration. It appears that, etymologically, well-being may be understood as a state of being one would aspire to. This also reminds Kant’s conception of aspirations being oriented to well-being. I further develop the philosophical aspects of happiness in another subsection to deepen our understanding of this complex notion. We may nevertheless

already note that on top of orientating all aspirations, happiness also is “the supreme good” according to this philosopher. Very close to economic terminology, this epigraph should have given content for economists to reflect upon.

This chapter will start by exploring the place of well-being and the different historical interpretations this term has had in economic science over time. The second section will then discuss the issue of measurement, which has been one of the major issues related to the notion of well-being in economics. Finally, I will discuss the developments of the notion of well-being in other social sciences.

## 3.1 Well-Being and Economics

This section will discuss the place of well-being in economic science. It is to be noted that this concept has many aliases when studied by economists. For instance, *well-being*, *happiness* and *utility* are often used interchangeably in the literature dealing with economics of well-being. Moreover, ‘economics of well-being’ may also be referred to as ‘welfare economics’ or alternatively ‘welfarism’. More recently, authors have also referred to this as the “economics of happiness” (Graham 2005, Sen 2008, Davoine 2012). I will attempt here to differentiate between the conceptualizations of well-being in economic theory over time.

The subsections reflect the major phases in the evolution of economic thought on well-being. The first subsection is a retrospective into the origins of welfare economics and its evolution. I will explore authors ranging from Jeremy Bentham to Amartya Sen by following the constant changing concept of well-being. The second subsection will then deal with the specifics of social choice theory. The final subsection will explore economics of happiness, mainly identifiable by the large diffusion of alternative methods.

### 3.1.1 Welfare Economics

Without ever knowing it, most undergraduates in economics study the very foundations of welfare economics. Many standard textbooks in microeconomics deal with the notion of *utility* as a proxy for well-being. These students are told that measuring the well-being of economic agents is quite impossible as such, while the lecturer rapidly flies over the measurement issues scholars have encountered over time. The conclusion roughly remains the same; the well-being of an individual cannot be measured directly and the adopted solution is to proxy well-being with revealed preferences, thus consump-

tion. Without further explanation or justification, solely for simpler modelization, the conditions of pure and perfect competition are announced. Major textbooks do not go any further in this consideration, either merely stating the use of the proxy (Picard 1990, Malinvaud 1982), or shifting entirely the focus (Varian 2015). Indeed, Varian states that utility was previously used as a proxy for well-being whereas it has to be considered a synonym for preferences. A similar change in the focus of analysis can also be found in the standard textbook by Krugman and Wells (Krugman and Wells 2016) who proxy utility to a measure of satisfaction. The observation of a shift in textbooks - moving away from welfare economics - since the 1960s has been made in Atkinson 2001.

This vision of rigorous mathematical precision as a response to an issue of human complexity eclipses the long history of welfare economics. It fails to account for the intellectual struggle to find an appropriate translation of well-being in economics. It is to be noted that several of the mathematical tools used nowadays in courses in microeconomics were not available to those who pioneered the economics of welfare (Warke 2000). It seems therefore in order to understand the aims of welfare economics, rather than focusing exclusively on the tools to achieve these goals.

In retrospect, welfare economics has considerably transformed the notion of utility over time. Jeremy Bentham's writings are commonly admitted to be the starting point of welfare economics and will initiate what is now called the Old Welfare Economics. He argues that the "fundamental axiom" of utilitarianism is "the greatest happiness of the greatest number that is the measure of right and wrong" (Bentham 1891, p. 93). The choice of terminology is a good indicator of Bentham's aim. Throughout his work, he uses the terms of happiness and utility - which will only later become the mainstream economical denomination - interchangeably. This relates the hedonistic nature of his analysis which he details in a famously quoted passage from his *Principles of Morals and Legislation*:

"To a person considered *by himself*, the value of a pleasure or pain considered *by itself*, will be greater or less, according to the four following circumstances:

1. Its *intensity*.
2. Its *duration*.
3. Its *certainty* or *uncertainty*.
4. Its *propinquity* or *remoteness*."

(Bentham 1879, p. 29)

Following this specification, Bentham ventures in the fifth chapter of his *Principles* in the classification of mutually exclusive kinds of pleasures and pains. His aim is therefore

a genuine inquiry into the nature of happiness of human beings with an attempt to understand how economic science can contribute to its understanding and bettering. This approach greatly differs from mainstream modern economics. As I have foreshadowed previously, the modern focus in welfare economics is rather on the measurement and the tools which seem most fit to do so. The debate on the aim of this field of economic inquiry is scarce in modern literature on the subject.

The hedonistic nature of what we now call “Old” Welfare Economics is reaffirmed by Arthur Cecil Pigou, who does not only consider the happiness of individuals but affirms that “for a full treatment we should need to bring into account also such dissatisfactions or disutilities as men may suffer” (Pigou 1951, p. 289).

It is notable that as Bentham explores the constituent elements of human happiness, he makes not only an economic inquiry but a multidimensional one, based on philosophy and psychology. This analysis moves in the opposite direction of modern welfare economic analysis. As I will discuss further on, mainstream economics has taken the path of simplifying the reality through debatable hypotheses with a model as the aimed endpoint. The scholars working on these models are aware of them being reductive with regard to the reality they attempt to account for. In this sense, the chosen path of analysis is that of fitting the data with the *ad hoc* models instead of deriving the models from – observed – reality.

This previous specification of the determinants of the “value” of human happiness can be generalized according to Bentham when adding another circumstance, being the “extent” of the considered pain or pleasure. This extent relates the “number of persons (...) who are affected by it” (Bentham 1879, p. 30) and translates the moral position adopted by the author. This is indeed the endpoint of Bentham’s policy recommendations; the policy-maker should orient legislation as to maximize the “greatest happiness of the greatest number”. This argument implies that (i) the considered individual has the ability to give a numerical valuation of her or his state of happiness, and (ii) the legislator has the ability to somehow compare happiness between individuals. These two fundamental assumptions characterize Old Welfare Economics. Once again, Pigou – as a major representative of this school of thought – has explicitly defended them.

Regarding (ii) the assumption of the possibility of interpersonal comparison of utilities, Pigou states that “on the basis of analogy, observation and intercourse, interpersonal comparisons *can*, as I think, properly be made” (Pigou 1951, p. 292).

When taking into account the greatest happiness of the greatest number principle, Bentham can be interpreted as in favor of wealth redistribution policies. Such a position

is highly criticized by later scholars, who find it to be morally charged and expressing an ethical standpoint. These two critics are referred to as the (i) cardinality issue and (ii) the issue of interpersonal comparisons of utility.

This critic has been summarized by Hotelling who affirms that “the general well-being would be purchased at the expense of sacrifices by some; and that it is unjust that some should gain at the expense of others, even when the gain is large and the cost small” (Hotelling 1938, p. 258). Despite these critics, Tom Warke argues – based upon in-depth textual analysis – that Bentham was aware of the issue of constructing a morally uncharged social welfare function (Warke 2000). He cites Bentham in stating that:

“ ‘Tis in vain to talk of adding quantities which after the addition will continue distinct as they were before, one man’s happiness will never be another man’s happiness . . . [[This addibility of the happiness of different subjects, however, when considered rigorously, it may appear fictitious, is a postulatum without the allowance of which all political reasoning is at a stand]]” (Bentham 1972, p. 495)

Bentham acknowledged the difficulty to infer his analysis from a micro- to a macroeconomic level. This aspect of his analysis has for a long time been misinterpreted by analysts (Warke 2000). Nevertheless, this does not offer a solution as to how objective policies should emerge from his greatest happiness of the greatest number principle. Moreover, the ability to measure an individual’s happiness - the cardinality issue - remains a flaw in Bentham’s analysis, as I will discuss in the section concerning the measurement of well-being. These issues have been addressed in the late 1930’s, in what is now called New Welfare Economics.

The illustration of Pigou’s aim when writing his seminal *The Economics of Welfare*, he refers to this discipline as “instruments for the bettering of human life” (Pigou 1927, p. vii). Pigou’s intentions – evidently in line with those of Bentham – are those of finding policies that could contribute directly to people’s well-being. His aim is therefore close to that of Bentham and his principle of the “greatest happiness of the greatest numbers”. It is to be noted that both Bentham and Pigou are labeled economists, but they nevertheless use very diverse terminology. Aiming for “happiness” and “bettering of human life”, these scholars use a variety of concepts which do not (anymore) seem to be used in mainstream 21<sup>st</sup> century economics. Or at least, these wordings of an economical issue will disappear with the decline of the ‘Old’ Welfare Economics, not to be seen again before the rise of the Capability Approach as outlined by Amartya Sen, many decades later. This idea has been conveyed by Atkinson when he labels one of his talks “The Strange Disappearance

of Welfare Economics” (Atkinson 2001).

On a more rigorous tone, Scitovksy points at the criticisms addressed to the initial line of thought on Welfare Economics, i.e. the issues of interpersonal comparison of utilities and cardinality. Despite Bentham and Pigou’s noble intentions of bettering human lives, their line of thought did not withstand the epistemological criticism it suffered in the early 1930’s. This criticism was led by Bergson and Samuelson. The 1938 paper by Bergson is often considered to have sealed the fate of Old Welfare Economics (Bergson 1938). Old Welfare Economics have been found “naive” and “unable to withstand the methodological criticism of the Pareto School” (Harsanyi 1955, p. 309). The methodological criticism that Harsanyi refers to, relies on the two main critics addressed to the former line of thought in Welfare Economics.

‘New’ Welfare economists claim it to be impossible to measure well-being directly. This undermines the previously developed notion of cardinality. To oppose this thought, these scholars introduce the notion of ordinal well-being. Ordinal well-being implies that an individual can not say that an apple provides them with 5 units of well-being and an orange with only 3 units. The ordinal approach to well-being says that individuals can only rank their preferences, in other words, they can say that they prefer apples to oranges. This example is trivial and most people can relate to it by effectively ordering their preferences for one fruit or another. The resolution of the issue of cardinality has led scholars to rapidly adopt this new approach. This ordinal approach may present difficulties in more complex situations nevertheless, but as Warke puts it “whether well-ordered preferences are congruent with reality has not been of major concern” (Warke 2000, p. 25).

The second major issue ‘New’ Welfare Economics attempt to tackle is that of interpersonal comparability of utilities. In other words, these scholars argue that one cannot compare the utilities two distinct individuals derive from an identical apple. This complicates the construction of a social welfare function since the policy-maker cannot simply sum all the individual states of well-being to determine the social welfare function. The further impact on research and policies is considerable; it means that a large share of ethical considerations is withdrawn from the analysis. This change is a major contributor to the becoming of Welfare Economics as a positive branch of economics, where it used to be a normative one.

The analysis adopted by ‘New’ Welfare Economics is narrowed down to identifying individual sets of preferences. This shift in the analysis completely discards the necessity to measure well-being as such and replaces it with the observation of an agent’s behavior. As such – and following Scitovsky – it is to be noted that *welfare* economics as such

cease to exist at this stage. Indeed, the focus of this branch of economics is shifted from well-being – or ‘happiness’ in the Benthamite tradition – to the study of preferences. More specifically, *revealed* preferences; if given a revenue, an agent can buy either x or y, and decides to buy x, economists following this analysis will conclude to a revealed preference of x over y. The underlying assumption is that of perfect rationality of the observed economic agent. This is clearly expressed by Little who assumes that “if an individual’s behaviour is consistent, then it must be possible to explain that behaviour without reference to anything other than behaviour.” (Little 1949, p. 97).

Instead of attempting to obtain the greatest happiness for the greatest number, the focus is now shifted to what is called allocative efficiency. This optimization problem has been addressed by Vilfredo Pareto, who has given his name to the famous notion of Pareto Optimality. His resolution of this problem is to state that a social or economic policy, reallocation or trade should only take place if at least one individual is better off without making any other individual worse off. This reasoning requires nevertheless a strong assumption expressed by Alfred Marshall: “it would naturally be assumed that a shilling’s worth of gratification to one Englishman might be taken as equivalent with a shilling’s worth to another . . . until cause to the contrary were shown” (Marshall 1961, p. 108). The implications of such an assumption are very strong. Going back to apples and oranges, Pareto would find the situation in which all the apples and oranges in an economy were in the hands of a single individual “optimal”. In a fictional economy that is only composed of apples and oranges - no other goods or services are available for trade or consumption - Pareto Optimality would require no trades to take place. Indeed, if our fruit-opulent individual were to proceed to any kind of trade, he would lose a small portion of his capital. Despite other individuals having something to eat, Pareto would argue that our fruit-magnate would be “worse off”, and thus recommend no trades took place.

Even in the early stages of the development of this vision, critics have pointed out the impoverishment of the analysis. Scitovsky objected that once the hypothesis of non-interpersonal utility comparisons and the law of diminishing marginal utility (implying that people derive that same satisfaction of an extra monetary unit of income) had been adopted in economic analysis, “welfare economics ceased to exist at this stage.” (Scitovsky 1951, p. 305). He points evidently to what I have tried to highlight through the historical analysis of the evolution of welfare economics. Despite the fact that we still talk about ‘welfare’, the focus has completely shifted. Where Bentham attempts to identify sources of pleasures and pains, while attempting to integrate them into the economic analysis, ‘New’ Welfare Economics have drifted away from this objective. These scholars now focus solely on the revealed preferences, eliminating well-being from the equation entirely. In

this line of thought, Cooter and Rappoport highlight the importance to “balance the gains in understanding markets which the ordinalist framework facilitated against the losses in understanding human welfare” (Cooter and Rappoport 1984, p. 528).

Kotaro Suzumura sums up three major epistemological critics to ‘New’ Welfare Economics, which support the abandonment of the initial notion of well-being in welfare economics:

- “(a) it fails to capture the original Pigovian idea of discovering feasible instruments for improving human life
  - (b) it presupposes that a social welfare function is given from outside of economics (...)
  - (c) if we try to tackle the social choice theoretic investigation into the process or rule to mold social welfare function from individual values, it opens the Pandora’s box of the Arrowian general impossibility theorems.”
- (Suzumura 2016, p. 12)

### 3.1.2 Social Choice Theory; rethinking Welfare Economics

Social Choice Theory is defined by Kotaro Suzumura as “concerned with the evaluation of alternative methods of collective decision-making, as well as with the logical foundations of welfare economics.” (Suzumura 2002, p. 7). The first part of this definition of Social Choice Theory - that of collective decision-making - is commonly traced back to the French Marie-Jean Condorcet and Jean-Charles Borda. The late eighteenth century in which these two authors wrote has later been called “the first golden age of social choice” (McLean 1995). These scholars were mainly concerned with election schemes. Their focus has never been anywhere near maximization of social welfare, but rather in finding a rigorous logical foundation for democratic elections.

Having abandoned cardinality and interpersonal comparisons of utility, economists are left with almost purely positive economic analysis. No ethically charged propositions had to be made; the scope of analysis of the economist was that of a neutral observant. The sole remaining normative statement was that provided by Pareto and his notion of *optimal* welfare. This was later enhanced by Bergson who advocated for a *maximum* welfare function. Further improvements were made by John Hicks and Nicholas Kaldor who proposed what is referred to as a Kaldor-Hicks *efficiency* criterion. The commonly identified issue of these welfare improvement propositions is that they failed to properly aggregate the individualistic nature of the New Welfare analysis.

Social Choice Theory takes up this challenge of finding a consistent way to aggregate the microeconomic analysis proposed by Welfare Economics. The starting point of this line of thought is commonly attributed to the seminal writings of Kenneth Arrow, more specifically when he demonstrates his famous Impossibility Theorem, which is formally called the Possibility Theorem (Arrow 1950). In the later and more “cleaned-up version” (Sen 1985b, p. 1766) of this theorem, Arrow reasons upon four conditions:

1. (i) “Unrestricted domain” or “universality”: the social welfare function must be defined for all possible individual sets of preferences.
2. (ii) “Pareto Principle”: if  $x$  is preferred to  $y$  by all individuals, than  $x$  is socially preferred to  $y$ .
3. (ii) “Independence of irrelevant alternatives”: the societal choice of a set of alternatives must be independent of the existence of other alternatives.
4. (iv) “Non-dictatorship”: no individual in the considered society must be able to impose their preference as the social preference.

Given a finite set of individuals and a minimum of three separate social states, Arrow shows that there is no social welfare function that satisfies the four previously exposed conditions.

Social choice theorists have in this sense attempted to overcome the issue of aggregation as exposed in New Welfare Economics. To do so, scholars have either dropped hypotheses or changed the focus of the analysis. The theoretical corpus that was born from Arrow’s Possibility Theorem and that this thesis will mainly focus on is Amartya Sen’s capability approach. The capability approach as developed by Sen may be viewed as a continuum of welfare economics insofar as it adopts similar strategies to resolve the previously exposed issues. More specifically, Sen proposes a radical change in focus by trading ordered preferences as studied by mainstream economics for capabilities. The notion of capabilities and the approach in its entirety will be further discussed in chapter 5. Sen justifies such a shift in focus when he declared that “it would be hard to believe that welfare economics could flourish without going into these neighboring disciplines [moral philosophy] as well, and Arrow’s analysis has made the interconnections a lot clearer.” (Sen 1985b, p. 1766).

### 3.1.3 Economics of Happiness

The capability approach is not the only resolution proposed by economists to solve the issues found in the reasoning of mainstream economics of well-being. Notably the so-called “economics of happiness” have proposed a return to subjective well-being, initially discarded by neoclassical schools of thought. Economics of happiness may be defined as an “approach to assessing welfare which combines the techniques typically used by economists with those more commonly used by psychologists. It relies on surveys of the reported well-being (...)" (Graham 2005, p. 41). As such, the theoretical corpus of economics of happiness introduces and generalizes the usage of subjective well-being in economic analysis.

Not only do economics of happiness address Arrow’s Possibility Theorem, but according to Frey and Stutzer 2002 it also allows to address the so-called Easterlin Paradox as formulated by Richard Easterlin (Easterlin 1974). Despite being considered as a major result, only a few economists pursued the line of research that Easterlin opened in the 1970s with his now seminal paper. Authors have found different explanations as to why this shift in interest did not occur at the publication of this paper. When discussing the revealed preference approach, Sen finds that “the popularity of this view in economics may be due to a mixture of an obsessive concern with observability and a peculiar belief that choice (...) is the only human aspect that can be observed.” (Sen 1987a, p. 12). Once again, “its dominance is reflected in the contents of microeconomics textbooks” (Frey and Stutzer 2002, p. 404). Furthermore, Frey and Stutzer find that the subjective approach allows a “fruitful *complementary*” approach to well-being.

Mainstream welfarists have displayed great reluctance to the usage of survey data to identify well-being for individuals. This is mainly due to the inherent bias of subjective data which does not respond to the claims of scientificity some economists envy in natural sciences. These biases are mainly due to unobserved factors that economists can not control for, including for example the mood of the respondent, the formulation of the survey questions or even dishonest responses. This reluctance to use such data can be viewed as a major difference between the methods of economists and other social sciences (Bertrand and Mullainathan 2001). Despite this, economics of happiness allows accounting for the Easterlin Paradox by including a larger span of determinants of happiness. Many studies have identified the variety of these determinants such as for example emotions (Elster 1998), unemployment (Clark and Oswald 1994), or sexual activity (Blanchflower and Oswald 2004).

## 3.2 Measuring Well-Being

The origins of the fundamental axioms in welfare economics have brought forth a dispute. Many authors find the first occurrence of welfarism in the writings of Adam Smith and his metaphor of the invisible hand. This belief has been more recently dismantled and re-attributed to Jeremy Bentham's writings, as I have discussed previously (Blaug 2007).

The first subsection will attempt to retrace measurements proposed to measure utility as defined in Old and New Welfare Economics. The second subsection will then further develop more recent measurements as proposed by economics of happiness, namely subjective well-being.

### 3.2.1 Utility

I have discussed previously that a consensus is still standing on the idea that utility can not be directly measured. This inability gave way to the parting from “Old” Welfare Economics and the occurrence of the “New” Welfare Economics. Nevertheless, scholars have proposed the idea that utility could be measured directly. This can, once again, be traced back to Bentham. In section 3.1.1, we quoted from his “Principles of Morals and Legislation” where he defines dimensions of pleasure and pain. Once these defined and expanded when applied to a group of people, Bentham proceeds to “take an exact account (...) of the general tendency of any act, by which the interests of a community are affected”. This formulation is not without reminding the idea of a social welfare function, also previously discussed.

Bentham then exposes a rigorous method on how to calculate precisely which actions are beneficial, or not, to a community. This method is now called the “hedonistic calculus” or the “felicific calculus”, and can be found in appendix F. This attempt to measure social welfare seems to lack the crucial phase of actually measuring the utility within individuals. As such, the hedonistic calculus can be considered rather as a method of dealing with numeric utilities once they have been measured.

Other authors have attempted to tackle the issue of measuring utilities within individuals directly. The most prominent example being that of Edgeworth who proposed the idea of a hedonometer. In the context of great popularity “psychophysics” in the field of psychology, Edgeworth imagined “an ideally perfect instrument, a psychophysical machine, continually registering the height of pleasure experienced by an individual, exactly

according to the verdict of consciousness” (Edgeworth 1881, p. 101). Edgeworth imagined this machine as being capable of measuring the “flutter of the passions”. When he proceeds to describe the actual functioning of such an apparatus, it is not with reminding us of a seismograph. He imagined it to register utility within an individual by “photographic or other frictionless apparatus upon a uniformly moving vertical plane.” Similarly to the seismograph, Edgeworth indicated that the machine would measure the “quantity of happiness between two epochs [as] represented by the area contained between the zero-line, perpendiculars thereto at the points corresponding to the epochs, and the curve traced by the index” (Edgeworth 1881, p. 101). Despite Edgeworth’s efforts to imagine such an artifact, it has never been operationalized in his lifetime. I will further discuss advances in this field in section 3.2.2.

Old welfare economics refer to cardinal and interpersonally comparable utilities. Measurement of such utilities may be very straight forward, while posing major measurement issues. Intuitively, a researcher could simply ask the subject to give a numerical value to each element that is to be measured. Let us consider the example of apples, oranges, and pears and let imagine that the subject is asked to numerically value the utility she would draw from consuming each of them on a given scale from 0 to 10. The outcomes would be relatively simple, where the subject would gain, for example, 4 utility from apples, 6 from oranges and 7 from pears. This becomes infinitely more complex when considering more complex sets, such as for example *all* the fruits that exist. The subject would spend a considerable amount of time valuing the fruits, might not have tasted some of them or not recall doing so. With the occurrence of computers and the increasing power of software, more elaborate strategies to measure utility cardinally have been developed. Namely, the MACBETH approach has been discussed throughout the 1990s. The “Measuring Attractiveness by a Categorical Based Evaluation TecHnique” is an “approach conceived to aid a person D to elaborate cardinal value judgements about elements of a finite set A, and to associate a real number  $\mu(x)$  with each element x of A” (Costa and Vansnick 1994, p. 489). These authors then attempt to reduce the number of questions (which were initially necessary to have the subject compare between all the different existent types of fruit) by measuring ratios between elements rather than the individual elements themselves:

“ $\forall x,y,w,z \in A$  with D judging x more attractive than y, and w more attractive than z, the ratio

$$[\mu(x) - \mu(y)]/[\mu(w) - \mu(z)] \quad (3.1)$$

reflects the ratio (that D feels with greater or lesser precision) of the differences of attractiveness between x and y on the one hand, and w and z on the other hand” (Costa and Vansnick 1994, p. 489).

The authors acknowledge throughout their paper that the questioning method “is quite hard for D” and that “it is not reasonable to ask D for a numerical estimate of the ratio of the differences of attractiveness that he feels between x and y on the one hand and w and z on the other hand.” (Costa and Vansnick 1994, pp. 489–490). Despite their efforts in simplifying the questioning techniques and proposing solutions to reduce its complexity, this method has received a limited amount of interest.

Before the development of the MACBETH method, which requires a certain amount of computational power, discussions evolved mainly around the theoretical bases of the welfare. I have discussed this in previous sections. Kotaro Suzumura synthesizes some of the discussions which were held in Bentham and Pigou’s conception of welfare in a simple framework:

“Design an institutional framework of the economy so as to identify and implement a solution  $x^* \in S$  to the following constrained maximization problem

$$\text{Max } \{u_1(x) + u_2(x) + \dots + u_n(x)\} \text{ over all } x \in S \quad (3.2)$$

where S is the set of feasible social alternatives,  $u_i$  is the utility function of person  $i \in N := \{1, 2, \dots, n\}$  with  $2 \leq n < +\infty$ ” (Suzumura 2016, p. 5).

Furthermore, and also along the lines of the debate discussed previously, Suzumura proposes a formalization for the criticisms addressed to the “Bentham-Pigou” formulation. These criticisms will result in the New Welfare Economics and may be described formally as:

“Design an institutional framework of the economy so as to identify and implement a solution  $x^* \in S$  to the following constrained maximization problem

$$\text{Max } f(u_1(x) + u_2(x) + \dots + u_n(x)) \text{ over all } x \in S \quad (3.3)$$

where S is the set of feasible social alternatives, f is the Bergson-Samuelson social welfare function that maps the profile  $u(x) = (u_1(x), u_2(x), \dots, u_n(x))$  of individual utilities on  $x \in S$  into an ordinal index of social welfare” (Suzumura 2016, pp. 8–9).

Upon looking closer to these two formalizations, it is notable that equation 3.3 encapsulates equation 3.2. The distinction lies in the function  $f$  that is applied in equation 3.3; as such, equation 3.2 is the social sum total of individual utilities sum whereas equation 3.3 is the ordinal index of social welfare provided by a Bergson-Samuelson social welfare function. I have discussed the theoretical foundations for these measurements in previous sections, which entail interpersonally comparable cardinal utilities for equation 3.2 and interpersonally non-comparable ordinal utilities for the latter equation 3.3. Suzumura summarizes the progression from the former to the latter maximization program can be considered as a “quantum leap in the history of welfare economics” (Suzumura 2016, p. 9).

Despite these synthetic programs, their actual measurement remains problematic. This is notably due to the nature of both  $u$  and  $S$ . More precisely,  $u$  refers to all the utility functions of the studied individuals. The precise identification of  $u$  may entail a considerable amount of determining factors, of which most are arguably omitted in economics. Moreover,  $u$  is hypothesized to be unique and thus identical for all the considered individuals. This is a very strong hypothesis and excludes *de facto* individuals with special needs. Such a presumption can be questioned furthermore for every individual, as I will discuss in section 5.1.1, where Amartya Sen will argue that utility gained from a similar element is unlikely to be identical between a cripple and a pleasure-wizard. Furthermore,  $S$  refers to “the set of feasible social alternatives”, which may be very complex situations. Every single one of these situations is complex enough to pose an evaluation issue in itself, let alone the evaluation of multiple situations.

### 3.2.2 Subjective Well-Being

As I have discussed throughout the previous sections, terms such as “happiness”, “well-being” and the derivative “utility” do not have a universally accepted meaning (Hirschauer, Lehberger, and Musshoff 2015). This is especially true when considering social sciences in the broad sense, as will be done in section 3.3. “Because happiness is such an elusive concept, it makes little sense to proceed by trying to define what happiness is. Fortunately, there is a useful way out. Instead of trying to determine what happiness is from outside, one can ask the individuals how happy they feel themselves to be.” (Frey and Stutzer 2002, p. 4). This workaround of the measurement issue of utility gives way to subjective well-being. In other words, it allows to bypass the issue of direct – be it cardinal or ordinal – measurement, by entrusting the evaluation of well-being to the individual to whom the measurement is applied.

With the advent of experimental psychology and behavioral economics, ideas similar

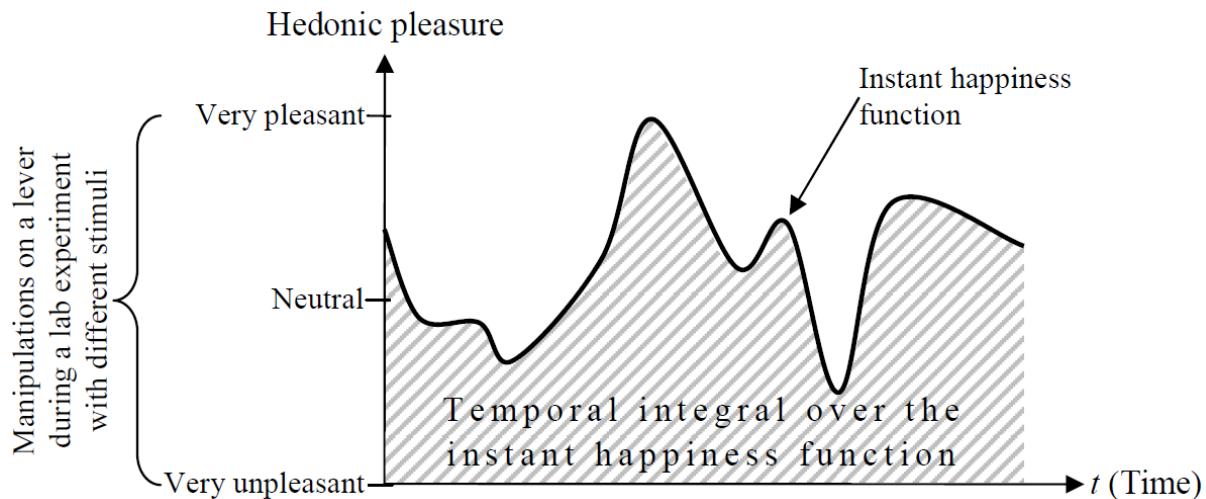


Figure 1: The operationalization of Edgeworth's 'hedonometer' in the lab (Hirschauer, Lehberger, and Musshoff 2015, p. 14)

to that of Edgeworth's hedonometer have been tested in both laboratory environments and *in situ*. In line with subjective well-being, and acknowledging the – so far – impossibility to measure directly states and scales of well-being within an individual, Kahneman and his colleagues imagined experimental protocols to measure them subjectively. Using the hypothetical hedonometer, happiness would be the temporal integral over the instant happiness function. Instead of using an apparatus, Kahneman proposed to identify the instant happiness function by asking people to draw this function themselves: "They are asked to provide a continuous indication of the hedonic quality of their experience in real time by manipulating a lever that controls a marker on a scale, which is usually defined by extreme values such as very pleasant and very unpleasant and by a neutral value" (Kahneman and Krueger 2006, p. 5). A visual representation of this type of measurement has been proposed by Hirschauer and his co-authors in figure 1.

This conception of measuring happiness has been labeled "instant happiness" (Hirschauer, Lehberger, and Musshoff 2015, p. 14) or "experienced utility" (Kahneman and Krueger 2006, p. 5). It refers therefore to the measurement of spontaneous moments of happiness which are evaluated *in situ*. In contrast, they defined "remembered happiness" and lastly the "construction of an overall well-being judgment". The latter two can be distinguished from the first as they do not attempt to measure happiness at one specific instant, rather they demand the individual to whom the measurement is applied to reflect on past episodes and to evaluate their levels of happiness *ex post* and in a laboratory setting.

Remembered happiness – also referred to as "remembered utility" (Kahneman and Krueger 2006, p. 5) or "hedonic level" (Veenhoven 2015, p. 4) – can be translated into the day-reconstruction method. This method has been used by researchers to measure

happiness *a posteriori*. Individuals are invited to reflect on the activities they undertook during the day and to associate their levels of happiness to each of these undertakings. This makes this method more reflexive and adds new subjective dimensions to the obtained measurement. Each of the measurements will be weighted averages, and thus change from the previously discussed temporal integral method. Three impacts which would change, positively and/or negatively, the experienced utility in this method have been identified; (i) the duration of episodes of pleasure and displeasure has a disproportionately low weight, (ii) disproportionately high weights are placed on positive and negative peaks and finally (iii) the relative weight of the experience increases towards the end of the period under consideration (adapted from Kahneman and Krueger 2006 and Hirschauer, Lehberger, and Musshoff 2015). When considering these points, it is to be noted that they are highly correlated with the theoretical understanding Bentham proposed of happiness (see section 3.1.1). As such, dimension (i) can be assimilated to Bentham's point 2. of "duration", dimension (ii) may refer to Bentham's point 1. of "intensity" and the last dimension (iii) can be translated as the "remoteness" Bentham describes. Pursuing this assimilation, it seems that Bentham's third point has been omitted by these authors when they fail to identify the "certainty" dimension.

The construction of an overall well-being judgment is a method that requires the highest degree of introspection on behalf of the individual from which happiness measurements are taken. Labeled as "contentment" by Veenhoven, he details that "most human evaluations are based on both sources of information, that is: intuitive affective appraisal and cognitively guided evaluation" (Veenhoven 2015, p. 9). As such this author posits that this method represents a good synthesis of the two previously discussed ones. Both the spontaneous occurrence and the retrospectively analyzed moments of (dis)pleasure are thus taken into account. This method can be translated into a measurement that utilizes a Likert scale to questions that attempt to evaluate happiness over a global time span. It is, therefore, following these authors, among others, that the survey for this thesis will be constructed.

Following the incorporation of a cognitive evaluation in this latter method, Hirschauer and his co-authors posit that one component of the measurement of happiness relates to the "individual's perception of to which degree his/her aspirations are being (and are likely to be) realized" (Hirschauer, Lehberger, and Musshoff 2015, p. 15). When reformulating this component, one may call it the "certainty" component. As such, by adding this last dimension, it is remarkable that this method aligns perfectly with Bentham's dimensions to happiness.

### 3.3 Social Sciences and Humanities on Well-Being

Research on well-being is evidently not limited solely to economics. This is particularly true since the focus of current mainstream economics has deviated its attention from the study of well-being to the study of utility. In the words of several economists, economical science has even completely ceased to take interest in the notion of well-being as such (Scitovsky 1951, Atkinson 2001), focussing solely on their new appellation, whilst populating it with a meaning solely pertinent for its operationalization in economic science. Furthermore, by coining this new term, economics has isolated itself from other social sciences as well as the humanities.

This section aims to discuss well-being both from the perspectives of philosophy (subsection 3.3.1) and from psychology (subsection 3.3.2).

#### 3.3.1 Philosophical Well-Being

The debate around what exactly well-being – or happiness – entails is as old as documented western philosophy. Nevertheless, there exists no consensus as to its exact definition, eudaimonism and hedonism are not entirely conciliated. The specific terminology used is representative of this debate. Happiness is the most usual translation for *eudaimonia* from Aristotle's Nicomachean Ethics whereas “in contemporary usage, the term happiness is generally considered to refer to hedonic happiness” (Waterman 1993, p. 678). Moreover, *eudaimonia* may be translated from the original ancient Greek as *welfare*, sometimes *flourishing*, and sometimes as *well-being*” (Kraut 2018). On the other hand, hedonism can be viewed as a philosophical positioning that argues that “a good life should be a pleasurable life” (Veenhoven 2003, p. 437).

In the epigraph of this chapter, Immanuel Kant refers to happiness as the “supreme good”, from which we may derive that the object of inquiry is a universal objective. Furthermore, he limits happiness to “rational beings” and thus, to human beings. Kant more specifically defines happiness as “the satisfaction of all our desires, *extensively*, in regard to their manifoldness, *intensively*, in regard to their degree, and *protensively*, in regard to their duration” (Kant 1922, p. 647). This definition appears very close to the one given by Bentham in his Principles of Morals and Legislation, where he provides among others *intensity* and *duration* as defining elements. In light of these observations, hedonism and *eudaimonia* can also be distinguished according to them. Where hedonism is argued to provide more intense, shorter bursts of happiness, *eudaimonia* is a more long-lived and arguably less acute form of happiness.

Bentham's conception of welfare has often been depicted as hedonistic as it puts on the foreground the notion of *pleasures* and attempts to reduce *pains*. As touched upon previously, the philosophical – or at least, the conceptual – foundations of welfare economics as developed after Bentham's disavowal are hard to grasp as they change entirely the object to *utility* through revealed preferences. By focusing merely on a very concise aspect of well-being, economists have created a self-sufficient framework, that aims to study human beings for what economists allow them to be theoretically, rather than for what they are. Nevertheless, utility is derived from the individual's revealed preferences. These revealed preferences are expressed through explicit and measurable choices made by the studied individual. As such, they are proxied by consumption, for example. When considering consumption in the philosophical understanding of well-being, one can intuitively understand such a proxy as purely hedonistic. It aims at satisfying short-lived pleasures rather than happiness in its entirety. Finally, I will argue that the introduction of the capability approach allows for a wider understanding of human happiness within economic science, by solidly anchoring it in philosophical eudaimonia.

Etymologically, *eudaimonia* comes from the Greek *eu*, which means “good” and *daimon* (or *daemon*), which means “spirit”. Following this, Alan Waterman considers that “the daimon refers to those potentialities of each person, the realization of which represents the greatest fulfillment in living of which each is capable. These include both the potentialities that are shared by all humans by virtue of our common specieshood and those unique potentials that distinguish each individual from all others.” (Waterman 1993, p. 678). Despite a different terminology, Waterman's understanding of the daimon is a conceptual neighbor to Amartya Sen's idea of capabilities. Waterman defines potentialities as something inherent to an individual and that the latter can realize, where Sen defines capabilities as something an individual can do or be. Furthermore, Waterman notices that potentialities can be unique to a specific individual, but can also be found in multiple – if not all – human beings. Similarly, Martha Nussbaum has established a list of 10 core capabilities that ought to be inherent to all humans, while other capabilities might be very individual-specific.

With regards to well-being, Richard Ryan and Edward Deci find that “well-being is not so much an outcome or end state as it is a process of fulfilling or realizing one's daimon or true nature—that is, of fulfilling one's virtuous potentials and living as one was inherently intended to live” (Deci and Ryan 2008, p. 2). This interpretation of the daimon embodies the conversion process between capabilities and achieved functionings – more specifically, the element of choice – and explains it as a source of well-being. Finally, Elizabeth Telfer defines eudaimonia as having “what is *worth* desiring and worth having in life” (Telfer 1980, p. 37). This is not without reminding of Sen's formula defining

capabilities as being “doings and beings an individual has *reason* to value”. I will further discuss the specifics of the capability approach in section 5.1.

#### 3.3.2 Well-Being and Psychology

The increasing interest in subjective well-being “reflects larger societal trends concerning the value of the individual, the importance of subjective views in evaluating life, and the recognition that well-being necessarily includes positive elements that transcend economic prosperity.” (Diener et al. 1999, p. 276).

It has been argued by psychologists that the theory of the happy life or happiness has not advanced since ancient Greek Philosophers (Wilson 1967, Diener et al. 1999). I have discussed previously the writings of Kant and Bentham who do explore and define this notion. Nevertheless, one may understand these psychologist’s claims as referring to their field of inquiry. Within the boundaries of psychology, these authors define the happy life according to two postulates which state that (i) “the prompt satisfaction of needs causes happiness, while the persistence of unfulfilled needs causes unhappiness.” and (ii) “the degree of fulfillment required to produce satisfaction depends on adaption or aspiration level, which is influenced by past experience, comparisons with others, personal values, and other factors.” (Wilson 1967, p. 302).

These principles can be viewed in the light of Kant’s interpretation of happiness. Where Wilson refers to “needs”, Kant prefers “desires”. And while Wilson identifies in (i) the rapidity with which a need is fulfilled and in (ii) the degree of fulfillment, Kant defines the amount, the intensity and the duration of the fulfillment of desires. In other words, these interpretations can be viewed as privileging time and completeness of desire fulfillment. The time component indicates that it is important to respond to a need or desire rapidly, but also to preserve the fulfillment over time. On the other hand, the completeness component highlights the importance of fulfilling all of an individual’s needs, as well as fulfilling them individually as much as possible. It is to be noted that this division is consistent with Bentham’s analysis of human happiness as I discussed in section 3.1.1. His “circumstances” 1 and 3 could thus be considered as part of the completeness component and 2 and 4 integrate the time component.

This theoretical background, and with specific reference to the completeness component, shows that happiness is a multidimensional notion by nature. In other words, one would be unable to identify a single element that can account for the global happiness of an individual. This goes against the previously discussed economist’s vision. In section 3.1.1, I pointed out that mainstream economics proxies happiness, or well-being, with the

*Components of Subjective Well-Being*

Pleasant affect	Unpleasant affect	Life satisfaction	Domain satisfactions
Joy	Guilt and shame	Desire to change life	Work
Elation	Sadness	Satisfaction with current life	Family
Contentment	Anxiety and worry		Leisure
Pride	Anger	Satisfaction with past	Health
Affection	Stress	Satisfaction with future	Finances
Happiness	Depression	Significant others' views of one's life	Self
Ecstasy	Envy		One's group

Figure 2: Components of Subjective Well-Being (Diener et al. 1999, p. 277)

notion of utility. In turn, this notion is uni-dimensional and often reduced to monetary income, consumption or capital of the considered individual. Psychology and philosophy allow enhancing the understanding of happiness for social scientists in general. This intuition is confirmed by what economists refer to as the Easterlin Paradox. Mere money cannot account solely for individual well-being. The phenomenon highlighted in 1973 by Easterlin, is confirmed in a similar observation made by psychologists decades later. This observation can be found in appendix G.

Despite this ‘paradox’ for economists, a rigidity to change in dimensions can be noted. On the other hand, psychologists have attempted to identify other dimensions to happiness, with regard to the completeness component which I highlighted previously. In this line of thought, Wilson asserts that “the happy person emerges as a young, healthy, well-educated, well-paid, extroverted, optimistic, worry-free, religious, married person with high self-esteem, high job morale, modest aspirations, of either sex and of a wide range of intelligence.” (Wilson 1967, p. 294). These demographic correlates of subjective well-being are identified empirically through questionnaires by Wilson. On a theoretical level, Diener, Suh, Lucas, and Smith resume their correlates of subjective well-being in figure 2.

With regard to both philosophy and psychology, subjective well-being is an informational basis that is increasingly documented and acknowledged. I will anchor an entire section in my empirical application on subjective well-being by integrating relating questions in the questionnaire. The construction and analysis of this questionnaire will be further discussed in the last part.

# Chapter 4

## Aspirations

All hoping is directed towards happiness.

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*Kant 1922, p. 647*

**E**TYMOLOGICALLY the word aspiration can be traced back to the early 15<sup>th</sup> century to the old French *aspirer*. Among other possible definitions, there could be ‘to endeavor’, ‘to obtain’ or ‘to seek to reach’ and sometimes even ‘to climb up to’. All these notions and possible interpretations give interesting insight as to what aspirations may entail. The idea of wanting something and longing for it is an initial element in this etymology. One may understand also that an effort is required in order to obtain what is wanted. This would be very consistent with the idea that education may impact the aspirations of an individual. In other words, considering education as an effort, or an investment in economic terms, this effort may enhance or decrease an individuals’ ability to formulate and the possibility of realizing her or his aspirations.

### 4.1 Economics and Aspirations

The discussion relating ‘mainstream’ economics and the concept of aspirations is relatively scarce. One has to delve deeper into specific branches of economics to find pertinent literature exploring this notion. It is mainly in behavioral economics and more recently in development economics that the concept of aspirations is explored as such. To include aspirations in the ‘mainstream’ economic analysis implies tensions between the traditional hypotheses applied to economic agents. This is grasped in the early stages of

its development by behavioral economists:

“Traditional economic theory is built on an idealization of man. (...) This idealization has advantages. Strong assumptions usually lead to strong conclusions. However, it is difficult to bridge the gap between the rational economic man and the groping, unstable man whom the behavioral scientist knows.”  
(Starbuck 1963, p. 128)

Considering aspirations from an economic standpoint is therefore not a simple exercise and major modifications have to be implemented in traditional theory for aspirations to ‘fit’.

In this section, I will draw upon economics to explore the notion of aspirations. More precisely, I will try to explore how economists have progressively attempted to integrate this complex notion into their existing models. The second subsection will then attempt to explore the factors which determine aspirations. Mere economics will not suffice to do so, which is why I will draw upon anthropology, sociology, and psychology. These social sciences will permit better insight into a notion in which complexity cannot solely be grasped by “mainstream” economics. Finally, I will attempt to tie the notion of aspirations to those of education and well-being. This last subsection will, therefore, draw upon the previous sections.

#### 4.1.1 Economics and Aspirations, a story of rationality

As stated before, there are very few to no pertinent references in mainstream economic literature to aspirations. Economics indeed requires extensions to other social sciences - i.e. psychology, sociology or anthropology - to integrate this notion. When Herbert Simon wonders “how much psychology does economics need?”, he responds with a very illustrative metaphor:

“Suppose we were pouring some viscous liquid-molasses-into a bowl of very irregular shape. What would we need in order to make a theory of the form the molasses would take in the bowl? How much would we have to know about the properties of molasses to predict its behavior under the circumstances? If the bowl were held motionless, and if we wanted only to predict behavior in equilibrium, we would have to know little, indeed, about molasses.” (Simon 1959, p. 255)

Simon illustrates human behavior with the adaptation of the molasses to the shape of the bowl. The shape of the bowl, kept motionless in this first instance, represents the economic environment in which the human evolves. This first part of his metaphor represents traditional, mainstream economics, which excludes any reference to other social science and utilizes strong hypotheses on both the actors, i.e. human beings, and the economic environment. He transcribes the idea that very little information is needed about the humans to predict their behavior. This is a perfect representation of the *homo œconomicus*; only very little is known about this actor, yet, his behavior is perfectly predictable. The *homo œconomicus* indeed only requires to be utility maximizing and perfectly rational in doing so.

“If (...) new forces (...) were brought to bear on the liquid, we would have to know still more about it even to predict behavior in equilibrium. (...) Similarly, in an organism having a multiplicity of goals, or afflicted with some kind of internal goal conflict, behavior could be predicted only from information about the relative strengths of the several goals and the ways in which the adaptive processes responded to them.” (Simon 1959, p. 255)

The second configuration of the metaphor alleviates the strong hypotheses symbolized in the first configuration by the motionlessness on the one hand. On the other hand, the transformation of the *homo œconomicus* in an organism having a multiplicity of goals instead of aimless molasses. Simon shows that in this case, prediction requires more information about the molasses itself indeed. In other words, when operating a shift from (neo-)classical analysis of the economic agent in a static fishbowl to that of a human being in a dynamic economic environment, one has to dive into the complexities of this very human being.

This shift is operated with insight from psychology in the late 1950s and the early 1960s. These allow for a better understanding of decision-making progress in economic situations (Simon 1959). Notably, economic science contradicts major findings in psychology. This is translated into the concept of satiation, which is rejected entirely in (neo-)classical mainstream economics. A rational agent cannot be satiated; whatever the amount of water the individual has drunk, another glass will provide this agent with a supplementary amount of utility. Economists have introduced the notion of diminishing marginal returns to indicate that every new glass of water will provide a smaller amount of utility than the previous one, but it will still provide some. Always. This leads to an evident incoherence where an economist will recommend drinking more and more water, leading unavoidably to hyponatremia.

The contradiction with psychology lies in the fact that the latter considers actions not from a maximization standpoint, but rather from the fulfilling of drives. Once the drive is satisfied, it will cease to exist as such and the individual will stop the undertaken action destined to fulfill the drive. Simon described this distinction as the fact that the “economic man is a *satisficing* animal whose problem solving is based on search activity to meet certain aspiration levels rather than a *maximizing* animal whose problem solving involves finding the best alternatives in terms of specified criteria” (Simon 1959, p. 277).

As such, psychology certainly has a contribution to make to economic analysis, especially in the bettering of economist’s understanding of the *homo oeconomicus*. The integration of these elements has translated in economics by the development of theories of “bounded rationality”. One application of bounded rationality is the Aspirations Adaptation Theory and was developed in the early stages by Reinhard Selten. For his work, he was awarded the Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel in 1994 alongside John Harsanyi and John Forbes Nash. Nevertheless, the focus was on the development of game theory and the intriguing Nash, and Aspirations Adaptation Theory only received a limited interest.

Almost two decades after the “Simon-Selten hypothesis” (Schwartz 2008), Richard Easterlin notes several direct applications for the concept of aspirations. This notion is still fragile at that time in economic literature, notably due to a lack of empirical support. Easterlin introduces aspirations as a complementary factor of analysis for behavior, alongside physical goods, when he declares that “behavior is influenced by the interplay between aspiration and the resources people have to satisfy their aspirations” (Easterlin 1976, p. 417). His application of the notion of aspirations is made specifically to fertility rates. He finds that if the gap between actual resources detained by a household and its aspirations is too considerable, this household will be reluctant to have children. This slightly shifts the focus from a purely ‘resource-based’ analysis to the assessment of simultaneously detained resources and introduces aspirations as a new explanatory factor.

Easterlin finds aspirations to also constitute an element of explanation of his famous “Easterlin Paradox”. This paradox shows that when the Gross Domestic Product per capita increases, the overall happiness of the population does not increase. As I have discussed previously, this finding was a major disavow of welfare economics. The paradox occurs where money could measure an agent’s well-being through the actual spending of it. As a response to his own paradox, Easterlin poses this rhetorical question: “[suppose that] material aspirations are a product of one’s economic socialization experience, and growth in real income expands the material environment, as it necessarily must. Then, over the long run, may not aspirations advance at the same pace as real income, negating the welfare improvement expected to follow from income growth?” (Easterlin 1976, p. 420).

As such, Easterlin proposes the concept of aspirations to contribute to understanding why an increase in happiness does not occur when income increases. It also highlights, once more, the importance of the acceptance that the *homo oeconomicus* modeled as such does not account for the variety and the diversity of economic agents and their actual levels of well-being. This standpoint is confirmed in further empirical (Stutzer 2004) and theoretical (Frey and Stutzer 2002) explorations.

The notion of a “gap”, foreshadowed by Easterlin, is used several decades later by Debraj Ray. The idea Ray conveys is similar to that exposed by Easterlin, mainly due to the fact that the example he takes to illustrate his idea is that of material aspirations. He finds that “the aspirations gap is simply the difference between the standard of living that’s aspired to and the standard of living that one already has. I want to argue that it’s this gap—not aspirations per se, nor one’s standard of living per se — that affects future-oriented behavior.” (Ray 2006, p. 3). Moreover, Ray gives a formalization of his understanding of aspirations following the equation:

$$g(a, s) \equiv \max \frac{a - s}{a}, 0 \quad (4.1)$$

where  $a$  stands for the aspired to standard of living and  $s$  the current standard of living. It is to be noted that both the equation and Ray’s explanation refer to standards of living, and thus, to material well-being. This is only “for concreteness” and it is to be noted that “the same idea can be applied, perhaps with modification, to other dimensions” (Ray 2006, p. 3).

This formalization emphasizes the notion of the aspirations *gap*. The importance is not the aspirations as such, but the distance from what an individual aspires to and what she or he currently possesses. This can be in terms of material capital, but can also be social or intellectual among others.

### 4.1.2 Social Determinants of Aspirations

So far, in the first subsection, I have explored aspirations from an economist’s point of view. The question of determinants of these aspirations has not been asked so far. This may be due to this question not being pertinent from a (neo-) classical economist’s perspective; aspirations are formed by a perfectly rational *homo oeconomicus*. The formation of the aspirations of this agent is therefore perfectly rational in the same way and requires only to maximize his utility. Any other input would not be deemed relevant nor

rational and thus, would be discarded.

In 1968, Archibald Haller explores a terminological issue which may shed initial light on the matter of the determinants of aspirations. He makes a distinction between “aspirations” and “expectations”. According to him, the first “can serve well to describe ego’s own orientation to a goal” (Haller 1968, p. 484). On the other hand, expectations refer rather to “hopeful anticipation for the other”. The anticipation from one individual for another can also have a direct impact on the second individual’s aspirations. A simple illustration is that of a parent who has high educational expectations for her or his child. These parental expectations can in turn influence the child’s aspirations. Such an understanding of aspirations foreshadows the findings of the capability approach on aspirations, as will be discussed further in section 4.2.

The idea of social influences on the formation of aspirations is not a recent one. It has been highlighted in 1939 by Kurt Lewin who finds that “the level of aspiration is greatly influenced by such social facts as the presence or absence of other persons or by the competitive or noncompetitive character of the situation.” (Lewin 1939, p. 869).

The seminal work by Ray introduces the notion of “aspiration window” and attempts to identify the individuals who might influence a person’s aspirations. He argues that aspirations are formed through observation of those individuals within one’s aspiration window. The aspiration window is not constituted solely by peers, but also includes individuals who are close, spatially, economically or even socially. Moreover, an aspiration window can be populated by role models, people one can relate to (Ray 2006). This vision broadens the pool from which an individual can draw her or his aspirations since it does not limit it to the sole social group of peers to which this individual belongs. When taking into account the exponential development of social media and similar platforms of discussion, individuals have a constantly increasing range of opportunities to relate to others and thus widen their aspiration window.

## 4.2 Aspirations Connect the Dots; Foreshadowing the Capability Approach

### 4.2.1 Economics meet the Capability Approach

The previous developments of aspirations starkly contrast with the manner they are applied ‘traditionally’ in economics, as discussed throughout the previous chapters, in

## 4.2. ASPIRATIONS CONNECT THE DOTS; FORESHADOWING THE CAPABILITY APPROACH

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which studies almost systematically fail to consider aspirations altogether. More recent studies do progressively integrate a more comprehensive understanding of aspirations, notably drawing on Appadurai and Ray. As such, Bernard et al. 2014 find that in “economic terms” aspirations may be thought of as “bounds among individuals’ preferences, the elements of the choice sets which they consider as relevant for them and motivate their actions” (Bernard et al. 2014, p. 2). Without an explicit reference to the capability approach, this definition presents a vocable that appears particularly close to the definition Amartya Sen provides for capabilities. The progressive translation of the notion of aspirations into economic science provides solid anchoring for the direction of the overall direction of this thesis.

Furthermore, the specific understanding of aspirations provided by Bernard et al. 2014 allows to further justify the importance of the inquiry of this research. They identify three salient features of aspirations (adapted from Bernard et al. 2014, p. 4):

1. Aspirations express goals or goal-orientations (or desired future end-states) that are relevant to well-being.
2. Aspirations evolve over time in response to life experience and circumstances.
3. Aspirations are an important influence on behavior (or actions) and thus attainment or outcomes.

Following these economists, strong relations to the capability approach and its understanding of future-orientated capabilities can be identified. Moreover, they find the existence of a link between aspirations and well-being. The fulfillment of aspirations provides higher levels of future well-being. Conversely, Wilson illustrates the opposite relation when he declares that “high aspiration is therefore seen as a major threat to happiness” (Wilson 1967, p. 302). Too high aspirations present a higher risk of non-fulfillment, thus directly threatening future well-being outcomes. Secondly, they highlight the evolving nature of aspirations as a direct result of “experience” and “circumstances”. Such a finding is highly consistent with the dynamic nature of capabilities as further discussed in section 6.1.3. Finally, and most importantly for the direction of this thesis, aspirations influence are found “important” with regards to “attainment or outcomes”.

The latter feature of aspirations is crucial for the theoretical development I propose here. Indeed, the main argument presented is that the scope of education within economic science is too narrow and fails to correctly capture educational outcomes. This is due to the short-sighted approach proposed by human capital theory particularly. In considering the main outcome of education to be higher productivity, which in turn results in higher income, it fails to account for aspirations. As presented by these authors, aspirations

constitute an important factor in outcomes. As such, the argument that is made here (and which will be empirically supported in Part III) is that aspirations are to be considered if educational outcomes are to be fully understood. Following these authors, the integration of aspirations in the understanding of (economic) outcomes allows for a better account of education globally. Furthermore, the link between aspirations and well-being is also rarely considered in economic science. Highlighting this link will furthermore allow understanding the role aspirations may play in the educational context.

#### 4.2.2 Educational Aspirations

When referring back to the seminal work by Gary Becker on human capital, the sole aspiration that is derived from education is that of a higher salary. Findings in different academic fields provide a more comprehensive understanding of aspirations globally, and even more so with specific consideration of the educational context. As discussed in the previous section, economic science has nevertheless progressively started to integrate a more widespread understanding of aspirations in its analysis. In the educational context this is translated in studies like Page, Garboua, and Montmarquette 2007 and Beaman et al. 2012. Drawing on experimental economics they find that aspirations may result in higher educational attainment. This constitutes the core of the rationale that this thesis attempts to address, with the difference that it draws on the informational basis of the capability approach as defined by Amartya Sen rather than pure economics.

The notion of aspirations has also been discussed in the light of the capability approach specifically. A considerable amount of research on this subject – with specific reference to educational context, or not – has been led by Caroline Hart (Hart 2011a, Hart 2011b, Hart 2012, Hart 2016). The link between education and aspirations has also been further highlighted through agency, see for example DeJaeghere 2018. Further research has highlighted the links between aspirations and well-being, see for example Ibrahim 2011.

Hart finds that when applied to children, and in line with the results from the previous section, external influences play a major role in the shaping of aspirations. As such, her field research shows that “while sometimes individuals may develop aspirations of their own volition in other cases they are persuaded towards particular aspirations by others. (...) there was evidence of some teachers guiding students towards or away from certain aspirations. There were also instances where an individual’s aspirations conflicted with the wishes of significant others, and parents in particular.” (Hart 2012, p. 84). Children appear therefore to be particularly exposed to external influences on their own aspirations.

## 4.2. ASPIRATIONS CONNECT THE DOTS; FORESHADOWING THE CAPABILITY APPROACH

This has led me to integrate a specific measure for the external influences on aspirations in the questionnaire (module 8) that is further developed in Part III. These external influences are also consistent with literature on dynamic and evolving capabilities.

Beyond the external influences on aspirations, specifically, when considering younger individuals, internal factors are also to be taken into account. Hart identifies multiple internal registers which influence the formation of aspirations (Hart 2011b). Drawing on a large scale field study, she finds that “pathways are informed by emotional as well as pragmatic choices” (Hart 2011b, p. 4). The emotional aspect of aspiration formation relates the stage where an individual projects herself into the future and wonders how she would feel if that specific aspiration were to be realized. With regard to economic theory, the impact of emotions on rationality has also been progressively explored. The findings of Hart are therefore consistent with those explored by for example Erev et al. 2002, who explore the impact of emotions within the framework of bounded rationality. This emotional register is complemented by the “performance and cognitive” register. In this case, the individual attempts to identify whether she will have the ability to achieve the considered aspiration. Finally, to further the previous discussions provided by Lewin and Ray, Hart introduces the “socio-cultural register”. This register is not to be interpreted as Ray’s “aspiration window”, but shifts the focus to the *feeling* of belonging, rather than the belonging itself. In this case, the individual ponders whether she will feel that she will “fit in”.

Agency in the shaping of aspirations plays a predominant role. The empirical application applied at the end of this thesis will find strong evidence pointing in that direction. The impact of agency on the formation of aspirations has also been approached on a theoretical level. Figure 3 illustrates the link between aspirations and agency.

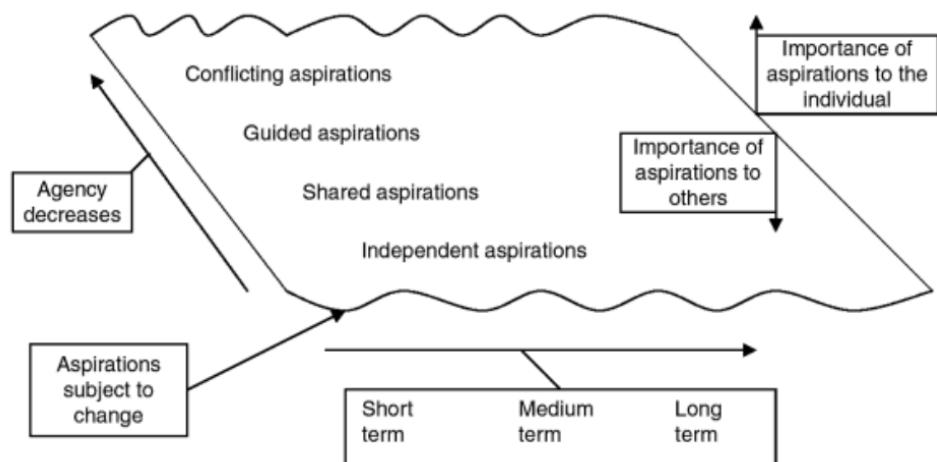


Figure 3: Dynamic multi-dimensional model of aspirations (Hart 2012, p. 85)

## CHAPTER 4. ASPIRATIONS

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Figure 3 shows the identification of four different types of aspirations in a three-dimensional space. The types of aspirations range from independent aspirations to conflicting aspirations and are consequently assimilated with a decreasing degree of agency. Independent aspirations may be qualified as aspirations that are formed autonomously by the considered individual. Shared aspirations are aspirations that result from a process of “negotiation” between the aspiring individual and significant others, such as parents or teachers. Guided aspirations are aspirations that come from a process in which the aspiring individual is oriented towards a specific (set of) aspiration(s) and did not have a high autonomy of decision. Finally, conflicting aspirations are those aspirations held by an individual that directly clash with the aspirations significant others project on this individual. Within the second dimension, these aspirations also vary accordingly to the importance of aspirations to the observed individual or their significant others. This tends to show that aspirations are formed or destroyed according to a ‘weight’ which is attributed to these aspirations by the individual and by the people who constitute this individual’s social sphere. Finally, and in the third dimension, time is found to “change” aspirations. As the individual evolves, and specifically children, her or his aspirations evolve accordingly. This has been discussed in the literature on children and aspirations, for example, Biggeri et al. 2006 and Ballet, Biggeri, and Comim 2011. This finding is confirmed in the exploratory empirical application proposed at the end of this thesis.

As such, Hart finds that aspirations are determined by an “overall impact on an individual of a constellation of factors” (Hart 2011b, p. 19). This specification allowed for a more informed construction as developed in Part III and permits the integration of informed questions that attempt to measure the influencing factors identified here. This will prove to be successful as agency comes is found to be the most significant factor impacting the formation of aspirations. The role of education in the capability approach will be more generally review in section 6.2.

## **Part II**

# **The Capability Approach and Children**



# Chapter 5

## The Capability Approach

So act as to treat humanity,  
whether in thine own person or  
in that of any other, in every  
case as an end withal, never as  
means only.

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*Kant 1994, p. xix*

The life of money-making is one  
undertaken under compulsion,  
and wealth is evidently not the  
good we are seeking; for it is  
merely useful and for the sake of  
something else.

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*Aristotle 2009, p. 7*

THE Capability Approach as developed by Amartya Sen operates a major shift in the informational basis when compared to the previously discussed theoretical and empirical frameworks. In the previous chapters, I discussed economic, sociological and psychological schools of thought and their approach in tackling the questions of education, well-being, and aspirations. The shift operated by Sen's approach allows considering all these dimensions in one single theoretical framework. Amartya Sen's background as an economist, specifically that of development economics and social choice theory (which led him to the 1998 Nobel Price in Economics) as well as a philosopher, opens the way for an extended and an inclusive informational base from which stems his capability approach.

The first section will attempt to define more precisely the rationale of the capability approach.

## 5.1 Core of the Capability Approach

The advent of the capability approach's rationale can be traced back to Sen's lectures in the late 1970's and his writings which stemmed from there. It has since then been widely discussed, critiqued, specified and reformulated by scholars from various academic backgrounds. In his Tanner Lectures on Human Values, Amartya Sen asks the question "Equality of What?" while considering utilitarian equality, total utility equality and Rawlsian equality (Sen 1980). I have discussed the notion of utility in previous sections (see sections 3.1.1 and 3.2.1). The first subsection will, therefore, discuss the rationale of the capability approach. It will specifically consider this approach from a welfarist economic standpoint. This is done with reference to the well-being problematique as coined by Des Gasper (Gasper 2007). Secondly, I will further discuss the notions of capabilities and functionings

### 5.1.1 Rationale of the Capability Approach

Sen's Tanner Lectures on Human Values argue that approaches that consider individual utility - as the previously discussed forms of utility and happiness - may not be sufficient. He argues that this specific form of outcome relies too heavily on a variety of factors that the analysis does not include, such as personality, aspirations but also the ability to benefit from marginal utility. He states that "if person A as a cripple gets half the utility that the pleasure-wizard person B does from any given level of income, then in the pure distribution problem between A and B the utilitarian would end up giving the pleasure-wizard B more income than the cripple A" (Sen 1980, p. 203). In a second stance, he argues against the more general case of the welfarist approach to well-being. He finds here that this approach "ignores claims arising from the intensity of one's needs" and that no attention is given to "the number of people whose interests are overridden in the pursuit of the interests of the worst off" (Sen 1980, pp. 208–209).

Instead of these approaches, which I have previously discussed, Sen promotes what he then calls "basic capability equality". He adds, on a humorous note which reveals his intimate conviction that he "shall not desist from doing some propaganda on its behalf" (Sen 1980, p. 197). His Tanner Lecture takes place at the dawn of his capability approach,

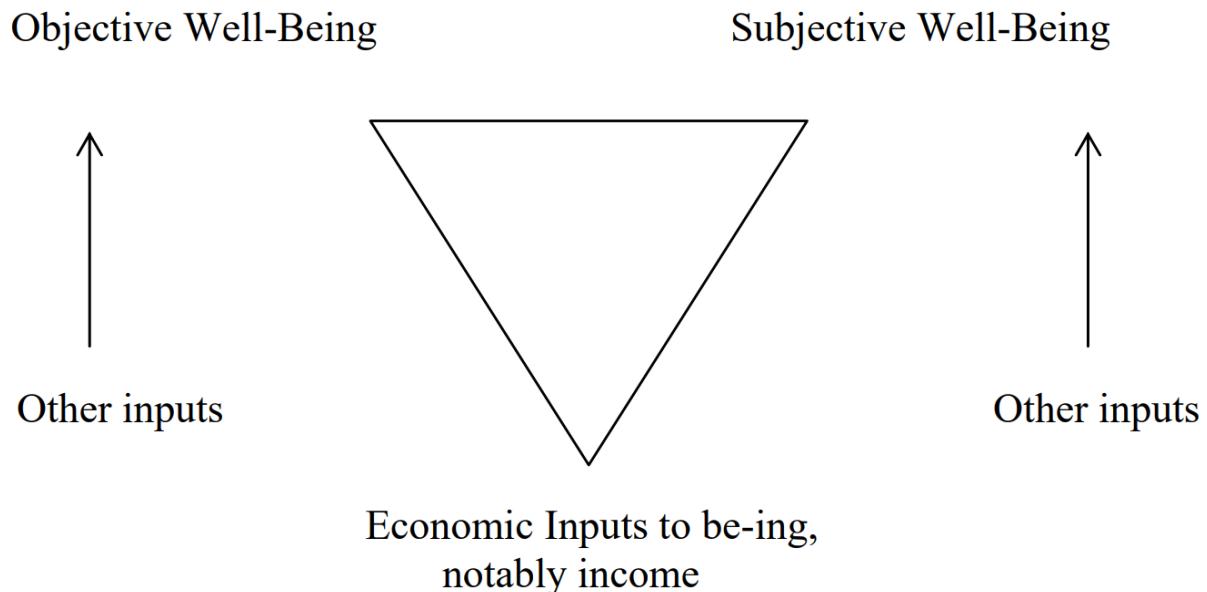


Figure 4: The well-being puzzle triangle: inputs and outcomes (Gasper 2007, p. 338)

and the outline he provides has since been updated, notably by himself. He defines basic capabilities initially as “being able to do certain basic things”. This first definition omits a major domain which Sen later added when he redefined capability as “the alternative combinations of functionings the person can achieve, and from which he or she can choose one collection. The approach is based on a view of living as a combination of various ‘doings and beings’, with the quality of life to be assessed in terms of the capability to achieve valuable functionings.” (Sen 1993, p. 31). This latter formulation of ‘doings and beings’ will be adopted by a major part of the scholars studying the capability approach.

Des Gasper examines the rationale of the capability approach as an addition to the standard economic analysis of well-being. He brings a better understanding through the study of the inputs and the outputs which are considered in different social sciences<sup>1</sup>. The illustration attached to his analysis is that of the ‘well-being puzzle triangle’ in figure 4. This triangle represents the relationships that exist between economic inputs, represented by income, objective well-being and subjective well-being. It is to be noted that there are no arrows on the sides of the triangle due to ‘patchy’ relationships between these dimensions. Several arguments are mobilized by Gasper to justify this statement. He draws on ‘economics orthodoxy’ (Gasper 2005, p. 182) to represent the link between well-being outcomes and economical income. Following this literature, this correlation is positive, as well-being increases with income. But this consideration goes only as far as the Easterlin Paradox, as I discussed previously in section 3.1.3. This figure then also accounts for other inputs on the well-being outcomes which may include every aspect of

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<sup>1</sup>A table summarizing this analysis can be found in appendix H.

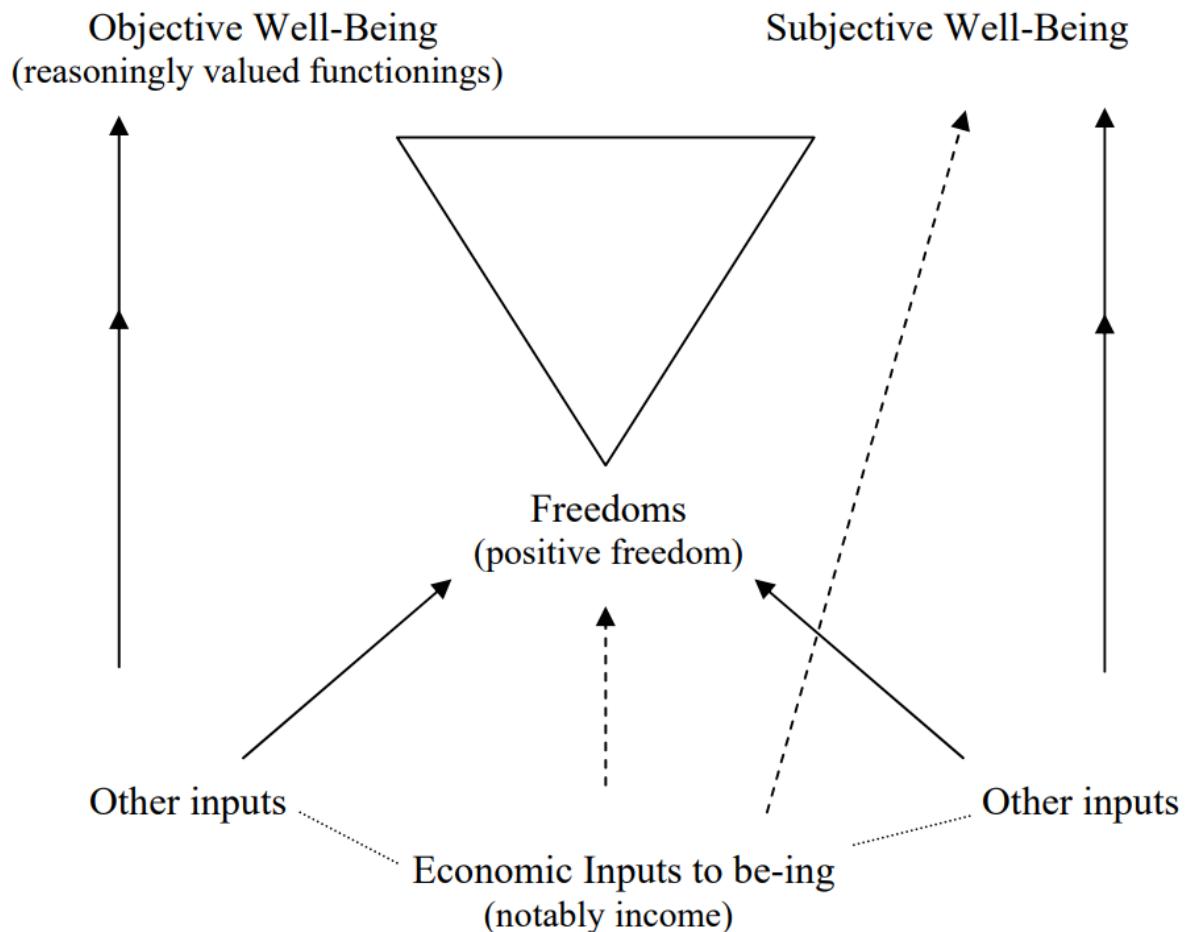


Figure 5: Sen's addition of attention to potential outcomes (Gasper 2007, p. 338)

human lives that contribute to the shaping of one's well-being but the economic inputs. However, the origin, the nature and the impact of the 'other inputs' remain unexplained in this first figure and fail to take into account adaptive preferences and framing effects, for example.

In the capabilitarian vocabulary, figure 4 represents actual functionings. Sen's contribution to this analysis is that of adding a layer of analysis, which becomes the core of this approach. As can be seen in figure 5, the central notion is that of 'positive freedoms'. These freedoms also gave their name to the entire approach, being labeled 'capabilities'. The introduction of freedoms in the analysis allows rethinking the previous illustration. The first distinction to be made is the fact that the economic inputs do not directly influence well-being in this second representation. The dotted line that links the economic inputs to subjective well-being represents solely the idea that an individual may experience higher levels of well-being exclusively due to the possession of more money (a higher income, for example). In more general terms the economic inputs are here only a means to achieve higher levels of well-being.

The second layer of analysis – i.e. the positive freedoms – are determined by the ‘other inputs’ and the previously discussed economic inputs. These freedoms, in turn, influence the well-being outcomes, rather than the economic inputs as in the first representation. This shifts the analysis of the well-being problematique entirely; without denying the importance of economic inputs, the capability approach considers a supplementary step. The richness of the capability approach lies specifically in the study of these positive freedoms. Where utilitarian approaches find a direct link between income – or material wealth – and well-being, the capability approach posits the existence of positive freedoms as a translation of this economic wealth into actual well-being. I will further develop the understanding of positive freedoms in sub-section 5.1.2. As such, the capabilities of an individual can increase with higher economic inputs. Nevertheless, the translation of these higher capabilities into well-being are conditioned on other factors. These conversion factors are visible in figure 6.

It is also important to note that economic inputs are not the sole shaping factors of capabilities. This approach is inherently multidimensional and accounts for various elements determining the vector of capabilities. These elements may include the social context in the broad sense, but also the institutional and cultural environment. As such, the ‘other inputs’ may influence both positively or negatively an individual’s set of capabilities. One can, for example, imagine that a favorable institutional context, in the form of democracy, the liberty of expression an individual has is much greater than that of an individual living under an authoritarian regime.

The capability approach does not only focus on what people are able to ‘do’, but also what people are able to ‘be’. The set of capabilities also entails freedoms like ‘being happy’. This approach is therefore particularly adapted for the identification of states of well-being as this thesis proposes in its last part.

Focusing specifically on the capability approach and putting aside Gasper’s well-being problematique, figure 6 is one of the earlier schematic representations of the capability approach by Ingrid Robeyns. This representation is broader and does not come from an economic standpoint. Despite the presence of economical inputs (here, the ‘means to achieve’, also labeled ‘commodities’ by Amartya Sen) compose only one of the multiple inputs to the capability set, and *in fine* the functionings.

One specificity of the capability approach that is added by this representation is the individual conversion factors. These factors are heavily conditioned by the previously mentioned social context. They represent the ability of a person to convert their initial inputs into actual capabilities. One can, for example, imagine that an individual who possesses the resources to drive a car – i.e. the money, or even the car itself – may not

## CHAPTER 5. THE CAPABILITY APPROACH

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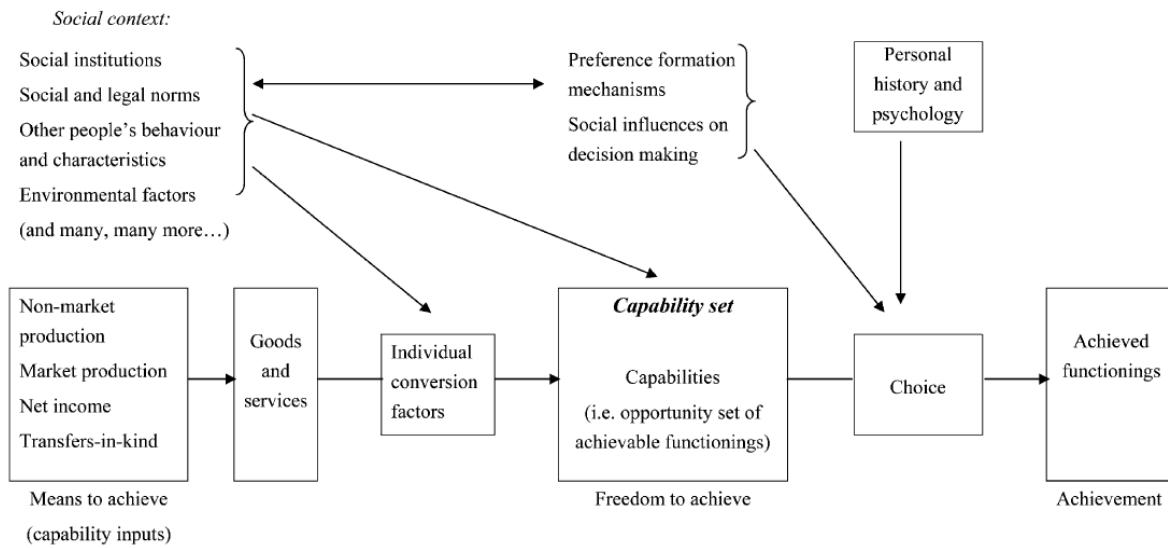


Figure 6: A stylised non-dynamic representation of a person's capability set and her social and personal context (Robeyns 2005, p. 98).

have the freedom to actually drive the same car. Such a situation may occur when this individual is a woman and lives in a society where women do not have the right to drive a car, for example. Such a consideration would be entirely ignored by previously discussed, more traditional approaches.

Another important and well-depicted aspect of this representation is the element of choice. This stage of the process intervenes between the capability set and the achieved functionings. It allows highlighting the fact that all capabilities are not transformed into achieved functionings *per se*. Such a conversion is dependent intrinsically bound to the individual. This does not mean that the individual is the sole influencing element in decision making. The two overhead boxes clearly show external social and environmental factors.

Integrating both choice and the previously discussed conversion factors as processes towards the achievement of functionings come with paramount theoretical considerations. These two elements rely heavily on the considered individual. As such, it is important for the capability approach to have a consistent outline of such an individual. The difficulties this encompasses are vast and have cost the capability approach severe criticism. Relying so heavily on the notion of individuals has resulted in the capability approach being treated as methodological individualism. Such a critique can easily be deflected after the analysis of figure 6, where the core of the analysis remains the individual, without denying her or his environment and social context. Scholars have also proposed that ethical individualism is a more adequate term to describe the capability approach (Robeyns 2005, Ballet, Dubois, and Mahieu 2007).

### 5.1.2 Capabilities and Functionings

In a later article, Ingrid Robeyns attempts to provide a core rationale for the capability approach, and more generally, she attempts to identify the characteristics all capability theories should have (Robeyns 2016). To do so, she proposes the ‘cartwheel view’ in which the core elements are common to all theories (at the center of the cartwheel) and where other characteristics are considered modules (the wedges). She finds that the center of the cartwheel contains *a minima* 12 characteristics, of which I will discuss capabilities and functionings here, as Robeyns considers them to be “the distinctive feature of all capabilitarian theories” (Robeyns 2016, p. 405).

It is important to note that the capability approach offers a conceptual leap from the utilitarian and resource-based analyses that I have previously discussed from the standpoint of economists. A major distinction that is to be made to shift from an economical to a capabilitarian view is to apprehend the inputs of both approaches, in a similar fashion as Des Gasper does when discussing the well-being problematique. In utilitarian and resource-based schools of thought, the means and the ends may be confused into one single element, namely income. As discussed previously, in these analyses, in order to increase well-being one has to increase income and/or (overall) wealth. The capability approach considers wealth as a valid input, but it does not constitute the sole variable. This is justified from a capabilitarian point of view, since it does not attempt to measure well-being directly, but focuses rather on the identification and the eventually the quantification of capabilities. As I have foreshadowed previously, these capabilities are to be understood as positive freedoms, in other words, things that people *could* do.

In order to situate correctly both the distinction and the complementary of capabilities and functionings, Amartya Sen declares that “a functioning is an achievement, whereas a capability is the ability to achieve. Functionings are, in a sense, more directly related to living conditions, since they are different aspects of living conditions. Capabilities, in contrast, are notions of freedom, in the positive sense: what real opportunities you have regarding the life you may lead” (Sen 1987b, p. 36). The choice of words has induced misunderstanding and confusion, to the point that he finds that “capability is not an awfully attractive word. It has a technocratic sound (... )”, whilst reasserting that “the expression was picked to represent the alternative combinations of things a person is able to do or be – the various ‘functionings’ he or she can achieve.” (Sen 1993, p. 30).

One illustration of this distinction between commodities and achieved functionings is the distinction between ‘possessing a bike’ and ‘bicycling’. This example is found throughout the capabilities literature and clearly depicts the different paths of understanding that

the capability approach provides. It also allows the introduction of capabilities as an intermediary step, enriching considerably the understanding. If the objective of public policy were to encourage the usage of bikes through a resourcist analysis, the focus would be the providing of bikes or equivalent monetary resources. By omitting the notion of capabilities and linking commodities directly to achieved functionings, such an approach does not account for other factors hindering the usage of bikes. These factors could nevertheless be prohibitory for the functioning of bicycling and may include the infrastructure but also cultural barriers. One can imagine for example a cultural barrier that forbids the usage of bikes by women. Despite women having the monetary resources or even the bike itself, they will not have the capability of riding the bike. This supplementary phase in the understanding of the occurrence of achieved functionings considerably increases the richness of the analysis.

Moreover, the study of functionings as outcomes of capabilities allows for a better understanding of well-being. As Robeyns puts it, “functionings are constitutive elements of well-being but also of ill-being” (Robeyns 2016, p. 406).

It is important to note that Sen considers the primary goal of capability driven policies should be the enhancement of these capabilities. This is reflected in the title one of his major books “Development as Freedom” (Sen 1999). Nevertheless, when considering the range of capabilities closely, one may perceive the existence of ‘less and non-desirable’ capabilities. Indeed, Sen has never excluded from the vector of capabilities those which may be harmful to others, for example. Taking this reasoning to an extreme one can easily imagine the capability to commit murder. As such, capabilities are not value-laden and may include every single freedom that an agent possesses. This is where the importance of the individual, who possesses the said vector of capabilities, as well as her choices are highlighted, which I will further develop in subsection 5.1.3. Moreover, such a capability is constrained by the institutional context – such as laws – and the cultural environment.

### 5.1.3 Agency

This subsection aims to clarify the position of the agent within the capability approach. As foreshadowed in the previous subsection, providing a definition for the individual, i.e. an agent, comes accompanied by major ethical considerations. The positioning and definition of the agent appear to be a major concern when applying the capability approach to children. Specifics of children as agents are further developed in section 6.1.2.

Amartya Sen defines an agent as “someone who acts and brings about change, and whose achievements can be judged in terms of her own values and objectives” (Sen 1999,

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p. 12). Sen introduces values as being inherent to the agent and thus responds to the issue previously raised regarding the fact that capabilities are initially non-value-laden. All capabilities are therefore not transformed into achieved functionings. They must first pass the filter of individual choice, the choice operated by the considered agent. As seen in figure 6, the formation of choice is conditioned not only by the individual's personal characteristics such as psychology and individual experiences. It is also shaped by social influences, which include social norms and institutions. As such, the social context of the agent heavily conditions her choice-making process. The importance of the deep anchoring of individuals in their social context has been highlighted notably by anthropologists, such as Arjun Appadurai, who states that "there is no self outside a social frame, setting and mirror" (Appadurai 2004, p. 67). Similarly, the concept of the aspirations window, as coined by Debraj Ray also seems to be deeply rooted in the social context. He affirms that "the window is formed from an individual's cognitive world, her zone of "similar", "attainable" individuals. Our individual draws (...) from the lives, achievements, or ideals of those who exist in her aspirations window." (Ray 2006, p. 410)

This very close attention paid to the individual has earned the capability approach heavy criticism. Specifically, the fact that the starting point of any capabilitarian approach is always the individual has resulted in this conceptual corpus to be depicted as methodological individualism. This form of individualism considers that individuals pre-exist the society they live and evolve in. In other words, the societal phenomena can be explained solely by the actions of the individuals that compose it. Such criticism seems at least partially unfounded and may be addressed with reference to agency. As mentioned in subsection 5.1.2, agency comes with moral duty. I discussed this in the light of "less desirable" capabilities. The moral compass which orientates the individual choices converting capabilities into achieved functionings is subject to external, and more specifically societal, influences. In this manner, criticisms depicting the capability approach as methodological individualism are rapidly emptied of their substance. Nevertheless, the moral issue of the "less desirable" capabilities remains unaddressed.

This thesis often refers to Immanuel Kant, mainly in its epigraphs, notably when he affirms that one should "act [so] as to treat humanity, whether in thine own person or in that of any other, in every case as an end withal, never as means only." (Kant 1994, p. xix). This ethical position allows to reflect on the capabilities which may pose issues when transformed into achieved functionings. Onora O'Neill considers that:

"The requirement not to use others as mere means underlies 'perfect' duties, which require rational natures not use one another (or themselves) as mere dispensable and disposable means that can be destroyed or damaged or de-

## CHAPTER 5. THE CAPABILITY APPROACH

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ceived for arbitrary ends, so eliminating, eroding or by-passing agency. The requirement to treat others as ends in themselves underlies ‘imperfect’ duties: because human agents have fragile and undeveloped abilities and are always, and often intensely, physically and mentally vulnerable to one another, they must, if they are to ensure that moral action has a reliable place in their world, sustain human abilities by developing their own capacities for action (talents) and supporting one another’s pursuit of (permissible) ends.” (O’Neill 1998, p. 219).

This interpretation of Kant allows a two-fold resolution of the issue that is raised by the non-value laden nature of capabilities. On the one hand, and with regards to the perfect duties, the preservation of an individual’s agency is fundamental. Both Kant and O’Neill highlight that one’s agency must in no way or form deprive another individual of her agency. This poses a first moral compass to the transformation of capabilities in achieved functionings. For example, and in phase with Sen’s definition of agency, one may not obstruct another to bring about change. On the other hand, the existence of imperfect duties underlines the inherent interdependence of all agent’s responsibilities and freedoms. In this line of thought, Martha Nussbaum writes that “The good of others is not just a constraint on this person’s pursuit of her own good; it is a part of her good” (Nussbaum 2006, p. 158). As such, qualifying the capability approach as a purely individualistic approach, seems to be a wrong interpretation. This does not mean that the initial and main focus is not on individuals, but rather that the individual is deeply anchored in her social, political and institutional environment. From this line of thought is derived the idea that the capability approach is ethical individualism, rather than methodological individualism (Ballet, Dubois, and Mahieu 2007, Robeyns 2005).

Finally, agency allows tying the capability approach even further with the concepts of both well-being and aspirations. Several capability scholars have discussed and distinguished the notions of ‘agency goals’ and ‘well-being’. Well-being is defined by Sen as the “‘well-ness’ of the person’s state of being” (Nussbaum and Sen 1993, p. 36), making it a static and self-regarding concern. This may involve states of being such as being well-nourished and sheltered. On the other hand, agency goals can be defined as “a person’s ‘agency freedom’ refers to what the person is free to do and achieve in pursuit of whatever goals or values he or she regards as important” (Sen 1985c, p. 203) or more plainly put, “the objectives the person sets himself or herself” (Burchardt 2009, p. 6). In this sense, agency freedom refers to a dynamic, future-orientated process, in which the agent attempts to attain her aspirations.

The distinction between agency goals and well-being allows accounting for the in-

herent multi-dimensional nature of both the well-being outcomes and the process that an agent undertakes to achieve them. This can be illustrated by Albert, who aspires to become a well-learned and prominent astrophysicist. Once he reaches the state of being this scientist, he will draw great amounts of ‘well-ness’ from it. This does not necessarily mean that the process to attain that specific state of being is free of obstacles. One may imagine that it includes countless hours of learning, researching and probably painful exams. This distinction, therefore, has important implications for the role of education within the capability approach. I will further discuss the role of education in the capability approach in subsection 6.2.2.

## 5.2 Measuring Capabilities

### 5.2.1 Operationalization of the Capability Approach

I have touched upon several issues of operationalization of well being previously. These methods all had in common that they attempted to empirically evaluate, be it cardinally or ordinally well being, and were from the standpoint of economic science. Within the capability approach, two major approaches to the operationalization may be identified. This first is the one that relates to the selection of relevant capabilities, or achieved functionings; in this line of thought, Robeyns argues that “not all applications of the capability approach require *empirical* research techniques” (Robeyns 2006, p. 358). The second encompasses the empirical applications to a variety of data sets, and which attempt to numerically evaluate or rank capabilities and/or achieved functionings. In this manner, Sen declares that “the capability approach is concerned *primarily* with the identification of value-objects” and that it as such proceeds to “the identification of the objects” and finally to evaluate “their relative values” (Sen 1992, p. 43). In the last part of this thesis, I will apply a sequential use of both of these two approaches by initially selecting relevant dimensions for the pupils and then letting them value them.

Before discussing these two strands of operationalization, it is to be noted that the capability approach has benefited from a high degree of formalization in its early days. Following his founding Tanner Lectures (Sen 1980), Sen proposes the following formalization of his textual outline of the capability approach (Sen 1985a, as summarized in Brandolini and D’Alessio 1998):

Let  $x_i$  be a vector of commodities possessed by person  $i$  and  $f_i(x_i)$  a function converting the commodity vector into a vector of functionings  $b_i$ , so that  $b_i = f_i(x_i)$ . The

function  $f_i(\cdot)$  (...) is a member of  $F_i$  which contains all different ways open to the person to transform the given commodities. Defining the valuation function by  $g_{ei}(\cdot)$ , where  $e$  refers to the “evaluator” and  $i$  to the person whose well-being is under examination (where it may be  $e = i$ ), it is:

$$v_{ei} = g_{ei}(b_i) = g_{ei}(f_i(x_i)) \quad (5.1)$$

For a given commodity vector  $\bar{x}_i$ , the set of feasible functionings  $A_i$  is determined by the set of converting functions  $F_i$ :

$$A_i = \{b_i | b_i = f_i(\bar{x}_i), \text{ for any } f_i(\cdot) \in F_i\} \quad (5.2)$$

By denoting a person’s budget set by  $X_i$ , the set of feasible functionings is then given by

$$B_i = \{b_i | b_i = f_i(x_i), \text{ for any } f_i(\cdot) \in F_i \text{ and for any } x_i \in X_i\} \quad (5.3)$$

The set  $B_i$  reflects the capabilities of the  $i$ th person.

The last equation (5.3) was later refined by Wiebke Kuklys, by integrating new advancements in the specification of the capability approach (Kuklys 2005, p. 11):

$$Q_i(X_i) = \{b_i | b_i = f_i(c(x_i)|z_i, z_e, z_s) \forall f_i \in F_i \text{ and } \forall x_i \in X_i\} \quad (5.4)$$

where

$x \in X$  is a vector of commodities and  $X$  is the set of all possible commodity vectors

$c=c(x)$  is a vector of characteristics of commodities, where

$c$  is a function that maps commodities into the characteristics space

$b=f(c(x|z_i, z_e, z_s))$  is a vector of activities and states of being (functionings), where

$f \in F$  is a conversion function that maps characteristics of commodities into the space of all possible conversion functions and

$z_i, z_e, z_s$  are conversion factors at the individual (i), social (s) and environmental (e) level, which determine the rate of conversion from characteristics to functionings.

$Q$  is the capability set comprising all potential functionings an individual can achieve.

The attempt to represent the capability approach under the form of a set of equations may be considered to shape the initial operationalization of the approach. They bring clarity to the interconnections of complex dimensions that Sen initially pointed out in his Tanner Lectures and which were then picked up and further developed by scholars from a variety of academical backgrounds. Having this mathematical rigor may, therefore, bring structure into the multitude of described dimensions, relations, and transformations. Doing so comes with a cost nevertheless, as this formalization is not very appealing to scholars from all fields. Moreover, the question as to whether they reflect the entire scope of the capability approach remains open. As such, it may be discussed whether Sen's final equation (5.3) is a more general case of (5.4) proposed by Kuklys, or if it fails to account for the specifically added conversion vectors ( $z_i, z_e, z_s$ ) by the latter. Furthermore, Kuklys adds the function  $c$ , as a function that determines further the "characteristics" of the commodities, which is not explicitly present in Sen's equations. Once again, his way of formalizing his own approach does nevertheless not exclude such considerations *de facto*.

Such considerations make the specification of the approach of primordial importance. It is required to further operationalize the approach and such equations do not suffice by themselves. As I will further discuss in sections 5.2.2 and 5.2.3 these equations can not be used as provided here. One point that is worth noting here is that Sen opens the strand of subjective evaluation in the most formal manner. He considers that it may be that  $e = i$ , thus allowing well-being to be evaluated by the person who is being examined. I will retain this point in my empirical application of the approach, by allowing the "evaluated" to be the "evaluators" simultaneously.

### 5.2.2 Selecting relevant capabilities

When Sen asks his famous question "Equality of what?" (Sen 1980), his aim is to shift the focus from resource-based and utilitarian approaches to his capability-based alternative. This question may nevertheless also entail the still topical subject of "which capabilities?". There appears to be no consensus in the literature about this question, especially since this seems like one of the major points of divergence between Amartya Sen and Martha Nussbaum. This theoretical discord polarizes the literature where one part applies the capability approach as defended by Sen and the other puts forward the approach "à la Nussbaum". As such, Nussbaum declares that Sen's conception of capabilities only gives "a general sense of what societies ought to be striving to achieve,

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but because of Sen’s reluctance to make commitments about substance (which capabilities a society ought most centrally to pursue), even that guidance remains but an outline.” (Nussbaum 2003, p. 35). She finds that where Sen argues in favor of a deliberative process, specific to the community to which the capability approach is applied, she defends the necessity to draw up a list of “Central Human Capabilities” (Nussbaum 2003, p. 41). Such a list is, by nature, universally applicable in the sense that it may be applied to any human being, indifferently of gender, ethnicity, or nationality. She finds that her list defines “general goals” which can then be “further specified by the society in question” (Nussbaum 2003, p. 40). Following this initial specification, she defines her list as follows:

- “1. Life. Being able to live to the end of a human life of normal length; not dying prematurely, or before one’s life is so reduced as to be not worth living.
2. Bodily Health. Being able to have good health, including reproductive health; to be adequately nourished; to have adequate shelter.
3. Bodily Integrity. Being able to move freely from place to place; to be secure against violent assault, including sexual assault and domestic violence; having opportunities for sexual satisfaction and for choice in matters of reproduction.
4. Senses, Imagination, and Thought. Being able to use the senses, to imagine, think, and reason – and to do these things in a “truly human” way, a way informed and cultivated by an adequate education, including, but by no means limited to, literacy and basic mathematical and scientific training. Being able to use imagination and thought in connection with experiencing and producing works and events of one’s own choice, religious, literary, musical, and so forth. Being able to use one’s mind in ways protected by guarantees of freedom of expression with respect to both political and artistic speech, and freedom of religious exercise. Being able to have pleasurable experiences and to avoid nonbeneficial pain.
5. Emotions. Being able to have attachments to things and people outside ourselves; to love those who love and care for us, to grieve at their absence; in general, to love, to grieve, to experience longing, gratitude, and justified anger. Not having one’s emotional development blighted by fear and anxiety. (Supporting this capability means supporting forms of human association that can be shown to be crucial in their development.)
6. Practical Reason. Being able to form a conception of the good and to engage in critical reflection about the planning of one’s life. (This entails protection for the liberty of conscience and religious observance.)
7. Affiliation.

A. Being able to live with and toward others, to recognize and show concern for other human beings, to engage in various forms of social interaction; to be able to imagine the situation of another. (Protecting this capability means protecting institutions that constitute and nourish such forms of affiliation, and also protecting the freedom of assembly and political speech.)

B. Having the social bases of self-respect and nonhumiliation; being able to be treated as a dignified being whose worth is equal to that of others. This entails provisions of nondiscrimination on the basis of race, sex, sexual orientation, ethnicity, caste, religion, national origin.

8. Other Species. Being able to live with concern for and in relation to animals, plants, and the world of nature.

9. Play. Being able to laugh, to play, to enjoy recreational activities.

10. Control Over One's Environment.

A. Political. Being able to participate effectively in political choices that govern one's life; having the right of political participation, protections of free speech and association.

B. Material. Being able to hold property (both land and movable goods), and having property rights on an equal basis with others; having the right to seek employment on an equal basis with others; having the freedom from unwarranted search and seizure. In work, being able to work as a human being, exercising practical reason, and entering into meaningful relationships of mutual recognition with other workers.” (Nussbaum 2003, pp. 41–42)

Despite Nussbaum allowing for this list to be “open-ended and subject to ongoing revision and thinking” (Nussbaum 2003, p. 42) this list has undergone a large number of criticisms, notably by Amartya Sen himself. He finds that “even with given social conditions, public discussion and reasoning can lead to a better understanding of the role, reach, and the significance of particular capabilities” (Sen 2004a, p. 80). He concludes that he has “nothing against the listing of capabilities but must stand up against a grand mausoleum to one fixed and final list of capabilities” (Sen 2004a, p. 80).

Further reluctance to the adoption of such a list entail both criticisms on a fundamental level and on a practical level. On the one hand, the fundamental criticisms reject the very idea of such a list, mainly because of its direct and radical opposition with Sen's idea of debate and deliberation, such as voiced by Sabina Alkire who finds Nussbaum's initiative “a list of normative things-to-do” (Alkire 2002, p. 54). On the other hand, the

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practical criticism addressed to the list of Central Human Capabilities are resumed by Ingrid Robeyns as follows:

“Suppose that a social scientist applies the capability approach to gender inequality assessment, or a village council uses the capability approach to decide on priorities for the allocation of its funds, and they end up using Nussbaum’s list of capabilities. In terms of the comprehensive outcome, it would still be important that the social scientist or the village council go through a democratic process for drawing up a list of priorities. This will give a legitimacy to the outcome that simply copying Nussbaum’s list will lack.”  
(Robeyns 2003, p. 68)

The strength of Robeyns’s critical regard on a predefined list lies in the fact that Nussbaum’s list is not to be rejected *per se*. She acknowledges the fact that its composing elements may be found perfectly applicable to practical situations and responding to the specifics of the individual or the community which deliberate about which capabilities appear central to them. Furthermore, and following Sen, the strength of the established list does not lie in the elements of the list itself, but in the legitimacy it acquires through public debate and deliberation. This thesis will find that the argument made by Robeyns holds in the sense that deliberation and debate may indeed, at least partially, lead to the Central Capabilities proposed by Nussbaum. It allows for the individuals to identify with the measurement that is proposed based upon the deliberation. Furthermore, one may imagine that if policies are implemented based upon such a list, the individuals who are directly or indirectly affected by them, may be able to better relate to them. Since they have actively participated in the elaboration of the list, they may find the policies to have greater legitimacy solely because they were involved in the process of creation. This is also one of the advantages I found in preceding a questionnaire with focus groups, which I will further develop in Part III.

Sen, in direct opposition with Nussbaum, argues for a deliberative democracy rather than the establishment of a list, open-ended and subject to change or not. The importance of deliberation may be viewed as Sen’s “Theory of Everything”. He goes as far as questioning the foundations of Human Rights if they are not rooted in a deliberative process and based upon sound theoretical founding. This does of course not mean that he refutes Human Rights entirely, recognizing the “great urgency to respond to terrible deprivations around the world” he finds that Human Rights in their current form have allowed to “confront intense oppression or great misery, without having to wait for the theoretical air to clear” (Sen 2004b, p. 317). Following Robeyns’s previously discussed argument, a list of fundamental or constitutional rights might emerge, but can only find

its legitimacy when it comes from public debate and reasoning. Sen pursues his exploration of human rights and their validity by drawing on Jeremy Bentham, who declared, regarding the French *Declaration of the Rights of Man and of Citizens*: “natural rights is simple nonsense: natural and imprescriptible rights (an American phrase), rhetorical nonsense, nonsense upon stilts” (Bentham 1843, p. 501). Once again, such a statement does not imply that the author refutes the list of Human Rights that this French Declaration draws up as such. Extracted from the same *Anarchical Fallacies*, Jeremy Bentham declares that:

“*Right*, the substantive *right*, is the child of law; from *real* laws come real rights; but from *imaginary* laws, from “law of nature” [can come only] “*imaginary* rights”.” (Bentham 1843, p. 523)

Bentham thus finds that rights ought to be identified, but that such rights can only come from “real” laws. When reflecting specifically on Bentham’s example, the French *Declaration of the Rights of Man and of Citizens* from 1789, his argument appears to be powerful. Despite this Declaration being considered as a considerable leap forward in legal terms it is not to be omitted that they were proposed and ratified by the elites of the society at the time. More specifically, the Constitutive Assembly that wrote this Declaration was a selection of individuals convoked by the French King Louis XVI. This Assembly might have been an attempt to represent the three estates, but was evidently more advantageously organized for the clergy and the nobility. Despite the commoners having more representatives, votes were counted per estate which resulted historically in 2 votes against 1; the clergy and the nobility protecting their privileges against the demands of the commoners. Considering this process of decision, it is to be noted that it does not result from public debate or deliberation. As such, Sen finds that a sound theoretical foundation is to be found to ensure individual freedoms. As discussed in section 5.1.3 such a foundation may be found in Immanuel Kant’s writings. Sen thus argues that:

“A pronouncement of human rights includes an assertion of the importance of the corresponding freedoms – the freedoms that are identified and privileged in the formulation of the rights in question – and is indeed motivated by that importance. For example, the human right of not being tortured springs from the importance of freedom from torture for all. But it includes, furthermore, an affirmation of the need for others to consider what they can reasonably do to secure the freedom from torture for any person. For a would-be torturer, the demand is obviously quite straightforward, to wit, to refrain and desist. The

demand takes the clear form of what Immanuel Kant called a perfect obligation. However, for others too (that is, those other than the would-be torturers) there are responsibilities, even though they are less specific and come in the general form of “imperfect obligations” (to invoke another Kantian concept). The perfectly specified demand not to torture anyone is supplemented by the more general, and less exactly specified, requirement to consider the ways and means through which torture can be prevented and then to decide what one should, thus, reasonably do.” (Sen 2004b, pp. 321–322)

Here, Sen touches upon the same perfect and imperfect obligations discussed in section 5.1.3. Following what he considers to be a more robust foundation of human freedom than the mere declaration of “natural” rights, one may perceive the importance of the selection of these very freedoms within each individual. In other words, without touching upon the identification of freedoms based on public debate and deliberation, Sen finds that individual obligations towards others are in fact, co-determined by others. Sen considers that individuals should select the freedoms they have – or take – based upon what they “should (...) reasonably do”. This requires the active process of thought and decision of the considered individual in acknowledging and pondering their own freedoms before taking them.

This active process has led to a strand of criticism addressed to Sen’s vision of freedoms and the way in which they may be expressed. With reference to the democratic process as defended by Sen, Jean-Michel Bonvin finds that “Sen’s entire approach leads to a very demanding conception of democracy, in which the capability of deliberation of each individual is actively solicited” (Bonvin 2005, p. 30, own translation). Drawing on Gerald Cohen’s writings (Cohen 1990), Jean-Michel Bonvin pursues his criticism by pointing out that “the capability approach by Sen adheres to a hyperactive ideal of human life, which relegates to the second rank those who wish to aim for passive enjoyment of material well-being” (Bonvin 2005, p. 30, referring to Cohen 1990, own translation). In the light of this criticism, Bonvin finds that in this case, those who do not wish or do not have the ability to deliberate would be in a disadvantaged position compared to those who actively engage in deliberation. In his words, these individuals would benefit of “inferior status” (Bonvin 2005, p. 30, referring to Cohen 1990, own translation).

These criticisms do appear to have two fundamental flaws. First of all, putting in the same group those who do not have the *ability* and those who do not have the *will* to participate seems to be a mistake. Sen’s consideration of participation in the selection of freedoms does not exclude those who do not have the ability to do so. Indeed, based upon Kant’s definition of obligations, others are *de facto* taken into consideration. This

appeals to those who do have the ability to undeniably take into account those who don't or do to a lesser extent. The 2015 French law obliging all public buildings to be accessible by everyone, specifically those who did not initially have this ability can be cited as an example here. These buildings are generally where elections and public debates are held (in town halls, for example), and people in wheelchairs might not have been able to access these buildings, excluding them from the public debate, deliberation and choice-making process. This example shows that Sen's account of freedoms does allow people who might not have been initially enabled to participate in the public sphere, may be included through deliberate, specific and oriented actions. Cohen's second argument, regarding those who do not have the *will* to participate appears to be a merely rhetorical one. Indeed, not participating in the public does not exclude them from benefiting from its outcomes. An example that appears pertinent here is that of social benefits; those who did not participate in the debate which introduces the benefits are not excluded from these same benefits. Moreover, having the capability to participate in public debate and decisions do not make this participation an obligation. Enjoying the results of this public debate does nevertheless create new capabilities for everyone, without excluding those who did not participate.

### 5.2.3 Empirical measurements of capabilities

Despite the previous discussion of selecting relevant capabilities, which appears to be a requirement before being able to actually measure them, a vast portion of the existing literature does not proceed to do so. Robeyns finds that “virtually all the quantitative applications are using existing datasets (...) these data are not collected with the aim of capturing people’s functionings well-being, let alone their capabilities” (Robeyns 2006, p. 359). This is nevertheless not systematically the case and has largely evolved Robeyns’s statement, and some counter-examples may be found with specific reference to education and children, see for example Biggeri et al. 2006 and Hart 2012. I will, therefore, draw largely on these existing methodologies in Part III, to both identify and measure pertinent capabilities.

To better approach the classification of methodological techniques, Andrea Brandolini and Giovanni D’Alessio propose a schematic representation, presented in figure 7. The first element of “item-by-item analysis” presents its major advantages in the fact that it does not reduce any complexity of the observed data<sup>2</sup>. This technique looks at all

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<sup>2</sup>See for example Phipps 2002, who applies a comparative analysis of descriptive statistics, mainly through response frequencies to the National Longitudinal Survey of Children and Youth (Canada), The Statistics Norway Health Survey (Norway) and the National Survey of Children (United States).

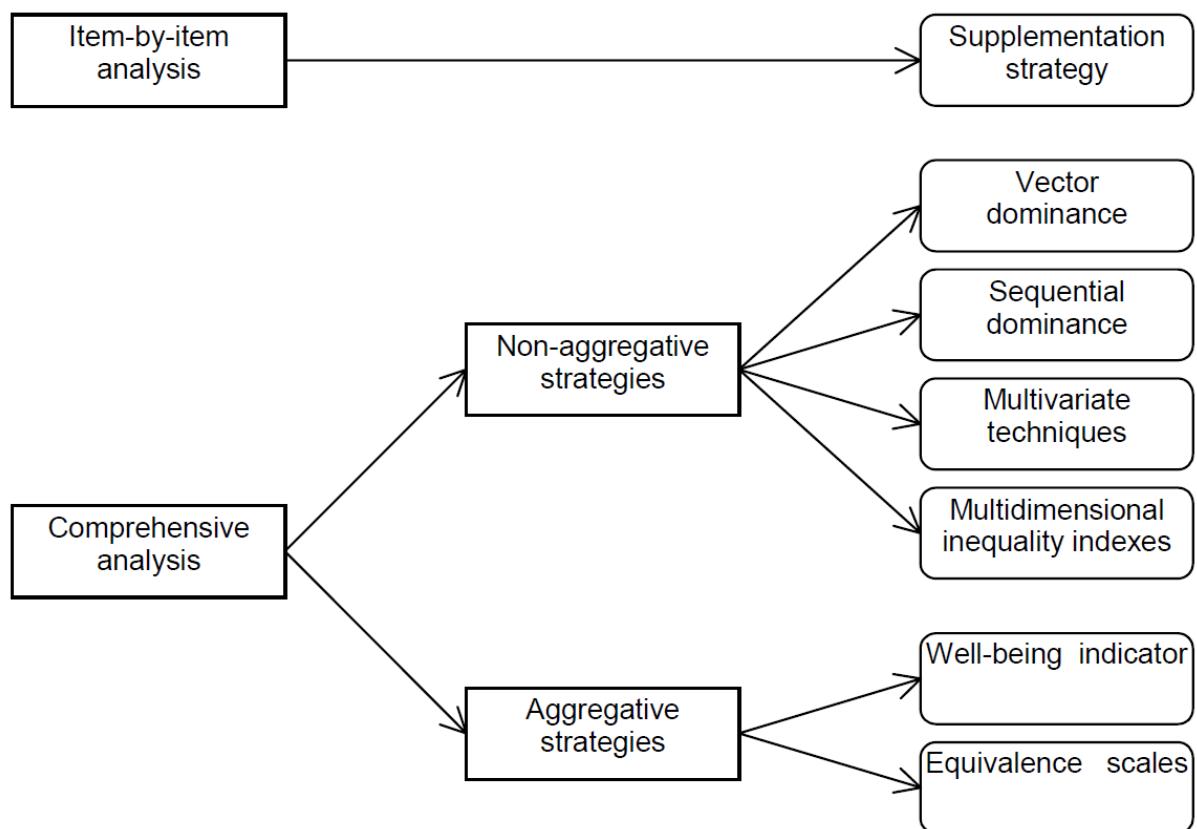


Figure 7: Strategies for the application of the capability approach (Brandolini and D'Alessio 1998, p. 16)

the observed dimensions individually, and may also cross them among each other. On the other hand, several weaknesses may also be identified. Such an approach, despite its quantitative nature, may be subject to the subjectivity of the researcher. The selection of the retained variables, their interpretation or cross-analysis only depends on the research who may, even unwillingly, introduce his subjective interpretation of the data or observed situations in the field into the analysis. Moreover, the analysis may lack completeness such as missing links between the variables. Especially in large databases, such a process may prove interminably long and rapidly grows in complexity, which makes it harder to apprehend for the researcher applying such a technique.

The second group comprises all the “comprehensive analyses”, which in turn, regroup the “non-aggregative strategies” and the “aggregative strategies”. Vector analysis focuses on the ordering of ensembles of capabilities, regrouped in vectors. On the other hand, sequential dominance is defined as the comparisons between different situations. These situations may include analysis between different groups or between different epochs. The multivariate techniques regroup a large body of techniques such as fuzzy set theory or structural equation modeling<sup>3</sup>. I will further develop an original non-aggregative strategy, specifically a multivariate technique, in section 8.2.1.

The aggregative strategies are the most widely used in communication for the general public. This may be attributed to their “communicational advantage” (Brandolini and D’Alessio 1998, p. 19) since they reduce all the information in an index. These strategies are championed by the Human Development Index, which is widely used and well-known. The strength of such indicators is also their major flaw, as Sen indicates: “the passion for aggregation makes good sense in many contexts, but it can be futile or pointless in others. (...) When we hear of variety, we need not invariably reach for our aggregator” (Sen 1987b, p. 33). The reduction in information operated by aggregation tends to simplify, reduce if not entirely erase pertinent dimensions. Such measures also make the line between the level of analysis fuzzy. Especially from an economist’s standpoint, this distinction is non-negligible, as Flavio Comim puts it:

“At a macro level, not many differences are possible, since, for instance, aggregates on mortality levels of female illiteracy will provide the same information either from a capability or from a ‘utilitarian’ perspective. The significant difference lies in micro-economic studies where the valuational foundation of the Capability Approach allows people to express their ‘powers of discrimination’ with regard to the good life.” (Comim 2001, p. 10).

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<sup>3</sup>See for example Di Tommaso 2006 and Addabbo and Di Tommaso 2011, who present examples of Multiple Indicators Multiple Causes (MIMIC) approaches, specifically applied to children.

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The issue underlined by Comim and the previous discussion on the selection of capabilities leads me to adopt a micro-oriented selection of relevant capabilities for the observed group of individuals, i.e. schooled children. I will then use a non-aggregative strategy to attempt to preserve as much of the information as possible contained in the original questionnaire. This approach will be further developed in section 8.2.1.

# Chapter 6

## The Applicability of the Capability Approach to Children

Youth is nothing but a word.

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Bourdieu 1980

### 6.1 Children and the Capability Approach

ONSIDERING children with regards to the Capability Approach poses several issues. As explored previously, this theoretical approach requires the abilities of choice-making and self-determination through agency. These requirements are not evident when considering children. When considering historically the position of children in a society, one notes that they have not always benefited from the attention, nor the understanding they have nowadays. This lack of recognition, which can be referred to as “theoretical orthodoxy” (Dahmen 2014, p. 153), has been questioned and revised since the 1990’s. This theoretical issue has been noted and discussed previously by scholars from a capabilitarian point of view, see for example Ballet, Biggeri, and Comim 2011.

This section will then propose to review this orthodoxy in the light of the new sociology of childhood in order to attempt to create a theoretical foundation for the application of the capability approach to children.

“The tradition within both sociology, psychology and educational studies has been to ignore or deny children any sort of status that would ground what children do in socially meaningful terms. Children are thought of as adults-in-waiting; that is, children exist

with reference to what they will become - competent, rational adults." (Wyness 1999, p. 354)

When researching self-determination with regard to children, be it from a conceptual or from a policy-making perspective, one is inevitably confronted with the issue of children's rights. A distinction is to be made between children's rights in terms of nurture on one hand and in self-determination on the other (Ruck, Abramovitch, and Keating 1998).

### **6.1.1 Children from a historical perspective**

The debate around children, their rights, their abilities, and their well-being does not seem to have reached a consensus. Where some find matter to protect either children's welfare or children's rights (Baumrind 1978), others further distinguish the children's rights into nurturance rights on the one hand, and self-determination rights on the other (Ruck, Abramovitch, and Keating 1998). These views are not necessarily found compatible with each other. For example, it can be argued that granting children greater self-determination rights may conflict with children's rights to be cared for and nurtured. Allowing a child not to eat because he doesn't want to is indeed contradictory with the same child's right to being properly fed.

Historically, the question of child rights was not a question as such, nor was their ability to choose for themselves. Stuart Hart finds that "prior to the 16th century most children beyond six years of age were considered to be small adults and were not separated from adults as a class" (Hart 1991, p. 53). As such, no distinction was made between what we consider nowadays as (very) young children. They were expected to perform work according to their competencies and were treated accordingly. Children did not draw the corresponding recognition from their work or status nevertheless, as they were "considered to be chattel" (Hart 1991, p. 53). This also translated in the legal age of marriage to be 13 in the middle ages, and the heir to the throne of France could become King upon the same age. Between the 16<sup>th</sup> and 18<sup>th</sup> centuries, the status of children underwent some significant changes, where they "were valued for contributing to family work and supporting parents in their old age". They were remained nevertheless "without individual identity to the extent that they were considered replaceable and interchangeable." (Hart 1991, p. 53).

When reflecting upon child labor specifically, up to the middle of the 19<sup>th</sup> century, child labor was considered a banality. "Not only were children used in labor, the labor of children was a social fact, not a social problem" (Bremner 1971, p. 103). The banality of this social fact is conveyed and denounced by Victor Hugo in this "Contemplations" in

1856<sup>1</sup>.

It is only at the beginning of the 20<sup>th</sup> century that children started to be considered as “the essential human resources whose mature form would determine the future of society” (Hart 1982, p. 4). This view nevertheless still considers children as deprived of any form of agency, as they are mere adults-in-becoming, rather than individuals for themselves. This leads authors to consider that children are “studied as passive beings structured by the social context of the family or the school, now research should focus on children’s agency, on the ways that children construct their own autonomous social worlds” (Freeman 1998, p. 436).

### 6.1.2 Child Agency

The historical evolution of the place of children in society as well as “theoretical orthodoxy” (Dahmen 2014, p. 153) has led to what is now referred to as “institutionalized youth land” also called “youth land”. (Reynaert and Roose 2014, p. 175). This compartmentalization between youth and adults has resulted in their exclusion from decision-making and autonomy. This youth land may be defined as “preparatory arenas that implement a principle of integration by means of separation.” (Honig 2008, p. 201). In this line of thought, youth is seen as becoming rather than being; instead of considering the children for what they are now, they are treated as what they will become. This deprives children of crucial aspects of agency, as they are not given any possibility of choice, nor are their current skills and competence acknowledged.

With regards to mainstream economic science, and specifically that of Human Capital, such positioning of children results in them being viewed as currently ‘valueless’, and they ought to be educated in order to foster higher productivity and to prevent future unemployment. Such a viewed is heavily maintained in the french zeitgeist with the popular expression “passe ton bac d’abord” (“graduate first”), which may have originated from a film bearing the same title in 1978. This expression is typically employed by parents towards children who express their wishes for the future, be it in terms of higher education or a job. It allows parents (or teachers) to simply discard the ability of choice of their children (or pupils) by conditioning their entire future on the successful obtainment of their diploma.

Within human capital, no explicit reference to the importance of agency for children is made. Nevertheless, it introduces a timid primary form of agency by empowering children

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<sup>1</sup>Hugo’s poem “Melancholia” severely criticizes the banality of child labor and its extremely negative impact on child well-being in French society in the 19<sup>th</sup> century. This poem can be found in appendix I.

## CHAPTER 6. THE APPLICABILITY OF THE CAPABILITY APPROACH TO CHILDREN

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through education. This theoretical framework conveys the idea that school increases productivity and therefore yields higher salaries. It also posits that the individual, here the child in school, has the choice to educate herself. Nevertheless, and as discussed in section 6.2.2, such a choice is heavily conditioned by the familial environment. This is particularly true for countries where education is not universal and free. Human Capital Theory does not address this issue and therefore only conveys an implicit and thin form of future agency.

The new sociology of the childhood attempts to counterbalance this theoretical orthodoxy and the derived youth land. This framework considers that “the actions and dispositions that constitute agency, including ‘choice’ and ‘competence,’ are not politically empty or neutral categories. Instead, the actions and dispositions of children become, in this approach, mutable, contingent and meaningful: revealing both the role of individual agency in reproducing social norms and the potential for individual agency to disrupt them” (Valentine 2011, p. 355). Following Kylie Valentine, this view of children introduces a major shift in comparison to both human capital theory and the sociological youth land. It endorses the idea that children are indeed individuals with their own agency.

From a capabilitarian standpoint, Comim et al. 2011, Valentine’s view has been attenuated by acknowledging that “children may need different resources and policies to be able to enjoy the same basic capabilities and achieved functionings” (Comim et al. 2011, p. 8). Furthermore, despite recognizing the autonomy and independence of children’s agency, thus allowing it to leave the youth land, it may suffer some shortcomings. I have discussed such a situation from a capabilitarian point of view in section 6.2.2. To remedy this, Saito considers that “education makes a child autonomous in terms of creating a new capability set for the child” (Saito 2003, p. 27). In turn, this empowerment in terms of autonomy and capabilities (in the form of education) allows children to be individuals, endowed with agency. As such, in light of the Capability Approach, all individuals are too be considered with their specific traits, commodities, and socio-institutional environment. The issue should not be trying to identify a group and its characteristics, but finding a manner to reason about every specific individual.

In this line of thinking, Mortier 2002 claims that “we are all children”. This incites us to think the capability approach specifically for every individual. Particularly for the application of the approach, it allows focussing on the identification of the context in which the individual’s agency is shaped, rather than identifying individuals for which we assume a context *ex ante*. This is has been identified by Diana Baumrind, who finds that “youths possess insights concerning family life, educational environments, and social conditions which are unique to their developmental stage and to their special place within the social context” (Baumrind 1978, p. 180). The statistical method that I will apply in

the last part of this thesis attempts to reflect this theoretical placement of children. It does not determine a model beforehand and allows children to take possession of their agency.

### 6.1.3 Evolving Capabilities

So far, and as represented mainly in figure 6, capabilities have been presented as a static, unidirectional process. As I will further discuss in section 6.2.2 – when discussing education and capabilities – capabilities are found to be far from a linear phenomenon. Furthermore, when integrating aspirations – which are by nature future-oriented – in the analytical framework of the capability approach, a dynamic vision ought to be developed. As justly noted by Martha Nussbaum:

“it is a salient feature of human life (...) that it is lived only once, and in one direction. So to imagine the recurrence of the very same circumstances and persons is to imagine that life does not have the structure it actually has. And this changes things.” (Nussbaum 1992, p. 39)

The notion of time has been discussed since the early stages within the capability approach, ranging from attempts to introduce time with the framework (see for example Comim 2003, Comim 2004, D’Agata 2007) to the identification of a “circularity problem” (Binder and Coad 2011, p. 327). This circularity problem aims to point out the fact that resources, or commodities, conversion factors and functionings may all be “endogenous and interrelated”. With specific reference to education, Binder and Coad find that “an individual’s education can be conjectured to be influenced by resources. But education can also have an influence on resources (...). Moreover, the achievement in this dimension might strongly influence functioning achievement in the health dimension” (Binder and Coad 2011, p. 328). These authors follow – and refer to – human capital theory to justify their statement. Indeed, with regards to for example Becker 1964, an individual’s education increases her future income. On the other hand, financial resources that an individual possesses may also heavily influence the education they are able to obtain, especially in countries that have a highly developed private educational sector. A clear entanglement may, therefore, be found between commodities, conversion factors, and functionings.

To further this finding, and with specific attention to children, Madoka Saito finds that education is inherently future-orientated. Its very interest lies in the future enhancement of the child’s freedoms. This corroborates the previously discussed standpoint from

which current functionings, attained through education, feedback into future commodities. In this line of thought, Saito declares that “when dealing with children, it is the freedom they will have in the future rather than the present that should be considered. Therefore, as long as we consider a person’s capabilities in terms of their life-span, the CA seems to be applicable to children” (Saito 2003, p. 26). It is following this idea of evolving and dynamically adapting capabilities that Ballet, Biggeri, and Comim propose the dynamic illustration of the capability approach, specifically applied to children presented in figure 8.

Drawing on Comim 2004, these authors find that evolving or dynamic capabilities may be defined as “capabilities that change, that have a beginning, a flourishing and a transformation into something else, qualitatively different” (Ballet, Biggeri, and Comim 2011, p. 34). This is true for adults, and even more so for children when considering the fact that children undergo a “rapid cognitive development can be facilitated or reduced by the presence or absence of instrumental capabilities such as being able to be adequately educated” (Ballet, Biggeri, and Comim 2011, p. 31).

Figure 8 then presents an integrated model of dynamic capabilities with children lying at its core. This representation is consistent with the rationale of the static representation Robeyns provided in figure 6, while also accounting for the developments on aspiration formation as developed by Hart (Hart 2012). These additions are mainly represented in the core (circular) part of figure 8, focusing the attention specifically on the child. It shows that the conversion factors of the commodities, including the crucial factor of choice, are heavily conditioned by the family, community and the state. These instances play a particular role to play in both the promotion and the limitation of the capabilities of the child. An interesting discussion on this point

Finally, this figure adds a dynamic dimension to the capability approach, adding loops that feed the vector of achieved functionings back into the conversion factors and even directly point back at the child. When considering education as a dynamic process, the functioning of ‘being educated’ may indeed directly impact the child on several levels. The knowledge of the child may, for example, be increased by education and allow her of him to make more informed choices in the future about converting one or another capability into an achieved functioning. This idea is captured in the official readings of the Human Development and Capability Association<sup>2</sup>:

“At the heart of the notion of a capability is a conception that a person is able to develop an understanding of valued beings and doings. This in itself

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<sup>2</sup>This Association was founded by Amartya Sen and aims to be “a global community of academics and practitioners focused on people-centered development and the capability approach”

## 6.1. CHILDREN AND THE CAPABILITY APPROACH

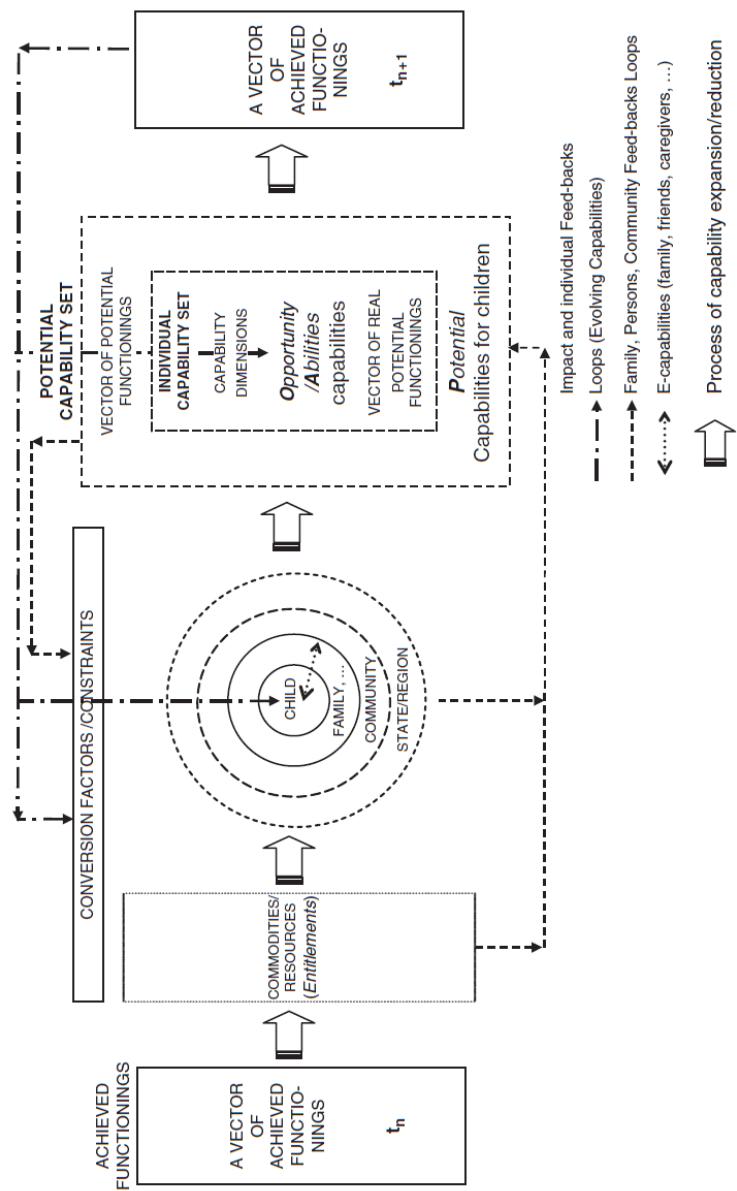


Figure 8: Capability Approach framework and evolving capabilities (Ballet, Biggeri, and Comim 2011, p. 24)

is a powerful argument for forms of education, through which an individual can explore her own conception of what it is she has reason to value. If an important normative aspiration is capability expansion, then developing education is a part of expanding the capacity to make valued choices in other spheres of life.” (Unterhalter, Vaughan, and Walker 2007, pp. 3–4)

## 6.2 The Role of Education within the Capability Approach

### 6.2.1 Broadening the Role of Education in comparison to Human Capital Theory

I have discussed in the first part of this thesis some of the fundamentals of human capital theory, its anchorage in economic theory and explored some of its limitations. In the words of Amartya Sen “after acknowledging its relevance and reach” it is important to “go beyond the notion of human capital” (Sen 1997, p. 1960). In this subsection, I would like to go beyond this theoretical corpus and compare and contrast it with the capability approach. This seems pertinent since “both perspectives put humanity at the center of attention” (Sen 1997, p. 1959). Nevertheless, as foreshadowed in the first part of this thesis and as developed in the previous section, one cannot stop at the formalization of human beings in the neoclassical framework of human capital. As Immanuel Kant, Onora O’Neill, and others have expressed in various manners, “because human beings are not merely means of production (even though they excel in that capacity), but also the end of the exercise.” (Sen 1997, p. 1960).

When comparing the two approaches, and specifically with regards to education, it is to be noted that they can be differentiated by looking at the considered outcomes. On the one hand, the human capital approach focuses on economic growth, whereas the capability approach gives importance to the quality of human life (Unterhalter 2009). More specifically, Sen distinguishes between three different roles fulfilled by education, which are – at least partially – ignored by the human capital approach (Sen 1992). He finds that education plays an *instrumental social role*. As I will further discuss in subsection 6.2.2, school becomes a primary social group to which pupils belong and which shapes the social actors they will become. As such, education enables the ability of youngsters, and thus the future voters, to engage in public dialogue. Secondly, he considers the *instrumental process role* which can be understood as the “capacity to participate in

## 6.2. THE ROLE OF EDUCATION WITHIN THE CAPABILITY APPROACH

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decision-making processes at the household, community or national level” (Unterhalter 2009, p. 214). Finally, Sen identifies an *empowering and distributive role*. The empowering role of education has been received considerable attention in the literature over time and plays a particular role in the empowerment of women, the disadvantaged, and otherwise marginalized groups in society to gain understanding and access to the public debate and decision-making process. This then enables the redistribution of resources, power, and freedoms to these same, initially excluded groups.

The tables 1 and 2, adapted from Bussi 2014, pp. 7–8, allow an overview of various elements that may distinguish human capital theory from the capability approach.

The rationales of both the human capital theory and the capability approach are discussed respectively in sections 2.2 and 5.1.1. The conception of the welfare subject in these tables is highly pertinent for the development of this thesis, as it attempts to identify the impact of schools on child well-being. In this perspective, this table recapitulates the main distinctions between the two approaches. Namely, the prospected well-being outcomes are fundamentally different as human capital theory focuses on the neoclassical notion of utility where the capability approach stresses the importance of agency. Moreover, the value of education is set at a different level; where the capability approach advocates for the intrinsic value of education, human capital theorists find only an instrumental role in education, which is expected to increase utility through higher productivity and thus a higher income. The intervention models proposed by the two approaches and according to Bussi may be distinguished with regards to their points of focus. Indeed, where human capital lays the focuses on the economic outcomes, the capability approach proposes a holistic approach to the individual at work. This allows the capability approach to be more inclusive, account for transitional periods and integrate individual aspirations.

As such, the capability approach allows for a wider and intrinsically multidimensional conceptualization of the agent at work, where the human capital framework only presents the economic outcomes of work. This allows the capability approach integrating notions such as individual well-being and aspirations, where Becker’s conceptualization fails to do so.

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Dimension	Human Capital	Capability Approach
Rationale	<p>Improving skills, health and personal development in order to contribute to increased economic return at individual and aggregate level and improve employability understood individual economic performance.</p> <p>Accumulation of economic and physical resources in the long run.</p>	<p>Improving personal, professional and social integration and promoting favorable and sustainable transition to the labor market considering needs and aspirations.</p> <p>Targeting social justice objectives (inter-individual perspective) and social cohesion (macro-objective) (social justice rationale of public action. Not merely accumulation of economic and physical resources but of real opportunities.</p>
Conception of the welfare subject	<p>Maximizing utility in the longer term and reaping economic returns from increased skills. S/he is expected to value education and training in a logic of life-long learning and in adaptation with the labor market needs.</p> <p>Well-being freedom and no agency freedom.</p> <p>Informed actor.</p> <p>Promoting lifelong learning.</p>	<p>Achieving what s/he values in terms of agency and being (capability for work).</p> <p>Considered as a person with “thick needs” which are needed if a person is to flourish in opposition to “thin” needs which are strictly linked with survival. Considered as a person capable of practical reasoning.</p> <p>Intrinsic and instrumental role of work and of education.</p>

Table 1: Comparing Human Capital and the Capability Approach, 1/2, adaptation from Bussi 2014, pp. 7–8

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Intervention model	<p>Formal entitlement supporting long-term training.</p> <p>Integrated with other social services (education and health) aiming at reaching economic integration.</p> <p>Individual job-coaching (job search and personal working development plan).</p>	<p>Formal and actual entitlement supporting the enrollment on long-term and quality training.</p> <p>Holistic approach to individual situation.</p> <p>Attention to people's needs of work and life balance and (career) aspirations as well as competences.</p> <p>Adequate amount and duration of benefits throughout transitions period which shelter from poverty and social exclusion.</p> <p>Flexible arrangements and possibility of reshaping project according to changing personal, social and environmental conditions.</p>
Institutions involved	<p>Cooperation with other institutions usually locally based which provide different services.</p> <p>Trainings are usually shaped according to market needs.</p>	<p>Possibility to easily create new partnerships so as to answer people's training/social and personal needs.</p> <p>No constraints from top-down or internal performance targets. If they exist they have an monitoring and not sanctioning use.</p>
Relationships with the demand side	<p>Financial incentive to companies guarantee on-the-job training or job coaching for people in training (collaboration for setting up training).</p> <p>Preference for regular market.</p>	<p>Providing sheltered employment opportunities if necessary.</p> <p>Employers are often involved in providing access to professional or training activities ("intern"/training).</p>
Time perspective	<p>Medium to long time perspective both in terms of service provided and benefit duration.</p>	<p>Time perspective depending on people's needs and aspiration (forward looking) and on benefits duration.</p>

Table 2: Comparing Human Capital and the Capability Approach, 2/2, adaptation from Bussi 2014, pp. 7–8

### 6.2.2 Education and Capabilities

One may argue that education is rather an inhibition to freedom than it actually expands it. This seems to have a particular echo in countries, like France, where one has the legal obligation to schooling until a certain age is reached. Such a statement is almost unanimously accepted by the children whom I interviewed for this thesis. When they are initially asked why they go to school, they have a very hard time finding its purpose. On the other hand, when they are asked what they would do if school was non-compulsory, they find a wide range of activities they would do, rather than going to school. Following this, the pupils would say that school hinders their liberty to do what they actually wanted to do. Despite this, when taking into account the time component of school, it has been argued that compulsory schooling permits to “develop the judgement of the person to be able to value in which way it is appropriate to use capabilities through education” (Saito 2003, p. 29). As such, school is inherently future-orientated. Important outcomes of school lie predominantly in the future through the development of future capabilities. On a psychological level, such a finding follows the ‘Marshmallow Experiment’ as described by (Shoda, Mischel, and Peake 1990). This experiment aims to view cognitive and self-regulatory competencies of adolescents. It finds that those children who had a higher resistance to their own will of instant gratification have better cognitive and self-regulatory competencies than their peers. When relating this experiment to school and its future-orientated outcomes, those pupils who are willing to invest in school (thus renouncing to current liberties) are expected to have higher returns to their initial investment. These returns go far beyond the scope that is proposed by the economic analysis of education as proposed by human capital theory, for example. When viewing education through the lens of the capability approach, outcomes of education are manyfold. Some of these outcomes are summarized in table 3.

By synthesizing educational outcomes from a capabilitarian perspective (table 3), Rosie Vaughan shows how this approach not only encompasses human capital theory but also how it largely extends it. This is represented by the shift of the considered outputs of education. Focus is here put on well-being and agency, where it is solely concerned with employment and income in the human capital approach. Moreover, employment is still present in the synthesis proposed by Vaughan. This table presents employment as a contributor to well-being while relegating it to the status of a means rather than the end of the entire theoretical framework. In this sense, human capital may be viewed as a theoretical subset of the capability approach.

Table 3 is also consistent with Saito’s findings of education being future-oriented. In line with Saito’s findings and consistently with the evolving capabilities as presented

## 6.2. THE ROLE OF EDUCATION WITHIN THE CAPABILITY APPROACH

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	<i>Capability to participate in education</i>	<i>Capabilities gained through education</i>
Well-being achievement	<p>(“Educational well-being”)</p> <p>Attending, participating, understanding. Can include basic educational skills such as literacy and numeracy</p>	Contribution of education to other capabilities crucial to general well-being: e.g., employment, health
Agency achievement	<p>(“Educational agency”)</p> <p>Educational aspects that are valued by the individual valued by the individual (e.g., attending school, completing schoolwork, level of achievement in participation, attending a particular school, studying a particular subject)</p>	Contribution of education to valued functionings and capabilities: e.g., employment sector, valued level of health, political engagement, family life
Well-being freedom	<p>Ability to choose to attend, participate, understand</p> <p>Barriers and constraints to this freedom in compulsory education</p>	<p>Contribution of education to the freedom to achieve well-being and valued functionings</p> <p>1) Having a range of skills and, therefore, options</p> <p>2) Reasoning and autonomous thought; choice and preference formation:</p> <ul style="list-style-type: none"> <li>—finding out which options are available</li> <li>—ability to reason about options</li> <li>—knowledge of how to overcome constraints to options</li> </ul>
Agency freedom	<p>Ability to choose to achieve aspects of education valued by the individual</p> <p>Barriers and constraints to this freedom in compulsory education</p>	

Table 3: Well-being and agency achievements and freedoms within, and through, formal education (Vaughan 2007, p. 119)

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by Ballet, Biggeri, and Comim 2011 in figure 8, Vaughan describes how education expands “options”, “choice”, and “preference formation”. As such, education appears as a cornerstone of the capability approach. As discussed previously *choice* is fundamental in the transformation of capabilities into actual functionings. The formation of tastes and preferences is therefore crucial to each individual that is considered in the capability approach. This also tightly relates to aspirations, as school allows for children to find out about “which options are available”. School thus becomes a canal through which children may enhance the vector of their capabilities by finding out about subjects they could or would not have found out about by themselves.

To further represent the impact of education on a child from a capability perspective, Vaughan proposes figure 9, which is Robeyns’s stylized representation, which she annotated to indicate where education intervenes. She then distinguishes between two different roles “depending on which particular capability is being considered” with on the one hand the case where functionings are considered (indicated with “A” in figure 9) and on the other hand she considered the conversion factors impact (indicated with “B” in figure 9).

### *Social context:*

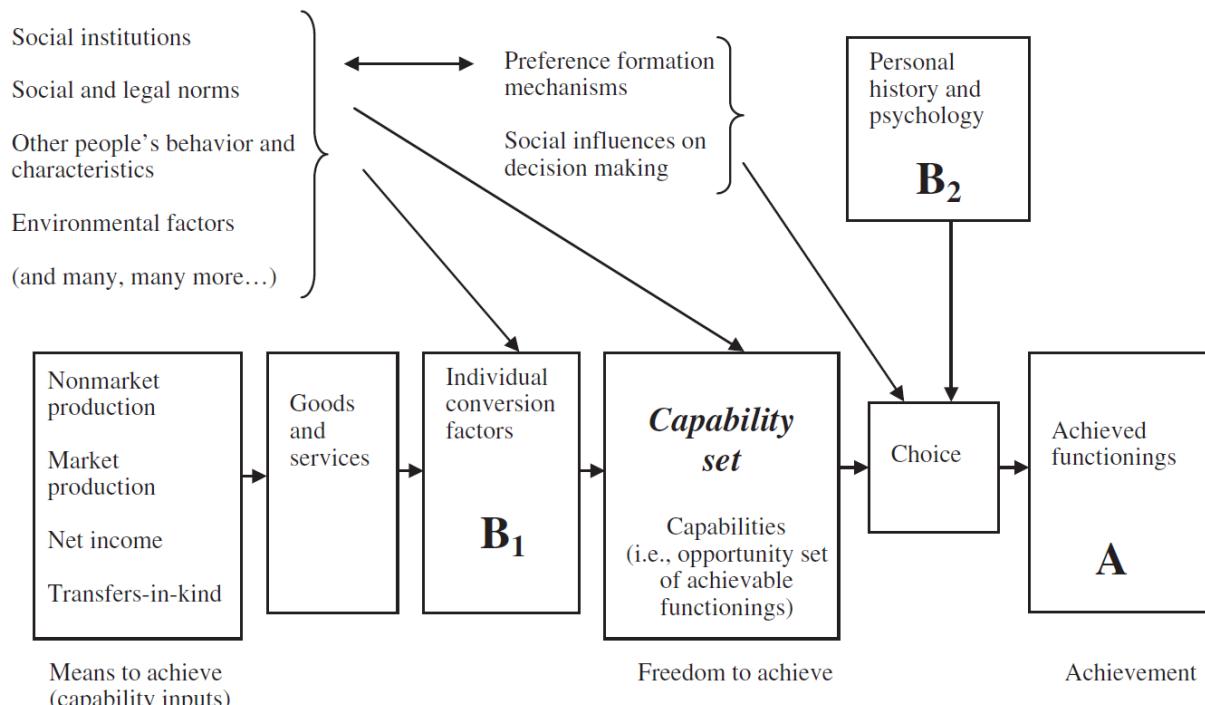


Figure 9: The different roles of education in Robeyns’s stylized nondynamic representation of a person’s capability set and her social and personal context (Vaughan 2007, p. 115)

This figure is an interesting visual representation of the spheres on which education might impact an individual from with regards to the capability approach. It nevertheless

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appears to fall short of some of the dimensions education impacts. As table 3 indicates, education can also have an influence on “preference formation” mechanisms as presented in figure 9. Education has been found to contribute to the range of options a child possesses (by *knowing* and *learning* about them), and it therefore directly influence the ability to shape a child’s preference. This might have deserved a fourth label (“C”) to be added in this representation. In turn, the preference formation influences the element of choice through which the child transforms capabilities into achieved functionings. Furthermore, and with regards to the evolving and dynamic nature of capabilities (as for example presented in figure 8), the achieved functionings feedback not only into the various conversion factors but also into the commodities (here the “means to achieve”) of the child.

Even though the goal of this representation is not to provide a dynamic representation of capabilities, this raises specific questions with regards to children. Specifically, it may be asked to which extent a child is in control of her or his commodities and then to which degree the child is able to convert these commodities into actual capabilities. As discussed for example by Ballet, Biggeri, and Comim 2011, the conversion (and possession) of a child’s commodities are heavily dependent on the commodities detained by parents. This then may allow to add a fifth label (“D”) to the “social context” in figure 9. The end of this section will then discuss the ‘social’ influence on a child’s ability to convert education into capabilities and/or achieved functionings.

In the French context, high schools have particularly dense presence times of its pupils, even when compared to other European countries (Kamette 2011). Indeed, at the time of this study, pupils can have classes from 8 o’clock in the morning to 6 o’clock in the late afternoon, 5 days a week. Jérôme Ballet, Jean-Luc Dubois and François-Régis Mahieu find that “belonging to a community and participating in its day-to-day life has an impact on the level of well-being of the individuals” (Ballet, Dubois, and Mahieu 2007, p. 186). School, therefore, becomes a primary community to which the pupils belong. This social context will heavily condition the individual the pupil will become. With regard to the profound social anchoring of agency in the social context, education plays a paramount role in its shaping. Robeyns considers the capability approach to be highly prone to the analysis of the impact of education and finds that it “looks at what education means for a life that is composed of many different dimensions and sees education as a contribution to the development of the kind of person one will become and the types of things one will be able to do.” (Robeyns 2016, p. 399). As discussed previously, this correlates with Saito’s interpretation of education as being future-orientated. Despite the evident fact that education is restrictive now (it keeps youngsters from doing whatever they want to do) it allows an increase in future freedoms. Let me consider the example of Albert again, who is now an astrophysicist, and very happy to be so. Had he never been obligated to

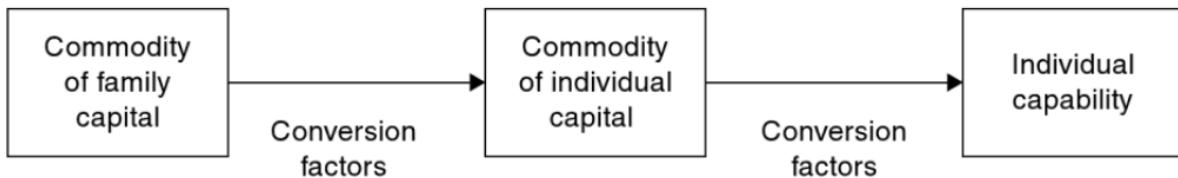


Figure 10: Two-stage process of converting capital to capability (Hart 2012, p. 55)

study physics in high school (when he would have preferred to go to the cinema with his friends at the time), he would never have been able to become the prominent physicist he is now.

The idea of aspiring only to what one knows, or reproducing one's social environment has been largely studied, specifically applied to the French educational context. This is notably the case for Pierre Bourdieu's now seminal sociological observations (Bourdieu 2016, Bourdieu and Passeron 2016, Bourdieu and Passeron 2018). Caroline Hart finds that Bourdieu's observations can very well "complement Sen's Capability Approach" (Hart 2012, p. 49). More specifically, Hart describes how the understanding of the Bourdieusian conceptualization of capital can enrich the understanding of both commodities and their related conversion factors within the capability approach.

Figure 10 can be viewed as an enhancement of the previously discussed figure by Robeyns (figure 6). It specifically enhances the 'means to achieve' described by adding supplementary stages before the occurrence of a capability. In the light of Bourdieu's writings, Hart finds that the commodities of children are to be considered with regard to their family context. Coined as 'family capital', this commodity relies on elements such as parent's and sibling's education, but also the presence of books in the family house for example. It is important to note that when Hart refers to 'family capital', she also includes "school/community capital" (Hart 2012, p. 54). Kevin Marjoribanks finds that such a form of capital also comes from adult-child relationships (Marjoribanks 2002). Regarding the second stage of commodity capital as developed in figure 10, namely the 'individual capital' it is important to note that a child with highly educated parents who value the education of their child, may still not be able to achieve the higher individual capabilities that are expected as an outcome. This is due to the conversion factors linking family and individual capital. One may imagine a particular case of children with mental disabilities or, more commonly, resistance of the child to the usage of family capital. Let us go back to Albert, whose parents are both psychologists with a wide network in academics. This could be considered as a strong family capital, which Albert can then convert into his personal capital. His parents have vast amounts of documentation and knowledge to share with Albert within their domain of expertise, as much as they could

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use their network to open doors to prestigious universities. Despite this, Albert does not want to become a psychologist. He, therefore, does not fully convert the family capital – which his parents might even be too forceful with – into his personal capital. Were his parents the astrophysicists he wants to become, this conversion process would be more evident. Remains nevertheless the last conversion factors, linking individual capital to capability. Hart finds that “an individual may be well educated, rich and knowledgeable of high culture but may not be able to achieve the valued functioning of being well-liked because they lack the ability/knowledge of how to use their capital commodities effectively to achieve this goal.” (Hart 2012, pp. 55–56).

In light of the discussions in this chapter, I argue that the capability approach allows for a highly pertinent framework to evaluate educational outcomes. With specific regards to aspirations and well-being, the capability approach allows evaluating education in a new light, shedding off the linear relation of causality of education on productivity and salary outcomes as prescribed by mainstream economics.

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## **Part III**

# **Application to the French Secondary Schooling System**



# Chapter 7

## The French Secondary Schooling System & Data Collection

### 7.1 Generalities

#### 7.1.1 Description of the French Secondary Schooling System

THIS section aims to present the French secondary schooling system globally, at the time of my study in early 2017. At that point in time, there was no mention of the French government of the intended reform that was introduced during 2018. This reform particularly affects the lycée, from which the “traditional” 3 sections were entirely removed, to be replaced with a higher degree of choice in terms of classes, and thus exams. These sections were replaced with 6 common subjects for all pupils, completed with 5 subjects of the pupil’s choice. It is to be noted that none of the interviewed pupils were affected by this reform, as it was introduced progressively, only applying to those who would newly enter lycée from 2018 onward.

French high school is divided into two different schools, starting with “collège”, starting at age 11 to 15. The second is “lycée”, where pupils enter after obtaining the “Diplôme National du Brevet”, prepared in their collège. The lycée has pupils from ages 15 to 18 and is considered as the first time pupils start to make their decisions in terms of classes they take.

Figure 11 shows all the different variations of high schools available in France. This figure also includes primary education (cycles I to III), which are not studied further here.

CHAPTER 7. THE FRENCH SECONDARY SCHOOLING SYSTEM & DATA COLLECTION

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	<b>Bac général</b>	<b>Bac technologique</b>	<b>BT</b>	<b>Bac pro</b>	<b>CAP</b>	ULIS/ UPE2A
Cycle terminal	Terminale générale	Terminale technologique	Terminale BT	Terminale professionnelle		
	Première générale	Première technologique	Première BT	Première professionnelle	2 <sup>de</sup> année CAP	
Cycle de détermination		Seconde générale et technologique	Seconde BT	Seconde professionnelle	1 <sup>re</sup> année CAP	

		<b>Diplôme national du brevet (DNB)</b>						
Cycle IV (approfondissements)		Troisième			ULIS / DIMA / UPE2A	Sixième à troisième Segpa		
		Quatrième						
		Cinquième						
Cycle III (consolidation)		Sixième						
Cycle III (consolidation)		Cours moyen deuxième année			ULIS / UPE2A			
		Cours moyen première année						
		Cours élémentaire deuxième année						
Cycle II (apprentissages fondamentaux)		Cours élémentaire première année						
	6 ans	Cours préparatoire						
Cycle I (apprentissages premiers)		Grande section						
		Moyenne section						
		Petite section						

Figure 11: The French secondary schooling system (DEPP 2018, p. 11)

I will focus here exclusively on classes ranging from the sixième to the Cycle terminal. The collège corresponds to the second phase of Cycle III and the entirety of Cycle IV. The lighter areas on the right of these cycles (ULIS<sup>1</sup>, DIMA<sup>2</sup>, UPE2A<sup>3</sup> and SEGPA<sup>4</sup>) correspond to specific classes, integrated within traditional collèges or in different structures entirely, specifically for children with special educational needs. This ranges from children with mental and/or physical disabilities (ULIS) to children who encounter other challenges with the traditional system (SEGPA). I have not conducted any interviews in any of these classes, and only one of the surveyed lycées had a ULIS class, representing 10 students out of more than 1000.

As this figure shows, the collège does not offer any form of diversity, and all students follow roughly the same classes. With regards to the lycée, a larger panel of choice is offered to its pupils. From right to left, the CAP<sup>5</sup> and “Bac pro”<sup>6</sup> are specifically designed for the professionalization of its pupils. Along with French, mathematics, and history, these pupils are trained for a specific trade. The BT (“Brevet Technicien”) is similar to the CAP. Finally, the Bac Technologique lies in between the Bac Général and the BT/CAP. It does not prepare for a specific trade, but rather into a sector. It provides “general” classes in a higher proportion than the BT, Bac Pro, and the CAP, whilst also offering deeper insight into sectors such as Healthcare, Laboratory Techniques, Agronomic Sciences or Management, for example. It is to be noted that either of these baccalaureates allows the student to apply for university, but rarely provide the fundamentals to succeed. Students will generally follow intensive summer schools or an entire year of supplementary formation before universities accept their applications.

This study was held solely with students following a Bac Général, ranging from the Seconde Générale et technologique to the Terminale générale.

The particularity of dividing high school into two different schools in France is translated into their administrative organization. This organization is a mixture of highly centralized within the state and can be very local at the same time, specifically for the collèges. Table 4 shows to whom the different domains of the organization of these schools

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<sup>1</sup>Unités Localisées pour l’Inclusion Scolaire; for students with mental and/or physical disabilities which do not permit them to be integrated into regular classes.

<sup>2</sup>Dispositif d’Initiation aux Métiers en Alternance; for students from age 15 onward, who wish to be trained for a specific trade. Being 15 years old in a collège generally indicates that the pupil has repeated more than once.

<sup>3</sup>Unité Pédagogique pour Élèves Allophones Arrivants; for students who do not speak french at a sufficient level to follow regular classes.

<sup>4</sup>Sections d’Enseignement Général et Professionnel Adapté; these sections are for pupils who do not possess the required competencies from Cycles I and II upon arriving in collège.

<sup>5</sup>Certificat d’Aptitude Professionnelle

<sup>6</sup>Commonly used shorthand for “baccalauréat professionnel”

## CHAPTER 7. THE FRENCH SECONDARY SCHOOLING SYSTEM & DATA COLLECTION

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Domain	Collège	Lycée
Teaching (programs)	State	State
Diplomas	State	State
Investments (material)	Department	Region
Investments (pedagogical)	State	State
Staff (teachers)	State	State
Staff (administrative)	State	State
Staff (support)	Department	Region

Table 4: Area of responsibility in the French secondary schooling system (adapted from DEPP 2018)

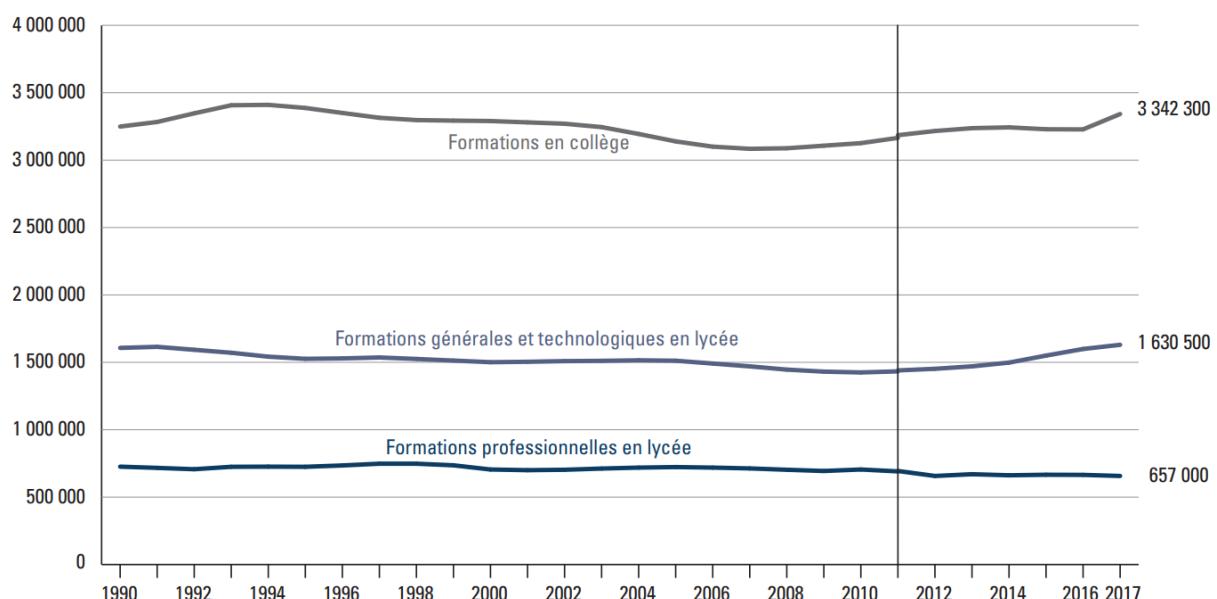


Figure 12: Pupils in the French secondary schooling system (DEPP 2018, p. 85)

are affected. As can be noted, the pedagogical aspect of these schools is all centralized by the state. As such the programs and the teachers are all nationally selected and affected to the schools throughout the country. Every high school student, therefore, undergoes the same program which is taught by nationally trained teachers.

On the other hand, the material investments are made on a more local level. Since the 2015 reform of the regions, France went from 22 to 13 regions, which makes the regions much less “local”. Nevertheless, the departments were unaffected by this reform, and remain very representative of their local territory. As such, collèges are built and upheld by these relatively local instances<sup>7</sup>.

<sup>7</sup>Primary schools are under the responsibility of communes. Since France counts almost 35 000 communes, some as small as several hundreds of inhabitants. This makes primary schools deeply anchored in their local territory.

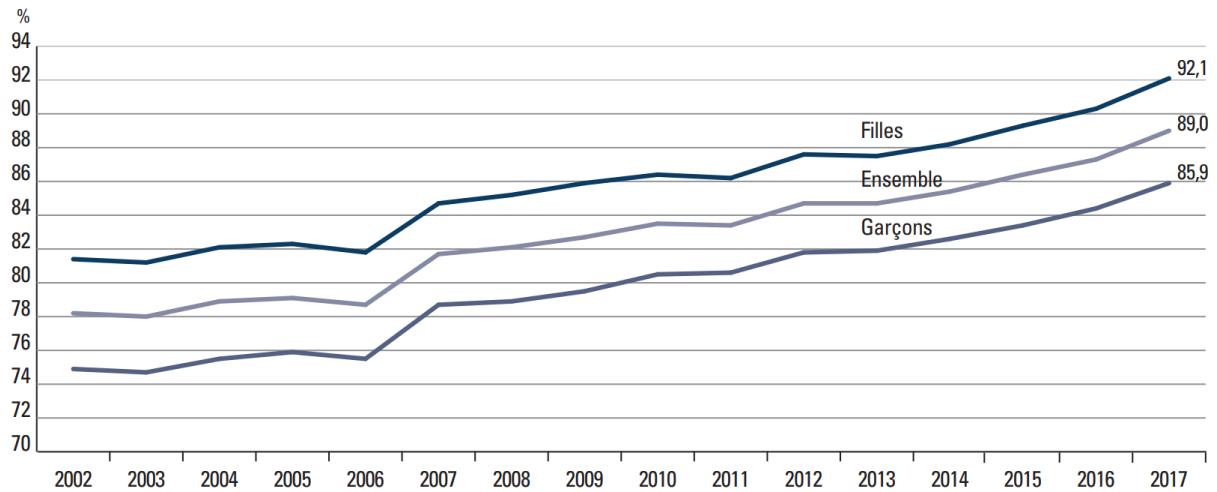


Figure 13: Success rate, “Brevet des Collèges” (DEPP 2018, p. 217)

Figure 12 shows the division of pupils within the previously discussed forms of high school. The “formations en collège” are non-divisible and incorporate all the different sections within collèges as discussed previously. The “formations générales et technologiques” regroup both the Bac général and the Bac technologique. As mentioned previously, this study focuses on students in collèges and those studying for their Bac général. Finally the “formations professionnelles” encompasses the BTs, Bacs pro, and CAPs.

### 7.1.2 Collèges

This school has 4 classes, starting with the “sixième” and ending with the “troisième”. This first part of high school revolves around the idea of equality for all. There are very few choices to make in terms of classes, with the exceptions of languages. A pupil may decide to take Latin starting in “cinquième” or not, as well as choose between Spanish or German starting in “quatrième”. It is to be noted that none of the collèges at which my study was conducted offered the possibility of choosing German, and all students would have to take Spanish by default. As such, collèges are highly uniformed schools where pupils have the same subjects. The collège then prepares its students for the “Diplôme National du Brevet”. This diploma is nevertheless not compulsory whatsoever to pursue high school in a lycée. Despite this particularity of the diploma, the success rate of the pupils in collège is constantly increasing as is shown in figure 13.

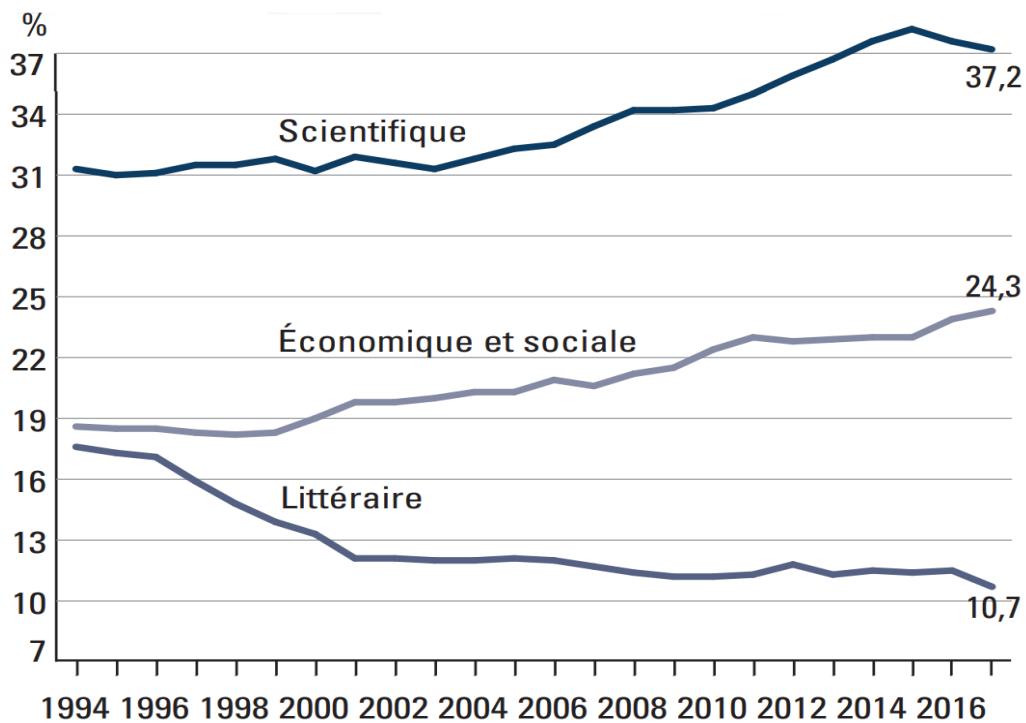


Figure 14: Pupils in lycée, per section (DEPP 2018, p. 101)

### 7.1.3 Lycées

Lycées generally host pupils from ages 15 to 18. As mentioned previously, this part of high school is where diversity in choice is introduced, different “orientations” can be chosen. Upon completing their collège, pupils first choose between either a “professional”, a “technological” or a “general” orientation. This thesis focuses exclusively on the general path. During the period of the study, the general section was divided into three sections, literary, socio-economical and scientific. The pupil chooses her/his orientation after completing the seconde générale, which is common to all students.

As figure 14 shows, there is a clear predominance of the scientific section within lycées. The fact that the socio-economic section progressively counted more pupils at the cost of the literary section, may be explained by the social stigma that comes with the latter section. The literary section has an increasingly negative reputation, specifically due to the fact that it is believed to have a negative impact on higher education (i.e. that universities do not, or less willingly, accept pupils coming from the literary section).

Moreover, the scientific section is viewed as that of excellence. It is not uncommon to find pupils who want to study economics in university chose the scientific section rather than the more intuitive socio-economic section for their aspirations.

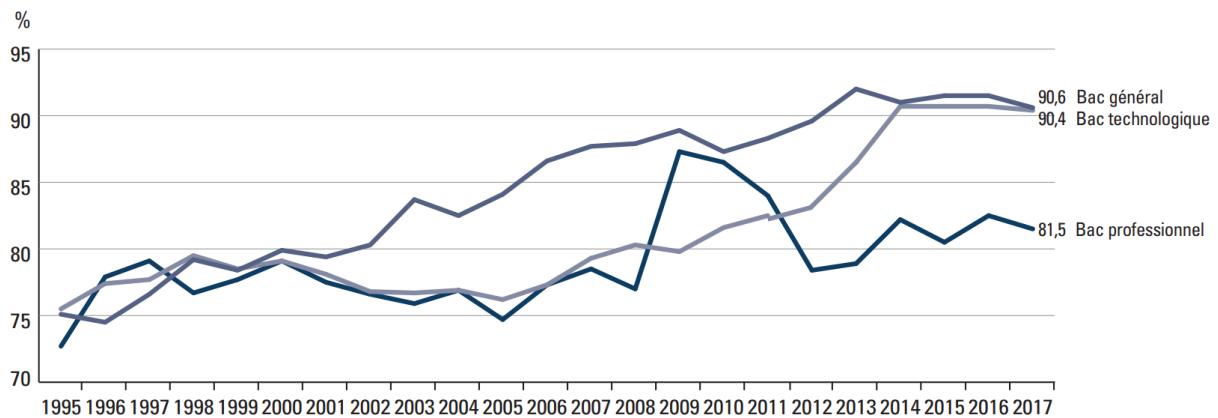


Figure 15: Success rate, “Baccalauréat” (DEPP 2018, p. 219)

#### 7.1.4 The French Secondary Schooling System, Well-Being, Aspirations, and the Meritocratic Myth

Specific studies have been discussed relating to the capability approach, aspirations, well-being and school, but none of these were applied to France. There are very few studies that link the capability approach directly to the French secondary schooling system<sup>8</sup>. The vast majority of studies that are specific to the French schooling system apply a more ‘traditional’ socio-economical approach. Such approaches encompass on the one hand those economic studies which heavily rely on human capital (as discussed extensively in Part I) and on the other the sociological approach championed by Pierre Bourdieu (see Bourdieu and Passeron 2016 and Bourdieu and Passeron 2018).

Since Bourdieu wrote his seminal books and articles, his observations still hold decades later. These are the conclusions of the Organisation for Economic Co-operation and Development (OECD): “the more one comes from a disadvantaged background in France, the less one has a chance to succeed” (OECD 2015, p. 4, own translation). When comparing these results internationally, the conclusions tend to get worse “insofar the French system is more inequalitarian than most of the OECD countries” (OECD 2015, p. 3, own translation). Moreover, this tendency appears to be increasing since 2006 according to the same report. Such empirical evidence has led this phenomenon to be labeled “The French meritocratic myth” (André 2013, p. 4). This author further describes this failure of the French secondary education system to be due to the “relative erosion of the school system’s ability to mitigate the impact of social origins on school performances” (André 2013, p. 4). Furthermore, the lycées professionnels still bear the stigma of being the incarnation of lesser success compared to their counterparts (lycée général et technologique). This representation is upheld on all levels of society, most notably when a governmental

<sup>8</sup>Exceptions do exist nevertheless, see for example André 2013 and Berthet and Simon 2014

report from 2016 declared that “*unsurprisingly*, vocational education remains very clearly the main orientation of the least advantaged social categories” (Paola et al. 2016, p. 14, own translation, emphasis added). It is worthwhile noting that no context is provided for this to be no surprise to the authors of this report (no discussion of literature, policy or historical data to frame this finding). Such comments appear to persist among pupils, and following the Conseil National d’évaluation du système scolaire (CNESCO as represented by Paola et al. 2016) is maintained at an institutional level.

This discussion motivated the introduction of specific measures in the first module of the questionnaire. In module 1 (socio-demographics) were included measures on the level of education attained and the current job of the respondent’s parents. Moreover, module 6 was entirely dedicated to attempting to subjectively identify (dis)advantages in school as identified by Bourdieu.

The notion of well-being in school has been introduced in the French educational system only after 2012, specifically through the explicit mentions of this aspect of schooling in official documents. Before 2012, the very concept of well-being was reduced to ‘health’ and the ‘practice of sports’ in schools (Thuy Phuong 2016). After this date, numerous reports and ministerial initiatives have been found to address the question of well-being within schools.

Several reports are found to be entirely dedicated to well-being within schools in France. Bacrou et al. 2013 use Hierarchical Cluster Analysis combined with multidimensional statistics to determine the impact of well-being on different school outcomes. They find that the pupil’s well-being in school has an impact to a certain degree of academic performance. In other words, well-being in school is found to positively impact performances in several taught subjects (such as French), where other subjects are not particularly concerned (such as mathematics). The authors find nevertheless that sufficient evidence is found in order to pursue the evaluation of subjective well-being of pupils in school. Sauneron 2013 confirms the relevance of the usage of subjective data for the measurement of well-being in school. She nevertheless finds that “measuring student well-being is complex because it mobilizes most often declarative data, therefore subjective data, which is sensitive to ”social desirability”” (Sauneron 2013, p. 2, own translation). Social desirability is a behavior in which individuals tend to respond to questions not with their own, honest opinion, but rather with responses they think the interviewer would consider socially acceptable. In other words, the respondents tend to keep up appearances for their interviewer instead of revealing what they actually think. Following this finding, the questionnaire used in the last chapter of this thesis incorporates a social desirability scale specifically adapted for younger individuals. This scale is nevertheless not found to have any significant explanatory power in any of the empirical analyses applied to the

data. Such a finding can be easily accounted for in the setup of the questionnaire, since the entire procedure of answering the questionnaire was done anonymously, without the intervention of an interviewer. As such, the pupils did not have to ‘pretend’ to any kind of socially desirable answers. This is further confirmed in the very informal and sometimes impertinent comments they provided at the very end of the questionnaire.

These reports confirm and consolidate the adopted methodology in the last chapter of this thesis by acknowledging at an institutional level the coherence of measuring subjective well-being of pupils in school. Moreover, the usage of both Hierarchical Cluster Analysis and multidimensional statistics is shown to be a pertinent choice in terms of data analysis for this inherently multidimensional type of data. Finally, the identification of social desirability as bias within subjective data (specifically for children) permits a strong justification for the usage of a social desirability scale in a questionnaire.

Findings on aspirations as underlined by Caroline Hart (Hart 2012, Hart 2016) have also found a French translation. The study of aspirations has been applied to the specific French schooling system over time. Dumora 2004 finds that the division of French high school between collège and lycée particularly shapes aspirations. She identifies that pupils in collège tend to follow “age group myths” which she also calls “the imaginary without imagination” (Dumora 2004, p. 258). Such a form of aspirations, specific to the younger pupils in high school, focuses on a very small amount of stereotyped jobs (doctors, lawyers, athletes, actors, for example). Dumora explains these “professional fictions” on the one hand through the fact that these youngest pupils decouple their aspirations from reality and merely fantasize about their ideal future. This is often linked with the absence of a complete understanding of the educational requirements and the professional implications of the job. On the other hand, she finds that the social context of schools tends to reinforce these professional fictions. Similarly to the results found by Ballet, Biggeri, and Comim 2011, who identify the importance of school as a social environment, Dumora identifies “peer groups” within schools to reinforce the “conformism of professional fictions”. On the contrary, starting with pupils from troisième and up, Dumora finds that individuals tend to move from the space of “possibles” to the space of “probables” (Dumora 1990, with reference to Bourdieu 1974). Despite the proximity with the capabilitarian vocable, Dumora has a purely psychological and sociological analysis. Moving from one space to the other translates the progressive incorporation of the realization of constraints on their initial aspirations. One of the identified constraints is the diplomas held of the pupil’s parents. From a broader perspective, the impact of the school environment on the formation of aspirations has also been discussed in the French context (Dupriez, Monseur, and Van Campenhoudt 2012). These findings are consistent with those found in a previous application of the capability approach to the French secondary schooling system (Vos and

Ballet 2018).

## 7.2 Data collection

### 7.2.1 Sampling

The first thing to note here is the extremely low response rate of schools to have answered my inquiries. My focus was on the region of “Nouvelle Aquitaine”. As this is a very vast region (almost 6 million inhabitants for 85 000 km<sup>2</sup>) I chose 2 departments from which I could easily operate and respond to the specific availability of the schools. The first department is the Dordogne (rural) and the second the Gironde (more urbanized, with Bordeaux as it’s capital). After identifying all the schools through the Ministry of Secondary Education as well as public information on the regional level, I proceeded to send out letters to each school using the traditional postal service. This resulted in 40 letters to the Dordogne and 57 to the Gironde. I received 1 negative and 3 positive replies. After a month of non-reply, I proceeded to send the same letter using the school’s official email account. I received no further replies. I obtained access to one further school through professional connections in that school, having worked there as an educational assistant. As such, I had access to 4 schools in total, 2 in the Dordogne and 2 in the Gironde.

Those schools that were willing to participate did so wholeheartedly, affecting one of their administrative staff to organize and accompany my presence within the school. They also allowed me to interview a representative cross-section of the school’s classes, having always *a minima* access to one class of each level and in 2 cases I was able to interview all the pupils from the school.

Despite these setbacks in terms of availability of the data, the sampling roughly follows a quota technique. With regards to figure 12, and excluding the “formations professionnelles”, pupils from collège represent 67% of the population for 33% of “lycéens”. The data collected for this study contains 425 “collégiens” (73%) and 161 “lycéens” (27%).

### 7.2.2 Identification

This section aims to provide descriptive insight to the collected database. In the interest of the pupils and the schools, none of the provided information allows to identify

either. By ensuring their anonymity, the hope was that the pupils would respond as honestly as possible to the questionnaire, without these honest answers being used against them by their parents, teachers or the school's administration. This has functioned well for some of them, who become very *expressive* in their final remarks/suggestions with regards to the questionnaire. Some pupils disliked the questionnaire particularly commenting that it was “too long”<sup>9</sup>, that there should be “less intimate questions”<sup>10</sup>, that it was “loss of time”<sup>11</sup> or simply “0”.

On the other hand, some expressed their incomprehension of the questionnaire, finding it “cool but some questions were hard and weird”<sup>12</sup> or considering it to be a “quiz”<sup>13</sup> (even though it was a good one).

Others considered it to have “helped” them “to express”<sup>14</sup> themselves, to “think” about their future<sup>15</sup>. Finally, most of the pupils did not take time to provide extra comments and/or remarks, or simply shared their love for their favorite singer or kebab<sup>16</sup>.

The following figures give initial and descriptive insight into the collected data. Figure 16 shows a slight over-representation of girls within the interviewees. This does not seem to be an issue since girls appear to be over-represented in secondary education in France, especially in lycée (DEPP 2018). The proportionality of girls as being over-represented is also consistent with the samples used in reports discussed in section 7.1.4.

Figure 17 shows the shares of different age groups among the interviewees. Despite the percentages being null for ages 10 and 20, it is to be noted that there are 2 individuals in the former and 1 in the latter case. No interviewee reported the age of 19. Following figure 18, pupils in collège represent 73% of the respondents whereas the lycéens represent 27%. The larger share of collégiens in the group of respondents is very similar to the share of collégiens in France globally. This follows the quota sampling as discussed previously.

Figure 19 shows an overview of the attainment of the respondent’s parent’s education. This figure is presented here as it is to be noted that these levels of education are reported by the interviewees themselves. This posed a particular problem for the collégiens, who appeared to often not know what level of education their parents had attained. This was also the case for their parent’s profession, for which I was very often asked for help (they

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<sup>9</sup>c est trop long

<sup>10</sup>moins de question intimes

<sup>11</sup>ça m'a fait perdre mon temps NUL

<sup>12</sup>C'était un questionnaire cool mais il y a avait des question dure et bizarre

<sup>13</sup>j'ai bien aimé faire ce quizz

<sup>14</sup>sa ma permis de parler

<sup>15</sup>Ca m'as permis de réfléchir d'avantage à mon futur pour mon métier.

<sup>16</sup>J aime le kebab salade tomate oignon.

did not know how to name their parent's jobs, and were only able to remotely describe what they did on a daily basis). As can be seen in this figure, higher education is often referred to in terms of supplementary years starting at the baccalaureate. The 'Bac +2' section refers to a diploma that is no longer delivered in France, since it has integrated the European standardization incorporating the European Credit Transfer System (ECTS), adopting the 'LMD' (Licence-Master-Doctorat) diploma scheme. The Bac +2 was nevertheless a common diploma previously and is still used in France (Brevet de Technicien Supérieur, for example).

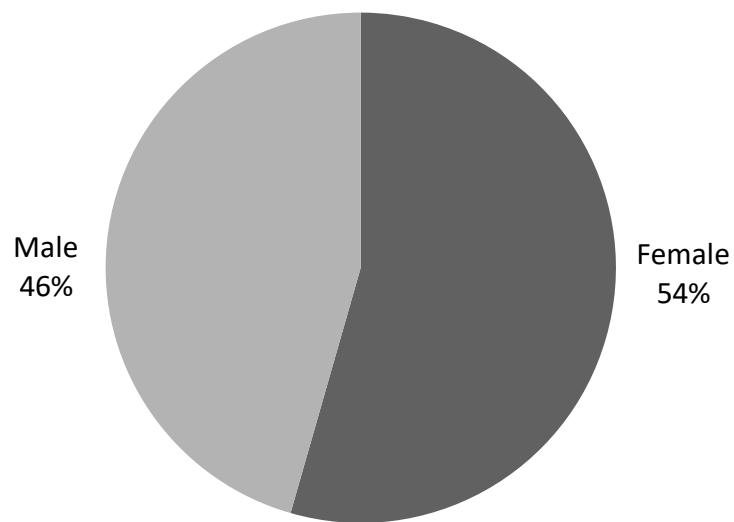


Figure 16: Results of module 1: Gender Distribution of Respondents

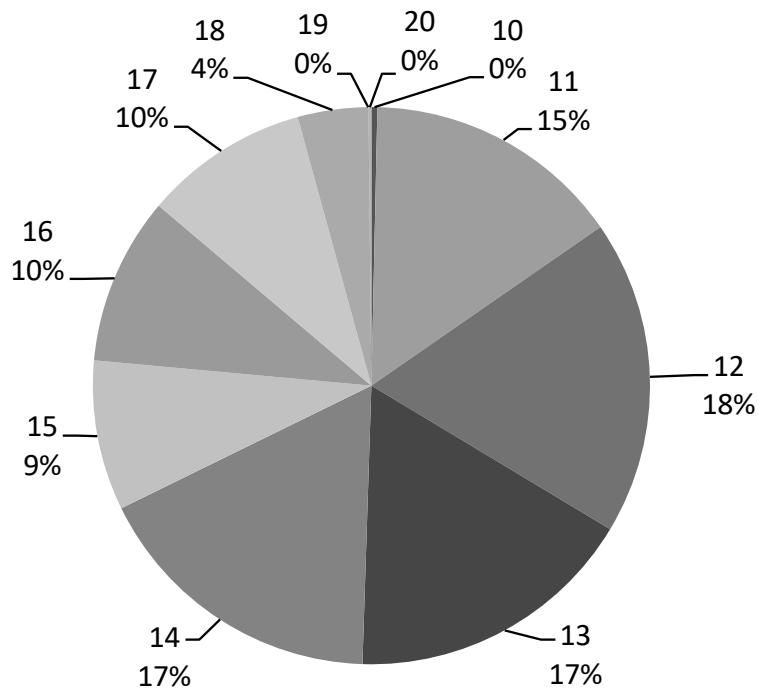


Figure 17: Results of module 1: Age Distribution of Respondents

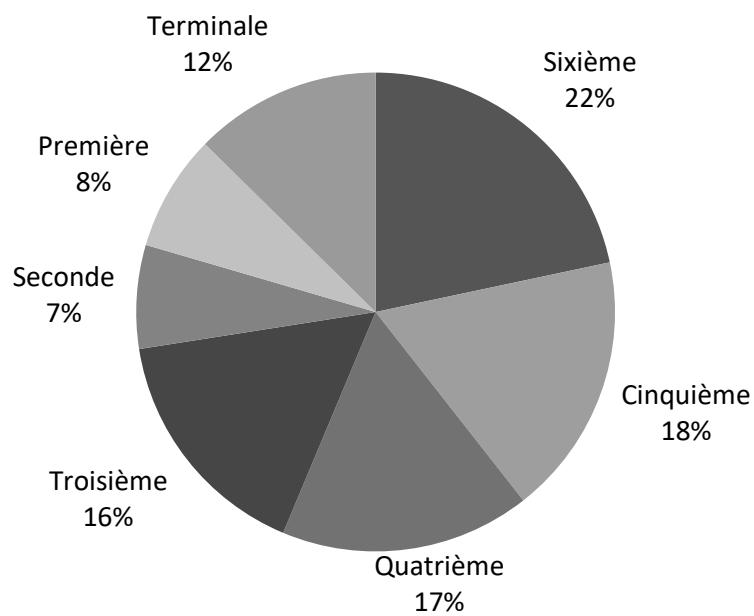


Figure 18: Results of module 1: Distribution of Classes of Respondents

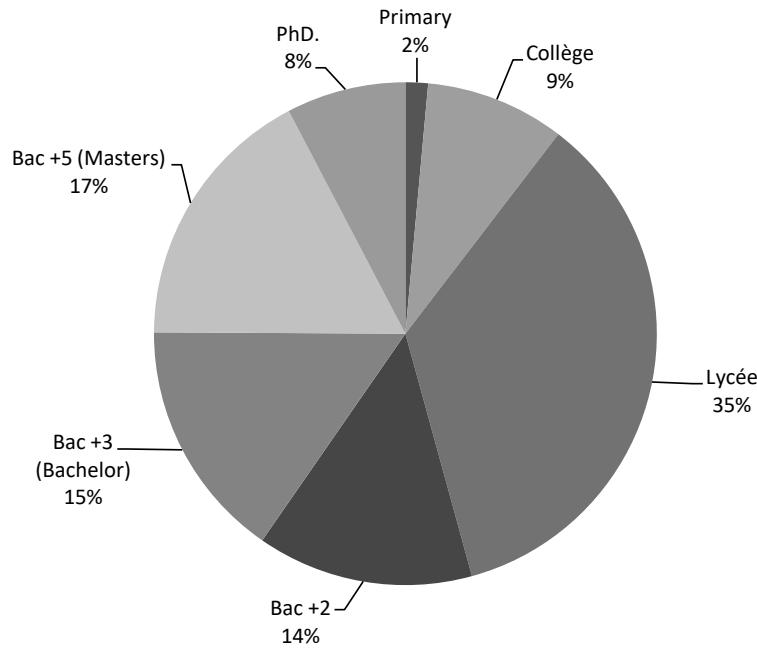


Figure 19: Results of module 1: Parent's Education Attainment of Respondents

Finally, figure 20 presents the results of module 2. As further presented in section 8.1.2 this module was not found to be a contributor to the explanatory power of the model and therefore discarded for further analysis. Nevertheless, pupils, and more specifically their responses to the questionnaire, may be subject to a form of social desirability. The existence of social desirability in subjective data has been mentioned by previous studies as mentioned in section 7.1.4, especially in the specific context of this study. This figure presents the social desirability on the horizontal axis (ranging from 1 to 47) where increasing values show a higher degree of ‘socially desirable’ responses. The vertical axis then presents the number of respondents according to their degree of socially desirable responses in the module. It is to be noted that this scale is not conceived to be an absolute measure, but rather a relative one. The results may thus only be compared among one another and are not to be considered as an absolute scale.

The non-significance of this measure can be explained by several factors. First of all, as shown in figure 20, the degree of socially desirable answers follow a quasi-normal distribution. As such, pupils may be considered to have normally distributed degrees of socially desirable responses. Furthermore, the methodology which was used to collect the answers inherently eliminates a considerable part of the eventual provenance of social desirability in answers. This social desirability comes from the fact that responses are provided to an interviewer, in which case the interviewee will display social desirable answers. As the responses were collected via a computer, with minimal intervention of

the interviewers, this tendency is at least partially eliminated. Finally, the tendency to not socially desirable answers is confirmed by some of the observations discussed at the beginning of this section. When asked for commentaries and remarks on the questionnaires, besides the occasional compliment, respondents tended to display remarks which were either completely out of context, impertinent or highly critical of the questionnaire. Such remarks point to a certain extent to the fact that answers were provided on a highly personal basis, disregarding the opinion the interviewer would have of those respondents. For these reasons, this social desirability scale is discarded in further analyses.

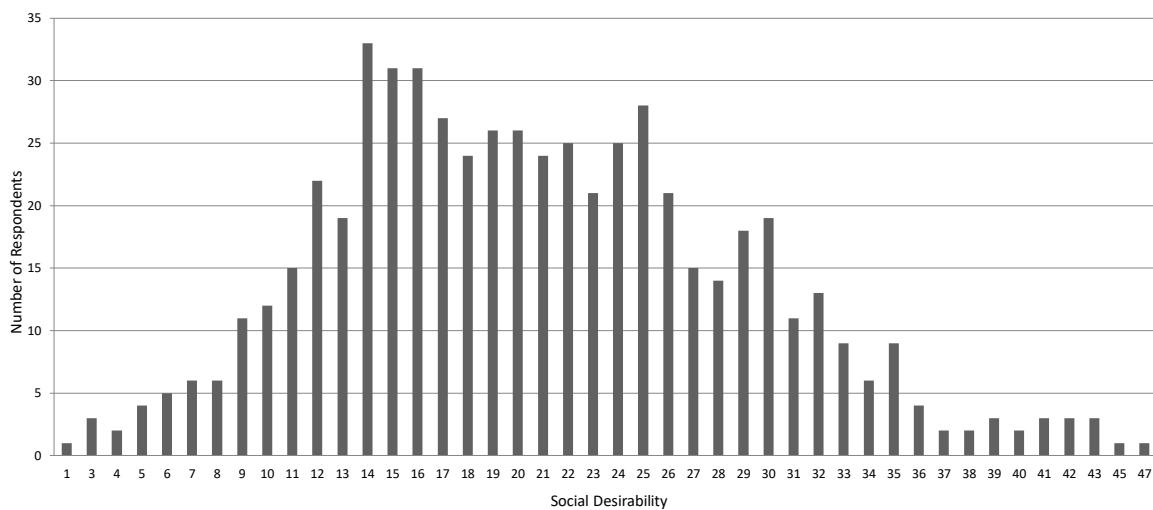


Figure 20: Results of module 2: Social Desirability among respondents

CHAPTER 7. THE FRENCH SECONDARY SCHOOLING SYSTEM & DATA  
COLLECTION

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# Chapter 8

## Empirical Application

The model must follow the data,  
not the other way around!

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Benzécri 1976

### 8.1 Methodological Strategy

HIS section presents the methodology that resulted in the construction of the questionnaire, which in turn was then submitted to the pupils to respond to. The questionnaire, more precisely the module on aspirations, was constructed entirely based upon the results of the previously held focus groups. The remaining parts of the questionnaire were *ad hoc* and based upon the existing literature. The strategy is a mixture of both qualitative and quantitative data gathering. In the same manner, the data will be analyzed qualitatively and quantitatively. As such, it follows the recommendation by Caroline Hart when she considers that when applying the capability approach “a pluralistic approach is required that draws on both qualitative and quantitative methods” (Hart 2009, p. 399).

#### 8.1.1 Gathering the Data, results of the Focus Groups

In order to construct the questionnaire, but also to explain clearly my methodology to the interviewees, I organized focus groups including all the pupils who would later respond to the questionnaire. A similar methodology can be found in studies such as Biggeri et al. 2006 and Hart 2012. These focus groups thus had a double objective; on the one hand, it

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allowed me to get familiarized with the school, the pupils, but also the teachers, the staff and specifically the person who would accompany me while I was present in the school. On the other hand, it would further allow me to identify the aspirations that the pupils linked to school, whether their schooling was a positive or a negative contributor to these aspirations.

Furthermore, having focus groups with the pupils before letting them respond to the questionnaire allowed them to reflect on the questionnaire beforehand. These focus groups highlighted in many cases the fact that the pupils had not previously thought about some of the questions that were discussed. This has been noted previously by Hart: “the young people’s explanations of how they went about making plans for the future were fragmented, messy and even contradictory at times. Thus it was difficult to tease out a hierarchical set of factors that influenced an individual’s choices.” (Hart 2011b, p. 19). Since a certain time elapsed between the initial focus groups and the filling out of the questionnaire, the hope is that the respondents reflected further on these questions to better form their opinion about them.

The initial objective was to have the focus groups without the presence of any other adult (teachers or educational assistants, for example) in the room, as I was able to obtain in a previous study (Vos and Ballet 2018). Due to increasingly strict regulations, having no professional nor personal connections in the surveyed schools, this was not possible. I would nevertheless discuss in advance my methodology with the school representative that would accompany me. These individuals were most comprehensive and collaborative, and after introducing me to the class would make sure not to intervene any further.

Each focus group was constituted of an entire regular class and lasted for one hour every time. In a first instance, I would take time to present myself, my reason for taking an hour of their time and the objective of the focus group. In a second phase, the objective was to spark a debate between the pupils, without any further intervention from me nor the person who would accompany me<sup>1</sup>. In order to trigger the debate in the focus group, the following questions were asked:

Q1 – “Is school important to you, and why?”

Q2 – “Do you think that coming to school is going to change your future, and how?”

Q3 – “Do you think that coming to school stops you from doing what you want?”

Q4 – “What things are you unable to do by coming to school?”

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<sup>1</sup>I was accompanied each time by either one of the CPEs of the school, or an educational assistant.

## 8.1. METHODOLOGICAL STRATEGY

The first and second questions are skewed to identify the “positive” outcome of school, in the pupil’s opinions. They allowed to initiate the debate, but this would very often end rather quickly. The third and fourth questions are intended to relaunch the discussions and capture the exact opposite and contrary to Q1 and Q2. This worked very well in the vast majority of the focus groups and these latter two questions would result in much more animated suggestions. This freedom of speech among peers, without any given direction from adults, resulted in rich discussions. Q3 and Q4 would typically result in the boldest of the class to declare that school is indeed a major hindrance to their freedom. Specifically, Q4 would result in a wide variety of activities the pupils would rather do than coming to school<sup>2</sup>. As the discussion progressed, and still without my intervention, they would very soon realize that had they never come to school, or if they stopped doing so, they would have never met the friend they intended to do all these activities with. This is where the discussion became particularly productive for all the benefits they identified in going to school. As can be seen in the tag cloud I constructed after these focus groups (figure 21), themes such as “amis” (friends), “communauté” (community), “social”, and “recontres” (encounters) occupy an important place. The realization that school was their major, and sometimes only, place of socialization, allowed the discussion to further evolve towards benefits of school.

The tag cloud in figure 21 is not intended to translate any kind of solid material for analysis, but I used it mainly when schools invited me to account for my research. This was the case for 2 schools, who wished to preview the outcomes of the focus groups, mainly for those teachers and staff who were not involved during my presence in the school. It is to be noted that the size of the words is not always representative of its frequency of occurrence during the discussion. Shorter words tend to be oversize with regards to the number of actual times it was used by pupils.

Since I attempted to intervene only during the focus groups when discussions flattened out, I took notes the rest of the time, counting the specific phrasings and themes the pupils would discuss. The tag cloud is the result of this counting, representing the frequency at which the words were used in the discussions. It regroups all the open classes I held for this research.

The outcomes of the focus groups provided for the construction of one of the modules of the questionnaire but also composes an interesting starting point for the analysis. In line with Sen’s idea of public debate and reasoning, the focus groups allowed to select the capabilities – in this case, future-oriented ones in the shape of aspirations – which appeared relevant to the observed population of pupils. Furthermore, and following the

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<sup>2</sup>The activities ranged from doing absolutely nothing to jet-skiing on a nearby river, most often accompanied by their friends.



Figure 21: Tag cloud resulting from the Focus Groups

## 8.1. METHODOLOGICAL STRATEGY

strategies of application of the capability approach as outlined by Brandolini and D'Alessio 1998, these focus groups allow for an initial “item-by-item analysis” as a supplementation strategy.

The first comparison that can be made is to view whether the identified dimensions are consistent with the existent literature. First of all, these focus groups allowed the identification of a vast majority of the list established by Martha Nussbaum (Nussbaum 2003). The items on Nussbaum’s list are nevertheless very generic, whereas the impacts of school – both positive and negative – identified by the focus groups were more specific. As such, “Life” from Nussbaum’s list translated into specifics such as having a job (with a decent salary), having a home, or learning about hygiene. The item of “Bodily Health” was also largely discussed, where health outcomes were directly related to school (specifically biology classes). “Bodily Integrity” appears to have been the major absent of the capabilities identified by the participants. “Senses, Imagination and Thought” may have been the most frequent occurrences of themes in the focus groups; pupils would systematically underline the importance of school in their learning process, allowing them to reason individually and independently. They would also stress the cultural and artistic knowledge school provides. “Emotions” has not been cited as such, even though it may overlap with the seventh item of “Affiliation”. The only emotions that pupils would mention are those of “pleasure”, “feeling lost” or sadness related to “bullying” which they associate with school. “Practical Reason” has been vastly discussed as they find school to allow them to “reason”, to “think”, to “learn” and to “know” about new things. “Play” is also a less represented item from the focus groups, even though it has not been omitted entirely, with references to be able to practice “sports” and to join “clubs” withing school. Finally, “Control Over One’s Environment” both politically and materially has been identified as important by the respondents. “Participation”, “hierarchy” and “citizenship” were mentioned with reference to political participation and having a “house”, a “salary” and “money” in general were found important outcomes of school.

The methodology of organizing focus groups for children while applying the capability approach has been applied previously (Biggeri et al. 2006, drawing on “Capability approach and child well-being”, Hart 2012). When comparing the outcomes of the focus groups to these studies, the overlap is initially less clear. Hart focuses on determinants of the specific aspiration formation of entering higher education, or hindrance thereof, and does therefore not specify a list of educational aspirations. Biggeri finds a compounded list of 14 elements relating capabilities that appear pertinent for children. The outcomes of the focus groups do overlap largely with the list proposed by Biggeri. Out of the 14 elements, at least 12 are identified by the focus groups. The remaining 2 elements appear to be highly specific to the individuals interviewed in the study proposed by Biggeri et al.

2006. “Bodily integrity and safety”, similar to the item from Nussbaum’s list, was not identified during the focus groups. This can be due either to the absence of any feeling of physical threat or because it would be a difficult subject to discuss with an external observer, let alone in front of their entire class. Furthermore, the eighth item on Biggeri’s list, namely “Freedom from economic and non-economic exploitation” was also not mentioned during the focus groups. Similarly, this can be due to the absence of the feel of concern about this subject or a non-willingness to discuss it. Such an item appears to be highly specific to the group of children that was observed during the study by Biggeri et al. 2006, since it was held during the “Children’s World Congress on Child Labour”, in Florence in May 2004. In contrast, it is highly unlikely that children who responded to the questionnaire for this thesis were concerned by child labor.

These results support Sen’s view of the importance of participation and deliberation as being essential to the correct framing of capabilities (or aspirations) when studying specific groups. On the other hand, it also suggests that some items may be omitted due to the non-willingness of participants to discuss specific subjects during public debates. Such a reluctance to discuss some specifics is not necessarily due to an absence of interest or because an individual finds it non-pertinent, but rather because the discussion of the topic may be uncomfortable or embarrassing. Similarly, the subject of sexuality was only very rarely discussed during these focus groups, despite most of the schools I worked in having specific classes on sexuality education. Every single time it was actually discussed, it was rather to provoke a reaction either from other pupils or from me. As such, relying solely on participation and public debate may present flaws and result in an incomplete list of items.

### **8.1.2 Construction of the Questionnaire**

The questionnaire was entirely constructed online. This comes with both benefits and drawbacks. It implied that all schools would require to have sufficient computers and internet access to allow classes to respond to the questionnaire. This has resulted in a more complex organization of the sessions during which the pupils could fill out the questionnaire. It also required to take time to explain the location and procedure to the students prior to them filling out the questionnaire. This has proven to pose difficulties in some cases. Notably the difficulty to communicate the (complex) link to the pupils. Moreover, not all the pupils felt at ease with the tool that was used. Here again, the schools were highly implicated, in providing both the computers and staff to provide assistance to the pupils who required it. Finally, this questionnaire being online, it posed a security issue. Anyone could navigate to the questionnaire and fill it out as many times

## 8.1. METHODOLOGICAL STRATEGY

as they wanted. To counter this, the questionnaire was protected with a password, taken down between sessions and all the provided answers provided with a timestamp.

A major advantage of using an online questionnaire was to entirely eliminate missing or irrelevant answers. This tool allowed to predetermine the “shape” some answers could take and a considerable amount of time was dedicated to predetermining and eliminating irrelevant answers. These irrelevant answers encompass for example pupils attempting to respond to anything else than a natural number, or an excessively large number when their age is asked. Evaluative questions exclusively used a Likert scale, which excludes the possibility to answer “I do not know” (Likert 1932). As some pupils would have preferred to have this option<sup>3</sup>, some would forcibly do so. The usage of this online tool permitted to avoid these answers.

The questionnaire itself was composed of 8 modules, which were not identified as such to the respondent. The first 7 modules were determined *ad hoc* and the content of the final module was determined after the focus groups.

The socio-demographic section contained items on age, gender, nationality, and family among others. The items related to family attempted to identify the respondent’s family composition (number of siblings) and the socio-professional background of the parents (level of education attained, current job).

The Social Desirability Scale attempted to identify the degree to which the respondent filled out the questionnaire in a way she/he found socially correct or acceptable. It is composed of twenty CSD items from the Crowne-Marlowe scale for adults which were rephrased in simpler language for children. The remaining items were specially constructed to sample a wide range of social experiences common to school-age children. The possibility of acquiescence response sets was minimized by keying 26 of the 48 items so that the interviewee must respond “true” and 22 so that she/he must respond “false” to appear socially acceptable (Crandall, Crandall, and Katkovsky 1965). Upon further analysis (section 8.2) it was found to be noncontributing to either of the axes. Using this item in further empirical analysis (section 8.2.3) appeared to be challenging as there exists no literature which relates the usage of this measure and is beyond the scope of the determination of contributing factors to school-related aspirations.

Module 3 attempted to identify the pupil’s well-being in school and was very largely based on a study with a similar methodology (Hart 2012). The questions used for this module are my own translation of their English version provided by Caroline Hart.

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<sup>3</sup>Le questionnaire est plus tôt facile et il manque une case pour “je ne sais pas” (This questionnaire is rather easy and the option “I don’t know” is missing)

## CHAPTER 8. EMPIRICAL APPLICATION

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Module	Content	Source
1	Socio-demographics	Own composition
2	Social Desirability Scale	Adaptation from Crandall, Crandall, and Katkovsky 1965
3	Well-being in school à la Hart	Adaptation from Hart 2012
4	Subjective importance of school	Own composition
5	Subjective evaluation of school quality	Own composition
6	Subjective evaluation of (dis)advantages à la Bourdieu	Adaptation from Bourdieu and Passeron 2016
7	Internal register with regards to further education	Adaptation from Hart 2011b
8	Aspirations and Agency	Own composition
9	School and it's impact on Aspirations	Focus Groups

Table 5: Questionnaire, modules and sources

Modules 4 and 5 invited the respondent to give their opinion on the importance, but also the quality of the school they attended.

Module 6 attempted to subjectively evaluate Bourdieu and Passeron’s statistical findings on the (non-)diversity of social classes in higher education. In other words, this module asked the pupil whether she/he considered being (dis)advantaged in comparison to their peers because of their parents being more or less rich, having attained a certain level of education or because their parents were more or less involved in their education.

Module 7 takes the previously identified registers of aspiration formation with regards to higher education by Hart 2011b. It transforms these registers into question about “further education” rather than higher education as they were initially intended by the author. This allows these findings to be applied to pupils from collège in making them more generic.

The module on Aspirations and Agency attempts to identify the degree to which the pupils find their decisions and aspirations in conflict with those of their peers, their parents, and their teachers. It also focuses on their feeling of autonomy in their decision making regarding their schooling and the formulation of their aspirations.

Finally, module 9 was entirely constructed as discussed in section 8.1.1, using only the aspirations identified to be pertinent by the pupils during the focus groups. It then formulated the question “I think that my schooling will allow me to...” followed by the aspirations discussed during the focus groups.

## 8.2 Data Analysis

### 8.2.1 Identification of the Correspondences; Multiple Correspondences Analysis

Multiple Correspondence Analysis (MCA) is part of the larger family of correspondence analysis. This body of inductive statistical methods may be attributed to the French statistician, Jean-Paul Benzécri. This model has been chosen for the analysis of the previously collected data following the epigraph of this chapter, where Benzécri affirms that “the model must follow the data, not the other way around!” (Benzécri 1976, own translation). Such a claim starkly contrasts with the more “traditional” econometric approach to data analysis in economic science. In this latter approach, data analyzed using a predetermined model, notably defining influencing factors *ex ante*, rather than allowing the data to structure itself. Regarding the corpus of correspondence analysis, Benzécri finds that “when our experience was applied to various types of data, it allows identifying models, not *a priori* but *a posteriori* [...] without any restrictive hypotheses.” (Benzécri 1977b, p. 19, own translation). Following this statement, applying an MCA to the collected survey data will allow identifying complex relationships between the different dimensions, i.e. modules, of the questionnaire, without presupposing any exiting relation. The application of such a technique is consistent and coherent when applied to a database specifically constructed for capabilitarian analysis as discussed in section 5.2.3. As noted by Schokkaert and Van Ootegem 1990, it is to be noted nevertheless that such a technique may yield “useful identification” while remembering that it is a mere “data reduction technique” which only “summarizes the information contained in the original questionnaire” (Schokkaert and Van Ootegem 1990, p. 439). In order to consolidate its findings, I will therefore further complete it with other empirical strategies.

I ran multiple iterations of the MCA over different forms of the entire database. Initially, using the entire database, only less than 12% of the inertia was explained with the first 2 axes, indicating too many or too blurry relationships were established using the entirety of the data. The following iterations consisted of removing those questions that were not found to significantly contribute to the explained inertia of the axes. As previously stated, the removed dimensions were notably the entirety of the Social Desirability Scale, but also various socio-demographic indicators. The indicators included nationality (both of the pupil and parents), parent’s marital status, and the pupil’s school. The retained criterion for establishing the threshold of significance of contribution to an axis was that the contribution of a modality had to exceed the average contribution of all modalities to the entire axis.

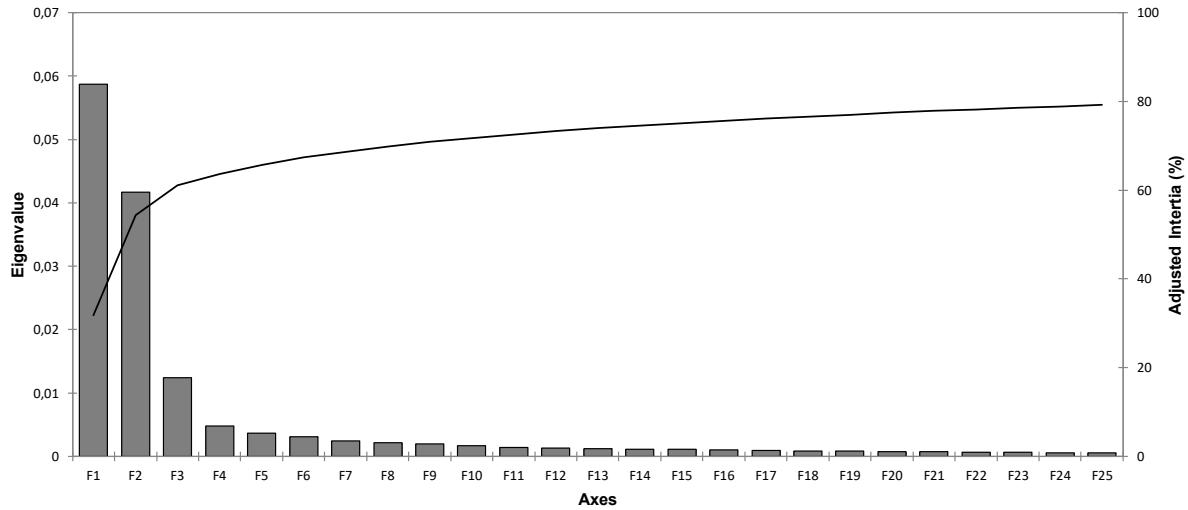


Figure 22: Multiple Cluster Analysis Scree Plot

Other dimensions, even though they did not contribute significantly to the determination of an axis, were forcefully kept in the MCA. This occurred notably for the number of siblings and the subjective evaluation of the (dis)advantages à la Bourdieu. The reason for doing so was that removing them would consist of entirely denying well-anchored aspects of the literature discussed previously.

As a result of these iterations, the final MCA was applied to 85 questions and all of the 586 respondents. The fact that all of the respondents could be used was very largely due to the usage of an online questionnaire, avoiding pitfalls discussed in section 8.1.2. Figure 22 shows the scree plot resulted from the final MCA. The very large number of axes (157 contribute to the explained inertia) makes the visualization difficult, which is why only the 25 first axes are represented on the scree plot, allowing to draw some information from the visual representation. The first two axes contribute 54,37% to the explained inertia. It is to be noted that this is a 20% increase in comparison to my previous study (Vos and Ballet 2018). The contribution of the third axis drops to 6,73% and the analysis of further axes is therefore discarded. The symmetrical graph of the variables resulting from the MCA can be found in appendix K. This appendix only represents the positioning of the variables as individuals cannot be directly analyzed in an MCA.

The following tables (6 to 18) present the results of the MCA. The selection of the dimensions (questions) is based upon the previously exposed criterion. This criterion of selection requires a modality to contribute strictly more than the average contribution of all the modalities to the axis' inertia. Once the significant contributors identified, they were then placed in either of the following tables according to their axis and sign (positive or negative). It is to be noted that the order of appearance of the questions

has no importance and merely reflects the order of appearance of the dimension in the questionnaire.

This analysis is much more conclusive than the similar previous one (Vos and Ballet 2018). The axes are more clearly distinguishable, which may be imputed to the considerably higher number of respondents to the questionnaire. These results are nevertheless to be taken with precaution, as should any statistical result. For instance, the presence of age 10 on axis F2 on the positive side (table 15) may be considered to be an outlier, as only 2 individuals reported the age of 10 in the entire panel of respondents. Furthermore, this presents a drawback in comparison to our previous study, as it does not clearly identify any age groups to be assimilated to either of the axes. We previously found that the level of aspirations, well-being in school and subjective evaluation of school tended to decrease while age increased. This is not the case in this application as only one age is found to contribute significantly to the elaboration of an axis, and this reported age is an outlier.

The axes being defined statistically, the MCA allows identifying the conceptual meaning of each of these axes. Once again, this statistical application appears highly conclusive as this identification is relatively clear-cut, specifically with regards to our previous study. The more blurry results of this initial study (Vos and Ballet 2018) have been its most prominent weakness, and has been pointed out, notably during a presentation at the first Cambridge Capability Approach Conference held in June 2016. Despite these results not being perfectly partitioned, the axes may be defined as follows.

Firstly, the first axis (F1) regroups on its negative side modalities ranging from 3 to 6, thus hovering around the ‘average’ of 4 (as shown in tables 6 and 7). The positive side of this axis is the most clear-cut of all, with exclusively the highest modality of 7 (tables 8, 9, 10, and 11), thus providing this axis with its label of ‘positiveness’. In other words, the first axis, specifically the positive side, appears to regroup modalities on the high end from all modules of the questionnaire.

This axis also shows that *more* aspirations are found to significantly contribute to its constitution. The positive side of this axis is co-constituted by the aspiration of political participation, which is not identified in the second axis. Moreover, a wider variety of the school’s staff is found to be aiding in the pupil’s schooling.

Secondly, the negative side of the second axis (tables 12, 13, and 14) is almost as precise as the positive side of axis F1. It regroups only the modality 6, with the exception of one single 5. This side of the second axis, therefore, represents the high-end, very much above average. The positive side of this second axis (tables 15, 16, 17, and 18) presents

a highly ‘pessimistic’ view of schooling, well-being therein, its quality and the associated aspirations. As this axis will show, this also translates into a negative, if not hostile, behavior of pupils towards school. First off, the dimension of age (with the associated modality of 10) is discarded as they are embodied by only 2 individuals out of the total 586 respondents. The predominant modality that contributes to the elaboration of this axis is that of 1. This modality is frequently accompanied by 2 and to a lesser extent by 3 or 4. Distributed over a vast majority of the modules of the questionnaire, this indicates that for those pupils who consider the quality of their school poorly, they tend to experience low levels of well-being in school as well as extremely low school-related aspirations.

The positive side of the second axis also occasionally identifies the highest modalities in very specific dimensions. Upon further exploration, it may be noted that these high modalities correspond to ‘negative’ dimensions, thus translating a negative attitude towards school, such as skipping classes frequently or considering to entirely stop coming to school. Another illustration of these sparse high modalities is that of the feeling that personal aspirations clash with those formulated by teachers in the pupil’s stead. One particular dimension, that is only present on this axis, is that of further education. It is associated with the lowest modality which translates into “when thinking about my future schooling, I think that I will not succeed”. This dimension translates a feeling of (imminent) failure of the pupil in the schooling system.

Finally, it is to be noted that there exists a general consistency in the grouping of the modalities. This may be considered as the most important result of this MCA. Without claiming the identification of a causal link, a clear correspondence is established between the modules in the questionnaire. Even though not every modality of every question is represented significantly, there is a general presence of all the modules in the definition of the two axes. I will further confirm this finding with the Hierarchical Cluster Analysis in the following section, which aims to complete this initial clustering method.

## 8.2. DATA ANALYSIS

Original (French)	English	Modalities
Penses-tu que tes professeurs t'aident globalement dans ta scolarité ?	Do you think that your teachers globally help you in your schooling?	5
Penses-tu que tes Assistants d'Éducation prendraient le temps de t'aider ?	Do you think that Educational Assistants would take time to help you?	4
Penses-tu que le personnel de santé est à l'écoute dans ton établissement ?	Do you think that the medical staff in your school listens to you?	5
Je pense que je peux parler de mes aspirations avec mon/ma CPE.	I think that I can talk about my aspirations with my CPE <sup>4</sup> .	3
Je pense que je peux parler de mes aspirations avec mes amis.	I think that I can talk about my aspirations with my friends.	5
Je pense que je peux parler de mes aspirations avec ma famille.	I think that I can talk about my aspirations with my family.	6
<i>Je pense que je peux décider moi-même de mes aspirations concernant...</i>	<i>I think that I can independently decide about my aspirations concerning...</i>	
...mon éducation actuelle et future.	...my current and future education.	4
...ma carrière.	...my career.	4, 5
...ma vie sociale.	...my social life.	4
...mes loisirs.	...my hobbies.	4
<i>Je pense que mon éducation va m'aider à...</i>	<i>I think that my education is going to help me to...</i>	
...trouver un travail.	...find a job.	4, 5
...apprendre et comprendre le Respect.	...learn about and understand respect.	4, 5
...fonder une famille.	...start a family.	4, 5
...comprendre la sexualité.	...understand sexuality.	4
...socialiser.	...socialize.	4, 5
...vivre en communauté.	...to live in a community.	4, 5, 6
...rencontrer des amis.	...meet friends.	4, 5, 6
...travailler en groupe.	...work with a group.	4, 5, 6
...mieux m'exprimer à l'oral.	...better my oral expression.	4, 5
...me faire une Culture Générale.	...acquire an all round culture.	5, 6

Table 6: Axis F1, negative, 1/2

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<sup>4</sup>Refers to a “Conseiller Principal d’Éducation”, present in every collège or lycée. This person is in charge of every aspect surrounding the pupils’ education within school, other than teaching. Thus taking care of administrative matters and personal and family problems, among others.

CHAPTER 8. EMPIRICAL APPLICATION

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Original (French)	English	Modalities
...devenir Citoyen.	...become a citizen.	4, 5
...voyager.	...travel.	4
...obtenir de nouvelles connaissances.	...acquire new knowledge.	4, 5, 6
...me faire un esprit critique.	...develop a critical mind.	4, 5
...obtenir des diplômes.	...obtain diplomas.	4, 5, 6
...continuer les études.	...pursue in further schooling.	4, 5, 6
...faire des stages.	...do internships.	4, 5
...m'épanouir intellectuellement.	...flourish intellectually.	4, 5
...comprendre le monde.	...understand the world.	4, 5
...avoir un logement convenable.	...obtain decent housing.	4, 5
...avoir des activités de loisir.	...have hobbies.	3, 4, 5
...me construire des Valeurs.	...construct my own Values.	4, 5
...me comprendre.	...understand myself.	3, 4, 5
...me construire mon identité.	...construct my own identity.	4, 5
...subvenir à mes besoins.	...provide for myself.	4, 5
...devenir indépendant et autonome.	...become independent and autonomous.	4, 5
...avoir la possibilité de faire de mon temps ce que je veux.	...dispose of my own time and do what I want.	3, 4
...aider les personnes qui m'entourent.	...help people in my surrounding.	4, 5
...aider les personnes qui sont dans le besoin.	...help people in need.	3, 4, 5
...avoir une bonne santé.	...have a good health.	4, 5
...avoir la possibilité d'aimer et d'être aimé.	...have the possibility to love and be loved.	4, 5

Table 7: Axis F1, negative, 2/2

## 8.2. DATA ANALYSIS

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Original (French)	English	Modalities
Je me sens écouté dans mon établissement.	I feel listened to in my school.	7
Je pense que je peux participer aux décisions prises dans mon établissement.	I think that I can participate in the decisions taken in my school.	7
Je pense qu'il est facile pour moi d'être moi-même dans mon établissement.	I think it is easy for me to be myself in my school.	7
J'apprécie l'atmosphère de mon établissement.	I like the atmosphere in my school.	7
J'apprécie venir dans mon établissement.	I like going to my school.	7
Ce même diplôme va m'être utile plus tard.	My diploma is going to be useful later.	7
En dehors du diplôme, les savoirs acquis dans mon établissement sont importants pour moi.	Besides my diploma, the knowledge I have acquired in school is important to me.	7
Je suis motivé(e) dans mon travail scolaire.	I feel motivated in my schoolwork.	7
Je fais mes devoirs.	I do my homework.	7
Mon attitude est positive.	My attitude is positive.	7
Penses-tu que tes professeurs enseignent bien leurs matières ?	Do you think that your teachers teach their subjects well?	7
Penses-tu que tes professeurs t'aident globalement dans ta scolarité ?	Do you think that your teachers globally help you with your schooling?	7
Penses-tu que les matières enseignées sont intéressantes ?	Do you think the classes you take are interesting?	7
Penses-tu que ta/ton Professeur Principal prendrait le temps de t'aider ?	Do you think that your Head Teacher would take time to help you?	7
Penses-tu que ta/ton CPE prendrait le temps de t'aider ?	Do you think that your CPE would take time to help you?	7
Penses-tu que tes Assistants d'Éducation prendraient le temps de t'aider ?	Do you think that your Educational Assistants would take time to help you?	7

Table 8: Axis F1, positive, 1/4

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Original (French)	English	Modalities
Penses-tu que le personnel Administratif de ton établissement prendrait le temps de t'aider ?	Do you think that the administrative staff would take time to help you?	7
Penses-tu que le personnel de santé est à l'écoute dans ton établissement ?	Do you think that the medical staff in your school listens to you?	7
Penses-tu que le Conseiller d'Orientation Psychologue aide à la recherche de formations/métiers qui t'intéressent ?	Do you think that your career guidance counselor helps you to find studies or jobs that you like?	7
Penses-tu que ton établissement offre un bon environnement de travail ?	Do you think that your school offers a good working environment?	7
Je pense que je peux parler de mes aspirations facilement.	I think that I can easily talk about my aspirations.	7
Je pense que je peux parler de mes aspirations avec mes professeurs.	I think that I can talk about my aspirations with my teachers.	7
Je pense que je peux parler de mes aspirations avec mon/ma CPE.	I think that I can talk about my aspirations with my CPE.	7
Je pense que je peux parler de mes aspirations avec mes Assistants d'Éducation.	I think that I can talk about my aspirations with my Educational Assistants.	7
Je pense que je peux parler de mes aspirations avec mon/ma Conseiller d'Orientation Psychologue (COP).	I think that I can talk about my aspirations with my career guidance counselor.	7
Je pense que je peux parler de mes aspirations avec mes amis.	I think that I can talk about my aspirations with my friends.	7
Je pense que je peux parler de mes aspirations avec ma famille.	I think that I can talk about my aspirations with my family.	7
<i>Je pense que je peux décider moi-même de mes aspirations concernant...</i>	<i>I think that I can independently decide about my aspirations concerning...</i>	
...mon éducation actuelle et future.	...my current and future education.	7
...ma carrière.	...my career.	7
...mes relations personnelles.	...my personal relationships.	7
...ma vie sociale.	...my social life.	7
...mes croyances spirituelles et/ou religieuses.	...my spiritual and/or religious beliefs.	7
...mes loisirs.	...my hobbies.	7

Table 9: Axis F1, positive, 2/4

## 8.2. DATA ANALYSIS

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Original (French)	English	Modalities
Je pense que mes aspirations sont en conflit avec ce que veulent mes parents pour mon futur.	I think that my aspirations are in conflict with what my parents want for my future.	7
Je pense que mes aspirations sont en conflit avec ce que veulent mes professeurs pour mon futur.	I think that my aspirations are in conflict with what my teachers want for my future.	7
Je pense que mes aspirations sont en conflit avec ce que veulent mes amis pour mon futur.	I think that my aspirations are in conflict with what my friends want for my future.	7
Je pense que mes aspirations sont en conflit avec ce que veut mon copain/ma copine pour mon futur.	I think that my aspirations are in conflict with what my boyfriend/girlfriend wants for my future.	7
<i>Je pense que mon éducation va m'aider à...</i>	<i>I think that my education is going to help me to...</i>	
...trouver un travail.	...find a job.	7
...apprendre et comprendre le Respect.	...learn about and understand respect.	7
...fonder une famille.	...start a family.	7
...comprendre la sexualité.	...understand sexuality.	7
...socialiser.	...socialize.	7
...vivre en communauté.	...to live in a community.	7
...rencontrer des amis.	...meet friends.	7
...travailler en groupe.	...work with a group.	7
...mieux m'exprimer à l'oral.	...better my oral expression.	7
...me faire une Culture Générale.	...acquire an all round culture.	7
...devenir Citoyen.	...become a citizen.	7
...voyager.	...travel.	7
...obtenir de nouvelles connaissances.	...acquire new knowledge.	7
...me faire un esprit critique.	...develop a critical mind	7
...obtenir des diplômes.	...obtain diplomas.	7
...continuer les études.	...pursue in further schooling.	7
...faire des stages.	...do internships.	7
...participer aux décisions politiques.	...participate in political decisions.	7
...m'épanouir intellectuellement.	...flourish intellectually.	7
...comprendre le monde.	...understand the world.	7

Table 10: Axis F1, positive, 3/4

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Original (French)	English	Modalities
...avoir un logement convenable.	...obtain decent housing.	7
...avoir des activités de loisir.	...have hobbies.	7
...me construire des Valeurs.	...construct my own Values.	7
...me comprendre.	...understand myself.	7
...me construire mon identité.	...construct my own identity.	7
...subvenir à mes besoins.	...provide for myself.	7
...devenir indépendant et autonome.	...become independent and autonomous.	7
...avoir la possibilité de faire de mon temps ce que je veux.	...have the possibility to do what I want with my time.	7
...aider les personnes qui m'entourent.	...help people in my surrounding.	7
...aider les personnes qui sont dans le besoin.	...help people in need.	7
...avoir une bonne santé.	...have a good health.	7
...avoir la possibilité d'aimer et d'être aimé.	...have the possibility to love and be loved.	7
...avoir la possibilité de pratiquer ma spiritualité ou ma religion librement.	...have the opportunity to freely practice my spirituality or religion.	7
...devenir indépendant et autonome.	...become independent and autonomous.	7
...avoir la possibilité de faire de mon temps ce que je veux.	...have the possibility to do what I want with my time.	7
...aider les personnes qui m'entourent.	...help people in my surrounding.	7
...aider les personnes qui sont dans le besoin.	...help people in need.	7
...avoir une bonne santé.	...have a good health.	7
...avoir la possibilité d'aimer et d'être aimé.	...have the possibility to love and be loved.	7
...avoir la possibilité de pratiquer ma spiritualité ou ma religion librement.	...have the opportunity to freely practice my spirituality or religion.	7

Table 11: Axis F1, positive, 4/4

## 8.2. DATA ANALYSIS

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Original (French)	English	Modalities
J'apprécie l'atmosphère de mon établissement.	I like the atmosphere in my school.	6
Je suis motivé(e) dans mon travail scolaire.	I feel motivated in my schoolwork.	6
Penses-tu que tes professeurs enseignent bien leurs matières ?	Do you think that your teachers teach their subjects well?	6
Penses-tu que tes professeurs t'aident globalement dans ta scolarité ?	Do you think that your teachers globally help you with your schooling?	6
Penses-tu que les matières enseignées sont intéressantes ?	Do you think the classes you take are interesting?	6
Penses-tu que ta/ton Professeur Principal prendrait le temps de t'aider ?	Do you think that your Head Teacher would take time to help you?	6
Penses-tu que ta/ton Conseiller(e) Principal d'Éducation prendrait le temps de t'aider ?	Do you think that your CPE would take time to help you?	6
Penses-tu que tes Assistants d'Éducation prendraient le temps de t'aider ?	Do you think that your Educational Assistants would take time to help you?	6
Penses-tu que le Conseiller d'Orientation Psychologue aide à la recherche de formations/métiers qui t'intéressent ?	Do you think that your career guidance counselor helps you to find studies or jobs that you like?	6
Penses-tu que ton établissement offre un bon environnement de travail ?	Do you think that your school offers a good working environment?	6
Je pense que je peux parler de mes aspirations avec mon/ma CPE.	I think that I can talk about my aspirations with my CPE.	5
Je pense que je peux parler de mes aspirations avec mes Assistants d'Éducation.	I think that I can talk about my aspirations with my Educational Assistants.	6
<i>Je pense que je peux décider moi-même de mes aspirations concernant...</i>	<i>I think that I can independently decide about my aspirations concerning...</i>	
...mes relations personnelles.	...my personal relationships.	6
...ma vie sociale.	...my social life.	6
...mes loisirs.	...my hobbies.	6

Table 12: Axis F2, negative, 1/3

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Original (French)	English	Modalities
<i>Je pense que mon éducation va m'aider à...</i>	<i>I think that my education is going to help me to...</i>	
...trouver un travail.	...find a job.	6
...apprendre et comprendre le Respect.	...learn about and understand respect.	6
...fonder une famille.	...start a family.	6
...comprendre la sexualité.	...understand sexuality.	6
...socialiser.	...socialize.	6
...vivre en communauté.	...to live in a community.	6
...rencontrer des amis.	...meet friends.	6
...travailler en groupe.	...work with a group.	6
...mieux m'exprimer à l'oral.	...better my oral expression.	6
...me faire une Culture Générale.	...acquire an all round culture.	6
...devenir Citoyen.	...become a citizen.	6
...voyager.	...travel.	6
...obtenir de nouvelles connaissances.	...acquire new knowledge.	6
...me faire un esprit critique.	...develop a critical mind	6
...obtenir des diplômes.	...obtain diplomas.	6
...continuer les études.	...pursue in further schooling.	6
...faire des stages.	...do internships.	6
...participer aux décisions politiques.	...participate in political decisions.	6
...m'épanouir intellectuellement.	...flourish intellectually.	6
...comprendre le monde.	...understand the world.	6
...avoir un logement convenable.	...obtain decent housing.	6
...avoir des activités de loisir.	...have hobbies.	6
...me construire des Valeurs.	...construct my own Values.	6
...me comprendre.	...understand myself.	6
...me construire mon identité.	...construct my own identity.	6
...subvenir à mes besoins.	...provide for myself.	6
...devenir indépendant et autonome.	...become independent and autonomous.	6
...avoir la possibilité de faire de mon temps ce que je veux.	...have the possibility to do what I want with my time.	6

Table 13: Axis F2, negative, 2/3

## 8.2. DATA ANALYSIS

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Original (French)	English	Modalities
...aider les personnes qui m'entourent.	...help people in my surrounding.	6
...aider les personnes qui sont dans le besoin.	...help people in need.	6
...avoir une bonne santé.	...have a good health.	6
...avoir la possibilité d'aimer et d'être aimé.	...have the possibility to love and be loved.	6
...avoir la possibilité de pratiquer ma spiritualité ou ma religion librement.	...have the opportunity to freely practice my spirituality or religion.	6

Table 14: Axis F2, negative, 3/3

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Original (French)	English	Modalities
Âge	Age	10
Je me sens écouté dans mon établissement.	I feel listened to in my school.	1
Je pense que je peux participer aux décisions prises dans mon établissement.	I think that I can participate in the decisions taken in my school.	1
Je pense qu'il est facile pour moi d'être moi-même dans mon établissement.	I think it is easy for me to be myself in my school.	1
J'apprécie l'atmosphère de mon établissement.	I like the atmosphere in my school.	1
J'apprécie venir dans mon établissement.	I like going to my school.	1
L'obtention du diplôme que je prépare est importante.	Obtaining the diploma I am currently preparing is important to me.	1, 2
Ce même diplôme va m'être utile plus tard.	My diploma is going to be useful later.	1
En dehors du diplôme, les savoirs acquis dans mon établissement sont importants pour moi.	Besides my diploma, the knowledge I have acquired in school is important to me.	1, 2, 3
Je suis motivé(e) dans mon travail scolaire.	I feel motivated in my schoolwork.	1, 2, 3
Je fais mes devoirs.	I do my homework.	1
Mon attitude est positive.	My attitude is positive.	1
J'ai déjà séché des cours.	I have skipped classes before.	7
J'ai déjà envisagé d'arrêter mes études.	I have considered to stop school.	7
Penses-tu que tes professeurs enseignent bien leurs matières ?	Do you think that your teachers teach their subjects well?	1, 2, 3
Penses-tu que tes professeurs t'aident globalement dans ta scolarité ?	Do you think that your teachers globally help you with your schooling?	1, 2
Penses-tu que les matières enseignées sont intéressantes ?	Do you think the classes you take are interesting?	1, 2
Penses-tu que ta/ton Professeur Principal prendrait le temps de t'aider ?	Do you think that your Head Teacher would take time to help you?	1

Table 15: Axis F2, positive, 1/4

Original (French)	English	Modalities
Penses-tu que ta/ton Conseiller(e) Principal d'Éducation prendrait le temps de t'aider ?	Do you think that your CPE would take time to help you?	1
Penses-tu que tes Assistants d'Éducation prendraient le temps de t'aider ?	Do you think that your Educational Assistants would take time to help you?	1
Penses-tu que le personnel Administratif de ton établissement prendrait le temps de t'aider ?	Do you think that the administrative staff would take time to help you?	1, 2
Penses-tu que le personnel de santé est à l'écoute dans ton établissement ?	Do you think that the medical staff in your school listens to you?	2
Penses-tu que le Conseiller d'Orientation Psychologue aide à la recherche de formations/métiers qui t'intéressent ?	Do you think that your career guidance counselor helps you to find studies or jobs that you like?	1
Penses-tu que ton établissement offre un bon environnement de travail ?	Do you think that your school offers a good working environment?	1
Est-ce que tu souhaites poursuivre tes études ?	Do you wish to pursue your schooling?	0
En pensant à des études futures, je me dis que ...	When thinking about my future schooling, I think that...	1 <sup>5</sup>
Je pense que je peux parler de mes aspirations facilement.	I think that I can easily talk about my aspirations.	1
Je pense que je peux parler de mes aspirations avec mes professeurs.	I think that I can talk about my aspirations with my teachers.	1, 2
Je pense que je peux parler de mes aspirations avec mon/ma CPE.	I think that I can talk about my aspirations with my CPE.	1
Je pense que je peux parler de mes aspirations avec mes Assistants d'Éducation.	I think that I can talk about my aspirations with my Educational Assistants.	1

Table 16: Axis F2, positive, 2/4

<sup>5</sup>This modality corresponds to "...I will not succeed."

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Original (French)	English	Modalities
Je pense que je peux parler de mes aspirations avec mon/ma Conseiller d'Orientation Psychologue (COP).	I think that I can talk about my aspirations with my career guidance counselor.	1
Je pense que je peux parler de mes aspirations avec mes amis.	I think that I can talk about my aspirations with my friends.	1
Je pense que je peux parler de mes aspirations avec ma famille.	I think that I can talk about my aspirations with my family.	1
<i>Je pense que je peux décider moi-même de mes aspirations concernant...</i>	<i>I think that I can independently decide about my aspirations concerning...</i>	
...mon éducation actuelle et future.	...my current and future education.	1
...ma carrière.	...my career.	1
...mes relations personnelles.	...my personal relationships.	1
...ma vie sociale.	...my social life.	1
...mes croyances spirituelles et/ou religieuses.	...my spiritual and/or religious beliefs.	1
...mes loisirs.	...my hobbies.	1
Je pense que mes aspirations sont en conflit avec ce que veulent mes professeurs pour mon futur.	I think that my aspirations are in conflict with what my teachers want for my future.	7
<i>Je pense que mon éducation va m'aider à...</i>	<i>I think that my education is going to help me to...</i>	
...trouver un travail.	...find a job.	1, 2
...apprendre et comprendre le Respect.	...learn about and understand respect.	1
...fonder une famille.	...start a family.	1
...comprendre la sexualité.	...understand sexuality.	1
...socialiser.	...socialize.	1, 2
...vivre en communauté.	...to live in a community.	1, 3
...rencontrer des amis.	...meet friends.	1, 2
...travailler en groupe.	...work with a group.	1
...mieux m'exprimer à l'oral.	...better my oral expression.	1, 2, 3
...me faire une Culture Générale.	...acquire an all round culture.	1, 2
...devenir Citoyen.	...become a citizen.	1
...voyager.	...travel.	1
...obtenir de nouvelles connaissances.	...acquire new knowledge.	1, 2, 4
...me faire un esprit critique.	...develop a critical mind.	1, 2

Table 17: Axis F2, positive, 3/4

Original (French)	English	Modalities
...obtenir des diplômes.	...obtain diplomas.	1, 2
...continuer les études.	...pursue in further schooling.	1, 2
...faire des stages.	...do internships.	1
...participer aux décisions politiques.	...participate in political decisions.	1
...m'épanouir intellectuellement.	...flourish intellectually.	1
...comprendre le monde.	...understand the world.	1, 2
...avoir un logement convenable.	...obtain decent housing.	1
...avoir des activités de loisir.	...have hobbies.	1
...me construire des Valeurs.	...construct my own Values.	1, 2, 3
...me comprendre.	...understand myself.	1
...me construire mon identité.	...construct my own identity.	1
...subvenir à mes besoins.	...provide for myself.	1
...devenir indépendant et autonome.	...become independent and autonomous.	1
...avoir la possibilité de faire de mon temps ce que je veux.	...have the possibility to do what I want with my time.	1
...aider les personnes qui m'entourent.	...help people in my surrounding.	1
...aider les personnes qui sont dans le besoin.	...help people in need.	1
...avoir une bonne santé.	...have a good health.	1
...avoir la possibilité d'aimer et d'être aimé.	...have the possibility to love and be loved.	1
...avoir la possibilité de pratiquer ma spiritualité ou ma religion librement.	...have the opportunity to freely practice my spirituality or religion.	1

Table 18: Axis F2, positive, 4/4

### 8.2.2 Profiling the Individuals; Hierarchical Cluster Analysis

Following Alain Baccini (Baccini 2010), the only pertinent outcomes of an MCA are the contributions of the variables to the axes' inertia (interpreted in section 8.2.1) and the coordinates of the same variables on the retained axes. This section will then apply Benzécri's recommendation to complete the MCA with a Hierarchical Cluster Analysis (HCA). He finds that "it is beyond doubt that, in any study using discrimination and based upon multidimensional data, that a factorial analysis must precede a hierarchical cluster analysis" (Benzécri 1977a, p. 404, own translation). More specifically, this HCA

is applied to the coordinates of the variables resulting from the MCA. In other words, the HCA groups variables into classes based on the euclidean distances previously determined. It is to be noted that the amount of classes is not defined *ad hoc*. As such, and similarly to the MCA, this method does not require a predetermined model and thus, no subjective view on behalf of the researcher.

As tables 19 to 28 show, the HCA identified 3 distinct clusters of variables. These groupings appear to confirm the initial findings from the MCA.

The first group may be labeled similarly to axis F2. It appears to classify all the low to extremely low modalities as belonging to the same group, which may then be called the ‘pessimists’. The vast majority of the dimensions are characterized by the modality 1. There is also a frequent appearance of modalities 2 and 3 in a lesser measure. Once again, this group is coupled with some modalities 7, which relate the ‘hostile’ attitude of the pupil to school. More specifically they refer to dimensions such as skipping classes and having considered stopping school entirely. Furthermore, this HCA also associates the non-willingness of these pupils to pursue schooling. The addition of this analysis to the previous MCA is the translation of a very low feeling of agency from the pupils. When asked whether the students think that they can “independently decide about [their] aspirations”, they find none of the proposed dimensions to be relevant. In other words, they do not experience any form of autonomy in their aspirations concerning their education, career or social interactions. Similarly to the previous finding, they couple this with extremely low modalities of their aspirations. The importance of the experience of agency with regards to schooling is found to be a major factor in the model that is exposed in section 8.2.3.

Secondly comes the group which may be labeled as ‘positive’. This group confirms once more the findings of the MCA as it associates high levels of well-being in school with the feeling pupils can bring about change and express themselves on their aspirations. These dimensions are coupled with a very positive evaluation of the quality of the school’s staff (both pedagogical and non-pedagogical), but also the usefulness of school and the aspirations they consider increasing from attending school. Some discrepancies are to be noted with the sporadic appearance of the modality 1. They appear to be directly linked to some of the non-pedagogical staff of their school, more specifically the CPE and the COP (career guidance counselor). This mildly attenuates the clear-cut definition of this positive group.

The issue of the COPs is something that has been informally reported to me while I was present in some of the schools. The most likely explanation for the association of the modality 1 with the COPs is that some students never actually meet them. Most of

the schools do not oblige their pupils to meet with the COP. Moreover, for those students who do wish to do so, this may prove to be a challenge due to their extremely rare actual presence within the schools. Several pupils have told me, informally, about the poor organization around meeting the COP. The specific issue of the CPE is much more difficult to account for. These individuals are present at school at all times, and in schools housing larger numbers of pupils, there may even be more than one at a time. To my knowledge, the largest school in Nouvelle-Aquitaine (considering the number of pupils) has up to 4 CPEs present simultaneously. The poor evaluation some pupils give of their CPEs may then be explained by the fact that these individuals do not have a harmonized role across schools as they do not have any actual obligations towards students (teaching classes or even receiving them in their offices, for example). Where some may decide to actively engage with pupils, some may be more discreet and therefore perceived as absent by their pupils.

This second group also presents a result that will be found again in the model that is presented in section 8.2.3, namely the fact that the respondents in this group identify simultaneously very high aspirations related to school and high levels of conflicting aspirations. Several elements may nevertheless be invoked to explain such a result. First, this group is also the group of individuals who report the highest levels of feeling of independence in the formation of their aspirations. As such they may consider that what they want conflicts with what other people want for them, but that they still have the ability to achieve their aspirations independently of the willing of others. Secondly, the aspirations of module 9 were modalities related to school exclusively. As the conflicting aspirations relate to people outside of school, the pupils may identify school as a parallel vector through which they may maintain and even further develop their aspirations. I will further develop these arguments in the following section.

The final group is that constituted of ‘moderate’ modalities, and regroups only modalities ‘in the middle’, ranging from 3 to 6 with very rare occurrences of 2. This group is the most difficult to interpret as there are no extreme values associated with it. What can be said about it is that it confirms the consistency of the conclusions found in the previous groups. Moreover, it once more shows that there appears to be a link between the different modules of the questionnaire, and thus the themes explored throughout this study. This consistency reinforced the conclusions found through the MCA. The formation of such groups does not imply any form of causality but confirms the existence of linkages between the different modules in the questionnaire.

The fact that the HCA applied to the MCA identifies highly consistent groups is therefore in line with the theoretical literature as well as the specific applications to the French schooling system. As discussed in section 7.1.4, the studies relating to the different

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impacts of well-being and aspirations on schooling are confirmed to a certain extent in the empirical application performed here. Even though this study does not identify the evolution over time of aspirations (such as highlighted by Dumora 2004 and Vos and Ballet 2018), it does show that aspirations are related to the feeling of well-being in school. This feeling of well-being has been declined in multiple forms in the questionnaire. It spans over dimensions of well-being relating to peers, as well as the (non-)educational staff in school. The ability to participate, the feeling that school provides a good working environment, as well as the subjective importance of school, are also found to influence school-related aspirations. It appears therefore that the usage of this questionnaire is consistent with findings of reports and both theoretical and empirical findings on the French secondary educational system.

Original (French)	English	Modalities
Âge	Age	10
Je me sens écouté dans mon établissement.	I feel listened to in my school.	1
Je pense que je peux participer aux décisions prises dans mon établissement.	I think that I can participate in the decisions taken in my school.	1
Je pense qu'il est facile pour moi d'être moi-même dans mon établissement.	I think it is easy for me to be myself in my school.	1
J'apprécie l'atmosphère de mon établissement.	I like the atmosphere in my school.	1
J'apprécie venir dans mon établissement.	I like going to my school.	1
L'obtention du diplôme que je prépare est importante.	Obtaining the diploma I am currently preparing is important to me.	1, 2
Ce même diplôme va m'être utile plus tard.	My diploma is going to be useful later.	1
En dehors du diplôme, les savoirs acquis dans mon établissement sont importants pour moi.	Besides my diploma, the knowledge I have acquired in school is important to me.	1, 2
Je suis motivé(e) dans mon travail scolaire.	I feel motivated in my schoolwork.	1, 2
Je fais mes devoirs.	I do my homework. I do my homework.	1
Mon attitude est positive.	My attitude is positive.	1
J'ai déjà séché des cours.	I have skipped classes before.	7
J'ai déjà envisagé d'arrêter mes études.	I have considered to stop school.	7
Penses-tu que tes professeurs enseignent bien leurs matières ?	Do you think that your teachers teach their subjects well?	1, 2
Penses-tu que tes professeurs t'aident globalement dans ta scolarité ?	Do you think that your teachers globally help you with your schooling?	1, 2
Penses-tu que les matières enseignées sont intéressantes ?	Do you think the classes you take are interesting?	1, 2
Penses-tu que ta/ton Professeur Principal prendrait le temps de t'aider ?	Do you think that your Head Teacher would take time to help you?	1
Penses-tu que tes Assistants d'Éducation prendraient le temps de t'aider ?	Do you think that your Educational Assistants would take time to help you?	1

Table 19: Hierarchical Cluster Analysis, Group 1, 1/3

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Original (French)	English	Modalities
Penses-tu que le personnel de santé est à l'écoute dans ton établissement ?	Do you think that the medical staff in your school listens to you?	2
Penses-tu que ton établissement offre un bon environnement de travail ?	Do you think that your school offers a good working environment?	1
Est-ce que tu souhaitez poursuivre tes études ?	Do you wish to pursue your shooling?	0
En pensant à des études futures, je me dis que ...	When thinking about my future schooling, I think that...	1
Je pense que je peux parler de mes aspirations facilement.	I think that I can easily talk about my aspirations.	1
Je pense que je peux parler de mes aspirations avec mes professeurs.	I think that I can talk about my aspirations with my teachers.	1
Je pense que je peux parler de mes aspirations avec mes Assistants d'Éducation.	I think that I can talk about my aspirations with my Educational Assistants.	1
Je pense que je peux parler de mes aspirations avec mes amis.	I think that I can talk about my aspirations with my friends.	1
Je pense que je peux parler de mes aspirations avec ma famille.	I think that I can talk about my aspirations with my family.	1
<i>Je pense que je peux décider moi-même de mes aspirations concernant...</i>	<i>I think that I can independently decide about my aspirations concerning...</i>	
...mon éducation actuelle et future.	...my current and future education.	1
...ma carrière.	...my career.	1
...mes relations personnelles.	...my personal relationships.	1
...ma vie sociale.	...my social life.	1
...mes loisirs.	...my hobbies.	1
<i>Je pense que mon éducation va m'aider à...</i>	<i>I think that my education is going to help me to...</i>	
...trouver un travail.	...find a job.	1, 2
...apprendre et comprendre le Respect.	...learn about and understand respect.	1
...fonder une famille.	...start a family.	1
...comprendre la sexualité.	...understand sexuality.	1
...socialiser.	...socialize.	1, 2
...vivre en communauté.	...to live in a community.	1, 3
...rencontrer des amis.	...meet friends.	1, 2
...travailler en groupe.	...work with a group.	1

Table 20: Hierarchical Cluster Analysis, Group 1, 2/3

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Original (French)	English	Modalities
...mieux m'exprimer à l'oral.	...better my oral expression.	1, 2
...me faire une Culture Générale.	...acquire an all round culture.	1, 2
...devenir Citoyen.	...become a citizen.	1
...voyager.	...travel.	1
...obtenir de nouvelles connaissances.	...acquire new knowledge.	1, 2
...me faire un esprit critique.	...develop a critical mind.	1, 2
...obtenir des diplômes.	...obtain diplomas.	1, 2
...continuer les études.	...pursue in further schooling.	1, 2
...faire des stages.	...do internships.	1
...participer aux décisions politiques.	...participate in political decisions.	1
...m'épanouir intellectuellement.	...flourish intellectually.	1
...comprendre le monde.	...understand the world.	1, 2
...avoir un logement convenable.	...obtain decent housing.	1
...avoir des activités de loisir.	...have hobbies.	1
...me construire des Valeurs.	...construct my own Values.	1, 2
...me comprendre.	...understand myself.	1
...me construire mon identité.	...construct my own identity.	1
...subvenir à mes besoins.	...provide for myself.	1
...devenir indépendant et autonome.	...become independent and autonomous.	1
...avoir la possibilité de faire de mon temps ce que je veux.	...have the possibility to do what I want with my time.	1
...aider les personnes qui m'entourent.	...help people in my surrounding.	1
...aider les personnes qui sont dans le besoin.	...help people in need.	1
...avoir une bonne santé.	...have a good health.	1
...avoir la possibilité d'aimer et d'être aimé.	...have the possibility to love and be loved.	1
...avoir la possibilité de pratiquer ma spiritualité ou ma religion librement.	...have the opportunity to freely practice my spirituality or religion.	1

Table 21: Hierarchical Cluster Analysis, Group 1, 3/3

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Original (French)	English	Modalities
Je me sens écouté dans mon établissement.	I feel listened to in my school.	7
Je pense que je peux participer aux décisions prises dans mon établissement.	I think that I can participate in the decisions taken in my school.	7
Je pense qu'il est facile pour moi d'être moi-même dans mon établissement.	I think it is easy for me to be myself in my school.	7
J'apprécie l'atmosphère de mon établissement.	I like the atmosphere in my school.	7
J'apprécie venir dans mon établissement.	I like going to my school.	7
Ce même diplôme va m'être utile plus tard.	My diploma is going to be useful later.	7
En dehors du diplôme, les savoirs acquis dans mon établissement sont importants pour moi.	Besides my diploma, the knowledge I have acquired in school is important to me.	7
Je suis motivé(e) dans mon travail scolaire.	I feel motivated in my schoolwork.	7
Je fais mes devoirs.	I do my homework.	7
Mon attitude est positive.	My attitude is positive.	7
Penses-tu que tes professeurs enseignent bien leurs matières ?	Do you think that your teachers teach their subjects well?	7
Penses-tu que tes professeurs t'aident globalement dans ta scolarité ?	Do you think that your teachers globally help you with your schooling?	7
Penses-tu que les matières enseignées sont intéressantes ?	Do you think the classes you take are interesting?	7
Penses-tu que ta/ton Professeur Principal prendrait le temps de t'aider ?	Do you think that your Head Teacher would take time to help you?	7
Penses-tu que ta/ton CPE prendrait le temps de t'aider ?	Do you think that your CPE would take time to help you?	1, 7
Penses-tu que tes Assistants d'Éducation prendraient le temps de t'aider ?	Do you think that your Educational Assistants would take time to help you?	7
Penses-tu que le personnel Administratif de ton établissement prendrait le temps de t'aider ?	Do you think that the administrative staff would take time to help you?	7

Table 22: Hierarchical Cluster Analysis, Group 2, 1/4

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Original (French)	English	Modalities
Penses-tu que le personnel de santé est à l'écoute dans ton établissement ?	Do you think that the medical staff in your school listens to you?	7
Penses-tu que le Conseiller d'Orientation Psychologue aide à la recherche de formations/métiers qui t'intéressent ?	Do you think that your career guidance counselor helps you to find studies or jobs that you like?	1, 7
Penses-tu que ton établissement offre un bon environnement de travail ?	Do you think that your school offers a good working environment?	7
Je pense que je peux parler de mes aspirations facilement.	I think that I can easily talk about my aspirations.	7
Je pense que je peux parler de mes aspirations avec mes professeurs.	I think that I can talk about my aspirations with my teachers.	7
Je pense que je peux parler de mes aspirations avec mon/ma CPE.	I think that I can talk about my aspirations with my CPE.	1, 7
Je pense que je peux parler de mes aspirations avec mes Assistants d'Éducation.	I think that I can talk about my aspirations with my Educational Assistants.	7
Je pense que je peux parler de mes aspirations avec mon/ma Conseiller d'Orientation Psychologue (COP).	I think that I can talk about my aspirations with my career guidance counselor.	1, 7
Je pense que je peux parler de mes aspirations avec mes amis.	I think that I can talk about my aspirations with my friends.	7
Je pense que je peux parler de mes aspirations avec ma famille.	I think that I can talk about my aspirations with my family.	7
<i>Je pense que je peux décider moi-même de mes aspirations concernant...</i>	<i>I think that I can independently decide about my aspirations concerning...</i>	
...mon éducation actuelle et future.	...my current and future education.	7
...ma carrière.	...my career.	7
...mes relations personnelles.	...my personal relationships.	7
...ma vie sociale.	...my social life.	7
...mes croyances spirituelles et/ou religieuses.	...my spiritual and/or religious beliefs.	1, 7
...mes loisirs.	...my hobbies.	7

Table 23: Hierarchical Cluster Analysis, Group 2, 2/4

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Original (French)	English	Modalities
Je pense que mes aspirations sont en conflit avec ce que veulent mes parents pour mon futur.	I think that my aspirations are in conflict with what my parents want for my future.	7
Je pense que mes aspirations sont en conflit avec ce que veulent mes professeurs pour mon futur.	I think that my aspirations are in conflict with what my teachers want for my future.	7
Je pense que mes aspirations sont en conflit avec ce que veulent mes amis pour mon futur.	I think that my aspirations are in conflict with what my friends want for my future.	7
Je pense que mes aspirations sont en conflit avec ce que veut mon copain/ma copine pour mon futur.	I think that my aspirations are in conflict with what my boyfriend/girlfriend wants for my future.	7
<i>Je pense que mon éducation va m'aider à...</i>	<i>I think that my education is going to help me to...</i>	
...trouver un travail.	...find a job.	7
...apprendre et comprendre le Respect.	...learn about and understand respect.	7
...fonder une famille.	...start a family.	7
...comprendre la sexualité.	...understand sexuality.	7
...socialiser.	...socialize.	7
...vivre en communauté.	...to live in a community.	7
...rencontrer des amis.	...meet friends.	7
...travailler en groupe.	...work with a group.	7
...mieux m'exprimer à l'oral.	...better my oral expression.	7
...me faire une Culture Générale.	...acquire an all round culture.	7
...devenir Citoyen.	...become a citizen.	7
...voyager.	...travel.	7
...obtenir de nouvelles connaissances.	...acquire new knowledge.	7
...me faire un esprit critique.	...develop a critical mind.	7
...obtenir des diplômes.	...obtain diplomas.	7
...continuer les études.	...pursue in further schooling.	7
...faire des stages.	...do internships.	7
...participer aux décisions politiques.	...participate in political decisions.	7
...m'épanouir intellectuellement.	...flourish intellectually.	7
...comprendre le monde.	...understand the world.	7
...avoir un logement convenable.	...obtain decent housing.	7

Table 24: Hierarchical Cluster Analysis, Group 2, 3/4

...avoir des activités de loisir.	...have hobbies.	7
...me construire des Valeurs.	...construct my own Values.	7
...me comprendre.	...understand myself.	7
...me construire mon identité.	...construct my own identity.	7
...subvenir à mes besoins.	...provide for myself.	7
...devenir indépendant et autonome.	...become independent and autonomous.	7
...avoir la possibilité de faire de mon temps ce que je veux.	...have the possibility to do what I want with my time.	7
...aider les personnes qui m'entourent.	...help people in my surrounding.	7
...aider les personnes qui sont dans le besoin.	...help people in need.	7
...avoir une bonne santé.	...have a good health.	7
...avoir la possibilité d'aimer et d'être aimé.	...have the possibility to love and be loved.	7
...avoir la possibilité de pratiquer ma spiritualité ou ma religion librement.	...have the opportunity to freely practice my spirituality or religion.	7

Table 25: Hierarchical Cluster Analysis, Group 2, 4/4

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Original (French)	English	Modalities
J'apprécie l'atmosphère de mon établissement.	I like the atmosphere in my school.	6
En dehors du diplôme, les savoirs acquis dans mon établissement sont importants pour moi.	Besides my diploma, the knowledge I have acquired in school is important to me.	3
Je suis motivé(e) dans mon travail scolaire.	I feel motivated in my schoolwork.	3, 6
Penses-tu que tes professeurs enseignent bien leurs matières ?	Do you think that your teachers teach their subjects well?	3, 6
Penses-tu que tes professeurs t'aident globalement dans ta scolarité ?	Do you think that your teachers globally help you with your schooling?	5, 6
Penses-tu que les matières enseignées sont intéressantes ?	Do you think the classes you take are interesting?	6
Penses-tu que ta/ton Professeur Principal prendrait le temps de t'aider ?	Do you think that your Head Teacher would take time to help you?	6
Penses-tu que ta/ton CPE prendrait le temps de t'aider ?	Do you think that your CPE would take time to help you?	6
Penses-tu que tes Assistants d'Éducation prendraient le temps de t'aider ?	Do you think that your Educational Assistants would take time to help you?	4, 6
Penses-tu que le personnel Administratif de ton établissement prendrait le temps de t'aider ?	Do you think that the administrative staff would take time to help you?	2
Penses-tu que le personnel de santé est à l'écoute dans ton établissement ?	Do you think that the medical staff in your school listens to you?	5
Penses-tu que le Conseiller d'Orientation Psychologue aide à la recherche de formations/métiers qui t'intéressent ?	Do you think that your career guidance counselor helps you to find studies or jobs that you like?	6
Penses-tu que ton établissement offre un bon environnement de travail ?	Do you think that your school offers a good working environment?	6
Je pense que je peux parler de mes aspirations avec mes professeurs.	I think that I can talk about my aspirations with my teachers.	2

Table 26: Hierarchical Cluster Analysis, Group 3, 1/3

Original (French)	English	Modalities
Je pense que je peux parler de mes aspirations avec mon/ma CPE.	I think that I can talk about my aspirations with my CPE.	3, 5
Je pense que je peux parler de mes aspirations avec mes Assistants d'Éducation.	I think that I can talk about my aspirations with my Educational Assistants.	6
Je pense que je peux parler de mes aspirations avec mes amis.	I think that I can talk about my aspirations with my friends.	5
Je pense que je peux parler de mes aspirations avec ma famille.	I think that I can talk about my aspirations with my family.	6
<i>Je pense que je peux décider moi-même de mes aspirations concernant...</i>	<i>I think that I can independently decide about my aspirations concerning...</i>	
...mon éducation actuelle et future.	...my current and future education.	4
...ma carrière.	...my career.	4, 5
...mes relations personnelles.	...my personal relationships.	6
...ma vie sociale.	...my social life.	4, 6
...mes loisirs.	...my hobbies.	4, 6
<i>Je pense que mon éducation va m'aider à...</i>	<i>I think that my education is going to help me to...</i>	
...trouver un travail.	...find a job.	4, 5, 6
...apprendre et comprendre le Respect.	...learn about and understand respect.	4, 6
...fonder une famille.	...start a family.	4, 5, 6
...comprendre la sexualité.	...understand sexuality.	4, 6
...socialiser.	...socialize.	4, 5, 6
...vivre en communauté.	...to live in a community.	4, 5, 6
...rencontrer des amis.	...meet friends.	4, 5, 6
...travailler en groupe.	...work with a group.	4, 5, 6
...mieux m'exprimer à l'oral.	...better my oral expression.	3, 4, 5, 6
...me faire une Culture Générale.	...acquire an all round culture.	5, 6
...devenir Citoyen.	...become a citizen.	4, 5, 6
...voyager.	...travel.	4, 6
...obtenir de nouvelles connaissances.	...acquire new knowledge.	4, 5, 6
...me faire un esprit critique.	...develop a critical mind.	4, 5, 6
...obtenir des diplômes.	...obtain diplomas.	4, 5, 6
...continuer les études.	...pursue in further schooling.	4, 5, 6
...faire des stages.	...do internships.	4, 5, 6
...participer aux décisions politiques.	...participate in political decisions.	6

Table 27: Hierarchical Cluster Analysis, Group 3, 2/3

Original (French)	English	Modalities
...m'épanouir intellectuellement.	...flourish intellectually.	4, 5, 6
...comprendre le monde.	...understand the world.	4, 5, 6
...avoir un logement convenable.	...obtain decent housing.	4, 5, 6
...avoir des activités de loisir.	...have hobbies.	3,4, 5, 6
...me construire des Valeurs.	...construct my own Values.	3, 4, 5, 6
...me comprendre.	...understand myself.	3, 4, 5, 6
...me construire mon identité.	...construct my own identity.	4, 5, 6
...subvenir à mes besoins.	...provide for myself.	4, 5, 6
...devenir indépendant et autonome.	...become independent and autonomous.	4, 5, 6
...avoir la possibilité de faire de mon temps ce que je veux.	...have the possibility to do what I want with my time.	3, 4, 6
...aider les personnes qui m'entourent.	...help people in my surrounding.	4, 5, 6
...aider les personnes qui sont dans le besoin.	...help people in need.	3, 4, 5, 6
...avoir une bonne santé.	...have a good health.	4, 5, 6
...avoir la possibilité d'aimer et d'être aimé.	...have the possibility to love and be loved.	4, 5, 6
...avoir la possibilité de pratiquer ma spiritualité ou ma religion librement.	...have the opportunity to freely practice my spirituality or religion.	6

Table 28: Hierarchical Cluster Analysis, Group 3, 3/3

### 8.2.3 Further comparisons; identifying group characteristics

In the previous multiple cluster analysis, no socio-demographic values were found to significantly contribute to the constitution of the first two axes. It did nevertheless allow for strong evidence that points at existing linkages between the dimensions of education, well-being, and aspirations. The absence of proper identification (i.e. characterization of the individuals within the groups) constitutes a flaw of the MCA presented here. This section will then attempt to attach further characteristics to the previously identified groups. In order to shed light on the second and third research questions proposed in the introduction, two methods will be combined. First of all, a comparison of the Chi-Squared ( $\chi^2$ ) between socio-demographic elements and the dimensions that were found pertinent by the MCA will be proposed. Secondly, a logistic regression will be proposed to quantify the impact of the dimensions on the formation of aspirations within school.

Before proposing the following results, I have removed the 3 outliers from the data, namely the two individuals who reported the age of 10 and the one individual who reported the age of 20. Specifically, the individuals of 10 would have greatly influenced the logistic regression as their modality would have been the base modality, drawing as such a lot of attention to them out of the total 586. This leaves 583 individuals for further analysis.

Module	Dimension	DF	$\chi^2$	p-value
1	Gender	6	9.773	0.135
1	Age	42	68.188	0.006
1	Parent's education	30	28.481	0.545
1	Job of Parent A	42	58.217	0.049
1	Job of Parent B	42	38.342	0.632
1	Number of Siblings	42	34.563	0.786

Table 29:  $\chi^2$  of school related aspirations and socio-demographic characteristics

Table 29 shows the Degrees of Freedom (DF), Pearson's Chi-Squared ( $\chi^2$ ) and the associated p-value of the different components of the first module of the questionnaire in relation to the average school-related aspirations. This latter average is calculated as the rounded average of all the items in the last module (module 9) of the questionnaire and therefore ranges from 1 to 7, similarly to the adopted Likert scale for the rest of the questionnaire. It thus attempts to capture an aggregate measure of all the aspirations which the pupils have found important in relation to school. As these aspirations have been determined through focus groups (as opposed to the *ad hoc* and literature-based modules) this aggregated measure pertinently represents the level of aspirations the respondents have with regards to school. It may be translated as the overall level of school-related aspirations for each respondent.

Table 29 therefore shows a predominant absence of relation between socio-demographic indicators and school-related aspirations. Significance is considered to be achieved for each p-value equal or inferior to .05. This confirms the results obtained from the MCA discussed in a previous section, where none of the indicators were found to significantly contribute to the determination of the axes. The gender, the parent's attained level of education, the job of parent B and the number of siblings do not appear to be determining factors of the formation of shool related aspirations in this data set.

The only exceptions found here are the respondent's age on the one hand and the job of parent "A" on the other. Parent A and B did not refer to either of the parents specifically in the questionnaire, notably the gender of the parent. This presents the strength of allowing the respondent to report their parents as being a homo- or a heterosexual

couple. This also allows to bypass the distinction between “mother” and “father”, and lets the respondent decide, consciously or unconsciously, to report the parent which may impact them most first. This appears to have been the case, where the job of parent A has a significant impact on the formation of the respondent’s aspirations whereas the job of parent B does not.

In order to identify the job of the respondent’s parents, they were given the most disaggregated form of jobs as provided by the INSEE<sup>6</sup>. This allowed them to more easily identify their parent’s jobs. It is to be noted that this was the question the pupils had the most difficulty with. Especially children in collèges often asked for help in identifying the jobs of their parents in the provided list. For further study, this list was then transformed into the most aggregated scale provided by the INSEE. As such, this aggregation was the same as used by Bourdieu and Passeron 2016 and one level higher than that used by Bourdieu 2016. As such, the job of the parent the respondent reported first appears to have a link to the formation of the pupil’s school-related aspirations, whereas the job of the other does not.

Furthermore, a significant relationship between age and aspirations is identified, which confirms previous findings on the impact of age on the formation and transformation of aspirations (Hart 2012, Vos and Ballet 2018). Such a result may be due to a variety of factors, even though they appear “complex and difficult to explain” (Hart 2012, p. 83). Hart finds three major components affecting the change of aspirations, namely “family aspirations and restrictions”, “interviewees’ perception of their subject ability at school or college, their examination results and their perceived aptitude for particular careers” and finally “work experience opportunities” (Hart 2012, p. 83). This is furthermore highly consistent with the idea of dynamic and especially evolving capabilities as discussed previously. Neither of the two previous results does indicate in which direction or manner age and job of parent A affect the shaping of aspirations. This will be further explored in the logistic regression proposed at the end of this section.

To contrast these results, table 30 shows that *subjective* measures of parent’s jobs and the attained level of education do have a significant relation to school-related aspirations. Module 6, relating subjective (dis)advantages “à la Bourdieu”, includes items that attempt to account for the manner in which the respondent *perceives* the (dis)advantages they benefit of/suffer from. More specifically they attempt to measure whether the pupils feel (dis)advantaged due to their parent’s education and/or financial capital. This is an interesting finding on itself as it shows the importance of the manner pupils *perceive* their parent’s jobs rather than their parent’s actual jobs. This correlates with the idea that is

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<sup>6</sup>Institut national de la statistique et des études économiques, the French national institute for statistics

developed by Hart (Hart 2011b), where internal registers play a predominant role in the determination of higher education aspirations. This makes the finding consistent with existing literature; although it alters the canal through which parent's socio-professional status affects their child's educational aspirations. In other words, it is not directly the job or the wealth detained by the pupil's parents, but rather the way in which she or he feels that it affects them in their schooling experience.

Module	Dimension	DF	$\chi^2$	p-value
3	Average Subjective Well-Being in School “à la Hart”	36	134.833	< 0.0001
4	Average Subjective Importance of School	36	189.463	< 0.0001
5	Average Subjective Quality of Teachers	36	287.360	< 0.0001
5	Average Subjective Quality of Educational Staff	36	95.288	< 0.0001
6	Subjective (dis)advantages “à la Bourdieu”	24	41.046	0.016
7	Internal register to further Education	24	24.646	0.482
8	Aspirations Agency within School	36	79.069	< 0.0001
8	Aspirations Agency outside School	36	116.527	< 0.0001
8	Aspirations and Autonomy of Aspiration Choice	36	128.526	< 0.0001
8	Conflictual Aspirations	36	87.154	< 0.0001

Table 30:  $\chi^2$  of school related aspirations and modules from questionnaire

Starkly contrasting with the results from table 29, table 30 finds a vast majority of the dimensions measured in the questionnaire to affect the level of educational aspirations with high levels of significance. All these dimensions are measured as rounded averages of the corresponding modules, and thus attempt to translate an aggregated measure of their corresponding modules. Module 4 attempts to measure the importance the respondents attach to their own school. It includes items which ask the pupils whether they consider obtaining their diploma important and whether this same diploma will be useful for them in the future. Furthermore, it contains an item that attempts to measure the subjective importance attached to the knowledge they will acquire in school.

Module 5 has been broken up for measurement in order to distinguish between the different types of staff present in school. On the one hand, the subjective importance and “quality” of the teachers are measured. It more specifically asks about the pedagogy of the teachers, and whether the pupils find that their teachers would help them globally in their schooling. The section of module 5, relating the contribution of further educational staff consisted of similar questions but with regards to the CPE and educational assistants. The specifics of module 6 have been discussed prior to table 30.

Module 7 attempts to relate the internal register to further education, as proposed by

Hart 2011b. It was composed of items that asked the respondent to project herself into “future schooling” and to choose between 1 of 5 propositions. These propositions focused on identifying whether the pupil feels like she or he would “be able to succeed”, “fit in”, “feel at ease in the environment”, for example.

Module 8, which attempted to measure aspiration agency overall was decomposed in four different sections. Globally the section aimed at measuring the feeling of agency of different levels. The first and second sections of this module asked if the respondent felt like she or he could “talk about [my] aspirations with...”. The first section then related to a variety of actors in school, like teachers, the CPE and the career guidance counselor for example. The second section asked the same question for individuals outside school, such as parents, siblings and girl/boyfriend. The latter section than particularly relates to those Hart describes as the “significant others” who play a particularly strong role on the emotional level and in the decision making, specifically regarding the formation of aspirations. The third section in this module focuses specifically on the autonomy of choice. Items in this module started with “I think that I can independently decide about my aspirations concerning...”. The propositions of aspirations were based on the focus groups and therefore correlate with exiting literature (see for example “Capability approach and child well-being” and Biggeri et al. 2006). Finally, the last section of module 8 provided a measure for conflicting aspirations. Items in this section were questions under the form of “I think that my aspirations are in conflict with what X wants for my future”, where X was replaced with the respondent’s significant others.

With the exception of the internal registers to further education, all modules (and the derived sections) were found to be significantly linked to the shaping of pupil’s school-related aspirations. These  $\chi^2$  tests, therefore, present further evidence to corroborate the existing literature on the determinants of aspirations. New findings in comparison to the previously proposed MCA and HCA are the more specific focus on determinants on educational aspirations. Using the  $\chi^2$ , the bilateral relationship between the presented modules, as well as some socio-demographic measures are highlighted.

These tests do nevertheless not present any direction or magnitude for these impacts. To deepen and further specify these relations ships, I will propose a logistic regression model, specifically for an ordinal dependent variable. The explained variable is a qualitative ordinal variable ranging from 1 to 7 (following a Likert scale). This variable remains unchanged in comparison to the previous bilateral relationships and is the aggregated score of the respondents school-related aspirations. The independent variables are a mixture of one quantitative variable – age – and four ordinal variables ranging also from 1 to 7. An exception here is the “Subjective (dis)advantages à la Bourdieu” which ranges from 0 to 4. In order to keep the related questions neutral and did therefore not follow a Likert

scale but were items to which the respondent had to answer with *yes* or *no*. The aggregated version used here is a sum of the 4 items, in order to capture the degree to which the individual agreed with the proposed statements overall. It is therefore not a measure of whether the respondent *is* advantaged or disadvantaged in the sense of Bourdieu, but she or he *feels* like the situation of her or his parent may induce these (dis)advantages. This measure, therefore, designates the inner register of aspiration formation rather than the actual levels of education, financial wealth and support of the respondent's parents.

The variety of the variables, as well as the ordinal nature of the dependent variable call for a specific model, namely an ordinal logistic regression. Such a model will allow fitting the data obtained from the questionnaire best, following Wooldridge 2010, p. 504, who finds that: "if  $y$  is an ordered response, then the values we assign to each outcome are no longer arbitrary". Thus, a multinomial or dichotomous logistic regression could also have been used, but these do not make use of the fact that the dependent variable of this model is ordered by nature, as suggested by Wooldridge. In other words, this model allows taking advantage of the fact that when a respondent has an aggregated score of 2 on school aspirations this individual has a qualitatively *higher* level of aspiration than an individual who has a level of 1.

The logistic ordinal model may be formalized as follows:

$$\text{logit}(P(Y \leq j)) = \log \frac{P(Y \leq j)}{P(Y > j)} \quad (8.1)$$

where  $Y$  is an ordinal outcome with  $J$  modalities,

with  $j = 1, \dots, J - 1$

and where  $P(Y \leq j)$  is the cumulative probability of  $Y$  less than or equal to a specific modality  $j$

From here follows the model, which may be written as:

$$\text{logit}(P(Y \leq j)) = \beta_j + \alpha_1 x_1 + \dots + \alpha_p x_p \quad (8.2)$$

where  $\beta_j$  is the intercept of the  $j$ th modality

where  $\alpha_p$  is the coefficient of the  $p$ th variable

This specification only allows to account for a 'binary' comparison of probabilities of

the outcome variable. In other words, the ratio  $\text{logit}(P(Y \leq j))$  (equation 31) accounts for the ratio between the probability of having a level of aspirations inferior or equal to  $j$  and having a level of aspirations strictly superior to  $j$ . The entirety of the model is, therefore, a set of  $J$  binary models as specified in equations 31 and 32 (7 levels of aspirations in this case). In order to estimate parameters  $\alpha$  and  $\beta$ , the likelihood function is then maximized over all of the  $J$  binary models. The model's parameters are presented in tables 33 and 34. In order to obtain this final model, it has undergone multiple iterations in order to select and retain only those variables which significantly contribute to the model. The significance of the contribution of a variable to the model is estimated through type II analysis. The type II analysis of the model refers to the level of certainty with which we may reject the  $H_0$  hypothesis. This type of analysis attempts to prevent a false negative, i.e. not rejecting the  $H_0$  hypothesis if it should have been rejected. As such, the initial model included all the variables presented in this section as independent, explanatory variables. As a variable was not found to contribute significantly to the model, it was removed and a new model was built. Table 32 presents the type II analysis of the retained model, and table 31 presents the overall significance of the model.

Statistic	DF	$\chi^2$	Pr > $\chi^2$
-2Log(Likelihood)	23	198.369	< 0.0001
Score	23	203.753	< 0.0001
Wald	23	169.725	< 0.0001

Table 31: Overall significance of logistic regression

The overall representation of the model is very good, and the contribution of the finally retained variables is also significantly confirmed. This model may, therefore, be accepted in this form. It is to be noted that a considerable amount of the variables discussed at the beginning of this section through binary  $\chi^2$  analysis are not found to contribute on a sufficiently significant level to the explanation of the formation of aspirations in this type of model. This reduces, for example, the socio-demographic measures to age solely. Similarly, only a few of the modules of the questionnaire are retained for this final model.

## 8.2. DATA ANALYSIS

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Variable	DF	$\chi^2$	Pr > $\chi^2$
Age	1	22.386	< 0.0001
Average Subjective Importance of School	6	44.656	< 0.0001
Subjective (dis)advantages “à la Bourdieu”	4	17.433	0.002
Aspirations and Autonomy of Aspiration Choice	6	38.197	< 0.0001
Conflictual Aspirations	6	29.695	< 0.0001

Table 32: Type II analysis of logistic regression

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Variable(modality)	Value(standard error)	$\chi^2$
Intercept(1)	-3.489(1.935)*	3.250
Intercept(2)	-1.926(1.856)	1.076
Intercept(3)	-1.033(1.865)	0.307
Intercept(4)	0.651(1.872)	0.121
Intercept(5)	2.601(1.871)***	1.932
Intercept(6)	4.853(1.872)***	6.720
Age	0.203(0.043)***	22.386
Average Subjective Importance of School(1)	0(0)	—
Average Subjective Importance of School(2)	-1.474(1.379)	0.285
Average Subjective Importance of School(3)	-2.012(1.306)	2.373
Average Subjective Importance of School(4)	-1.490(1.189)	1.570
Average Subjective Importance of School(5)	-1.823(1.166)	2.445
Average Subjective Importance of School(6)	-2.406(1.158)**	4.314
Average Subjective Importance of School(7)	-3.140(1.162)***	7.299
Subjective (dis)advantages “à la Bourdieu”(0)	0(0)	—
Subjective (dis)advantages “à la Bourdieu”(1)	0.569(0.236)**	5.824
Subjective (dis)advantages “à la Bourdieu”(2)	0.060(0.225)	0.071
Subjective (dis)advantages “à la Bourdieu”(3)	0.174(0.254)	0.470
Subjective (dis)advantages “à la Bourdieu”(4)	-0.637(0.291)**	4.796
Aspirations and Autonomy of Aspiration Choice(1)	0(0)	—
Aspirations and Autonomy of Aspiration Choice(2)	-3.056(2.088)	2.143
Aspirations and Autonomy of Aspiration Choice(3)	-2.594(1.461)*	3.152
Aspirations and Autonomy of Aspiration Choice(4)	-2.387(1.362)*	3.070
Aspirations and Autonomy of Aspiration Choice(5)	-3.727(1.347)**	5.902
Aspirations and Autonomy of Aspiration Choice(6)	-3.614(1.349)***	7.180
Aspirations and Autonomy of Aspiration Choice(7)	-4.044(1.347)***	9.012

*Significant at \*10%, \*\*5%, \*\*\*1%*

Table 33: Parameters of logistic regression (1/2)

Variable(modality)	Value(standard error)	$\chi^2$
Conflictual Aspirations(1)	0(0)	—
Conflictual Aspirations(2)	0.744(0.213)***	12.163
Conflictual Aspirations(3)	0.407(0.240)*	2.870
Conflictual Aspirations(4)	0.553(0.290)*	3.641
Conflictual Aspirations(5)	-0.128(0.359)	0.126
Conflictual Aspirations(6)	-0.098(0.414)	0.056
Conflictual Aspirations(7)	-2.227(0.669)***	11.088

Significant at \*10%, \*\*5%, \*\*\*1%

Table 34: Parameters of logistic regression (2/2)

In this type of model, the first modality is fixed and used as a reference modality. As such, there are no calculated values for each of the first modalities (1, and 0 for the (dis)advantages à la Bourdieu) of all of the qualitative variables.

Following the specification of the model, with regards to equations 8.1 and 8.2, the interpretation of the parameters is not immediate. This interpretation may actually appear rather counter-intuitive. Age, as the only quantitative variable among the independent variables, may be interpreted as ‘one unit of change in the age, results in a 0.203 increase of the logit’. As the logit is the ratio of two probabilities, the understanding of this ratio is primordial. It is a ratio where the numerator is the probability of occurrence of modality  $j$  or any modality *lower* than  $j$ . The denominator is the probability of the occurrence of any modality strictly higher than  $j$ . As such when age increases, *ceteris paribus*, the ratio of probability increases also. The increase of the ratio can be either explained by an increase of the numerator and/or a decrease of the denominator. Thus, when age increases, the probability of the occurrence of modality  $j$  or any modality below  $j$  increases. Likewise, the probability of the occurrence of a modality superior to  $j$  decreases. Simply put, when age increases, the probability of the occurrence of lower levels of aspirations increases, whereas the probability of the occurrence of higher levels of aspirations decreases. As such, with age, aspirations appear to be decreasing. This finding confirms previous research led with a similar methodology (Vos and Ballet 2018). Likewise, these findings on the impact of age appear to be consistent with research led specifically within France. This impact has been discussed for example by Dumora 2004 who identified the “age group myths” as discussed in section 7.1.4.

It is also consistent with the multi-dimensional model of aspirations illustrated by Hart in figure 3. One of the dimensions which affects aspirations in this figure is that of the temporal horizon. This figure does nevertheless not show a necessary decrease in

aspirations but rather highlights that aspirations are subject to change over time. The result of the model presented here regarding age may find meaning in the ‘change’ of aspirations as underlined by Mario Biggeri as he considers “the life cycle and the importance of age in defining the relevance of a capability” (Biggeri 2007, p. 199). Aspirations may be less school-related over time, as the pupils age and progressively detach from school, reflecting on their future beyond being in school. In this process, aspirations that are directly related to school (such as learning new things, for example) may be progressively replaced with aspirations that extend beyond the scope of school alone (such as earning a lot of money, for example).

It is to be noted that this interpretation appears to be rather counter-intuitive. In more ‘traditional’ forms of regressions, a positive sign of a parameter indicates that the associated independent variable positively evolves with the dependent variable. It appears that this method is to be interpreted conversely. Since this may result in misunderstandings, some popular software for statistical analyses change the model’s equation (here expressed in equation 8.2) for a more ‘intuitive’ interpretation of the parameters. This is the case of Stata and R for example, which change the model by changing the signs of all the  $\alpha_p x_p$  to negative, resulting in  $\text{logit}(P(Y \leq j))$  being a sum of negative terms. This does not change the model’s rationale but results in the parameters having opposite signs, and thus varying in the same direction as the dependent variable.

The other variables being qualitative, their interpretation is similar to that of age, but is done per modality and not in a continuous manner as for age. A rapid overlook of these results shows that those which are found the most significant are the modalities that reflect the ‘extremes’. This polarization of significance may translate that those respondents who reported the lowest and/or the highest modalities are those whose aspirations are consequently the most affected.

When looking at module 4, translated by the average subjective importance of school, modalities 6 and 7 are the only ones that significantly impact the shaping of aspirations. The associated parameters being increasingly positive indicates that those who consider school to be important for their future have an increasingly higher probability of also having higher school-related aspirations. The only significant parameters are those associated with the highest modalities. These can then be understood as pupils who consider school to be important are also the pupils who associate the highest aspirations to school. This can then be better understood in light of the French secondary schooling system. As discussed in section 7.1.4, French schools suffer from a lack of recognition on both an institutional level and from the perspective of their pupils. This has been discussed specifically with regards to vocational education but appears to find a counterpart in the schools observed here. In other words, pupils who do not consider school

to be important are less probable to have high school-related aspirations. It seems to be important that pupils hold their school in high regard.

Module 6, namely the feeling of the impact of (dis)advantages à la Bourdieu, shows the inversion of the sign between modality 1 and modality 4. As such respondents who do not feel affected (be it positively or negatively) by the monetary and/or educational capital detained by their parents tend to have lower school-related aspirations. Inversely, the pupils who report the highest levels of perceived (dis)advantage have a higher probability of having higher aspirations. To be consistent with previously discussed literature, this result can be interpreted accordingly. It appears to be important that pupils feel supported by their parents. With specific reference to the items in this module, it is important for a pupil to feel that their parents are supportive of their schoolwork through encouragement, but also through their knowledge and their financial situation. The impact of parent's resources on a child's capabilities has been discussed by Biggeri, who finds that a "child's capabilities are at least partially affected by the capability set and achieved functionings (as also by their means, i.e., assets, disposable income) of their parents" (Biggeri 2007, p. 199). The findings presented here prolong the argument by Biggeri by suggesting that it is the *perception* the children have of their parents "means" which affect them. It is also to be noted here that only the two most 'extreme' modalities are found to be significant. This may point at the idea that only those pupils who are in the most extreme situations find their aspirations impacted by any (dis)advantages à la Bourdieu.

Such a finding is particularly interesting with regard to the specific case of French high schools. To my knowledge, both Bourdieu and writings in his trail have measured these (dis)advantages objectively, through parent's wages, capital or jobs, and the pupil's educational achievement. This model then adds to these previous findings by pointing at an impact on the subject level. Not only does it provide evidence for the existence of such a relation, but it also shows that this impact is highly significant at the extremes. This finding then ties in with the specific findings on the French secondary schooling system, by confirming the existence of such a relationship using a different methodology.

Module 8 is translated into two different sections. On the one hand, the autonomy of aspiration choice appears to be the most significant contributor to the formation of aspirations in this model, with all but one modality significantly contributing. Moreover, this variable contributes increasingly to the shaping of the pupil's aspirations with higher modalities. As such, the more the respondent has the feeling of being autonomously able to determine her or his aspirations, the more this individual will have higher levels of aspiration related to school. This result is therefore highly correlated with the literature relating to agency and aspirations. It translates the fact that it appears important to the respondents to be able to decide about their future by themselves. This sentiment has

previously been labeled the “sense of ownership of the aspiration” (Hart 2012, p. 84).

On the other hand, the findings in the second section relating conflictual aspirations are initially startling, if not contradicting. They suggest that higher levels of conflictual aspirations provide for higher levels of school-related aspirations. Different elements may nevertheless explain such results. First of all and with regards to the results of the HCA (group 2), the respondents who report the highest levels of conflicting aspirations, also report the highest degrees of autonomy in the formation of their aspirations. Despite the existence of conflicting aspirations, these conflicts may not affect the pupils as much in the formation of their school-related aspirations as the feeling of being able to individually decide what they want their future. In other words, these individuals feel that they are autonomous enough to decide for themselves regardless of what other people want for them.

Secondly, the aspirations measured in the last module (and thus constitute the dependent variable in this model) were strictly school induced. This finding may, therefore, suggest that the respondents are aware of the fact that school may, independently from their significant others, empower them to attain their valued aspirations. They may express here the fact that they are aware that school may help them achieve their aspirations through a different canal. The awareness of this canal is a considerable argument for the crucial importance of school and the ideal of social ascension. School may be perceived by the respondents as a parallel medium for the shaping of their aspirations, which operates out of the familial environment. This result is strengthened by the fact that the measured aspirations were exclusively related to school and does not clash with existing literature. Considering school as a canal of aspiration formation on its own, running parallel to that which is ruled by significant others such as parents, siblings and friends allows conciliating findings from existing literature and this model. Pupils find in school an alternative way to realize what they aspire to. The instrumental role of education in the formation of aspirations has been identified notably by Biggeri who finds that “education is a basic capability with an intrinsic value means that it can be instrumental for other capabilities” (Biggeri 2007, p. 199).

The importance of being educated is not only a basic capability that may be viewed as instrumental for current aspirations but also entails the ability to develop capabilities in the future and therefore empower individuals to realize their aspirations. This has been discerned for example by Lorella Terzi who affirms that “the capability to be educated plays a substantial role in the expansion of other capabilities as well as future ones, it can be considered fundamental and foundational to different capabilities, and hence inherent to the very possibility of leading a good life” (Terzi 2007, p. 30). As such, the fact that the respondents identify the importance of school (also confirmed in module 4) which may

independently lead them to the realization of their aspirations makes a strong argument for the importance of school as such. The inherent ties with the attainment of higher levels of well-being (translated as a “good life” by Terzi) also expand the initially discussed instrumental role of education by human capital. Where human capital does not consider well-being as an outcome of education, thus detaching itself from welfare economics, the capability approach allows reinstating this intrinsic added value for education.



# Chapter 9

## Conclusion

THE initial inquiry of this thesis has been from a theoretical perspective. The chronological review of economic literature, complemented with that from other social sciences and humanities has permitted to identify the shift of focus operated by economists with regards to well-being. Where Jeremy Bentham provides a wide understanding of the notion of well-being in economic terms, further literature has progressively emptied this notion of its substance. This phenomenon has been very accurately referred to as “The Strange Disappearance of Welfare Economics” (Atkinson 2001) and translates into economists abandoning a meaningful definition of well-being (or welfare) for the profit of the notion of utility. Utility, as experienced by a *homo oeconomicus*, has the property of being perfectly objectively measurable. In other words, utility can be homogeneously measured for each and every individual. Such a measurement does allow economics to be non-value laden and easily comparable across societies, countries, and continents. Nevertheless, this appears to neglect some crucial aspects of what makes the individuality and the manner people experience this utility, as Sen has pointed out (Sen 1980). The transformation of welfare into utility procures considerable benefits in terms of statistical rigor which allows economics to draw closer to the mathematization of natural sciences. This nevertheless appears to omit the social share from the social science economics is.

The theoretical focus of economists on education appears to have undergone a similar trajectory, where initially economists found the intrinsic value of education to the shaping of people’s future, human capital theory has narrowed down this understanding to the merely economic, and thus monetary, outcomes of education. This has resulted in public education focusing on the attainment of diplomas and disregarding other crucial aspects of education, which according to the statistical exploration proposed here, may result in contradictory results.

Likewise, mainstream economic theory has acknowledged the paramount Easterlin Paradox, which economics is unable to explain in its existing shape. Despite Richard Easterlin himself offering the solution of aspirations as a solution to this paradox, it has not made its way into standard economic textbooks. Insights from psychology offer a better understanding of aspirations but appear to be only sporadically used by economists.

The capability approach offers an elegant, powerful, and economically pertinent framework for the evaluation of these notions. Amartya Sen's initial definition and further developments made by scholars from a variety of social sciences and humanities have allowed this theoretical corpus to flourish into a standalone framework for the evaluation of a variety of societal considerations. The capability approach allows thinking about education in a much broader sense than standard economic theory permits. Where mainstream economics focuses on productivity and salary outcomes of education, the capability approach permits to consider well-being in school and school-related aspirations as inherent factors shaping economic educational outcomes. As the statistical findings in this thesis suggest, when well-being and subjective evaluation of school are low, pupils do not aspire to further education. This may result in lesser investment in education – in the human capital understanding of education – on behalf of the pupil. As such, depriving students of their well-being in school and their feeling of agency comes accompanied by crushed aspirations.

The statistical findings of this thesis are unequivocal about the existent relation between on the one hand the pupil's subjective views and evaluation of their school and its provided education, and on the other hand well-being in school, a feeling of autonomy and school-related aspirations. It is to be noted nevertheless that no relation of causality is identified, the statistics 'merely' demonstrate the existence of a relation between these dimensions. Moreover, the nature nor the sense of an eventual causality of this relationship, which may be multiple and highly complex, are not discussed. Nevertheless, the proposed questionnaire is found to be, at least partially, pertinent through the application of both multiple cluster analysis and hierarchical cluster analysis. They allow showing the existence of links across the board, with regards to the retained modules which are exposed in Part III. As such, pursuing educational policies for human capital reasons appear to be inefficient. They fail to take into account the promotion of well-being and aspirations in school, which are found to be pertinent dimensions for education.

This leads to the idea that educational policies based solely on the theoretical basis offered by human capital, may prove inefficient, even with regards to its own goals. As this thesis attempts to show, the various shapes of well-being in school affect the level of aspirations pupils retain from their formal education. A pupil with low aspirations may, in turn, not be willing to nor feeling capable of pursuing her or his education, be it in high

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school or in university. Such a pupil may also not aspire to the ‘better’ jobs associated with pursued education. If pupils fail to aspire school would then not serve its economic purpose in providing its pupils with higher productivity and thus higher salaries. Failing to recognize this, will ultimately undermine the very purpose of educational policies that will underachieve their own purpose.

School also appears to play an important role in the formation of child agency. Both the multidimensional statistic and the logit model employed in Part III show that those pupils who have highly conflicting aspirations also display the highest school-related aspirations. Despite their aspirations being contrary to what others want for them, some pupils still aspire to high school outcomes. This tends to show that some pupils may find in school a parallel vector in which they may shape and foster their aspirations, in a certain manner liberating themselves from other external pressure. In this sense, school has a major role to play in order to provide an environment in which these pupils may pursue their aspirations, free of external constraints, most notably from their social surroundings.

Similarly, literature shows that pupils are highly impacted by their parent’s socio-professional status. Through its statistical findings, this thesis points to a more nuanced version of these findings. It finds that it might not be the socio-professional status *per se* of the parents, but rather the feeling that the children retain of it that might affect their levels of aspirations. This understanding of the influence of parent’s status is, therefore, a major finding for schools and the associated policies. It reinforces the idea that school ought to be an independent canal through which aspirations can be formulated, outside the familial sphere of influence. School may, therefore, position itself as a vector where aspirations may flourish, independently from other spheres of influences. The statistical application to the French system proposed here furthermore identifies that, in some cases, this role is not fulfilled by schools. Most notably, the results point at the career guidance counselor (COP) and the CPE, who are not found to contribute sufficiently, maybe even negatively to the formation of the pupil’s aspirations. There appears to be room for improvement for schools to further fill in their role as a vector of aspirations for its pupils.

Finally, the empirical application also highlights the subjective importance of schools and diplomas. Even though such a finding may appear trivial and intuitive, it has considerable implications for educational policies. Literature shows that French schools suffer from a structural problem of the importance that is accorded to schools, both on an institutional and on an informal level. This has been theoretically discussed, for all types of schools, and is confirmed in the empirical applications for the schools which participated in this research. Bettering the subjective image their pupils hold of them may then enable schools to foster higher aspirations for their pupils.

## CHAPTER 9. CONCLUSION

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It thus appears that education is applied in the ‘thin’ sense which is justified, defended, and promoted by now obsolete economics of education. This thesis finds that education may be more beneficial if it were implemented in a much ‘thicker’ perspective. Mainstream economists and policymakers may consider Judith Bessant’s advice, directly drawn from Kantian philosophy, who finds that “the categorical imperative as an over arching principle in youth policy-making (...) can determine that only actions that policy makers are prepared to have applied to themselves are acceptable” (Bessant 2005, p. 108).

The line of thought developed throughout this thesis invites to further research on behalf of economists. It attempts to stress the importance of economic science to further investigate the underlying mechanisms at work in formal education, with as objective to promote better educational (and maybe even economical) outcomes. Further research may include technical expansions on the models presented here. Even though the social desirability scale did not present any links with the other dimensions of the questionnaire, it may nevertheless be used in a model that allows the individuals to be weighted. This would require solid anchoring in psychological literature, but may provide deeper insight into the type of data gathered here.

Another line of inquiry may include measures of the impact of the dimensions considered here on objective academic performance. The questionnaire used for this study did not include any objective measure of the academic outcomes of each pupil. Including such a module may enhance the understanding of the impact of those dimensions measured here on the performance of students in school. This would allow for a deepened link with traditional economic approaches. Such an inquiry may be strengthened through the usage of panel data, allowing to follow the evolution of the subjective modules presented here coupled with objective academic performance, and even outcomes in terms of wages. This would then allow deepening the link with economic outcomes considered in part I.

Further research in line with this thesis may also include the identification of links of causality between the discussed dimensions. This could enhance understanding and allow to properly target and gauge education policies. For the French government, this should then apply to both the State and the more local level (Régions and Départements), which should be provided with adequate tools and resources to implement these policies. These policies should attempt to foster well-being in school as well as create and promote individual aspirations. This study also suggests that increased involvement of the considered individuals – i.e. the pupils – into research may be beneficial for a better understanding of the dimensions to promote in educational policies. This also opens research questions relating to alternative educational models such as those proposed by Célestin Baptistin Freinet or Maria Montessori. To what extent is it pertinent and beneficial for pupils to be able to autonomously decide of their education, and what they learn from it? Can these

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pedagogical methods provide children with reasonable amounts of pedagogical freedom, allowing them to flourish with reason in the future?

*There are germs in human nature, and it becomes our concern to develop the natural capacities proportionately, to unfold humanity from its seeds, and to see to it that man attains his destiny. Animals attain their destiny of themselves, and without being aware of it. Man is obliged to make an effort to attain his; but this cannot be done if he never has a concept of it.*

Kant 1904, pp. 110–111

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# Appendices



## **Appendix A**

### **Sources of growth, Denison, 1962**

APPENDIX A. SOURCES OF GROWTH, DENISON, 1962

Figure 23: Denison 1962, p. 111

SOURCES OF GROWTH OF REAL NATIONAL INCOME

LINE	SOURCE OF GROWTH	SHARE OF NATIONAL INCOME (PER CENT DISTRIBUTION)		GROWTH RATES (PER CENT PER YEAR)		CONTRIBUTION TO GROWTH RATE OF REAL NATIONAL INCOME (PERCENTAGE POINTS)	
		1909-29	1929-57	1909-29	1929-57	1909-29	1929-57
1	Real National Income.....	100.0	100.0*	2.82†	2.93	2.82‡	2.93
2	Increase in total inputs, adjusted.....	.....	.....	2.24	1.99	2.26	2.00
3	Adjustment.....	.....	.....	-0.09	-0.11	.....	.....
4	Increase in total inputs, unadjusted.....	.....	.....	2.33	2.10	.....	.....
5	Labor, adjusted for quality change.....	68.9	73.0	2.30	2.16	1.53	1.57
6	Employment and hours.....	.....	.....	1.62	1.08	1.11	0.80
7	Employment.....	.....	.....	1.58	1.31	1.11	1.00
8	Effect of shorter hours on quality of a man-year's work.....	.....	.....	0.03	-0.23	0.00	-0.20
9	Annual hours.....	.....	.....	-0.34	-0.73	-0.23	-0.53
10	Effect of shorter hours on quality of a man-hour's work.....	.....	.....	0.38	0.50	0.23	0.33
11	Education.....	.....	.....	0.56	0.93	0.35	0.67
12	Increased experience and better utilization of women workers.....	.....	.....	0.10	0.15	0.06	0.11
13	Changes in age-sex composition of labor force.....	.....	.....	0.01	-0.01	0.01	-0.01
14	Land.....	7.7	4.5	0.00	0.00	0.00	0.00
15	Capital.....	23.4	22.5	3.16	1.88	0.73	0.43
16	Non-farm residential structures.....	3.7	3.1	3.49	1.46	1.13	0.05
17	Other structures and equipment.....	14.6	15.0	2.93	1.85	0.41	0.28
18	Inventories.....	4.8	3.9	3.31	1.90	0.16	0.08
19	United States owned assets abroad.....	0.6	0.7	4.20	1.97	0.02	0.02
20	Foreign assets in United States (an offset).....	0.3	0.2	-1.85	1.37	0.01	0.00
21	Increase in output per unit of input.....	.....	.....	0.56	0.92	0.56	0.93
22	Restrictions against optimum use of resources.....	.....	.....	.....	.....	-0.07	.....
23	Reduced waste of labor in agriculture.....	.....	.....	.....	.....	0.02	0.05
24	Industry shift from agriculture.....	.....	.....	.....	.....	.....	.....
25	Advance of knowledge.....	.....	.....	.....	.....	.....	0.58
26	Change in lag in application of knowledge.....	.....	.....	.....	.....	.....	0.01
27	Economies of scale—Independent growth of local markets.....	.....	.....	.....	.....	0.07	0.07
28	Economies of scale—growth of national market.....	.....	.....	.....	.....	0.28	0.27

\* For 1930-40 and 1942-46 interpolated distributions rather than the actual distributions for these dates were used. Estimates are 1929-58 averages.

† This rate, like that for 1929-57, derives from Department of Commerce estimates. Estimates by John W. Kendrick, based on adjustment to Department of Commerce concepts.

‡ Not estimated.  
of estimates by Simon Kuznets, yield a growth rate of 3.17, which would result in a figure for output per unit of input (line 21) of 0.91.

## **Appendix B**

**Returns to education, Becker, 1993**

Figure 24: Becker 1964

Results of Regressing Natural Log of Earnings on Education for 1959 Earnings of White Males Aged 25 to 64  
in the South and Non-South

	Variance of Natural Log of Earnings	Variance of Education	Average Natural Log of Earnings <sup>c</sup>	Average Education	Inter- cepts <sup>c</sup>	Adjusted Rates of Return <sup>a</sup> (standard errors) <sup>b</sup>			Adjusted Coefficient of Deter- mination (R <sup>2</sup> )			Residual Variance in Natural Log of Earnings
						Low Education			Medium Education	High Education	Unadjusted R <sup>2</sup>	
						(6)	(7)	(8)	(7)	(8)	(9)	(10)
Non-South	.42	11.28	1.66	10.78	1.09	.05	.06	.08	.06	.08	.07	.39
					(.67)	(.09)	(.06)	(.06)	(.07)	(.08)	(.06)	
South	.55	15.23	1.43	9.96	.66	.07	.09	.09	.09	.09	.16	.46
					(.50)	(.08)	(.07)	(.07)	(.07)	(.07)	(.06)	.20

Source: *United States Census of Population: 1960, Subject Reports—Occupation by Earnings and Education*, Bureau of the Census, Washington, D.C., 1963, Tables 2 and 3.

<sup>a</sup> “Low” education is defined as 0–8 years of school completed, “medium” as 8–12 years, and “high” as more than 12 years.

<sup>b</sup> In calculating the standard errors and the adjusted coefficients of determination, the number of degrees of freedom was assumed to equal the number of cells minus the number of parameters estimated. The true number is clearly somewhat greater than this.

<sup>c</sup> Earnings measured in thousands of dollars.

## **Appendix C**

**Returns to education,  
Psacharopoulos, 2004**

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APPENDIX C. RETURNS TO EDUCATION, PSACHAROPOULOS, 2004

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Figure 25: Psacharopoulos and Patrinos 2004, pp. 128–130

Country	Year	Education			Source
		Level	Men	Women	
Argentina	1985	Overall	9.1	10.3	Psacharopoulos (1994)
Argentina	1989	Overall	10.7	11.2	Psacharopoulos (1994)
Austria	1981	Overall	10.3	13.5	Psacharopoulos (1994)
Bolivia	1989	Overall	7.3	7.7	Psacharopoulos (1994)
Botswana	1975	Overall	16.4	18.2	Psacharopoulos (1994)
Brazil	1980	Overall	14.7	15.6	Psacharopoulos (1994)
Brazil	1989	Overall	15.4	14.2	Psacharopoulos (1994)
Canada	1989	Overall	8.9	—	Patrinos (1995)
Czech Republic	1984	Overall	2.4	4.2	Munich <i>et al.</i> (1999)
Czech Republic	1988	Overall	4.0	5.7	Nesterova and Sabirianova (1998)
Czech Republic	1989	Overall	2.7	3.8	Munich <i>et al.</i> (1999)
Czech Republic	1992	Overall	5.3	6.7	Nesterova and Sabirianova (1998)
Czech Republic	1993	Overall	5.2	5.8	Munich <i>et al.</i> (1999)
Czech Republic	1996	Overall	5.8	7.0	Munich <i>et al.</i> (1999)
Chile	1987	Overall	13.7	12.6	Psacharopoulos (1994)
Chile	1989	Overall	12.1	13.2	Psacharopoulos (1994)
China	1985	Overall	4.5	5.6	Psacharopoulos (1994)
Colombia	1973	Overall	18.1	20.8	Psacharopoulos (1994)
Colombia	1973	Overall	10.3	20.1	Psacharopoulos (1994)
Colombia	1988	Overall	11.1	9.7	Psacharopoulos (1994)
Colombia	1989	Overall	14.5	12.9	Psacharopoulos (1994)
Costa Rica	1974	Overall	14.7	14.7	Psacharopoulos (1994)
Costa Rica	1989	Overall	10.1	13.1	Psacharopoulos (1994)
Costa Rica	1989	Overall	10.5	13.5	Psacharopoulos (1994)
Cote d'Ivoire	1987	Overall	13.6	12.1	Schultz (1994)
Cyprus	1984	Overall	8.9	12.7	Psacharopoulos (1994)
Denmark	1990	Overall	5.1	3.4	Christensen and Westergard-Nielsen (1999)
Dominican Republic	1989	Overall	7.8	12.0	Psacharopoulos (1994)
Ecuador	1987	Overall	11.4	10.7	Psacharopoulos (1994)
Ecuador	1987	Overall	9.8	11.5	Psacharopoulos (1994)
El Salvador	1990	Overall	9.6	9.8	Psacharopoulos (1994)
Finland	1980	Overall	9.3	—	Asplund (1999)
Finland	1987	Overall	7.4	6.4	Asplund (1999)
Finland	1989	Overall	8.4	7.8	Asplund (1999)
Finland	1991	Overall	8.8	8.7	Asplund (1999)
Finland	1993	Overall	7.8	8.3	Asplund (1999)
Germany	1974	Overall	13.1	11.2	Psacharopoulos (1994)
Germany	1977	Overall	13.6	11.7	Psacharopoulos (1994)
Ghana	1989	Overall	4.4	4.2	Schultz (1994)
Ghana	1992	Overall	9.3	10.6	World Bank (1996a)
Greece	1977	Overall	4.7	4.5	Psacharopoulos (1994)
Greece	1993	Overall	6.9	9.0	Magoula and Psacharopoulos (1999)
Guatemala	1989	Overall	14.2	16.3	Psacharopoulos (1994)
Honduras	1989	Overall	17.2	19.8	Psacharopoulos (1994)
India	1978	Overall	5.3	3.6	Psacharopoulos (1994)
Italy	1978	Overall	2.9	—	Brunello <i>et al.</i> (1999)
Italy	1983	Overall	6.0	3.5	Brunello <i>et al.</i> (1999)
Italy	1985	Overall	3.5	3.9	Brunello <i>et al.</i> (1999)

Country	Year	Education			Source
		Level	Men	Women	
Italy	1987	Overall	0.0	3.0	Brunello <i>et al.</i> (1999)
Ivory Coast	1984	Overall	11.1	22.6	Psacharopoulos (1994)
Jamaica	1989	Overall	12.3	21.5	Psacharopoulos (1994)
Jamaica	1989	Overall	28.0	31.7	Psacharopoulos (1994)
Lesotho	1993	Overall	10.6	16.5	Mokitimi and Nieuwoudt (1995)
Malaysia	1979	Overall	5.3	8.2	Psacharopoulos (1994)
Mexico	1984	Overall	13.2	14.7	Psacharopoulos (1994)
Mexico	1984	Overall	14.1	15.0	Psacharopoulos (1994)
Nicaragua	1978	Overall	8.5	11.5	Psacharopoulos (1994)
Norway	1980	Overall	3.2	4.9	Barth and Roed (1999)
Norway	1983	Overall	4.7	5.5	Barth and Roed (1999)
Norway	1987	Overall	4.3	6.2	Barth and Roed (1999)
Norway	1989	Overall	4.1	3.9	Barth and Roed (1999)
Norway	1991	Overall	4.2	5.3	Barth and Roed (1999)
Panama	1989	Overall	9.7	11.9	Psacharopoulos (1994)
Panama	1989	Overall	12.6	17.1	Psacharopoulos (1994)
Paraguay	1990	Overall	10.3	12.1	Psacharopoulos (1994)
Peru	1985	Overall	11.5	12.4	Psacharopoulos (1994)
Peru	1990	Overall	8.5	6.5	Psacharopoulos (1994)
Philippines	1988	Overall	12.4	12.4	Psacharopoulos (1994)
Portugal	1977	Overall	7.5	8.4	Psacharopoulos (1994)
Portugal	1985	Overall	9.4	10.4	Psacharopoulos (1994)
Russia	1991	Overall	3.1	5.4	Munich <i>et al.</i> (1999)
Russia	1994	Overall	6.7	9.6	Munich <i>et al.</i> (1999)
Singapore	1998	Overall	11.1	15.2	Sakellariou (2003)
Slovakia	1984	Overall	2.8	4.4	Munich <i>et al.</i> (1999)
Slovakia	1993	Overall	4.9	5.4	Munich <i>et al.</i> (1999)
South Africa	1990	Overall	2.3	0.8	Mokitimi and Nieuwoudt (1995)
South Korea	1976	Overall	10.3	1.7	Psacharopoulos (1994)
South Korea	1980	Overall	17.2	5.0	Psacharopoulos (1994)
Sri Lanka	1981	Overall	6.9	7.9	Psacharopoulos (1994)
Sweden	1968	Overall	8.9	8.7	Arai and Kjellstrom (1999)
Sweden	1974	Overall	5.3	5.5	Arai and Kjellstrom (1999)
Sweden	1980	Overall	4.3	4.3	Arai and Kjellstrom (1999)
Sweden	1981	Overall	5.1	4.1	Arai and Kjellstrom (1999)
Sweden	1991	Overall	5.0	4.0	Arai and Kjellstrom (1999)
Switzerland	1982	Overall	5.5	9.1	Weber and Wolter (1999)
Switzerland	1991	Overall	8.3	7.5	Weber and Wolter (1999)
Switzerland	1992	Overall	8.2	7.8	Weber and Wolter (1999)
Switzerland	1993	Overall	7.8	7.9	Weber and Wolter (1999)
Switzerland	1995	Overall	9.1	9.0	Weber and Wolter (1999)
Switzerland	1997	Overall	—	6.1	Weber and Wolter (1999)
Thailand	1972	Overall	9.1	13.0	Psacharopoulos (1994)
Uruguay	1989	Overall	9.0	10.6	Psacharopoulos (1994)
Venezuela	1976	Overall	9.9	13.5	Psacharopoulos (1994)
Venezuela	1987	Overall	10.0	13.1	Psacharopoulos (1994)
Venezuela	1989	Overall	9.1	11.1	Psacharopoulos (1994)
Venezuela	1989	Overall	8.4	8.0	Psacharopoulos (1994)
Vietnam	1992	Overall	3.4	6.8	Moock <i>et al.</i> (1998)
Yugoslavia	1976	Overall	5.8	6.6	Psacharopoulos (1994)
Yugoslavia	1986	Overall	4.9	4.8	Psacharopoulos (1994)

APPENDIX C. RETURNS TO EDUCATION, PSACHAROPOULOS, 2004

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Education					
Country	Year	Level	Men	Women	Source
<b>Mean</b>			<b>8.7</b>	<b>9.8</b>	
Puerto Rico	1959	Primary	29.5	18.4	Psacharopoulos (1994)
Taiwan	1982	Primary	8.4	16.1	Psacharopoulos (1994)
Indonesia	1982	Primary	19.0	17.0	Psacharopoulos (1994)
Great Britain	1841	Literacy	24.5	3.5	Psacharopoulos (1994)
Great Britain	1871	Literacy	19.0	9.0	Psacharopoulos (1994)
<b>Mean</b>			<b>20.1</b>	<b>12.8</b>	
Canada	1980	Secondary	2.0	6.0	Psacharopoulos (1994)
Canada	1985	Secondary	10.6	18.6	Psacharopoulos (1994)
France	1969	Secondary	13.9	15.4	Psacharopoulos (1994)
France	1976	Secondary	14.8	16.2	Psacharopoulos (1994)
Great Britain	1971	Secondary	10.0	8.0	Psacharopoulos (1994)
Indonesia	1982	Secondary	23.0	11.0	Psacharopoulos (1994)
Indonesia	1986	Secondary	11.0	16.0	Psacharopoulos (1994)
Puerto Rico	1959	Secondary	27.3	40.8	Psacharopoulos (1994)
South Korea	1971	Secondary	13.7	16.9	Psacharopoulos (1994)
Sri Lanka	1981	Secondary	12.6	35.5	Psacharopoulos (1994)
Suriname	1993	Secondary	10.7	-0.8	Horowitz and Schenzler (1999)
<b>Mean</b>			<b>13.9</b>	<b>18.4</b>	
Australia	1976	University	21.1	21.2	Psacharopoulos (1994)
Canada	1980	University	5.5	10.5	Psacharopoulos (1994)
Canada	1985	University	8.3	18.8	Psacharopoulos (1994)
Cyprus	1994	Higher	5.2	7.2	Menon (1995)
Denmark	1990	University	3.5	5.2	Cohn and Addison (1998)
Finland	1987	University	6.6	7.7	Cohn and Addison (1998)
France	1969	University	22.5	13.8	Psacharopoulos (1994)
France	1976	University	20.0	12.7	Psacharopoulos (1994)
France	1976	University	20.0	12.7	Psacharopoulos (1994)
Great Britain	1971	University	8.0	12.0	Psacharopoulos (1994)
Indonesia	1982	University	10.0	9.0	Psacharopoulos (1994)
Indonesia	1986	University	9.0	10.0	Psacharopoulos (1994)
Japan	1976	University	6.9	6.9	Psacharopoulos (1994)
Japan	1980	University	5.7	5.8	Psacharopoulos (1994)
Norway	1991	University	4.0	4.2	Cohn and Addison (1998)
Puerto Rico	1959	University	21.9	9.0	Psacharopoulos (1994)
South Korea	1971	University	15.7	22.9	Psacharopoulos (1994)
Sweden	1991	University	4.4	5.0	Cohn and Addison (1998)
<b>Mean</b>			<b>11.0</b>	<b>10.8</b>	

## **Appendix D**

**Non-market effects of education,  
Haveman and Wolfe, 1984**

APPENDIX D. NON-MARKET EFFECTS OF EDUCATION, HAVEMAN AND WOLFE, 1984

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Figure 26: Haveman and Wolfe 1984, pp. 382–386

CATALOG OF IMPACTS OF SCHOOLDING, NATURE OF IMPACTS, AND EVIDENCE  
ON MAGNITUDE OF LEVEL AND VALUE OF IMPACT

Channel of Impact of Schooling	Economic Nature of Impact	Nature of Existing Research on Magnitude of Impact	Status of Economic Benefit Estimates
1. Individual market productivity	Private; marketed; human capital investment	Extensive research on the magnitude of market earnings impact, by demographic group and type of schooling (Schultz [86], Hansen [43], Becker [2], Mincer [71], Hanoch [42], Griliches and Mason [39], Conlisk [18])	Increments to marginal value products, reported as rates of return. Producers' surplus neglected
2. Nonwage labor market renumeration	Private; marketed and nonmarketed; human capital investment	Some research on differences in fringe benefits and working conditions by education level (Duncan [25], Lucas [61], Freeman [33], Smeeding [91])	Rough estimates of true returns to schooling 10 to 40 percent greater than rate of return estimates indicate
3. Leisure	Private; nonmarketed; consumption	Wage rate differences identified in 1. form shadow prices which could be used to value leisure, but seldom are (Psacharopolous [80], Behrman and Wolfe [5])	No firm evidence on the extent of value
4. Individual productivity in knowledge production	Private; nonmarketed; human capital investment	Some evidence that schooling increases productivity in the production of additional human capital (Ben-Porath [7,8], Rosen [81])	No estimates of economic value
5. Nonmarket individual productivity (e.g., do-it-yourself)	Private; nonmarketed; human capital investment	Some evidence of education-induced reduction in female home production time, but increase in quality; no evidence for males	

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		No estimates of economic value
6. Intra-family productivity	Private; some external effects; both marketed and nonmarketed; human capital investment	Relationship between wife's schooling and husband's earnings, apart from selectivity, is well-established (Benham [6])
7. Child quality through home activities	Private; some external effects; both nonmarketed and marketed; human capital investment	Substantial evidence that child quality in several dimensions (health, cognitive development, education, occupation status, future earnings) is positively and significantly related to mother's and father's education (Leibowitz [55,56], Edwards and Grossman [28], Birch and Gussow [9], Hill and Stafford [46,47], Wolfe and Behrman [104], Sewell and Hauser [89], Lindert [59], Murnane [76], Schultz, [87], Taubman [97], Wachtel [99])
8. Own health	Private; modest external effects; partially marketed; human capital investment and consumption	Evidence that own schooling positively and significantly affects health status and, on an aggregate level, that more education decreases mortality (Fuchs [35,36], Feldstein [31], Leigh [58], Grossman [40], Orcutt [78], Lee [54])
		Little evidence on economic value; except indirect evidence via earnings, weeks worked, and life expectancy

APPENDIX D. NON-MARKET EFFECTS OF EDUCATION, HAVEMAN AND WOLFE, 1984

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Channel of Impact of Schooling	Economic Nature of Impact	Nature of Existing Research on Magnitude of Impact	Status of Economic Benefit Estimates
9. Spouse and family health	Private (within household); modest external effects; partially marketed; human capital investment and consumption	Evidence that own and spouse's schooling positively and significantly affects health status and, on an aggregate level, that more education decreases mortality (Auster, Leveson, and Saracheck [1], Rosensweig and Schultz [83], Grossman [40], Grossman and Jacobowitz [41])	Little evidence on economic value; except indirect evidence via earnings, weeks worked, and life expectancy
10a. Fertility (viz., attainment of desired family size)	Private (within household); nonmarketed; consumption	Research on contraceptive use and techniques suggests that efficiency in contraceptive use and attainment of desired family size is related to education (Michael [66], Ryder and Westoff [85], Michael and Willis [69], Rosensweig and Seiver [84])	No estimates of economic value
10b. Fertility (viz., changed tastes for children)	Private (within household); some external effects; nonmarketed consumption	Evidence suggests that schooling reduces desired family size (Mincer [73], Becker [2], Willis [103], Michael [66], Birdsall [10] Easterlin [27])	No estimates of economic value; perhaps impossible given nature of taste change, except through influence on economic growth

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11. “Entertainment”	Private; nonmarketed; consumption	Education appears to be consumed for its intrinsic value, and possibly to broaden forms of entertainment enjoyed (Lazear [53])	No estimates of economic value; perhaps impossible given nature of taste change
12. Consumer choice efficiency	Private; some external effects; nonmarketed; human capital investment	There is evidence that education alters budget allocations in the same direction as income, implying the existence of positive efficiency effect (Michael [65], Pauly [79], Schultz [87], Hettich [45])	No estimate of the value of increased efficiency
13. Labor market search efficiency (including migration)	Private; some external effects; nonmarketed; human capital investment	Some evidence that job search costs reduced with improved information and knowledge, and job and regional mobility increased (Greenwood [38], Metcalf [64], DaVanzo [19], Schwartz [88], Mincer [74], Friedlander [34])	No estimate of the value of increased efficiency
14. Marital choice efficiency	Private; minor external effects; nonmarketed; consumption	Some evidence of improved sorting in the marriage market and positive assortative mating by intelligence (Becker, Landes, and Michael [4], Jensen [51])	No estimate of the value of increased efficiency
15. Crime reduction	Public good	Evidence that education is, <i>ceteris paribus</i> , positively associated with reduced criminal activity (Ehrlich [30])	No estimates of economic value

APPENDIX D. NON-MARKET EFFECTS OF EDUCATION, HAVEMAN AND  
WOLFE, 1984

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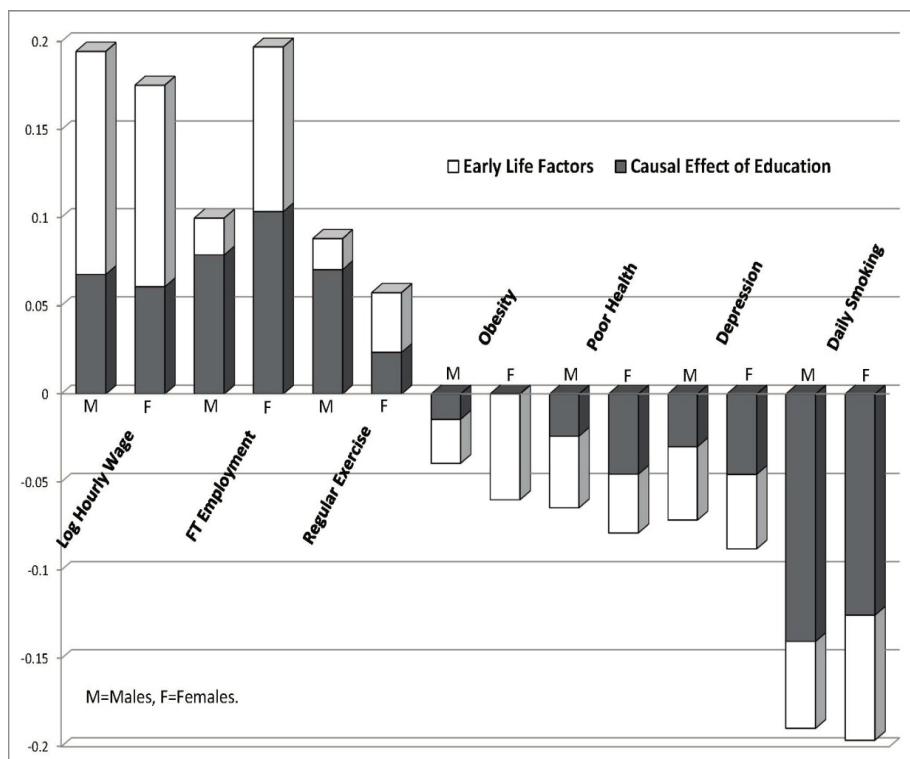
## **Appendix E**

**Educational Disparities in Labor  
Market and Health Outcomes, Conti  
and Heckman, 2014**

APPENDIX E. EDUCATIONAL DISPARITIES IN LABOR MARKET AND  
HEALTH OUTCOMES, CONTI AND HECKMAN, 2014

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Figure 27: Conti and Heckman 2014, p. 40



“the length of each bar shows the mean differences at age 30 in a number of outcomes (health, health behaviors and labor market outcomes) between individuals who have dropped out at the minimum compulsory school leaving age (16 years in Britain at the time we consider), and those who have stayed on beyond age 16 to achieve a post-compulsory educational qualification.” (Conti and Heckman 2014, p. 39)

## Appendix F

### Bentham's "Hedonistic Calculus", Bentham, 1879

Begin with any one person of those whose interests seem most immediately to be affected by it : and take an account,

1. Of the value of each distinguishable pleasure which appears to be produced by it in the first instance.
2. Of the value of each pain which appears to be produced by it in the first instance.
3. Of the value of each pleasure which appears to be produced by it after the first. This constitutes the fecundity of the first pleasure and the impurity of the first pain.
4. Of the value of each pain which appears to be produced by it after the first. This constitutes the fecundity of the first pain, and the impurity of the first pleasure.
5. Sum up all the values of all the pleasures on the one side, and those of all the pains on the other. The balance, if it be on the side of pleasure, will give the good tendency of the act upon the whole, with respect to the interests of that individual person; if on the side of pain, the bad tendency of it upon the whole.
6. Take an account of the number of persons whose interests appear to be concerned; and repeat the above process with respect to each. Sum up the numbers expressive of the degrees of good tendency, which the act has, with respect to each individual, in regard to whom the tendency of it is good upon the whole : do this again with respect to each individual, in regard to whom the tendency of it is good upon the whole : do this again with respect

to each individual, in regard to whom the tendency of it is bad upon the whole. Take the balance; which, if on the side of pleasure, will give the general good tendency of the act, with respect to the total number or community of individuals concerned ; if on the side of pain, the general evil tendency, with respect to the same community.

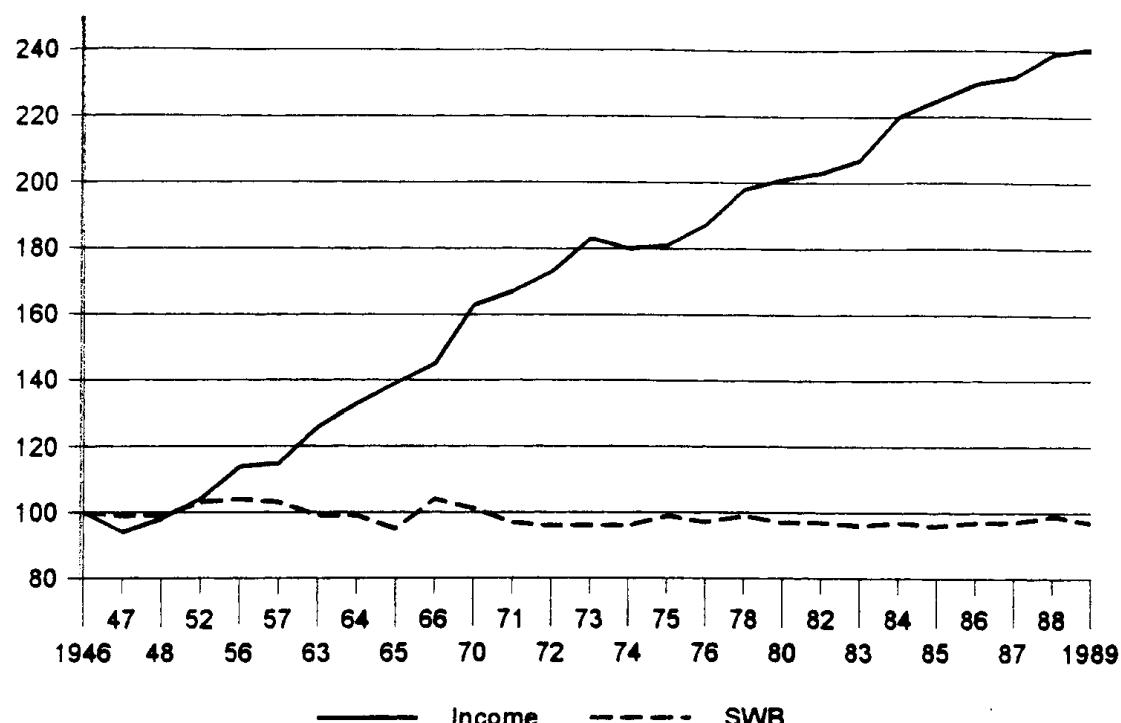
## **Appendix G**

**United States income and subjective well-being, Diener, Suh, Lucas and Smith, 1999**

APPENDIX G. UNITED STATES INCOME AND SUBJECTIVE WELL-BEING,  
DIENER, SUH, LUCAS AND SMITH, 1999

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Figure 28: Diener et al. 1999, p. 288



United States income and subjective well-being (SWB), 1946–1989. Income is percentage of after-tax disposable personal income in 1946 dollars (adjusted for inflation). Subjective well-being is reports of happiness as percentage values of the 1946 values.

## **Appendix H**

**Alternative levels of focus in studies  
of well-being, Gasper, 2005**

Figure 29: Gasper 2005, p. 179

<b>PUTATIVE NARRATIVE SEQUENCE (from bottom to top)</b>	<b>WHO HAS STUDIED THE CATEGORY?</b>
<i>III. FULFILLMENT / SATISFACTION INFORMATION</i>	
HUMAN FULFILLMENT as value fulfillment	Studied by humanistic psychologists and philosophers
'Utility' – as HAPPINESS &/OR SATISFACTION (this is, clearly, not a unitary category; different aspects can be distinguished)	Traditionally not measured by economics (instead presumed unitary and imputed via long chains of assumptions). Studied empirically in psychology, especially in SWB research, and by others.
'Utility' – as DESIRE FULFILLMENT	Imputed from choice, in much economics; if (choice → desire fulfillment) is presumed. Studied directly by some other scientists.
<i>II. NON-FULFILLMENT NON-MONEY-METRIC INFORMATION</i>	
FUNCTIONINGS (other than satisfaction)	Little studied by economics (health economics is one exception). Studied by functional specialisms, sociology, social statistics and psychology. in work on social indicators and objective quality of life.
CAPABILITY or POSITIVE FREEDOM (the range of valued lives which a person could attain)	Hard to measure; usually functionings are the proxy. But see e.g. medical measures of (dis)ability.
CAPABILITIES (people's skills and capacities); and other characteristics of people	Measured by functional specialisms; see e.g. various psychological and health indicators.
CHARACTERISTICS OF GOODS, which are acquired through consumption.	Not much researched by economics, except e.g. in some basic needs work. Investigated by functional specialisms, such as in nutrition, health, education, transport, design, and in psychology.
CONSUMPTION proper – viz., actual <i>use</i> of purchases / acquisitions.	Not much researched by economics, except e.g. in some basic needs work. Left to psychology, anthropology, medicine, cultural studies, etc.
<i>I. INFORMATION ON INPUTS; MONEY-METRIC FOCUS</i>	
PURCHASES and other acquisitions	More researched by marketing, psychology, anthropology, sociology; less intensively by economics.
'Utility' as CHOICE, which is assumed to reflect preference, and (as the default case) is weighted according to purchasing power.	These assumptions have been normal in economics; including often 'revealed preference' as an <i>axiom</i> .
INCOME AND RESOURCES / POWER TO ACQUIRE GOODS / COMMODITIES	Researched by economics; not the power to acquire many other basic goods: political freedom, dignity, rewarding personal relations, satisfying meanings, ..

# Appendix I

## Mélancholia, Victor Hugo, 1856

Où vont tous ces enfants dont pas un seul ne rit ?  
Ces doux êtres pensifs que la fièvre maigrit ?  
Ces filles de huit ans qu'on voit cheminer seules ?  
Ils s'en vont travailler quinze heures sous des meules ;  
Ils vont, de l'aube au soir, faire éternellement  
Dans la même prison le même mouvement.  
Accroupis sous les dents d'une machine sombre,  
Monstre hideux qui mâche on ne sait quoi dans l'ombre,  
Innocents dans un bagne, anges dans un enfer,  
Ils travaillent. Tout est d'airain, tout est de fer.  
Jamais on ne s'arrête et jamais on ne joue.  
Aussi quelle pâleur ! la cendre est sur leur joue.  
Il fait à peine jour, ils sont déjà bien las.  
Ils ne comprennent rien à leur destin, hélas !  
Ils semblent dire à Dieu : « Petits comme nous sommes,  
Notre Père, voyez ce que nous font les hommes ! »  
Ô servitude infâme imposée à l'enfant !  
Rachitisme ! travail dont le souffle étouffant  
Défait ce qu'a fait Dieu ; qui tue, œuvre insensée,  
La beauté sur les fronts, dans les cœurs la pensée,  
Et qui ferait — c'est là son fruit le plus certain —  
D'Apollon un bossu, de Voltaire un crétin !  
Travail mauvais qui prend l'âge tendre en sa serre,  
Qui produit la richesse en créant la misère,

Qui se sert d'un enfant ainsi que d'un outil !  
Progrès dont on demande : « Où va-t-il ? Que veut-il ? »  
Qui brise la jeunesse en fleur ! qui donne, en somme,  
Une âme à la machine et la retire à l'homme !  
Que ce travail, haï des mères, soit maudit !  
Maudit comme le vice où l'on s'abâtardit,  
Maudit comme l'opprobre et comme le blasphème !  
Ô Dieu ! qu'il soit maudit au nom du travail même,  
Au nom du vrai travail, sain, fécond, généreux,  
Qui fait le peuple libre et qui rend l'homme heureux !

## **Appendix J**

### **Social Desirability Scale**

APPENDIX J. SOCIAL DESIRABILITY SCALE

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Number	True/False	English	French
1	True	I always enjoy myself at a party.	Je m'amuse toujours pendant une fête.
2	False	I tell a little lie sometimes.	Parfois je dis un mensonge.
3	True	I never get angry if I have to stop in the middle of something I'm doing to eat dinner or go to school.	Je ne m'énerve jamais quand je dois m'arrêter en plein de milieu de quelque chose pour aller manger ou aller à l'école.
4	False	Sometimes I don't like to share things with my friends.	Parfois je n'aime pas partager certaines choses avec mes amis.
5	True	I am always respectful of older people.	Je suis toujours respectueux envers des personnes plus âgées.
6	True	I would never hit a boy or girl who was smaller than me.	Je ne taperais jamais une fille ou un garçon plus petit que moi.
7	False	Sometimes I do not feel like doing what my teachers want me to do.	Parfois je n'ai pas envie de faire ce que mes professeurs me disent de faire.
8	True	I never act "fresh" or "talk back" to my mother or father.	Je ne fais jamais le malin et je ne réponds jamais à mes parents.
9	True	When I make a mistake, I always admit I am wrong.	Quand je me trompe, j'avoue toujours que j'ai tort.
10	False	I feel my parents do not always show good judgement.	J'ai le sentiment que mes parents n'ont pas toujours un bon jugement.
11	True	I have never felt like saying unkind things to a person.	Je n'ai jamais eu envie de dire des choses méchantes à quelqu'un.
12	True	I always finish my homework on time.	Je finis toujours mes devoirs à temps.
13	False	Sometimes I have felt like throwing or breaking things.	Parfois j'ai envie de balancer ou casser des choses.
14	True	I never let someone else get blamed for what I did wrong.	Je n'ai jamais laissé quelqu'un d'autre porter le chapeau pour mes erreurs.
15	False	Sometimes I say something just to impress my friends.	Parfois je dis des choses juste pour impressionner mes amis.
16	True	I am always careful about keeping my clothing neat, and my room picked up.	Je veille toujours à ce que mes vêtements soient propres et ma chambre rangée.
17	True	I never shout when I feel angry.	Je ne crie jamais quand je suis en colère.
18	False	Sometimes I feel like staying home from school even if I am not sick.	Parfois j'ai envie de rester à la maison au lieu d'aller à l'école, même si je ne suis pas malade.

Table 35: Social Desirability Scale, 1/3, own adaptation and translation from Crandall, Crandall, and Katkovsky 1965

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19	False	Sometimes I wish that my parents didn't check up on me so closely.	Parfois j'aimerais que mes parents ne me fliquent pas autant.
20	True	I always help people who need help.	J'aide toujours les personnes qui en ont besoin.
21	False	Sometimes I argue with my mother to do something she doesn't want me to do.	Parfois je me dispute avec l'un de mes parents pour pouvoir faire quelque chose qu'ils ne veulent pas que je fasse.
22	True	I never say anything that would make a person feel bad.	Je ne dis jamais quelque chose qui puisse blesser une autre personne.
23	True	My teachers always know more about everything than I do.	Mes professeurs savent toujours mieux les choses que moi.
24	True	I am always polite, even to people who are not very nice.	Je suis toujours poli(e), même envers les personnes qui ne sont pas gentilles.
25	False	Sometimes I do things I've been told not to do.	Parfois je fais des choses que l'on m'a dit de ne pas faire.
26	True	I never get angry.	Je ne m'énerve jamais.
27	False	I sometimes want to own things just because my friends have them.	Il m'arrive de vouloir avoir quelque chose juste parce que mes amis l'ont.
28	True	I always listen to my parents.	J'écoute toujours mes parents.
29	False	I never forget to say "please" and "thank you".	Je n'oublie jamais de dire "s'il vous/te plaît" et "merci".
30	False	Sometimes I wish I could just "mess around" instead of having to go to school.	Parfois j'aimerais pouvoir traîner au lieu d'aller à l'école.
31	True	I always wash my hands before every meal.	Je me lave les mains avant chaque repas.
32	False	Sometimes I dislike helping my parents even though I know they need my help around the house.	Parfois je n'aime pas aider mes parents, même quand je sais qu'ils ont besoin de mon aide.
33	True	I never find it hard to make friends.	Je n'ai jamais de difficulté à me faire des amis.
34	True	I have never been tempted to break a rule or a law.	Je n'ai jamais été tenté de transgresser une règle.
35	False	Somethings I try to get even when someone does something to me I don't like.	Parfois j'essaie de me venger quand quelqu'un me fait quelque chose que je n'apprécie pas.
36	False	I sometimes feel angry when I don't get my way.	Je me sens parfois en colère quand je n'ai pas ce que je veux.

Table 36: Social Desirability Scale, 2/3, own adaptation and translation from Crandall, Crandall, and Katkovsky 1965

APPENDIX J. SOCIAL DESIRABILITY SCALE

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37	True	I always help an injured animal.	J'aide toujours un animal blessé.
38	False	Sometimes I want to do things my parents think I am too young to do.	Parfois j'ai envie de faire des choses pour lesquelles mes parents me trouvent trop jeune.
39	False	I sometimes feel like making fun of other people.	Je me moque parfois des autres.
40	True	I have never borrowed anything without asking permission first.	Je n'ai jamais emprunté quelque chose avant de demander la permission.
41	False	Sometimes I get annoyed when someone disturbs something I've been working on.	Parfois je m'agace quand quelqu'un dérange mon travail.
42	True	I am always glad to cooperate with others.	Je suis toujours content(e) de travailler en groupe.
43	True	I never get annoyed when my best friend wants to do something I don't want to do.	Je ne m'énerve jamais quand mon(ma) meilleur(e) ami(e) veux faire quelque chose dont je n'ai pas envie.
44	False	Sometimes I wish that the other kids would pay more attention to what I say.	Parfois j'aimerais que mes camarades écoutent davantage ce que je dis.
45	True	I always do the right things.	Je fais toujours la bonne chose à faire.
46	False	Sometimes I don't like to obey my parents.	Parfois je n'aime pas obéir à mes parents.
47	False	Sometimes I don't like it when another person asks me to do things for him.	Parfois je n'aime pas que quelqu'un d'autre me demande des faires des choses pour lui.
48	False	Sometimes I get mad when people don't do what I want.	Parfois je m'énerve quand quelqu'un ne fait pas ce que veux.

Table 37: Social Desirability Scale, 3/3, own adaptation and translation from Crandall, Crandall, and Katkovsky 1965

## **Appendix K**

### **Multiple Cluster Analysis, Symmetrical Graph of the Variables**

APPENDIX K. MULTIPLE CLUSTER ANALYSIS, SYMMETRICAL GRAPH OF THE VARIABLES

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Figure 30: Multiple Cluster Analysis, Symmetrical Graph of the Variables

