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Aspirations and the persistence of poverty and inequalities

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Introduction

Have a dream? Yes, I do! An absurd
And impossible, beautiful, bird-
like, insistent clear vision
And bright-beamed decision.
Aspiration's my goal's crucial word.

Frank Luke (2009)

In the history of development economics, there has been a sequence of quite different approaches seeking to understand the persistence of poverty of individuals and nations in the global South. Based upon these approaches, economists have provided policy recommendations intended to overcome poverty and to improve living conditions marked by deprivation, exclusion, and discrimination. Many of the approaches and policy recommendations have not lived up to the expectation that they could contribute to the alleviation of poverty, and have been replaced by other paradigms and ideas. The history of development economics could hence be thought of as a 'trial-and-error' search for paradigms and theories that can inform development policy in a beneficial way. But this is not the only interpretation: many researchers are far more skeptical about the results of decades of research. As recent Nobel laureate Angus Deaton (2010a, p. 437) wrote on a rather critical note, "[p]ast development practice is seen as a succession of fads, with one supposed magic bullet replacing another - (...) a process that seems not to be guided by progressive learning".

In recent years, behavioural approaches to economic development have entered the stage (see Cardenas and Carpenter 2008, for an overview). Using insights from the field of psychology, an increasing number of economists have attempted to develop approaches that can deliver a better understanding of why poverty and inequality persist in so many societies. One such behavioural approach is the topic

of this thesis: the endogenous formation of aspirations and aspiration traps.

The essence of this approach is that a life of poverty, deprivation or exclusion may impact a person's behaviour in such a way that they may not aspire to goals and activities that would best serve their interests, even though their resources, capacities, and constraints could allow them to do so. More precisely, the approach is concerned with situations in which people, consciously or not, do not attempt to reach potentially beneficial goals.[1] When social structures and inequalities influence goals people pursue, and notably when they stifle aspirations of disadvantaged people, they may reinforce and stabilise themselves through the channel of individual behaviour. The purpose of this field of research is to understand the cognitive, psychological, and behavioural mechanisms and processes behind such behaviour and to investigate possible policy interventions. Continuous learning from the failures of earlier approaches and development theories is part of the story in the sense that the field seeks to understand behaviour that looks irrational when viewed through the lenses of rational choice, and to advance the understanding of economic and human development upon these grounds.

It is remarkable that many papers in the field write about aspirations without defining them. It may be that authors use the term as in everyday language: in the literal sense of the word, an aspiration describes an ambition to achieve something (Bernard and Taffesse 2014). Bernard et al. (2011, p. 4), one of the rare exceptions, define an aspiration as "the presence of forward-looking goals or targets, and a preference to attain them". As such, an aspiration can be understood as a goal a person is set out to pursue. March and Simon (1958) equal aspirations with ambitions for achievement.

Bernard et al. (2011) make a distinction between aspirations and goals upon the notion that aspirations are "*motivators*; that is, they are goals in which individuals are willing, in principle, to invest time, effort or money to attain (in contrast to idle daydreams and wishes)" (Bernard and Taffesse 2014, p. 199, italics in original). The last feature, however, seems to be a feature of goals, too. I therefore do not follow this distinction.

Treating aspirations and goals as equivalent seems all the more justified as both concepts share another common feature: both do not only represent an achievement or state people are set out to reach and that motivates their effort,

1. The distinction of beneficial and detrimental goals and aspirations is one of the most difficult issues facing the approach. I introduce this problem, which will be a topic of discussion throughout the thesis, with some more details shortly on page 17.

but also a benchmark that people use to assess achievements and results. In Herbert Simon's view, people use aspiration levels to assess whether attained levels of achievement are satisfactory (see for instance March and Simon 1958; Simon 1976). For psychologist John Locke, goals "are, at the same time, an object or outcome to aim for and a standard for judging satisfaction. To say that one is trying to attain a goal of X means that one will not be satisfied unless one attains X" (Locke and Latham 2002, p. 709). In other words, goals are an "inflection point or reference standard for satisfaction versus dissatisfaction" (p. 709). This corresponds to the usage that behavioural economists have given aspiration in analytical models: technically, aspirations have been incorporated as reference points in utility-maximisation models (Génicot and Ray 2015a; Dalton et al. 2016).

That aspirations are future-oriented insinuates that they refer to achievements that cannot be satisfied immediately. Aspirations are not about immediate gratification, but about goals requiring at least a certain level of effort. For example,

> a hungry person may aim to get some food to satisfy his immediate hunger and exert some effort to achieve that aim. This does not count as an aspiration. In contrast, the goal to be food secure in the future represents an aspiration. (Bernard and Taffesse 2014, p. 198)

Aspiring to a future-oriented, effort-requiring goal implies, in turn, that people do not only wish for the materialisation of certain outcomes in the future, but also (believe they) have an idea of how to reach them, at least in rough terms. Beliefs about ends-means relationships are an essential foundation of future-oriented aspirations (Elster 1983). Beliefs about ends-means relationships - whether correct or incorrect - imply, again, that the individual is aware of the necessity of making a certain investment and willing to realise it (Bernard et al. 2011; Bernard and Taffesse 2014). Reeves (2014, p. 3) differentiates between "active aspirations" and "vague hopes" to elucidate that "a loosely-stated goal or set of goals, largely untethered from current activities and decision-making" (p. 3) does not qualify as an aspiration.

Many activities and achievements that one can reasonably assume to improve a person's living conditions require goal-setting, aspirations, and effort. Activities like obtaining an educational degree or setting up a business will work out for people who effectively aspire to these goals and pursue their path to their achievement with perseverance. In contrast, if people are unable to see themselves obtaining the achievement before their mind's eye, for example because they do

not believe in their abilities, they will hardly take up the challenge.

One basic premise of the literature on aspiration traps is that low aspiration are more frequent among poor and disadvantaged people, because disadvantage and social exclusion can easily provoke pessimistic outlooks on life and on one's opportunities and abilities. Alsop et al. (2006, p. 12) report that "women and minority groups frequently underinvest in their human capital because they have been brought up to believe that they cannot do certain things that other people can do. As a result, [they] internalise their second class status in ways that cause them to make choices that perpetuate their disempowered status".

As much as the notion that subjective perspectives of one's opportunities and possibilities matter for behaviour is plausible, the idea that poverty should be addressed through individual aspirations is a delicate issue. First of all, addressing development outcomes through psychological and cognitive channels sounds dangerously similar to "paternalistic attempts at social engineering on the psyche" Bowles (1998, p. 102). If one follows Deaton's view that past development practices and theories have not achieved to reduce poverty considerably, and that we don't know much about how this could be achieved, one may even suspect that the development industry is looking for someone new to blame for these failures. Psychological explanations at the individual level could be an attractive candidate: poor people could do better, but their living conditions have depressed their aspirations; as a consequence, they are trapped with their life of poverty, inequality and fatalism.

Such arguments are of course short-lived: there is a large literature on the causes of and hindrances to economic and human development and, notably, the myriad external constraints facing poor, underprivileged, excluded people. It may well be true that depressed aspirations and fatalism are a consequence of poverty and of a lack of prospects of a better future. For example, Bernard et al. (2011) report how low aspirations and fatalistic outlooks on the future are common among poor Ethiopians. But it cannot be convincingly suggested that aspiration failures are an original cause of poverty.[2]

But does this mean that aspirations should not be a topic in economic analysis? This position is equally hard to defend: aspirations may not be an original cause of poverty, but they may still contribute to its persistence. Once we suspect that depressed aspirations - in addition to myriad other factors - make it harder to

2. I will defend this point with more details in chapter 1, where I review origins and reasons of persistent poverty.

overcome poverty, ignoring them seems to be a bad choice, too.

In order to contribute to progressive learning rather than to become another fad, research addressing the origins and consequences of aspirations must thus find a justified balance between these poles, and be sensitive to a number of potential pitfalls. One such pitfall is to adopt perspectives that are too much centred around economic motives and economistic explanations of behaviour. The research field of aspiration traps is geared towards the analysis of the cognitive, psychological, and behavioural mechanisms and processes behind the endogenous formation of aspirations and aspiration traps. It thus involves psychological perspectives by its very nature. Moreover, given that the field is interested in a phenomenon against the background of specific socio-economic structures - material constraints, discrimination or institutional structures reflecting particular inequalities, to name just a few points -, economic and sociological perspectives should be involved in the analysis. In other words, research on aspiration traps requires interdisciplinary and transdisciplinary efforts. This requires of course more than a single thesis - in economics - can deliver. But I will attempt to open pathways towards an interdisciplinary analysis of the phenomenon under study.

Another pitfall is the risk of not finding an appropriate balance between explanations at the individual and structural level. On the one hand, individualistic approaches may easily be taken to suggest that individuals are to blame for their living conditions. On the other hand, structural approaches can easily become too deterministic. Banerjee and Duflo (2012, p. 91) warn that "old-fashioned sociological determinism, whether based on caste, class, or ethnicity, are rife in conversations involving the poor". To avoid one-sided perspectives, explanations from both the individual and the structural level must have their due share in the analysis. Explanations should deny neither human agency nor social embeddedness.

The third type of pitfall, and probably the most tricky one, refers to an issue that will be omnipresent throughout the thesis: the normative assessment of aspirations. Aspirations are a matter of scholarly attention because they may - allegedly - not be optimal or in a person's best interest. But what is optimality supposed to mean? In the particular context of development studies, how does research on aspirations prevent the risk of imposing external standards of life goals, well-being or metaphysical ideas of the meaning of life? It may even be claimed that the very idea of goal-oriented behaviour is not free of implicit value judgements.[3]

3. The idea of goal-orientation is arguably related to progress, which in turn is an inherent feature

The normative dimension of aspirations and aspiration traps touches upon the previously mentioned tension between ignorance and invasion again: to ignore the role of aspirations is not an option, but as soon as aspirations are addressed, researchers find themselves making judgements about subjective perspectives and goals of other people.

Instead of abandoning the project in the face of these challenges, I would like to suggest that it is precisely these challenges that create a promising opportunity for researchers interested in the persistence of poverty and inequality. Aspirations lead us to the grain of the conditions of poverty, and invite the researcher to reflect upon its fundamental meanings. The analysis of aspirations requires the researcher to address individual (subjective) perspectives and structural conditions in their interaction. The researcher must reflect upon how aspirations are shaped by socio-economic structures, but also how individual aspirations contribute to their persistence. As such, the approach does not locate the primary responsibility of poverty within the poor individual, but it neither views poor people as pitiable beings without agency that are tossed about by the waves of their miserable living conditions. This provides the chance to debate approaches to policy that rest upon a well-reflected understanding of human agency.

Outline and organisation

This thesis is divided into three parts. Part I is conceptual and aims to advance the understanding of the concept of aspirations with input from various angles. Part II provides an empirical perspective on the development of aspirations and their impact on behaviour. Part III addresses the normative dimension.

Part I starts in chapter 1 with a placement of the aspirations approach within theories of and approaches to economic and human development. While aspiration traps may be an important consequence of a life in poverty and make poverty reduction considerably harder, it cannot be convincingly claimed that poverty follows from low aspirations alone. Therefore, it is worthwhile to reflect on how aspirations can be properly placed within the broader landscape of the reasons of persistent poverty and inequalities. This will not only show that aspiration traps

of modernisation and developmentalism. Poststructuralists have criticised these orientations for blocking the view on alternative conceptions of the future (Peet and Hartwick 2009). More generally, critics have contended that development studies are dominated too much by Western perspectives on the 'good life', provoking intellectual independence (Alatas 1993; Pieterse and Parekh 1995). On the other hand, one may oppose the view that a goal can be oriented towards achieving a life along alternative conceptions, too.

are just a little - yet important - cog in the big wheel of poverty; it will also set the stage for a later discussion of how material conditions and constraints of a life in poverty can reinforce aspiration traps.

Having put aspirations in their due place in the overall picture of economic and human development, chapter 2 provides an overview of how aspiration traps have been discussed in the recent (development) economics discourse. After a few conceptual contributions, notably by Debraj Ray (2006), two analytical models have shaped the debate: one by Garance Génicot and Debraj Ray (2015b), that studies how aspirations can contribute to inequality and growth dynamics in a society through individual investment decisions, and one by Patricio Dalton, Sayantan Ghosal and Anandi Mani (2016) that analyses the occurrence of psychological poverty traps when individual aspirations embark on a downward bound path. I review the conceptual contributions and the models to properly depict the state of the debate.

As this review will show, at the present state, the literature has mostly focused on effects of endogenous aspirations (in terms of growth and inequality, or of persistent poverty), still leaving entirely open which behavioural mechanisms may be at work. The subsequent chapters therefore aim to contribute to filling this important gap.

It seems natural to start the search for behavioural mechanisms within the field of behavioural economics, to which the analytical models previously discussed also belong. Although behavioural economists have not addressed the process of the development of aspirations explicitly, there are quite a few concepts and fields of debate that are compatible and can be plausibly transferred. Chapter 3 discusses selected contributions for this purpose.

In chapter 4, I criticise this approach upon the notion that a broader approach - that is, one that does not center around behaviour that deviates from that of a neoclassical agent, and that allows for broader understandings of rationality - could be more insightful to comprehensively understand how people build aspirations and how this impacts their behaviour. I use the example of the concept of identity and its relevance for aspirations to illustrate the benefits of leaving narrow neoclassical standards behind.

Chapter 5 broadens the view even further and brings in three selected approaches from other social sciences. As said above, aspirations, by their very nature, are a phenomenon of transdisciplinary relevance and appeal: one could not

plausibly defend that they fall within the remit of any one of the social science disciplines. Aspirations are inherently social, but they also are a matter of a person's psyche and mind, as well as of their economic situation. It is of course beyond the scope of this thesis to provide a comprehensive account of the perspectives from across the social sciences, and much more to transcend these disciplinary boundaries. But with the selective discussion of three approaches from anthropology, social psychology and sociology - Arjun Appadurai's work on the capacity to aspire, Albert Bandura's social cognitive theory, and Pierre Bourdieu's work on milieus and habitus -, I attempt to prepare the path for potential collaborative work in the future.

Chapter 6 closes the conceptual part and proposes an integrative framework for understanding the development of endogenous aspirations on the basis of the previous chapters.

Part II addresses empirical perspectives of both the development and the consequences of aspirations. Chapter 7 introduces this part with a review of the relevant empirical literature. Testifying to the transdisciplinary relevance of the concept of aspirations, this chapter brings together empirical evidence from several disciplines and fields, mainly economics, sociology, education research, career research, and development studies. It will be shown that many theoretical hypotheses and patterns have been sustained by a long-standing, but also very dispersed literature. Some of the most fundamental questions have remained without strong empirical support (or rebuttal). Two of them are addressed in the following chapters.

The first issue, addressed in chapter 8, concerns a main underlying premise of the recent theoretical work in economics (that is, the models presented in chapter 2). Economists have posited that aspirations vary with the macroeconomic development of a country, notably with economic growth and inequality (dynamics) (Ray 2006, 2010). Possible relationships have been discussed at length in theory, as chapter 2 discusses, but not been tested empirically. Using a multilevel model with data from the World Values Survey, I intend to test whether the proposed relationships could be compatible with empirical evidence. The evidence resulting from my analysis does not contradict the theorised relationships, and I will argue that it may well sustain it.

Chapter 9 addresses another open question. It is the basic premise of research on aspiration traps that aspirations people hold influence their behaviour. If this was not true, analysing aspiration traps would be pointless. Manifold studies have

found that people with higher aspirations achieve higher goals. Studies have also have tested and found correlations of individual aspirations with socio-economic variables. But are aspirations really causal for achievements, and are aspirations really downward-*biased* along socio-economic lines? Confirming these two effects empirically would be crucial for justifying the attention that has been paid to aspirations in the recent literature. Due to identification problems, the literal idea of a downward-spiral trap resulting from poverty and exclusion is difficult to test, and even though much evidence suggests it exists, it has not been thoroughly tested so far. With data from the Young Lives Study on Childhood Poverty for India and Vietnam, I attempt to address this issue using structural equation modelling. My results confirm that aspirations influence behaviour in addition to other (material and non-material) constraints.

Finally, chapter 10 in part III is devoted to the discussion of a number of normative concerns that will have accumulated throughout the previous chapters. Normative issues and ethical concerns are ubiquitous in discussions about individual aspirations and aspiration traps of poor and disadvantaged people. Having seen that aspirations are closely tied to socio-economic structures and that they may worsen a person's living conditions, it is no option to close one's eyes before them. On the other hand, judging which aspirations serve individual interests best is a complicated task for academic research. To solve this dilemma, this chapter discusses how aspirations can be related to welfare, and how an understanding of this relationship may give directions for policy.

The research field of aspiration traps has emerged rather recently, and is not yet very sorted and full of loose ends. It touches upon a very large range of topics and concepts both from within economics and from across the social sciences disciplines, and connects to a number of earlier discussions. This thesis aims to unravel some of these connections and loose ends, but it can only provide a starting point for the study of aspirations and their relevance for human behaviour and human development. Many potential paths cannot be pursued, but I will point to them wherever appropriate. The conclusion will take up on several unpursued ideas and point to potential directions for future research.

Part I

Aspirations: contouring a concept

Chapter 1

Understanding human development: what can aspirations contribute?

> Economics, surely, is a social science. It is concerned with the operations of human beings, who are not omniscient, and not wholly rational; who (perhaps because they are not wholly rational) have diverse, and not wholly consistent, ends.
>
> John R. Hicks (1960, pp. 707-708)

In 2012, 15% of the world's population in low and middle-income countries lived on US$ 1.90 a day or less (World Bank 2015a). In Sub-Saharan Africa, their share amounted to 43%. Using a threshold of US$ 3.10 per day, 35% of the population in low and middle-income countries were affected by poverty. Shares were considerably higher in fragile and conflict affected states and regions (60%) and Sub-Saharan Africa (67%). In Latin America's developing nations, 12% of the population were concerned; in Haiti, the poorest country of the subcontinent, 71%.[1] According to national poverty lines, 69% of the population are poor in Guinea-Bissau (2010), 60% in Guatemala (2014), 25% in Egypt (2010), 22% in India, and 10% in the Czech Republic (2013).[2] In 2015, about one quarter of the urban populations of East Asia's and Latin America's developing countries lived in slums, and more than half in Sub-Saharan Africa (World Bank 2015a). Poverty is a global and persistent phenomenon, and universal human development continues

1. Poverty headcount ratios are calculated with 2011 PPP prices.
2. Note that these percentages are not comparable because national poverty lines differ.

to be a remote desire.[3]

Of course, human development is much more than control over economic resources. In the end, human development means "making a better life for everyone" (Peet and Hartwick 2009, p. 1). The fulfilment of basic needs such as the access to sufficient food and water, a safe and healthy place to live, or physical and emotional health is an essential component, but there are many other aspects that matter for a better life for everyone. The United National Development Program's (UNDP) Human Development Index (HDI), for example, emphasises the three pillars 'long and healthy life', 'knowledge', and 'decent standard of living' (UNDP 2015). The United Nations's Sustainable Development Goals (SDGs) include aspects as diverse as quality education, climate action, responsible consumption and production and sustainable cities and communities (UN-DESA 2016).

A comprehensive discussion of the concept of human development is clearly beyond the scope of this thesis.[4] However, it should be stated that I use human development in a rather broad sense. In particular, I side with Peet and Hartwick (2009, p. 2) who posit that "development is interested not so much in the growth of an economy but rather the conditions under which production occurs and the results that flow from it".

Poverty, in turn, means a lack of economic resources, but is also much more than this. As Arjun Appadurai writes,

> [p]overty is many things, all of them bad. It is material deprivation and desperation. It is lack of security and dignity. It is exposure to risk and high costs for thin comforts. It is inequality materialized. It diminishes its victims. (Appadurai 2004, p. 64)

I therefore understand poverty as the opposite not of economic affluence, but of human development. Exclusion from economic and social participation, exclusion from health and mental and physical well-being, discrimination, as well as exposure to risk and vulnerability are all different faces of a life in poverty.

This chapter attempts to place the analysis of the role of aspirations in its

3. I am not intending to say that poverty is best measured by income measures. The debate about measures of human development and well-being is a huge field of research on its own (see for instance Kahneman and Krueger 2006, Fleurbaey and Blanchet 2013 and Peet and Hartwick 2009). As this debate is not central for the topic of this thesis, I will not go into it. Measurement issues are related to debates about the concept of human development that I briefly touched upon in the following paragraph.

4. See for example Arndt (1981), Streeten (1994), Alkire (2002), Sen and Anand (1997) and Peet and Hartwick (2009) for overviews and discussions.

due context. Aspirations are of course not the only, and certainly not the most severe hindrance to human development. To have a clear understanding of the background against which the role of aspirations should be viewed, section 1.1 briefly recapitulates the economic literature on human and economic development. Section 1.2 introduces the aspirations approach and discusses how it may contribute to the understanding of persistent poverty and exclusion.

1.1 Why does poverty persist?

When economists started to be concerned with 'economic development' in the middle of the past century, many were primarily interested in economic growth and material wealth. This was justified partly by the assumption that human development would follow from economic growth.[5] Many economists were optimistic with regards to the economic convergence (in terms of per-capita incomes) of former colonies and the global South with the rich countries. Today, it cannot be denied that this convergence has not occurred, except for some exceptional cases, most of them South Asian (Azariadis 2006).[6] The study of poverty, deprivation and 'economic backwardness' remains "enormously important" (Basu 2003, p. 3).

This is so not only because poverty persists, but because the reasons of its persistence have not been very well understood. As Kaushik Basu, today the World Bank's chief economist, phrased it some years ago, "[t]he stubborn persistence of most of these problems has made us increasingly aware that there is more to economic underdevelopment than meets the eye" (p. 6). With regards to poverty alleviation, Deaton (2010a)'s lesson "from the literature is that we do not know" (p. 425). The only thing that seems clear is that many factors and dynamics at different levels of human interaction play a role are intertwined in complex ways, making easy answers unlikely.

At the macroeconomic level, poverty traps or low-level equilibrium traps have attracted large attention for decades. The main idea is that poor economies are trapped in a situation in which low per capita income provokes consequences that keep per capita income low. A critical minimum effort could allow the economy

5. Indeed, many scholars continue to confound human development and economic growth. Peet and Hartwick (2009) use the term 'conventional theories of development' to refer to theories that equate economic growth with development.

6. Jerven (2010, 2015) criticises that economic growth that African countries have experienced since the 1950s has been largely overlooked by scholars who think of Africa as the notoriously poor continent and do not differentiate between the experiences of single countries. Notwithstanding, it is consensual that there has been no tendency of universal convergence.

to leave the low-level equilibrium (Rosenstein-Rodan 1943; Nurkse 1953; Singer 1949; Solow 1956; Murphy et al. 1989). The idea that a big push is needed to push economies out of poverty has experienced a certain revival in recent years (Sachs 2005; Sachs and Warner 1999), but there is also considerable skepticism and critique towards this approach (see for instance Easterly 2006). One underlying reason of low-level equilibria could be a lack of capital in poor countries (Lucas 1990). Markets could have problems to develop and grow due to low levels of demand, which in turn is related to large levels of unemployment, underemployment and informal occupations (Myrdal 1968; Sen 1975; Bacchetta et al. 2009). Institutional structures can be a hindrance to economic growth (Acemoglu et al. 2003b; Acemoglu et al. 2005) as much as a lack of technical capacities (Kalecki 1976; Fukuda-Parr et al. 2002). Moreover, temporary events like political and/or violent conflict, disease, or war can impact development prospects (Azariadis 2006; Gates et al. 2012; Ray and Esteban 2016).

Another major topic of discussion is the impact of trade on economic growth, poverty reduction, and human development. If there is any consensus at all, it is that both the patterns of a country's insertion into the world economy as well as the impact of these on their economies and societies are very diverse and country-specific (Rodrik 2011). Prominent voices have warned that the integration into the world market and in particular the economic policies of the rich nations represent a threat to the developing world and prevent poor countries from benefitting (Chang 2007; Reinert 2007). Indeed, there are cases of countries that have seen their living standards decrease as a consequence of trade liberalisation.

On the other hand, this experience is not shared by all countries. Rodrik (2007) concludes from this mixed evidence that no linear relationship between trade and growth *can* exist, because the outcome will depend on many factors such as domestic institutions, international trade institutions, domestic productive structures, or the process and degree of trade openness. The literature on aid effectiveness is inconclusive, too (Doucouliagos and Paldam 2008). Critiques have not only contended that foreign aid to poor countries is ineffective (see for instance Qian 2015; Hansen and Tarp 2000; Doucouliagos and Paldam 2009; Bourguignon and Ferreira 2007): some authors claim that foreign aid has even been harmful (Stiglitz 2007; Chang 2007).

All these constraints and limitations make it hard for poor people to overcome their living conditions, because these often cannot be improved at the individual, household or community level. History has created patterns of integration into the

world market, structures of production, institutional equilibria, poor governance and corruption and spatial and distributional patterns that embark countries on paths dependencies that make the improvement of living conditions, in particular of the most disadvantaged, an extremely complex and difficult endeavour (Acemoglu et al. 2003a; Acemoglu et al. 2003b; Acemoglu and Robinson 2006a; Engerman and Sokoloff 2006; Bowles 2006; Bardhan 1997; Aidt 2009).

Poverty is most often accompanied by large inequalities of income and access to resources, services, and opportunities. There is no straightforward correlation between the incidence of poverty and levels of economic inequality,[7] but most poor people live in countries where there are also non-poor people.[8] The relevance of inequality for the persistence of poverty is another long-standing field of economic research (Kuznets 1955; Alesina and Rodrik 1994; Persson and Tabellini 1994; Banerjee and Duflo 2003; Galor and Zeira 1993; Taylor and Arida 1988). Income inequality often entails unequal access to resources and services as diverse as health, credit, insurance, law, or schooling, which in turn contributes to the persistence of poverty of disadvantaged groups. Moreover, economic inequality is usually accompanied by unequal access to political power (Acemoglu and Robinson 2006b; Acemoglu and Robinson 2008; Flechtner and Panther 2016), making it much more difficult for disadvantaged people to defend their interests politically.

The access to credit is among the channels that have received the largest attention by economists. Credit market imperfections have been discussed as a major hindrance to economic growth at the macroeconomic (Kuznets 1966; Gurley and Shaw 1967; Bell 1988; Bencivenga and Smith 1991) as well as at the microeconomic level. For example, Eswaran and Kotwal (1990) indicate that individuals can absorb risks better when they can smooth their consumption through credit. In order to make investment capital available for disadvantaged people, microcredits have been proposed and received large attention (see Gersovitz 2010, for an overview). However, empirical studies of the impact of microcredit on behaviour and welfare have been ambiguous (see for example Diagne and Zeller 2001 and Banerjee et al. 2015).

Notwithstanding, it is consensual that credit constraints and limited access to and disposal of economic resources more generally are a major factor holding

7. For example, the GINI index of Ethiopia is rather low with 33.2 (2010), while 30% live below the national poverty line (World Bank 2015a).

8. Durlauf and Quah (1999) have suggested that two thirds of global income inequality between households stems from international differences, while one third is due to inequalities within countries.

individuals back from improving their living conditions, for instance because they lack resources to invest in the education of their children, to set up a business, or to adopt new technologies. In addition, disadvantaged people often have poor access to insurances, making them more vulnerable to a range of factors beyond their control such as weather and climate conditions, accidents, or betrayal (Besley 1995).

All these topics would qualify as standalone topics of a thesis and can only be briefly mentioned here.[9] The point that is being made here is that the persistence of poverty, deprivation and inequalities is due to extremely complex processes at many levels. Poor people face innumerable constraints the alleviation of which lies to considerable extents outside their personal control. Against this background, it cannot be convincingly claimed that poor and disadvantaged people are primarily those responsible for their living conditions.

Nevertheless, there has been a certain shift in research on economic and human development in recent years. The growing interest in behavioural economics in the profession has translated into a growing number of approaches focusing on the role of individual behaviour for the persistence or reduction of poverty and the improvement of living conditions more generally.[10] Notably, the rise of randomised controlled trials (RCTs) has been accompanied by a growing number of papers focussing on individual behaviour.[11] For example, prominent papers of the field study why farmers in Kenya use less fertilizer than the supposedly optimal amount (Duflo et al. 2011), what reduces teacher absenteism in schools in India (Duflo et al. 2012), how the use of flip charts improves test scores of Kenyan students (Glewwe et al. 2004) or how school participation can be increased (see Kremer 2003, for a review).

9. The Elsevier Handbook series on development economics with volumes edited by Chenery and Srinivasan (1988, 1989), Behrman and Srinivasan (1995a, 1995b), Schultz and Strauss (2007), and Rodrik and Rosenzweig (2010) reviews a considerable amount of concepts, theories, and empirical evidence and allow insights into economic thinking about economic and human development in earlier decades. Basu (2003) discusses classical topics from an analytical perspective. Rist (2006) contains a review of Western discourses about economic development in the 20th century. Peet and Hartwick (2009) provide an overview of theories of development starting with classical economists and including poststructuralism, postcolonialism, postdevelopmentalism, feminist theories of development, and critical modernism. Khan (2014) is a recent overview of the history of development economics thought. Arndt (1981) discusses how the term 'economic development' has been interpreted over time, and Jomo and Reinert (2005) compare perspectives of different economic schools of thought.

10. See Cardenas and Carpenter (2008) for an overview.

11. See Banerjee and Duflo (2009), Duflo et al. (2007), and Duflo and Kremer (2005) for an overview of the methodology and Labrousse (2016) and Deaton (2010a, 2010b) for a critique.

1.2 What can aspirations contribute?

The approach discussed in this thesis analyses the role of activities and goals people aspire to, and which may sometimes not be in their best interest. As such, it also addresses a personal contribution of individuals to the persistence or overcoming of their living conditions. But this does of course not mean that individuals bear the full responsibility of their aspirations and thereby provoke a life of poverty. Instead, the argument is that a life of poverty and exclusion does not only persist because it limits people's access to credits, insurances, or education, but also because it can impact their aspirations.

Aspiration traps are an additional item on the list of factors that make overcoming poverty harder. Poverty is not an individual failure, nor are low aspirations that contribute to its persistence. Aspirations people develop reflect inequalities of and exclusions from resources, services, privileges, experiences and opportunities, and cannot be looked at in isolation of the social environment that helped to shape them.

For an illustration of the potential importance of aspirations a person holds, take the case of educational achievements. It is well known that the personal economic returns of education are positive in most parts of the world (Glewwe 2014; Montenegro and Patrinos 2013, 2014; Colclough et al. 2010). Investment in education seems to be worthwhile to improve people's living conditions and lifetime incomes. Nonetheless, many people do not attempt to improve their future living conditions and income levels (or that of their children) through investments in their education (Glewwe and Kremer 2006; Graeff-Martins et al. 2006). When viewed through the lenses of a neoclassical model, this is a puzzling finding (Koch et al. 2015).

Possible explanations for this could be a lack of money or personal preference. But given that educational achievements most often correlate with socio-economic background variables, it is not convincing that preferences are the driving force behind observed choices. As long as preferences are assumed to be exogenous, why should they correlate with socio-economic background?

Yet another explanation could be provided by informational constraints. In a field experiment by Jensen (2010) in rural areas of the Dominican Republic, it turned out that schoolboys had wrong, downward-biased ideas about returns to schooling in their region. But even when information about the benefits of schooling was provided to a subgroup of the students, they and their parents did still not

aspire to substantially larger educational attainments.[12]

An explanation proposed in the behavioural literature recurs to cognitive and psychological motives. "Combined with poor education, lack of skills and lack of connections, poor people often lack self confidence", the authors of the World Bank's *Voices of the Poor* project claim (Narayan et al. 2000). They suggest that a life of poverty and exclusion is often associated with a lack of a profound understanding of how pathways to success in their society work. This, in turn, can provoke low self-confidence and feelings of inability and personal failure. As the authors elaborate,

> [p]oor people often feel powerless, trapped in a web of linked deprivation. (...) [They] frequently describe problems with accessing information about government, market and civic activities, particularly outside their communities. Often this is due to geographic isolation, lack of communication and social exclusion. Though many see education as a means to upward mobility, costs and difficult access often deter or prevent them from sending their children to school. (...) Their lack of ability to provide for their families and belong to society leads to low self-confidence and self-worth (p. 235).

Consider the following anecdote by Banerjee and Duflo (2012): a schoolboy in an Indian village is supposed to participate in a test. Referring to his potential performance, a local farmer voices his pessimistic expectations: "[c]hildren from homes like ours..." (p. 91). The researchers also quote a passage from the Indian Public Report on Basic Education in India (PROBE), stating that "[r]emote or backward areas are (...) seen as infertile ground for a teacher's efforts" by many educators and officials. Hoff and Pandey (2014) quote the same report from 1999, saying that teachers often take a disparaging and discouraging attitude towards low-caste students. Such experiences of social exclusion and devaluation can stifle the students' beliefs about their abilities and their aspirations.

Moreover, opportunities people face determine to what extent they can explore their abilities and develop their aspirations - and a life of poverty offers fewer opportunities.[13] Following Joseph Fishkin (2014),

12. In a follow-up study four to six months after the intervention, students in the treatment group reported significantly higher expected earnings as a consequence of complete secondary schooling. However, they had completed only 0.18 years more on average than students in the control group four years after the study. Their likelihood of staying in school after compulsory schooling had been accomplished was only marginally larger than those of their peers, and the difference was not statistically significant by standard benchmarks.

13. A life of severe poverty and deprivation represents an extreme example of a life in which aspirations can become stifled as a consequence of very limited opportunities. At the same time,

> [o]pportunities shape not only the paths we pursue, but also the skills and talents we develop and the goals we formulate. We do not come into the world with fixed preferences, ambitions, or capacities, but develop all of these through processes of interaction with the world and with the opportunities we see before use. Opportunities therefore have profound effects on how each of us develops and who we become (p. 3)

and, as such, on goals and aspirations we set for ourselves.

Many ideas that are central to the recent literature on aspirations and aspiration traps have been discussed in the literature before, but all too often no reference is made to them. Aspiration levels have been used in several other fields of economics before. Let me highlight two central points here. March and Simon (1958) were concerned with the 'optimal ambition problem'U̇nderstanding ambitions as aspirations, goals or targets, they wanted to identify the ambition level that maximises satisfaction. A satisfying choice was defined as the choice that makes decision-makers feel they chose the best option (March and Simon 1958; March 1986).

understood aspirations as discussed the of ambitions that impact outcomes through effort and serve as a standard of assessment of these outcomes at the same time. Quite similar to papers discussed in this chapter, they searched for the optimal ambition level by means of a preference function for achievement that maximises satisfaction (see also March 1986). Neither of the papers discussed in this chapter makes reference to them.

The idea that our preferences and aspirations adapt to opportunities is of course not new. Amartya Sen has pioneered economic research of such adaptive processes, notably that of the adaptation of disadvantaged people to poor living conditions:

> The underdog learns to bear the burden so well that he or she overlooks the burden itself. Discontent is replaced by acceptance, hopeless rebellion by conformist quiet, and - most relevantly in the present context - suffering and anger by cheerful endurance. (...) [P]eople learn to survive to adjust to the existing horrors by the sheer necessity of uneventful survival. (Sen 1984, pp. 308-309)

From this perspective, attributing differences in behaviour, choices, and effort to differences in individual (exogenous) preferences becomes unconvincing:

Fishkin (2014) and (Dalton et al. 2016) emphasise that opportunities people face shape abilities and aspirations indepedently of a person's specific living conditions, and often in unnoticed ways.

preferences, goals, and beliefs about our abilities are endogenous and a reflection of earlier opportunities. Fishkin's take on this process is worth being quoted at length:

> [I]t is not true that any part of our talents, or for that matter our efforts, can be isolated from the opportunities and experiences the world has afforded us. Instead, everything we do is the product of layer upon layer of interaction between person and environment - between our selves, our efforts, and our opportunities - that in a sedimentary way, over time, build each of us into the person we become. (Fishkin 2014, pp. 7-8)

In this spirit, the approach discussed in this thesis seeks to contribute to an understanding of how individual aspirations develop within specific social environments that provide different sets of opportunities to different people. It rejects the view that aspirations are exogenous, and instead posits that they are continuously influenced by social interactions and opportunities facing the individual.

A distinction introduced by D'Ippoliti (2011) in the context of gender differences is useful here. He distinguishes two approaches to the understanding of differences between people: heterogeneity and diversity. Heterogeneity is the standard approach in neoclassical economics and refers to differences economic theory assumes to exist but in the understanding and analysis of which it is not usually interested. In contrast, diversity refers to differences that are understood as the product of social interactions within given social environments and the analysis of which is relevant to economic research. I follow this distinction in that for an economic theory of aspirations to be meaningful, it should understand aspirations as diverse - in the sense that differences in individual aspirations are produced by society - rather than heterogeneous, that is, as exogenous and independent from society.

Under the influence of societal influences, opportunities and experiences, people develop what anthropologist Arjun Appadurai has called "capacity to aspire" (Appadurai 2004). This capacity refers to a person's ability to build aspirations that serve their interests best, given their personal and social resources. In a simultaneous assessment of objective opportunities, personal abilities, preferences, and societal structures, people must decide which goals are attainable, appropriate and beneficial for them. Appadurai, whose contribution decisively stimulated the debate on aspirations as an origin of poverty traps in economics, posits that a life of poverty offers fewer opportunities to train this capacity. As a consequence, poor people easily forego beneficial options in terms of education, investments, or

occupations because they do not consider these options for themselves and have not aspired to them.

Experiences of poverty and exclusion on the one hand and aspirations on the other hand co-evolve over time. Aspirations, preferences, expectations and beliefs about our abilities reflect earlier opportunities as much as they shape future ones.[14] To use Fishkin (2014)'s words again, specific options are not attainable when they do not appear in "the range of paths [people see] open before them" (p. 9). As will be discussed throughout this thesis, discrimination, hopelessness, low self-confidence, experience, social hierarchies, the absence of role models and a lack of (enough) information are only a few of many aspects that influence achievements, activities and goals people can aspire to.

This is not to imply that economic constraints are *not* a primary influence of achievements and goals a person can accomplish. It is without doubt that poor people in any place of the world face countless material constraints in their every-day lives. But sometimes, it seems that there are chances people may use - but then don't. From the external observer's perspective, such a situation may read like "Why do these parents not just invest in their child's education?" In a situation in which a certain level of schooling is a realistic endeavour and would make the child's life go better, this behaviour seems irrational. But aspirations are no well-informed goals built by agents conforming to the principles of rational choice theory. In the real world, aspirations are the outcome of complex social and cognitive processes and subject to innumerable influences that may drive aspirations upwards or downwards.

This is well illustrated by the case of an eleven-year-old boy from a low-income housing development in the United States.[15] His outlook on the future and his aspirations read like this: "I ain't goin' to college. Who wants to go to college? I'd just end up getting' [sic!] a shitty job anyway" (MacLeod 1995, p. 3). Jay MacLeod, who accompanied and observed young students from this neighbourhood for two years, remembers that he was "surprised by the modesty of their aspirations [that]

14. I will distinguish these concepts at the beginning of chapter 2, page 40.

15. This thesis, as well as most of the recent aspirations literature in economics, is concerned with aspirations in development contexts. This is not to say that aspiration traps cannot occur in advanced economies, but the contexts and mechanisms contributing to their occurrence are certainly different. I am using this example here to illustrate the particular point that a pessimistic outlook on the future may hold individuals back from embarking on the intent. I do not suggest that the situation described by MacLeod is exactly comparable to a situation that may have occurred in a developing country. The primary difference I see is that the severity of economic constraints differs strongly between both contexts. Aspiration traps in advanced societies would certainly deserve scholarly attention, too.

(...) did not even cut across class lines" (p. 4). This has severe consequences, as people with low aspirations, he interprets, "disqualify themselves from attaining the American definition of success (...) *before embarking on the quest*" (p. 4, italics added).

Again, such behaviour make look irrational through the lenses of mainstream economic theory. As MacLeod writes about another boy in his study,

> [t]o many outsiders, Freddie's depressed aspirations are either an indication of laziness or a realistic assessment of his natural assets and attributes (or both). A more sympathetic or penetrating observer would cite the insularity of the project and the limited horizons of its youth as reasons for Freddie's outlook. But to an insider, one who has come of age in Clarendon Heights or at least has access to the thoughts and feelings of those who have, the situation is not so simple. (...) These boys provide a poignant account of what the social structure looks like from the bottom. (...) We shall come to see Freddie's outlook not as incomprehensible self-defeatism, but as a perceptive response to the plight in which he finds himself (p. 6).

Adopting an aspirations perspective provides the researcher with the opportunity to try to investigate motives and drivers of behaviour from an individual's perspective. From the perspective of a rational choice model, it may look irrational that Freddie does not attempt to achieve social mobility by educating himself. But from his subjective perspective, he has reasons and motives to behave as he does. That his aspirations may seem natural and without alternative to him does of course not guarantee that they serve his interest best. This dilemma makes research on endogenous aspirations appealing and important at the same time.

This perspective on subjective aspirations illustrates, again, that research on aspirations and aspiration traps is not intended to blame individuals for their poverty or for 'achieving too little', nor to insinuate that they are themselves responsible of their living conditions. Writing about aspiration traps is "not an assertion about *individuals* who are poor; it is a statement about the condition of poverty itself" (Ray 2002, p. 1, italics in original). Research on aspiration traps clearly differentiates itself from earlier literatures such as the Culture of Poverty discourse. It does not promote the idea of traditional cultures of poverty that presumably held groups or nations back from development through apathy, cultural inertia, laziness or backward preferences.[16]

16. See Douglas (2004) for a summary and critique of earlier approaches and Chang (2007) for a discussion of the question of whether some cultures are incapable of economic development. The view

Instead, it seeks to improve the understanding of behaviour in the profession. A few years ago, Esther Duflo (2006) proposed that mainstream economic theory may not be helpful to understand human behaviour under conditions of poverty, because poverty might change how people behave and make decisions. She claimed that economists needed to develop a corresponding theory. Again, the need of such a theory did not stem from the premise that poor people are different, but because a life of poverty impacts human behaviour and decision-making.

As mentioned before, not all elements of new theories developed against this background are new. Even though most authors make no explicit reference to Amartya Sen's work on adaptive preferences, adaptation figures prominently in the recently developed literature on aspirations. The same holds true for Jon (Elster 1982)'s contributions on adaptive preferences and Herbert Simon's work on aspiration levels (Simon 1955; 1957, and many other works), to name just a few cases. Instead, economists have mainly incorporated aspirations in their exploration of 'non-standard behaviour'.[17]

Utility maximisation models have embraced the idea of endogenous, socially built aspirations. Debraj Ray, one of the first to pick up Appadurai's ideas, defines aspirations as the "social grounding of individual desires" (Ray 2006, p. 409).[18] Preferences, desires and standards of behaviour are introduced as social constructs and as such depend to a certain extent on individual living conditions, experiences, cultural and social contexts, and all kinds of social conditions. Choices about schooling, professions, hobbies and many other minor or major decisions of life are now studied as social decisions. Despite all differences authors may have when it comes to further details, it is clear that the concept of aspirations challenges the standard view of the individual in neoclassical economics.

Before ending this introduction, a clarification is in order. Although aspirations are socially constructed and determined by social conditions, I do not intent to paint a picture in which the development of aspirations is a totally deterministic

that poor living conditions impact cognitive and psychological processes is prevalent in behavioural economics (see for instance Mani et al. 2013, Haushofer and Fehr 2014 and Mullainathan and Shafir 2013).

17. The term 'non-standard' is used by mainstream behavioural economists (see for instance DellaVigna 2009 and Bernheim and Rangel 2007) to refer to preferences, beliefs, or processes of decision-making that do not adhere to the principles of neoclassical theory, which is understood as standard. The analysis of aspirations against this theoretical background is the topic of chapters 3 and 4.

18. This is of course no new idea, either. In a later paper with Garance Génicot (discussed in section 2.3), Ray sees close connections with earlier work on status-seeking and conscpicuous consumption such as Veblen (1899), Duesenberry (1949), and Clark and Oswald (1996) and Corneo and Jeanne (1997).

process. The social formation of endogenous aspirations does not take away room for surprises, individual decision-making and agency. As Basu (2003, p. 18, italics in original) remarks, a trap is a situation "one *can* get out of". Moreover, though often understood as downward spirals, aspiration traps do not necessarily qualify as processes of "circular causation" or "vicious circles" in Myrdal (1944)'s sense, where a change in some exogenous factor is required to break the downward spiral (Hirschman 2013). Too strict and sequential an understanding of aspiration traps would indeed deny any agency, freedom of mind, possibilities of unintended consequences of whosoever's action, the role of surprises and developments which individual agents did not foresee. Therefore I am inclined to regard the aspiration traps approach as a possibilist approach in a Hirschmanian sense. As such, it sustains the "right of a non-projected future as one of the truly inalienable rights of every person and nation [and sets] the stage for conceptions of change to which the inventiveness of history and a 'passion for the possible' are admitted as viable agents" (p. 30).

Chapter 2

Models

> Decision processes, like all other aspects of economic institutions, exist inside human heads. They are subject to change with every change in what human beings know, and with every change in their means of calculation.
>
> Herbert A. Simon (1982, p. 146)

The analysis of individual aspirations in the context of poverty and inequalities in economics is a recent and rather small field of research.[1] This chapter is dedicated to the presentation of recent theoretical contributions. Two of the three contributions that received the largest attention and boosted the interest in endogenous aspirations have proposed analytical models. To present the current state of the debate, this chapter reviews these models.

Before this, I briefly summarise Debraj Ray's conceptual work on the interrelation of aspirations, poverty and inequality, which has transported the idea of aspiration traps into economics and development studies, in section 2.2. Section 2.3 discusses a formal model developed by Ray in joint work with Garance Génicot that formalises and extends these ideas. Section 2.4 presents another formal model by Patricio Dalton, Sayantan Ghosal and Anandi Mani (2016). They model

1. I am referring to the recent development-specific discourse about aspiration traps. Aspirations have been used in several other fields of economics before. In Simon's theory of satisficing decision-making behaviour (Simon 1957), aspiration levels serve as the benchmark against which decision alternatives are evaluated. March and Simon (1958) discussed the 'optimal ambition problem' of ambitions that impact outcomes through effort, and that serve as a standard of assessment of these outcomes at the same time. (see also March 1986). Aspiration adaptation theory (Sauermann and Selten 1962; Selten 1998) uses aspirations for modelling non-optimising boundedly rational behaviour. As mentioned earlier, status aspirations have been analysed in research on status-seeking and conspicuous consumption (Veblen 1899; Duesenberry 1949; Clark and Oswald 1996) and Corneo and Jeanne (1997). Aspiration levels have also been used to explain decision-making in game-theoretical settings (Karandikar et al. 1998; Bendor et al. 2001b, 2001a) and in models of reinforcement learning (Börgers and Sarin 2000).

the occurrence of a psychological aspiration trap of an isolated agent who fails to see how aspirations, efforts and achievements co-evolve. Section 2.5 reports on several other models along similar lines that explore more specific applications of aspirations.

Given that all these models are utility-maximisation models, it is useful to briefly discuss how aspirations can fit into a utility-maximisation framework and, notably, to clarify how aspirations are different from preferences and expectations. In a utility-maximisation framework, agents make optimal choices given their preferences over certain outcomes and their constraints.[2] Beliefs about ends-means relationships connect the agent's preferences with their actions: they contain the agent's beliefs about what needs to be done to fulfil their preferences. Expectations are part of these beliefs: which results does the individual expect from which action or choice?[3]

In a utility framework, preferences, beliefs, expectations, and constraints could all be understood as determinants of aspirations (but aspirations are not equivalent to any of these concepts). Aspirations are forward-looking goals or targets[4] that people produce in the face of their preferences, constraints, beliefs, and expectations. For example, a preference for specific activities may translate into corresponding occupational aspirations under the condition that the individual beliefs that reaching this goal is possible under her given constraints, and thus expects to fulfil her aspiration. But it may also be the case that a person considers - on the basis of her beliefs and expectations - her preferred occupation to be unattainable and then aspires to her second preferred occupation. The latter case illustrates that preferences and aspirations are not equivalents.[5]

Expectations are not equal to aspirations, either. Expectations refer to beliefs about ends-means relationships - in expected utility frameworks, they are simple probabilities -, whereas an aspiration is a goal a person pursues based upon these ends-means relationships, among other things. For example, a person who enters university to study law may expect to be able to work as a lawyer after successful

2. I discuss the underlying assumptions in chapter 4, section 4.2. For the moment, they are not central.

3. In expected utility theory, expectations attach different probabilities to different potential outcomes (Neumann and Morgenstern 1953). This aspect has not been in the focus of models on aspiration traps.

4. See the introductory chapter, pages 14-15.

5. This is a very simple example with the primary purpose of illustrating that aspirations are not equivalent to any of the terms in a utility-maximisation framework. The relation between preferences and aspirations is much more complex, as chapter 3, section 3.1 and chapter 10 will corroborate.

completion. This does not mean that this person automatically aspires to this achievement: she may not believe in her personal capacities to complete the degree successfully; she may develop preferences for a different occupation; or she may decide that the required effort is not worthwhile. Expectations are beliefs of the type 'if, then', whereas aspirations are goals a person - consciously or unconsciously - decides to pursue.

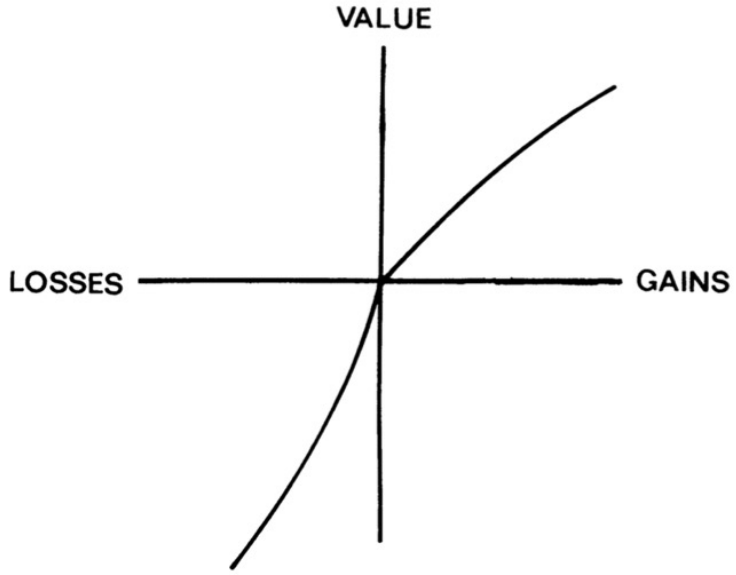
Against this background, to incorporate aspirations in a utility framework, researchers must find a way to do so other than simply equating aspirations with preferences or expectations.[6] The two models discussed with more detail in this chapter have integrated aspirations in utility frameworks by using aspirations as reference points in their utility functions. Therefore section 2.1 briefly introduces the basic features of reference point models.

2.1 Reference point models

Reference point models go back to Daniel Kahneman and Amos Tversky's prospect theory (Kahneman and Tversky 1979). Prospect theory was developed upon the notion that neoclassical expected utility theory was unable to capture an important part of observed decision-making behaviour, and proposes an alternative model of decision-making under risk. A key proposition of prospect theory is that individual utility is determined not only by (absolute) levels of income or wealth, but also relative to a reference point. For example, when a person enters a new job and is offered a salary, she will assess the level of the salary in absolute terms (level). But her judgement will also be influenced by a reference point, for instance her previous income: if the proposed salary represents a loss in comparison to the current one, the assessment will be different from a situation in which it represents a gain. More generally put, the value a decision-maker attaches to a specific option or situation is derived from a reference point (a level) and the magnitude of the deviation from this reference point.

6. I am not intending to say that utility frameworks are necessarily the best way to study aspirations. Utility frameworks have been criticised on many grounds. Many authors claim that the axioms of rational behaviour are theoretically appealing, but empirically wrong (see for instance Selten 2001). Bowles (1998) questions the exogeneity of preferences. Basu (2003) criticises the assumption of self-interested rationality as well as the absence of social norms as a main driver of human behaviour. The theory of bounded rationality (Simon 1956, 1956; see Selten 2001 for an overview) criticises the framework upon the notion that real humans do not have the cognitive abilities that would be required for the behaviour utility-maximisation models describe. Selten (1991) presents an entertaining overview of criticism from different perspectives. The analysis of aspirations within this framework faces its own problems, as will be discussed at the end of this chapter.

Figure 2.1: Kahneman and Tversky's value function



Source: Kahneman and Tversky (1979, p. 279, fig. 3). Reprinted with permission from the Econometric Society.

Kahneman and Tversky expressed this idea in a value function that is defined for changes from a specific level, referred to as the reference point. The function v is normally concave above the wealth level serving as reference point ($v'' < 0$, for $x > 0$) and convex below it ($v'' > 0$, for $x < 0$), where x is the reference point (Kahneman and Tversky 1979, p. 278). This form implies two things. First, the marginal assessment of both gains and losses decreases with the size of the change. Small changes tend to be overrated, while huge changes appear relatively smaller. This is referred to as diminishing sensitivity. Second, as the function is assumed to be steeper for losses than for gains, gains are underrated in comparison to losses. The idea is that people suffer more from a loss than they would enjoy a gain of the same magnitude.[7] Figure 2.1 shows the typical S-shape of a value function fulfilling these characteristics.[8]

In the original model, the reference point is the status quo, for example current income. Later models have proposed a variety of other reference points such

7. This second feature is less relevant for the discussion in this chapter. Models studying aspirations have primarily focussed on the idea of a reference point as such, rather than on the idea that losses in comparison to this reference point are rated differently than gains. I will therefore not discuss the idea of loss aversion further here.

8. Later functions and graphs have emphasised the S-shape more than the original graph, which focussed on the different degrees of steepness above and below the reference point.

as aspirations as "reference points for life goals" (Dalton et al. 2016, p. 10), probabilistic beliefs about outcomes from the recent past (Köszegi 2006; Köszegi and Rabin 2006, 2007) or the behaviour of others (Bogliacino and Ortoleva 2015). The idea of a reference point as such may be applied to virtually anything and can easily embrace social phenomena (Davis 2011).

2.2 Debraj Ray: aspiration windows and aspiration gaps

The first prominent papers on aspirations in the context of development, poverty and inequality that took up the idea of aspirations as an origin of poverty traps came from Debraj Ray (2002, 2006, 2010). His earliest contribution (Ray 2002) was based on a presentation at the World Bank Conference on Culture and Development in June 2002, where Ray commented on a presentation by Arjun Appadurai, which would become Appadurai's later book chapter (Appadurai 2004).[9] Ray's presentation as well as the the book chapter resulting from it (Ray 2006) did not yet contain a proper model, but many reflections that laid the ground for later work. Ray (2010) adds some additional considerations.

Ray primarily understands aspirations as "the social grounding of individual desires" (Ray 2006, p. 409): individual desires, preferences and behaviour are not determined in isolation but influenced by social environments and interactions. As opposed to the assumption of isolated and exogenous preferences, he assumes that desires and standards of behaviour are shaped by experience and one's social environment. Preference formation can be (and likely is) influenced by group dynamics, social interactions, social hierarchies, space, and time.

Accordingly, our cognitive neighbourhood consists of people who are near and similar to us: we base our aspirations on the living conditions, achievements and setbacks of those who are spatially, economically and socially close. He calls this cognitive neighbourhood 'aspiration window'. Our aspiration window only includes similar individuals because these can show us which accomplishments a person like us can achieve and serve us as role models. Including many such people in one's aspiration formation is "like running an experiment with better controls, and therefore has better content in informing (...) decisions - and, by extension, (...)

9. Anthropologist Appadurai stimulated the debate on aspirations as an origin of poverty traps in economics through this talk and the book chapter. His work will be discussed in detail in chapter 5, section 5.1.

aspirations" (Ray 2006, p. 411). This process is multidimensional and complex, since we compare to people of our age, our origin, our marital status, occupational category and so forth.[10] Such similarities are only a necessary but no sufficient condition: the decisive criterion for the inclusion of a person in one's aspiration window is the degree of perceived similarity.

Similarity can be approached from different angles. Peers and near-peers we are frequently in touch with are likely to enter our aspiration window. More generally, people tend to compare to those who are economically and socially close, for instance to neighbours. Spatial and communicational separations can play a decisive role: we may include people we physically observe but exclude those whom we are separated from, for instance those living in different parts of the city or the country. The precise determinants of one's aspiration window will be "highly society-specific" (Ray 2002, p. 2). Furthermore, Ray argues that the greater the degree of mobility an individual perceives, the larger the aspiration window, since social mobility allows for more diverse a set of potential role models.

For the analysis of aspiration formation, Ray introduces the idea of 'aspiration gaps', defined as "the difference between the standard of living that's aspired to and the standard of living that one already has"; or, in other words, "a measure of how far one wants to go" (Ray 2006, p. 412). In the most extreme cases, there can be huge gaps (1) or no gap (0). No further explanation is made explicit about the determinants of the gap, but Ray's explanations imply that the size of the aspiration window is decisive: those who are inside my aspiration window determine the gap as the distance between their status and mine.

The aspiration gap is then used to explain how aspirations affect behaviour. In general, the existence of an aspiration gap will create an impetus to close it. The investment required for this process incurs costs on the agent. When the required investment and effort are large, they will likely discourage the individual from attempting to close the gap: they might perceive that even large efforts will not allow them to catch up. Very low gaps, in turn, might make agents think that their effort is not worthwhile the little improvement they expect.

Note that Ray's understanding diverges from the definition given in the introductory chapter:[11] as defined their, aspirations only include those goals a person

10. It might well be that a person informs her aspirations according to her colleagues who are similar in education, income, age and other factors. But it might just as well be that a person does not compare to colleagues because the job is the only thing they have in common, while age, ethnicity and socio-cultural background are different.

11. See pages 14-15.

Table 2.1: Aspiration windows, aspiration gaps and inequality in poor societies

Level of inequality	Aspiration window	Aspiration gap	Behavioural implication
high inequality (two equilibria)	rich people included	large	frustration, aspiration failure
	rich people excluded	small	aspiration failure through fatalism
low equality	contains mainly people of same levels	small	
medium inequality, reasonable connectedness	contains people with reasonable distance to oneself	reasonable distance	productive aspirations

Source: own table, based on Ray (2006)

can effectively see herself achieving before her mind's eye, that is, a goal she believes she can reach and that is not unthinkable. In this understanding, people can become discouraged while they pursue an aspiration, but at an earlier point, the aspiration represented a goal the person believed she could achieve. In contrast, mere wishes would not have qualified as an aspiration.

In contrast, in Ray's understanding, it seems that any standard of living an individual is exposed to may become an aspiration, however unrealistic and unattainable it may be. To reconcile both understandings, we would have to assume that Ray's agents believe they can reach any aspiration level they build under the influence of their social environment, even though it is implausible.

In the next step, Ray examines aspiration windows and gaps under different levels of inequality in a society with two groups (rich and poor). Table 2.1 summarises his ideas. All these cases are conceptualised in the context of a population that is predominantly poor.[12] In rather polarised or stratified societies, there are two possible outcomes. The first one is that the poor may include the rich in their aspiration window (they see them and are aware of their living conditions), the second one is that the rich are excluded. When the rich are included in the aspiration window of the poor, the poor might not expect to catch up because their aspiration gap is too huge, and they end up discouraged or frustrated. When the rich are

12. Ray does not rule out the applicability of these to different contexts, quite to the contrary, but he does not pursue these ideas further and primarily refers to socially determined aspirations and poverty.

excluded from the poor's aspiration window, no huge gap would be perceived. The latter case is associated by Ray with a multi-dimensionally stratified society, for instance through discrimination, slavery or a caste system, where different groups live so isolated lives that influences of the rich on the aspiration windows of the poor are hardly imaginable.

Not only inequality and polarisation can provoke apathy and fatalism: so can equality. Ray argues that in a society in which all people are equally or similarly poor, there are no inspiring and incentivising role models in people's aspiration windows, and too small aspiration gaps. Therefore, when combined with poverty and low levels of income, equality may depress aspirations.

To sum up, aspiration gaps can remain small and provide little inspiration in two cases: "the experiences of others may have little effect on us *either* because they lie outside our aspirations window, or, even they do, their living standards (which form our aspirations) are far away from ours" (Ray 2006, p. 412, italics in original). These cases are contrasted with a "reasonably connected" society, where people have aspiration windows that are large enough to provide incentives, but at the same time secure the right balance in order not to discourage aspirations through too large gaps. Ray suggests that for productive aspirations, it is crucial to find the right level of inequality: "a society in which there is a chain of *observed, local* steps between the poorest and the richest will be more vibrant" (Ray 2002, p. 2, italics in original).

It is important to highlight two points. First, in Ray's understanding, individuals can be inside our aspiration window even though their living standards are far away from ours. This seems contradictory, since similarity to our role models and peers on whose aspirations and experiences we base our aspirations was mentioned as a crucial factor earlier. Two mechanisms may explain this. Either we consider these individuals similar to us because we share some common feature - ethnic origin, providence from the same neighbourhood or community, or the like -, but they achieved social mobility, which is why today their living conditions are very distinct. Or we have never been similar, but they are included in our aspiration window because of physical proximity (consider people working as nannies, housemaids, caretakers or drivers for rich households or slums in direct neighbourhoods to luxury apartment buildings).

This feature of Ray's model has important implications because of a second feature: as mentioned above, aspiration gaps are automatically derived from the aspiration window. Understood in this way, aspirations are not distinguished from

pure desires and wishes. Every difference we observe is automatically converted into an aspiration, which, however, can be discouraging.[13] In contrast, Ray differentiates aspirations in general and "aspirations [the agent] can act upon" (p. 4). There is potential for confusion in this use of the term.[14]

In his 2010 paper, Ray explores the relation of aspirations and inequality dynamics. Based upon Albert O. Hirschman's tunnel parable (Hirschman and Rothschild 1973), he suggests that inequality dynamics shape aspirations for the future in a non-linear way. In the tunnel parable, Hirschman tells the story of car drivers who are stuck in a traffic jam. Drivers in one lane at first become optimistic with regards to their expected progress when drivers in the neighbouring lane start moving on. But after a while, they are still standing and waiting, while the neighbouring lane goes faster and faster. Hirschman proposes that in such a situation, the drivers' initial optimism turns into frustration. This frustration may be more severe than the initial situation when all drivers were stuck.

Hirschman used the tunnel parable to explain the observation that people do not always protest immediately when inequality increases. Protest may also occur after a while, when inequality has turned out to last rather than to announce improving living conditions for everybody. Transferring this parable to the development of aspirations, Ray argues that aspirations can first be encouraged by increasing inequality, but stifled when it grows for too long time.

People might expect to be better off soon because they observe that other people around them are able to improve their living conditions. Growth is assumed to be uneven, just like the progress of the drivers in different lanes. As long as people expect to benefit sooner or later, uneven growth and increasing inequality may encourage their expectations and aspirations. However, these will be discouraged when nothing changes for them after a while. People may feel that their aspirations have been betrayed when non-inclusive economic growth excludes them for a longer while. Borrowing from this parable, Ray claims that there is no linear effect of inequality and growth on aspirations, but rather a complex and dynamic interplay. Chapter 8 will come back to Hirschman's tunnel effect and test Ray's proposition empirically in a cross-section of countries.

Ray's work as summarised so far can be seen as the foundations for his sub-

13. Ray writes about this case that "aspirations do exist, but the feeling is widespread that such aspirations are largely unreachable" (Ray 2002, p. 5). I have already pointed out above that an aspiration that is considered unreachable would not qualify as an aspiration as defined by other authors (Bernard and Taffesse 2014) and in this thesis.

14. The formalisation of a part of these ideas in section 2.3 will be less ambiguous.

sequent joint work with Garance Génicot. In his 2010 article, he wrote that "economists (...) are nowhere close to a theory of socially defined aspirations and for the double-edged way in which they might influence behavior - either constructively, via a profitable chain of investment and reward, or destructively, via frustration and violent conflict" (Ray 2010, p. 46). The formal work reported in the next section constitutes an important advancement since then.

2.3 Aspirations, inequality and growth in a formal model

Already the first versions of Ray's work implied that neither inequality nor poverty alone are decisive for aspirations and behaviour. In a formal model in joint work with Garance Génicot (Génicot and Ray, 2015b; GR hereafter), Ray studies a model that focuses on how society-wide outcomes shape aspirations, which in turn impact societal outcomes through individual decisions. Their model investigates how aspiration are built under social influences, how aspirations influence behaviour, and how aggregated individual behaviour shapes society-wide outcomes. For an unambiguous review of the model, I will present its key features.[15]

In GR's model, an individual's utility function is defined as

$$u(c) + w_0(z) + w_1(e), \tag{2.1}$$

where payoffs are derived from personal consumption ($u(c)$), the wealth of their children ($w_0(z)$), and from the degree to which the children's wealth exceeds parental aspirations ($w_1(e)$). This excess e is defined as $e = \max\{z-a, 0\}$, capturing the idea that parents enjoy additional gratification when their income aspirations for their children are exceeded. In other words, the aspiration level a is the reference point for parental utility.

GR propose that parental aspiration levels are determined by their own wealth y and the society-wide distribution of wealth in the current generation F. Expressed in a general function form,

$$a = \Psi(y, F). \tag{2.2}$$

A previous version of the paper (Génicot and Ray 2015b) discussed several particu-

15. Please refer to the original paper for a complete version including proofs.

lar processes of aspiration formation. For example, consider the case of stratified aspirations where the individual's membership in a quantile i determines aspirations:

$$\Psi(y, F) = a_i, \tag{2.3}$$

a_i being a scalar representing the aspiration level in each quantile; or consider the case of upward-looking aspirations

$$\Psi(y, F) = \frac{\int_y^\infty x dF(x)}{1 - F(y)}, \tag{2.4}$$

where aspirations are built as the conditional mean of all incomes that are higher than oneself's (pp. 5-6). Note that this formulation roughly captures the idea of aspiration windows and gaps. How exactly inequality and growth influence specific aspirations and how exactly aspirations are built is not in the focus of this model.[16]

The authors go on to embed their aspirations formation in a standard growth model to study the impact on the overall wealth distribution. At a given moment t, an individual divides her wealth y_t between consumption c_t and bequest for the future k_t, such that

$$y_t = c_t + k_t. \tag{2.5}$$

The latter parameter increases the wealth of the next generation:

$$y_{t+1} = f(k_t). \tag{2.6}$$

The utility function thus becomes

$$u(y_t - k(z)) + w_0(z) + w_1(max\{z - a_t, 0\}). \tag{2.7}$$

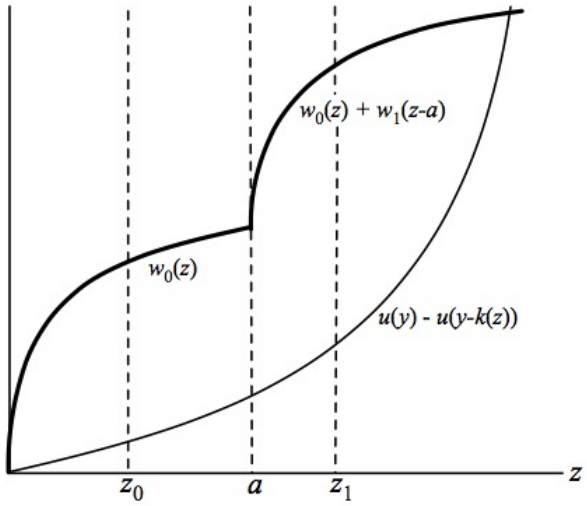
In words, an individual's utility depends on her wealth remaining after having saved for her children, the children's wealth, and the degree to which aspirations for children's wealth are exceeded.

Children's wealth is expressed as $z_t = y_{t+1}$. Every individual has a policy ϕ about how much to contribute to their children's wealth z, given their aspirations for their children a_t and their wealth y_t, such that $z_t = \phi(y_t, a_t)$.[17] The overall distribution of wealth in the next generation, F_{t+1}, is determined by F_t and ϕ in

16. The next chapter discusses possible mechanisms that can account for the link between a, y and F.

17. For each $z \geq 0$.

Figure 2.2: The benefit from future wealth



(A) Costs and Benefits

Source: Génicot and Ray (2015a, p. 7, fig. 2(A)). Reprinted with permission from the authors.

such a way that

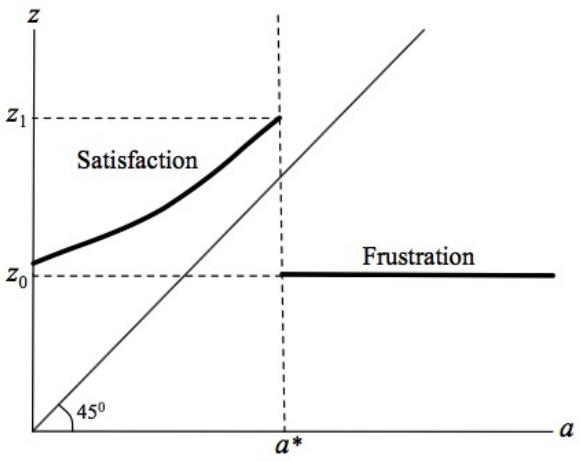
$$F_{t+1}(z) = \text{Prob}_t\{y|\phi(y, \Psi(y, F_t)) \leq z\}, \tag{2.8}$$

where Prob_t is defined as the probability measure induced by the distribution function F. Recall that aspirations were given from an individual's wealth level and the overall wealth distribution in a society (equation 2.3), such that $\phi(y_t, a_t)$ can be rewritten as $\phi(y, \Psi(y, F_t))$. Equations 2.7 and 2.8 then represent the two conditions of an equilibrium for a sequence of wealth distributions F_t and a policy ϕ that follow from an initial distribution F_0.

Figure 2.2 transports the intuition of this maximisation problem and the benefit accruing from future wealth. If the next generation's wealth falls short of attaining aspiration level a, benefit from it is derived only from its actual value.[18] Where $z > a$, there is an additional benefit from the excess of parental aspirations. Reaching such a benefit level requires higher sacrifices in terms of current utility (own consumption), represented by the cost curve $u(y) - u(y - k(z))$. There can be two local solutions to the maximisation problem: one on the left of a, where aspirations are said to be frustrated, and one on the right, where they are satisfied. One of them will constitute the unique optimum solution.

18. Recall that function 2.1 had two components related to z, the first one related to the actual value of it and the second one to the degree to which expectations were exceeded.

Figure 2.3: Satisfaction and frustration from aspirations at a given level of initial wealth



Source: Génicot and Ray (2015a, p. 9, fig. 3). Reprinted with permission from the authors.

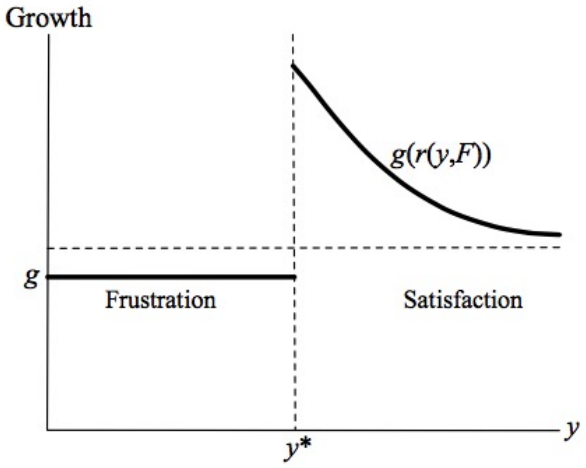
The authors continue to investigate under which conditions which of the two local solutions will be the optimal one.[19] They do so by comparing different aspiration levels at a fixed level of initial wealth. To start with, aspirations will be satisfied when they are close to zero. When aspirations grow, this will first incentivise people to save more (for their children's wealth z). But after a point, aspirations will exceed the level of accomplished wealth z. When this happens and aspirations are frustrated, this link between aspirations and chosen wealth is cut, the latter becoming insensitive to aspirations.

Figure 2.3 visualises this idea. Below a threshold level of aspirations a^*, aspirations and chosen wealth z will grow together, and individual aspirations are satisfied. However, for each level of initial wealth, there is a threshold beyond which aspirations will turn to frustration, because children's wealth cannot keep pace. The lesson learned here is that high aspirations can discourage individual savings, while rather moderate aspirations can be more beneficial. This reflects Ray's idea discussed in the previous section and makes the point that aspirations are not simply the larger, the better (that is, the more beneficial).

The question of which of the local optima from figure 2.2 will be the optimal solution can as well be analysed by comparing different wealth levels at a fixed level of aspirations. Due to the endogenous nature of aspirations and their link with

19. See p. 8 and Proposition 2 on p. 9 of the original paper for a technical justification.

Figure 2.4: Satisfaction and frustration at a given aspiration level and different growth rates of wealth



Source: Génicot and Ray (2015a, p. 12, fig. 4). Reprinted with permission from the authors.

wealth levels, changes of initial wealth will always entail changes of aspirations. Aware of this restriction, the authors choose to investigate how the optimally chosen growth rate of wealth varies with different levels of initial wealth. They use a standard growth model to study the relationship between initial wealth levels and subsequent growth rates of wealth (the growth incidence curve) and draw the conclusion that there is as well a unique threshold of income below which a given level of aspirations is discouraging (the wealth level is too low) and after which it is encouraging at a decreasing rate. Figure 2.4 captures this intuition.

For a formalisation of this idea, they write the individual maximisation problem as a utility function with constant elasticities:

$$\left(y - \frac{z}{\rho}\right)^{1-\sigma} + \delta\left[z^{1-\sigma} + \pi(\max\{z-a,0\})^{1-\sigma}\right] \tag{2.9}$$

The components of the utility function are assumed to have constant elasticity, such that $u(c) = c^{1-\sigma}$, $w_0(z) = \delta z^{1-\sigma}$ and $w_1(e_i = \delta\pi e^{1-\sigma})$, where $\sigma \in (0,1)$, $\delta > 0$ is a measure of discounting, and $\pi > 0$ measures the additional value of exceeding one's aspiration level. The authors then introduce the idea of an aspirations ratio r, defined as $r \equiv y/a$, thus as the ratio of initial wealth to aspirations. They further introduce the idea of a growth factor $g \equiv z/y$. Introducing r and g into equation 2.9,

the maximisation problem becomes

$$\left(1-\frac{g}{\rho}\right)^{1-\sigma}+\delta\left[g^{1-\sigma}+\pi(\max\{g-\frac{1}{r},0\})^{1-\sigma}\right]. \tag{2.10}$$

There are two scenarios: one where aspirations are satisfied, and another in which they are frustrated. This yields two different solutions to the maximisation problem. In the case where aspirations are satisfied, we have $g \geq \frac{1}{r}$ (because this implies $a/y \geq z/y$). The authors show that a growth factor corresponding to this condition has a unique solution and is strictly decreasing in r.[20] When aspirations are in the range of frustration, the result will be a growth factor $\underline{g}$, representing the "frustration level" (Génicot and Ray 2015a, p. 11).

Summing up, for all wealth-aspiration pairs, there is a threshold r^* below which continuation wealth grows with the factor $\underline{g}$, and above which is growth by $g(r)$. The frustration growth rate $\underline{g}$ does not necessarily imply a negative growth rate; it depends on other parameters of a specific situation. However, it will be below $g(r)$.

In the rest of their paper, GR analyse how aspirations and income evolve jointly, shedding light on a variety of specific issues. Not all of them can be discussed here at length. One interesting implication of their model is that perfect equality of wealth cannot result because of the ways in which aspirations are defined. Aspirations are range-bound, that is, they lie in quite narrow ranges around income levels (section 4.1 in their paper). The mechanism is that when incomes converge, aspiration dynamics will push them apart again, some wealth levels downwards and others upwards. A steady state can only come about with an unequal distribution of incomes. In words of the authors, the "local convexity of aspirations-based utility (around the aspirations level) precludes convergence" (p. 13). Additionally, they discuss implications of stationary distributions of incomes, which they understand as social mobility dynamics. In contrast to steady state dynamics where a wealth distribution is replicated in each period, the wealth of different dynasties may grow at different rates due to endogenous aspirations, provoking social mobility. The authors show that such dynamics require not only inequality of income but bimodality (see section 4.2 in their paper).

Rather than going into the technicalities of this discussion, I will concentrate on the aspect which is of primary interest for this thesis: the relation between growth, inequality and aspirations (section 4.3 in their paper). I will discuss the

20. The solution is provided by the solution to $\left(1-\frac{g(r)}{\rho}\right)^{-\sigma}+\delta\rho\left[g(r)^{-\sigma}+\pi\left(g(r)-\frac{1}{r}\right))^{-\sigma}\right]$, see equation (10) in Génicot and Ray (2015a, p. 10).

formal aspects of this relationship as proposed by GR in the rest of this section.

Again, the constant-elasticity utility function and a linear production function are used for the analysis. Individuals will maximise equation 2.9. The authors identify two ways in which income inequality can evolve. First, consider an initial situation in which all individuals in a society have satisfied aspirations. This implies a high level of economic equality; otherwise low income levels would have created frustrated aspirations under the distribution F_0. From such a starting point, incomes will converge asymptotically to perfect income equality with sustained growth. As the authors state, "the basin of attraction for an equal steady state *is a relatively equal society to begin with*" (Génicot and Ray 2015a, p. 18, italics in original).

If society starts with an unequal distribution, lower incomes will build frustrated aspirations, provoking a bimodal economy with increasing inequality. Second, starting with an unequal distribution may turn out to frustrate everybody' aspirations.

Finally, the authors investigate which other factors may help a society converge towards equality. Various parameters of their model are identified to have positive effects on such dynamics. These are higher rates of returns (ρ), lower aspirations and less socially sensitive aspirations. Recall that $r \equiv y/a$ and that satisfied aspirations are built above a threshold, that is when $r_0(y) \leq r^*$. A higher rate of return reduces this threshold r^* (see equation 2.9). Lower aspirations are - in technical terms - beneficial for reaching equality because they reduce the possibility of aspirations exceeding the threshold of frustrations. This may come down to cases of fatalism and aspiration failures, thus it seems difficult to talk of a beneficial solution here.

Finally, the role of a lower social sensitivity of aspirations is explained as follows. Consider γ as the degree of social sensitivity:

$$\Psi(y, F) = \gamma y + (1 - \gamma)\psi(F) \text{ for } \gamma[0, 1] \tag{2.11}$$

This finding is connected to an empirical exercise. The authors try to find symptoms of such effects in empirical data. The procedure is the following: with percentile growth rates for 43 countries, they are able to calculate returns to individual investments. These are compared to different growth rates which were studied in the model as resulting from different income distributions and aspiration patterns. They find that those aspirations which are inversely U-shaped around

the individual's actual income and the corresponding estimated growth rates fit the data best, which would speak in favour of the social environment's influence on aspiration levels. However, disconnecting aspirations of different groups from each other does not seem to be beneficial.

Summing up, there are several insightful messages in GR's model. One is that aspirations are a two-sided sword: they can create productive engagement as well as frustration. Second, when aspirations and macro-economic outcomes influence each other, unequal distributions of income may reinforce themselves through aspirations. Clearly, their model should be seen as a theoretical exploration of these dynamics, rather than as a fair description of an empirical situation. Of course, some of its assumptions deserve empirical testing in order to underscore the applicability of the model's lessons to real-world situations. Primarily, more research is required regarding the specification of the formation of aspirations $a = \Psi(y, F)$.

2.4 Psychological aspiration traps

The aspiration trap in the sense of a psychological poverty trap has been modelled by Dalton et al. (2016, DGM henceforth). The authors abstract from interactions of the agents within society and concentrate on the psychological dynamics through which an isolated individual may become trapped with low aspirations. These traps are modelled as a consequence rather than as a cause of poverty: It is not the poor individual who carries specific traits that cause aspiration traps, but the condition of poverty that provokes detrimental outcomes in poor individuals who in principle share the same behavioural patterns as non-poor individuals. Aspirations are modelled as reference points, and traps result from interplays of pessimistic beliefs, low aspirations and low efforts.[21]

In the decision-making process, the non-rational agent - no matter if poor or rich - fails to see and comprehend the connections between aspirations, decisions and utility in three regards. First, the agent fails to realise that aspirations are not naturally nor neutrally given, but that they were in the first place influenced by her social environment. Second, aspirations are not constant, but change and adapt to successes and failures, new influences, and experiences. Third, effort levels adapt to aspirations the agent holds. Agents may recognise that higher

21. Similar dynamics had been proposed by Heath et al. (1999) and Heifetz and Minelli (2006) as well.

aspirations spur higher efforts, but ignore how their (initial) aspiration levels are influenced by social influences and earlier achievements. In words of the authors, "individuals take aspirations as given, when in fact, aspirations and effort are jointly determined" (Dalton et al. 2016, p. 2). It has been shown that such dynamic adjustments are not compatible with rational choice (Gilboa and Schmeidler 2003; Dalton and Ghosal 2011, 2016).

The feedback loop is a two-way street: when an individual builds higher aspirations, these entail higher efforts and, as a consequence, lead to higher achievements. Higher achievements stimulate higher aspirations in the next round. Through the same feedback mechanisms, low aspirations can embark an individual on a downward bound path: lower aspirations provoke lower efforts, the individual achieves less and thereupon continues to set herself low goals. As opposed to a fully rational agent, who would aspire to the outcome that maximises her utility and choose an effort level that leads to the optimal outcome, a behavioural agent is only able to foresee one rung at a time, but not the full dynamics of aspirations over a lifetime. As a consequence, once an agent holds low aspirations, she may get caught in a downward spiral - an aspiration trap.

In the model, any agent, no matter the economic circumstances, is subject to these biases.[22] But the result is particularly perverse for individuals living in poverty for two reasons. First, other external correlates of poverty typically make the achievement of goals harder, and may reinforce the feedback effect on aspirations. Second, individuals living a life under conditions of poverty and deprivation are more likely to build cautious aspirations in the first place (Appadurai 2004; Haushofer and Fehr 2014; Mullainathan and Shafir 2013).

Dalton et al.'s model features three key variables. The agent has an initial wealth level $\theta_0 \in \Theta = [\underline{\theta}, \overline{\theta}]$.[23] She has to make a decision about her level of effort $e \in [0, 1]$, which determines her final wealth θ. Agents have an aspiration level $g \in \Re_+$ regarding their final wealth.

The agent is assumed to maximise utility, following a utility function with a reference point. Utility is derived not only from the cost-benefit considerations of effort (cost) relative to achieved wealth (benefit), but from the relative achievement

22. A model along these lines with positive feedback loops has been built by Compte and Postlewaite (2004).

23. From a bounded subset of $\Re_+$.

of aspirations as well:

$$u(e, g, \theta) = b(\theta) + v\left(\frac{\theta - g}{\theta}\right) - c(e). \tag{2.12}$$

$b(\theta)$ is the benefit of achieving a specific final wealth level, $v\left(\frac{\theta-g}{\theta}\right)$ is a reference-dependent value function with the aspiration level as reference point, and $c(e)$ is the cost of the individual's effort.[24] The value function may have the typical S-shape of the original value function in Kahneman and Tversky (1979), but other shapes are possible, too (see Appendix B of the original paper). The S-shaped function captures the idea of loss aversion: the agent becomes frustrated from the failure to achieve an aspiration level to a higher extent that she derives benefit from meeting these aspirations. An individual's utility thus depends partly on the final wealth achieved and partly on this level's relation to the aspiration level g such that the agent derives utility from a proportional gain relative to the aspiration level and suffers from a proportional loss of final wealth relative to it.

Poverty comes into this model through two channels. The first is through external constraints on an individual's productivity. These are greater for poor people, impeding their productivity compared to non-poor agents who are less credit-constrained, have easier access to information or networks and so forth. Final wealth θ is a function of the individual's effort and her initial wealth level in such a way that the fruits of her effort increase the richer she is initially:

$$\theta = f(e, \theta_0) = (1 + e)\theta_0. \tag{2.13}$$

The second channel is through effort levels. Effort levels are influenced by manifold environmental influences ranging from the family background over the neighbourhood to community norms as well as individual characteristics - and thus by poverty and living conditions more generally. DGM therefore require aspiration levels to be consistent with an individual's *expected* level of final wealth, which is closely tied to her economic living conditions. At the same time, aspirations are required to be mutually consistent with effort in a self-fulfilling way. These conditions are fulfilled when the realised level of final wealth is consistent with aspiration level g and effort level e that has led to this wealth level. A rational

24. Again, I will not reproduce the complete model including all assumptions necessary for the model to work out properly. For example, assumptions are made about $c(e)$ which are important for technical reasons but not for understanding the intuition of the model. I intend to discuss their model with its key features. For the complete model, please see Dalton et al. (2016, pp. 5-15 and Appendix A for proofs). The authors also provide additional examples with two different value functions in Appendix B and some extensions in Appendix C of their paper.

decision-maker would choose a rational solution s from the set $S(\theta_0)$ of rational solutions.[25] The maximisation problem of a rational decision-maker becomes

$$\hat{e} \in \arg\max_{e \in [0,1]} s(e, \theta_0) = u(e, f(e, \theta_0), f(e, \theta_0)) \tag{2.14}$$

and

$$\hat{g} = f(\hat{e}, \theta_0). \tag{2.15}$$

A fully rational agent chooses a unique pair of effort and aspiration levels matching her expected benefits, given her initial wealth level. Since aspiration levels match expected outcomes, rational agents will not build aspirations they cannot meet. Moreover, they would be aware of the feedback loop between efforts and aspirations.

For a poor agent, this implies that her aspiration and effort will stay behind those of a rich agent: even if her marginal utility from wealth gains is higher than that of the rich agent, the marginal productivity of her effort is lower due to greater external constraints,[26] and the first effect cannot outweigh the second.[27] The result is a situation in which both a poor and a rich individual choose their aspiration and effort levels in such a way that they correspond to their real possibilities, those of the poor individual staying behind those of the rich because of real external constraints. Such a situation does not represent an aspiration trap: the poor rational agent's lower aspirations stem from the fact that she has consciously adapted her aspirations to her material possibilities.

Such levels of reflection and consciousness are unrealistic in real humans. In contrast to rational agents, DGM propose that most people take their aspiration levels as given and do not realise how these are influenced by previous achievements. Indeed, there is theoretical and empirical work supporting this argument.[28] In other words, behavioural agents choose e while taking g as given. As a consequence, they face a different maximisation problem:

$$\max_{e \in [0,1]} \tilde{u}(e, g, \theta_0) = u(e, g, f(e, \theta_0)). \tag{2.16}$$

25. Several model assumptions jointly assure that for each fixed value of θ_0, there is a unique rational pair of and ^{g}, see Proposition 1 on p. 172. $S(\theta_0)$ contains all solutions that verify the requirement of complementarity of effort and initial wealth.

26. Marginal utility from wealth is higher for the poor individual because the benefit function $b(f(e, \theta_0)$ was specified to be concave. Marginal productivity increases with initial wealth because of equation 2.13.

27. This is made sure by technical assumptions I omit in my review, see Assumption 1 on p. 169.

28. The authors quote Easterlin (2001), who studies empirically how income aspirations adjust to experienced income over the life cycle. Elster (1977) has described how individuals precommit themselves to future activities through social mechanisms without realising that their future preferences will have changed.

A solution to this problem, which the authors call a behavioural solution, is a consistent pair of effort and aspirations (e^*, g^*) such that $e^* \in e(g^*, \theta_0)$ and $g^* = f(e^*, \theta_0)$. This way, aspirations and effort levels have become self-fulfilling complements. The authors show that for each level of initial wealth, there is a set of solutions, ranging from a minimal effort level $\underline{e}(g, \theta_0)$ to a maximal effort level $\overline{e}(g, \theta_0)$, coming along with a minimal $(\underline{e}^*, \underline{g}^*)$ and a maximal effort-aspiration pair $(\overline{e}^*, \overline{g}^*)$, respectively.[29] In contrast to rational agents, who would choose the aspiration level that would lead them to the highest possible outcome given their external constraints, behavioural agents may choose their optimal aspiration level only by chance.

The authors continue to show that under the assumptions of their model, there are two conditions under which an individual may be internally constrained: either when $e = 0$ and $g = \theta_0$, thus with minimal aspirations and efforts, or when $e = 1$ and $g = 2\theta_0$, the maximal solution. Poverty raises the probability of ending up with the minimal, welfare-dominated effort-aspiration pair.[30] Assume that an individual's initial aspiration level g_0 is given from a probability distribution, which is the same for all individuals. This aspiration level will determine the individual's effort level. Then, the expected future outcome will adjust to this effort (and achievement) level through $g = f(e, \theta_0) = (1 + e)\theta_0$. As the net benefit of exerting effort is increasing in initial wealth θ_0, the aspirations of the poor individual will always be corrected downwards, compared to a non-poor individual, because the productivity of effort will impact the feedback loop from effort to future aspirations through achievements. The lower the initial wealth level, the lower the achievements, to which future aspirations adapt. Unless agents start with their optimal initial aspiration level, they are bound to become trapped in a downward spiral. Building upon theoretical and empirical literature such as Appadurai (2004), it is likely that poor individuals will start out with aspiration levels below their optimal level.[31]

29. There is a dynamic and adaptive intuition in this reasoning, which does not seem to be captured by the model at first glance. However, the authors argue that their static model can capture the outcomes that would result from a more complex, dynamic model because in each period, the individual adapts her aspirations to the outcome realised in the past. Equation 2.14 has required this consistency. The resulting self-fulfilling effort-aspiration pairs are equivalent to the ideas of a personal equilibrium in Köszegi (2010) and to that of a psychological Nash equilibrium in Geanakoplos et al. (1989).

30. DGM have an understanding of optimal aspirations that relies the satisfaction of individual preferences as a welfare criterion, see Dalton and Ghosal (2011, 2013, 2016). I will discuss this criterion and the problems of its usage in the context of endogenous in chapter 10.

31. Chapter 5 will discuss drivers of low (initial) aspirations and the role of poverty, socio-economic backgrounds and other environmental factors.

This model is in line with a model by Heifetz and Minelli (2006), who show that individual choices impact every day decisions without the individual being aware of that process. They define a self-justifying decision as the one which is not regretted afterwards by the individual because aspirations and preferences have adjusted in a consistent manner. In the case of an individual choice below actual possibilities, the individual would not take notice of this gap due to the adaptation in the service of consistency, and get stuck in an aspiration trap. The authors advance the idea that "all self-justifying choices might be sub-optimal, due to the inability of individuals to foresee the potential evolution of their own preferences" (p. 3).

To sum up, when low aspirations embark a person on a downward bound spiral, "low aspirations become a source of disadvantage in their own right" (Dalton et al. 2016, p. 14). While it is certain that external constraints limit a poor individual's outcome, there is an additional effect stemming from internal constraints. Rather than not achieving the goals poor people have set for themselves, the origin of a behavioural aspiration trap is that the agent "simply does not aspire as high as the best outcome he could have realised" (p. 13).

2.5 Other models with applications to specific contexts

Related to these general models, several topic-specific models and variations have been proposed.[32] Mookherjee et al. (2010) study a model in which human capital formation is determined by educational investment decisions on the one hand and labour demand on the other. Parental aspirations are understood as reference points for decisions about investment into schooling: higher aspirations raise the willingness to invest in their children's education. Aspirations are built upon observations of present and past achievements of the people within the parents' aspiration window, which may include neighbours, social networks and peers. The composition of neighbourhood and particularly segregation therefore play a role for education outcomes. This model combines features of DGM and GR in the sense that a current distribution of wealth and achievements in the parents' environment

32. Page (2005) used prospect theory to model endogenous educational choices. The educational degrees of people in one's social environment served as reference point. The idea of his paper is quite alike that of the models represented in this chapter. However, it seems the paper published in French language has not found its way into the English-speaking literature. In the meantime, other authors including Dalton et al. (2016) have refined the applications of reference-point models to aspirations. For this reason, I will not review Page's contribution.

determine their aspiration levels.

Bogliacino and Ortoleva (2015) build an overlapping generations model in which the average income of a society operates as reference point for the utility of consumption and consumption aspirations. Agents decide between investments into the wealth of the following generation (bequest) and own consumption. Their model predicts that each economy has multiple equilibria: in the long run, the wealth distribution of an economy will end up perfectly equal or perfectly polarised. This long-run outcome depends on the initial distribution: every society admits an equilibrium with polarisation (in a distribution with a missing class), and societies with a not very dispersed initial distribution allow an equilibrium with equal wealth distribution. In a next step, the authors bring growth rates into the game and investigate how different initial levels of wealth distribution effect growth rates. Depending on different equilibria, they find that perfect equality and low inequality are the initial states which are most beneficial for growth rates.

Ghiglino and Goyal (2010) investigate aspirations applied to consumption, production and exchange. Consumption aspirations are determined by endowments, technology, preferences and the consumption of peers and neighbours. The authors assume that individuals only care for the average consumption of their neighbours. When segregated communities become more integrated and neighbourhoods change, this also changes the reference points of utility from consumption. The poor lose while the rich gain in terms of utility: when comparing to richer neighbours, utility from a fixed bundle of consumption goods decreases for the poor, whereas the richer neighbours perceive their affluence more strongly now and feel richer than before. It should be noted that this paper mentions neither aspirations nor reference points: the authors use a network-approach to investigate questions of segregation, centrality and social influences on consumption. Still, the ideas and questions of interest are quite closely related to the other works discussed.

Chapter conclusion

The models presented and discussed in this chapter have focused on specific aspects of aspiration formation and on the consequences of aspirations for behaviour. The models by GR and DGM are mostly general and laid the groundwork for more specific applications of others.

The main contribution of GR's model is to show that aspirations are two-edged: they can stimulate productive engagement, but they can also cause frustration

when they are not achieved. Their model has also shown that when aspirations and macro-economic outcomes influence each other, unequal patterns of income distribution may reinforce themselves through aspirations. Future research could connect to this model by discussing more closely the mechanisms through which macro-economic developments and social influences more generally influence aspirations.

DGM have focused on psychological mechanisms and the impact of aspirations on the behaviour of isolated agents. Their main contribution is to show that whenever an agent does not fully internalise the feedback effects between their aspirations, effort levels, and achievements, they may get caught in a psychological poverty trap and consistently aspire to outcomes that fall short of realising their full potential, given their constraints and opportunities. Poor agents are most likely to get caught in a psychological poverty trap: they are equipped with lower initial aspiration levels acquired from their families and social environments, and the productivity of their economic activities is typically lower, leading to lower outcomes than those of a rich agent exerting the same level of effort.

To conclude, both models are concerned rather with the effects of aspirations on outcomes in specific dimensions rather than with the process of their development. While GR are not interested in how exactly the environment shapes aspirations, DGM assume that poor people start out with lower initial aspiration levels that have been transmitted from their family or their social environment. If this is true, then they will end up in downward spirals and aspiration traps more often than richer people. GR concentrate on other mechanisms and assume a function of aspiration formation that leaves the process totally open. This is not surprising: utility-maximisation models can hardly go beyond this point.

One reason for this is that utility-maximisation frameworks rely on assumptions about human behaviour and can only study the effects of these assumptions on behaviour and outcomes.[33] In contrast, to study the foundations of these assumptions as such, one has to look elsewhere.[34] This limits the potential of utility-maximisation models for the analysis of endogenous aspirations consid-

33. As mentioned earlier, there are more reasons to be critical of utility-maximisation models, see footnote 3 on page 26.

34. Mainstream (behavioural) economics have been criticised as "as-if" economics: rather than seeking to *explain* behaviour and empirical data more generally, the goal of neoclassical analysis is to develop models the assumptions of which allows to fit observed data. This procedure goes back to Friedman (1953)'s claim that the most important goal of economics as a positive science is to develop models and hypotheses that yield valid predictions. Assumptions underlying these models need not necessarily be right: studying theoretical models as if humans complied with its underlying assumptions is a justifiable procedure as long as the model's predictions are good enough.

erably. As a consequence, the models reviewed in this chapter can take credit for having motivated and justified the analysis of aspirations within economics (again), and for having brought endogenous aspirations on the agenda. This is in itself an achievement. But it can only be a starting point: the black box of the development of aspirations has remained close. Chapters 3 and 5 turn to other areas and disciplines to shed light on the behavioural mechanisms inside of this black box.

A second, very basic issue of utility-maximisation models is that the researcher needs to have plausible ideas about the shape of the utility function, that is, about how aspiration levels relate to individual utility. Otherwise, we do not know what exactly is being maximised. The models reviewed in this chapter have assumed that higher aspirations are evaluated as better aspirations. But as I will discuss in chapters 4 and 10, this may not be justified. Instead, I will argue that it is far from clear what utility-maximising aspirations are.

Chapter 3

How do aspirations develop? Insights from behavioural economics

> If all that is postulated is simply that men *choose*, without anything being stated even as to how they choose or what governs their choice, it would seem impossible for economics to provide us with any more than a sort of algebra of human choice, indicating certain rather obvious forms of inter-relationships between choices, but telling us little as to the way in which any actual situation will behave.
>
> Maurice Dobb (1945, p. 171)

To open the black box of aspiration formation, it is quite natural to start the search for potential explanations and behavioural mechanisms within the field of behavioural economics: it is a vivid and fast-growing field and the models presented in chapter 2 belong there. Except for the contributions reviewed in the previous chapter, the development and impacts of aspirations have not been explicitly addressed in the recent literature in this field (except for some empirical contributions that will be discussed later in chapter 7), but I will propose that many topics and debates can be fruitfully transferred to the field of aspirations.

To do so, I will review selected behavioural mechanisms discussed in the field that may potentially inform the understanding of the endogenous formation of aspirations. No comprehensive overview of the field of behavioural economics can be provided; contributions are selected on the basis of their potential to inform the

analysis of aspirations.[1]

The discussion is structured along a basic distinction made within mainstream behavioural economics:[2] 'non-standard preferences' and 'non-standard beliefs'.[3] These are understood as different "classes of deviation" (DellaVigna 2009, p. 365).

This approach, with its focus on deviations of observed behaviour from predictions of the neoclassical model of individual behaviour, obscures that behavioural mechanisms that are discussed with regards to non-standard preferences may be relevant for the understanding of beliefs and decision-making processes as well, and vice versa. For example, cognitive dissonance has been discussed first and foremost with regards to worldviews and beliefs, but it may also apply to preferences. I will discuss each mechanism or concept in the context within which it is usually discussed and mention how it may be relevant to the other 'classes of deviation'. The motivation for this procedure is that this chapter aims at extracting relevant insights from the field of behavioural economics. This is not to imply that the approach of mainstream behavioural economics is necessarily the most useful way to analyse the development of endogenous aspirations. Chapter 4 is devoted to a critique.

3.1 Aspirations and 'non-standard' preferences

A large part of the literature on non-standard preferences challenges the assumption of preference exogeneity that prevails in mainstream economic theory. Samuel Bowles (1998) re-opened the debate within mainstream economics with his review

1. See Heukelom (2014) for a recent history of behavioural economics. Diamond and Vartiainen (2007) is a collection of essays covering the main branches of study of the field. Angner and Loewenstein (2012) review the history of the field since the 1980s. While DellaVigna (2009) reviews the most discussed topics, Heap (2013) combines his overview with a discussion of general policy implications. Some contributions, notably those discussed in section 3.1, do not all belong to behavioural economics in a strict sense.

2. I use the term 'mainstream behavioural economics' to refer to work that deviates from neoclassical economics in a strict sense but is acceptable to mainstream economists, journals, and institutions. Typically, this literature is characterised by a "careful understanding of the strengths of the recent orthodox [that is, neoclassical] approach and [by] a modeling methodology acceptable to the mainstream" (Colander et al. 2004, p. 492). I will come back to this discussion with particular reference to behavioural economics in chapter 4, section 4.1.

3. In fact, there are three pillars: 'non-standard' preferences, beliefs, and decision-making processes. 'Non-standard' refers to preferences, beliefs, or processes of decision-making that deviate from the principles of neoclassical theory (see for instance DellaVigna 2009; Bernheim and Rangel 2007). In my view, non-standard decision-making is not central for the development of aspirations: aspirations are developed over longer periods of time rather than within specific situations. Decision-making research, in turn, focuses on the impact of a situational decision design on decision outcomes. This is not of primary relevance for aspirations.

of evidence against the existence of exogenously given preferences. He identified several ways in which economic institutions and situational settings can shape individual preferences. These preferences cannot be understood as exogenous any more.

Bowles uses a rather broad understanding of preferences as "*reasons for behavior, that is, attributes of individuals that (along with their beliefs and capacities) account for the actions they take in a given situation*" (p. 78, italics in original). For him, preferences clearly go beyond taste and include the framing of a situation (Tversky and Kahneman 1986) as well as addictions, compulsions, habits and other kinds of psychological dispositions. Furthermore, he embraces commitments (Sen 1977), moral preferences (Harsanyi 1977), and the individual understanding of a situation (Ross and Nisbett 1991).[4] If one follows Bowles, it should be uncontroversial that the mechanisms discussed with respect to endogenous preferences may refer to endogenous aspirations just as well.

Myriad publications have continued the investigation of endogenous preferences over the last years. The next sections will discuss three aspects of this research that are particularly relevant for the development of endogenous aspirations, and apply them analogously. The first one refers to the question of how people acquire preferences and aspirations through social learning and cultural transmission (section 3.1.1). The second concerns the adaptation of preferences to experiences and opportunities (section 3.1.2). Two arguments underlie the analogous application of these concepts and mechanisms. First, preferences are one important component of goals and activities people aspire to, and thus feed into eventual aspirations.[5] Second, it is implausible that mechanisms such as cultural transmission or adaptation apply only to preferences and tastes, but that they leave (life) goals in a more general sense untouched.

3.1.1 Social learning and cultural transmission

Bowles has attacked the assumption that individual preferences are exogenously given on various grounds. One of his objections is that preferences are not 'just there' for some unknown reasons, but that people acquire and develop them over time. In his understanding,

4. At the same time, Bowles warns that for preferences to be meaningful predictors of human behaviour, they must be somewhat stable over place and time. Nonetheless he embraced situational aspects like framing as well as cognitive processes in his ample definition of preferences.

5. I have discussed how preferences and beliefs relate to aspirations in chapter 2, pages 40-41.

> most preferences are not chosen in the usual sense of intentional action toward given ends. Rather, preferences are learned as an accent or a taste for a national cuisine is acquired, that is, by processes which may but need not be intentional. (Bowles 1998, p. 80)

Two points are important here. The first is that preferences are not stochastic or random, but strongly influenced by the social environment in which an individual happens to live. Second, people do not consciously choose nor reflect their preferences. Preferences and habits[6] are typically adopted from one's community and then internalised, becoming an important part of one's personality and identity. As such, cultural environments[7] play a central, yet most often unnoticed role for preferences people develop and, by analogy, their aspirations. These processes of social learning and cultural transmission have been a major theme in the sociology of knowledge (see Berger and Luckmann 1967, for a classic reference).

Economists have written about the intergenerational transmission of preferences, beliefs, and norms, too (Bisin and Verdier 2011, provide an overview). The economic analysis of the intergenerational transmission of preferences is dominated by formal analysis focused on specific mechanisms of transmission (see for instance Bowles and Gintis 1998, 2002a; Bisin et al. 2004; Guiso et al. 2008) and by econometric studies of intergenerational correlations of attitudes, values, reported preferences and religious beliefs between parents and children (see among others Cavalli-Sforza et al. 1982; Dohmen et al. 2012; Jellal and Wolff 2002).

In contrast, economists have rarely been interested in the mechanisms and processes behind such observations. An exception are Stephan Panther and Hans Nutzinger (2004), who recur to evolutionary anthropologist Michael Tomasello (1999) to discuss the processes of social learning and the endogenous development of preferences. They put emphasis on the cultural nature of human learning: "[h]uman cognition is fundamentally cultural, because it is primarily a product of cultural learning" (Panther and Nutzinger 2004, p. 4). This is so because humans learn to large extents through the interaction with other humans, for instance when

6. The term 'habit' is not primarily used to denote preferences or choices to which an individual has become habituated, but to a mental disposition towards choices: it is "a social mechanism, which typically involves the imitation of others" (Hodgson 2004, abstract), and serves the purpose of enabling the agent to make decisions in a complex, evolving and uncertain world. Socially transmitted habits can determine beliefs individuals hold and thus determine preferences and aspirations agents regard as natural and appropriate for them.

7. By culture, I am not primarily referring to a national culture. Instead, I understand culture as defined by Panther (2000) and Panther and Nutzinger (2004), that is, as a learned system of meanings and values that is shared by a group of people (p. 3, own translation). In this sense, cultural environments refer to social environments and milieus as also understood by Bourdieu. I discuss the link of shared meanings and values and Bourdieu's milieus in chapter 5, section 5.3.

imitating others, being taught by others, or cooperating. According to Tomasello (1999), such cultural learning processes are possible because of the human ability to identify with others and to recognize similarities and differences. As of early ages, children imitate the behaviour of adults in their social environment and begin to understand themselves as similar. This lays the foundation for both the cultural adoption of preferences, traits, beliefs, self-views, and world views in a broad sense, and the development of collective identities. From this perspective, it is clear that as of early ages, people adapt their preferences for and beliefs about acceptable and worthwhile life goals and aspirations from their social environment and in light of their personal and collective identities.[8]

Instead of studying these processes further, most economists have delved into the question of 'nature or nurture' (see Sacerdote 2011 for an overview), that is, the extent to which preferences are *not* the result of social learning and cultural transmission. By analogy, the question of nature or nurture is relevant for the development of aspirations as well. To what extent does the occupational aspiration to become a nurse hinge on an adolescent's talent, and to what extent on her social background and self-view? To what extent do young people adapt their schooling aspirations to their social environment, and to what extent does their performance depend on innate talents and abilities? What are 'natural' talents and abilities anyway?

As opposed to preferences, innate or genetic influences on aspirations have not been studied so far. But it is highly plausible that the channel through which genetic disposition may influence preferences - through innate abilities and tastes - may shape aspirations in an analogous way. Lessons learned about the link between genetic disposition and preferences are therefore worth being discussed with regards to aspirations.

Empirical studies usually find that cognitive test scores of parents and children tend to be closely correlated (see Plomin 1999 and Plomin and Spinath 2002 for reviews). It has also been found that identical twins obtain more equal labour market outcomes than fraternal twins, suggesting some genetic component (Trouton et al. 2002; Oliver and Plomin 2007). Against this background, scholars have been interested in the possibility of a genetic inheritance of cognitive abilities and of what is called intelligence in every-day language. The results are noteworthy: studies find correlation coefficients between children's and parental IQ ranging

8. The role of identities is only briefly mentioned here. Chapter 4, section 4.3 discusses their relation with aspirations with more details.

approximately between 0.4 and 0.7 (Bowles et al. 2005).

On the other hand, Bowles and Gintis (2002b) argue on the grounds of theoretical genetics that the theoretically possible genetic transmission from parents to children is not so large. In other words, if the genetic channel was the only channel of transmission, the correlation could only be smaller (Bowles et al. 2005). Large correlations cannot be explained solely on the basis of genetic transmission, because so large degrees of transmission are not possible. This means that observed correlations of cognitive abilities are not only innate and genetically transmitted, but that other channels must contribute to them as well.

A study by Hart and Risley (2003), using data from the US, sheds light on this puzzle. They suggest that parents from different socio-economic backgrounds dispose of different economic and social resources to foster the cognitive development of their children as of early childhood. The tested cognitive abilities of children differs strongly within age groups and is closely correlated with those of their parents, but the origin is not genetic. The researchers find that at age 3, about 90% of a child's vocabulary is derived from that of their parents. Unfortunately, they also find that higher-income parents provide their children with many more words than parents from low-income backgrounds (both in terms of quantity and variety), creating advantages of communication skills, reading comprehension, writing abilities, and conversation styles for higher-income children. This led to the name of the study: "The Early Catastrophe: The 30 Million Word Gap by Age 3".

Other studies point into the same direction. Fryer and Levitt (2013) investigate cognitive abilities of Black and non-Black children in the US over time. They do not find systematic differences in the first years of the babies' lives, but gaps emerge in later years. A possible explanation is that their parents' abilities influences the environment in which the children grow up. Households, social environments, and communities seem to have important influences on cognitive development. Petrill et al. (2004) find that chaos in the household in which an infant grows up can harm cognitive development. More generally, Fishkin (2014) claims that "there is no such thing as 'natural' talent or effort, unmediated by the opportunities the world has afforded us, which include our circumstances of birth" (p. 83).

In a strongly controversial book, Herrnstein and Murray (1996) propagated rather the opposite mechanism. They proposed that intelligence is mainly an innate characteristic of a person, and that a lack of it provokes poverty, school drop-out, unemployment and welfare dependence. The book has been enegertic-

ally criticised and rejected on various grounds. Some attack its investigation of racial differences in intelligence (Block 1995); others question the empirical conclusions on methodological grounds (Heckman 1995; Goldberger and Manski 1995), claiming that the cognitive test scores are endogenous and that effects of family background on cognitive test scores are omitted (Korenman and Winship 2000). The book is worth a mention because it has certainly stimulated research about the genetic transmission of abilities. As a result, a fair amount of consensus has been reached that cognitive abilities are first and foremost shaped by socio-economic resources at home rather than being a inherited trait (see Fishkin 2014, chap. II, for an in-depth discussion).

To conclude, the literature on social learning and cultural transmission suggests that preferences and tastes are largely culturally and socially transmitted and adapted. Moreover, there is an indirect effect through the social and cultural impact on abilities, talents and dispositions, which in turn impacts preferences. All this results in their relevance for aspirations: people will aspire to activities they deem attainable, given their talents and abilities. Furthermore, people will aspire to goals and activities that correspond to their preferences, if they have a choice.

As to the other two 'non-standard' elements of mainstream behavioural economics, these lessons could also be extended to beliefs and expectations. It is highly plausible that children do not only adapt tastes and preferences from their social environments, but also beliefs about the world in general terms (see for example Norenzayan and Atran 2004, for a psychological study). The cultural transmission of beliefs has not been in the focus of economic research, but has been an essential part of research in sociology, as exemplified by Pierre Bourdieu's work (discussed in chapter 5, section 5.3). Moreover, studies about the cultural transmission of values (see for example Bisin and Verdier 2000 and Johnston et al. 2014) make plausible that children adapt beliefs about their place in the world (for example, regarding occupational choices) or about goals they can expect to accomplish.

Finally, it is plausible that even aspirations as such are directly transmitted. Parents have aspirations for their children, which reflect their socio-economic position, their worldviews, and their own experiences. These may be directly transferred from parents to children, as Dercon and Singh (2013) have also suggested.

Social learning can draw not only from families, but also from peers. The theoretical literature has not differentiated social environments in this respect, and often implicitly focused on families. Peer effects on preferences and aspirations

have not been in the focus of theoretical contributions to behavioural economics; Ray's discussion of aspirations windows is an exception. But there are a number of empirical studies that will be reviewed in chapter 7.

Overall, this conclusion justifies a much closer analysis of the processes behind the social transmission, learning and adoption of aspirations from social environments. Chapter 5 will complement this section from a sociological perspective.

3.1.2 Adaptive processes

The adaptation of preferences and, by analogy, of aspirations is a major theme for research interested in endogenous aspirations. The literature on adaptive preferences posits that individuals adapt their preferences to experiences, living conditions and situations in evolutionary ways. As such, preferences are neither static nor exogenous, as neoclassical theory assumes, but malleable, adaptive and endogenous. Economists have referred to the phenomenon using a variety of terms such as "adaptation problem" (Qizilbash 2006a) or "adaptive preferences" (Elster 1982, and many others).[9] I will speak of adaptive processes in the following.[10]

Adaptive processes with regards to aspirations are also a major theme throughout this thesis. Perhaps the fact - and I will claim that it is a fact - that aspirations are adaptive is the main reason why we should be interested in them. People do not only learn and adopt aspirations from their social environment, but then also continuously adapt them to new experiences. This is why this section goes after the previous section though because in my view, the adaptation of aspirations may be understood as one way of social learning and cultural transmission.

Different dynamics of adaptation have been proposed in the literature, putting emphasis on particular behavioural motives. For Amartya Sen, a central matter of concern is the adaptation to deprivation and poverty. Preferences, life goals and desires adapt to living conditions and possibilities people perceive they have: "[c]onsiderations of 'feasibility' and of 'practical possibility' enter into what we dare to desire and what we are pained not to get" (Sen 1985c, p. 21). His examples of the "tamed housewife", who identifies with her role as a kind of survival strategy,

9. See Qizilbash (2008) for a more detailed discussion of these terms. For a discussion of the differences between Sen's and Elster's approaches, which will be discussed shortly in this section, see Qizilbash (2006b) and Nussbaum (2001).

10. While some authors refer to preferences in a narrow sense, Sen's examples (Sen 1985c and Sen et al. 1987, see the next paragraphs) show that people cannot only adapt their preferences, but their worldviews, self-views and life attitudes in general. Most of the literature has discussed the adaptation of preferences, but it should not be forgotten that similar processes are at work when it comes to beliefs. This motivates my choice of the term 'processes'.

or of the hopeless beggar, who manages to draw gratification from small occasional alms, are well-known examples (Sen 1985c; Sen et al. 1987). His description of their adaptation to their living conditions is worth being quoted at length:[11]

> A person who has had a life of misfortune, with very little opportunities, and rather little hope, may be more easily reconciled to deprivations than others reared in more fortunate and affluent circumstances. The metric of happiness may, therefore, distort the extent of deprivation, in a specific and biased way. The hopeless beggar, the precarious landless labourer, the dominated housewife, the hardened unemployed or the over-exhausted coolie may all take pleasures in small mercies, and manage to suppress intense suffering for the necessity of continuing survival, but it would be ethically deeply mistaken to attach a correspondingly small value to the loss of their well-being because of this survival strategy. (Sen et al. 1987, pp. 45-46)

The adaptive nature of preferences, desires and life goals - and thus, aspirations - is understood by Sen as a kind of emotional survival strategy of disadvantaged people.

Disadvantage should be understood here in broad terms: the adaptation to one's social environments is not an exclusive consequence of a life in material poverty, but of any disadvantage. For example, as D'Ippoliti (2011) points out, gender is "one of the leading examples of the role of adaptation and false consciousness" (p. 113). "[T]he social environment presents itself in two very different forms to men and women" (p. 6), for instance through different rules of conduct held in a society, differences of power, expectations toward socially expected behaviour and characteristics and of habit, leading to the adaptation of behaviour of people of different genders to their respective social environment. This obviously includes the adaptation of these women's aspirations to specific constraints, expectations, norms, and opportunities.

The tamed housewife or the hopeless beggar Sen describes may in principle downgrade their preferences, life goals, and aspirations as an outcome of a fully-informed, rational, and conscious reflection of their situation (though this need not be the case). Jon Elster (1983), in contrast, is concerned with the unconscious suppression of desires that turn out or at least seem to be unachievable. His understanding of adaptive preferences is commonly referred to as the 'sour grapes

11. Sen's writings about adaptive preferences do not only inform about the phenomenon itself, but usually present implications for the 'metric of happiness', that is, Sen's critique of utility theory as a means of studying welfare. I am ignoring this critique for the moment and postpone the implications for the study of welfare to chapter 10.

effect' because it is best described with Aesop's fable of the fox and the sour grapes.

In this fable, a fox finds itself unable to reach and pick some grapes it has seen and desired. As a consequence, it moves from desire and appetite to refusal and dislike. Eventually, it comes to believe that the grapes were sour and that it would not have liked them anyway. The fable characterises the process of "downgrading the inaccessible options" (Teschl and Comim 2005, p. 233) in an unconscious and non-transparent way. The mechanism driving this adaptive process is the search for psychological relief: not being able to attain a good or a goal one desires creates discomfort, which the non-intentional and unconscious modification of preferences can relieve.

This non-intentional modification of preferences must be distinguished from intentional character planning. Stoic, Buddhist or Spinozistic philosophies as well as psychological theories of self-control use the intentional shaping of desires. In these cases, the dissonance between the desired and the possible is reduced by conscious strategies of liberation from one's desires. As Elster puts it, the difference resides in "preferences being shaped by drives or by meta-preferences" (Elster 1983, p. 117).

Yet another mechanism of adaptation is through experience, habit and exposure. Qizilbash (2008) gives the example of two persons who prefer to live in urban and rural areas, respectively, just because this is what they have known and what comes natural to them. In this manner, preferences and aspirations adapt to what is known. This idea is quite complementary to the idea of social and cultural learning. When children learn and adopt preferences, aspirations, and ideas about life from their social environment, considerations of feasibility and practical possibility - to use Sen's words - are shaped by the scopes and limits they are confronted with. The line between the two concepts can become quite blurred.

The lines can also become blurred because strategies of adaptation can themselves be culturally and socially learned. In Italy, Aesop's fable is widely known and children are often advised not to behave like the fox. Children learn from early ages that they should not give up their goals in the face of difficulties, and pretend they did not want to achieve them. If people deny goals and wishes in an unconvincing manner, they are made fun of because they behave like the fox. [12] In a different cultural context, strategies children learn and adopt from their social surroundings could be very different.

12. I am thankful to Carlo D'Ippoliti and Riccardo Trevisan for telling me about this.

Both intentional and non-intentional mechanisms of adaptation can be used to analyse the development of endogenous aspirations. Elster reinforces the transferability of adaptive preferences by understanding the process of the adaptation of preferences as the adjustment of people's aspirations to feasible possibilities (Elster 1982). Note that the process of adaptation discussed here is equivalent to the adaptation of a reference point in reference point models. But reference point models alone do not explain the motives behind the adaptation of preferences and aspirations to reference points. The literature on adaptive preferences makes clear that several motives - the conscious or unconscious search for psychological relief as well as social learning and experience - can play a role.

Think of people who do not want to pursue rather ambitious careers. Their aspiration may simply reflect their preferences. But it may also be the case that they do not aspire to more ambitious occupations because they have come to believe that they could not achieve them or perform well. In the latter case, rather modest aspirations may save the person from disappointment, rejection, or derision. For example, women may have internalised that they can hardly excel in technical jobs, and come to believe that they are not interested or do not like these jobs - even if this was different had they tried. The crux is not in actual problems that may arise during the pursuit of specific careers, but in the fact that people do not even consider their full set of options. Recall that when aspirations adapt to the set of perceived possibilities, people may be aware neither of their adapted aspirations nor of their underlying beliefs. This makes the distinction of intentional and non-intentional adaptive aspirations so difficult.

Note that this distinction was at the heart of Dalton et al. (2016)'s model presented in chapter 2: when the agent fails to internalise how aspirations adapt to external conditions, an aspiration trap arises. When they are fully aware of how their aspirations develop, there is no trap. As such, the self-fulfilling prophecy mechanism proposed in the model is a process of adaptation. The authors point out that their description of adaptative preferences is formally identical to the steady states of mechanisms of preference adaptation in models developed by Weizsäcker (1971), Hammond (1976) and Pollak (1978). The "strategic value of ignorance" has also been discussed in game-theoretical contexts (Carrillo and Mariotti 2000; Hirshleifer 1971). In these models, individuals benefit from neglecting options or pieces of information, and by analogy aspirations, that likely lead to disappointment.

To summarise this section, adaptive processes are a major theme in the endo-

genous development of aspirations. People - consciously or unconsciously - adapt their aspirations to their social environment, their opportunities and experiences, and all kinds of beliefs they hold. Regarding aspirations as adaptive allows the researcher to focus on the structural and social embeddedness of aspirations without losing sight of the individual's subjective perspective. It moreover helps to understand aspirations in an evolutionary and dynamic way. At the same time, this perspective makes it extremely implausible to maintain that aspirations are exogenous and reflect people's preferences over life goals. This, in turn, has important implications for the welfare assessment of aspirations people hold and pursue.[13]

Not only preferences can be modified and adapted: so can beliefs. The adaptation of beliefs has been discussed in the context of "cognitive dissonance" reduction. Cognitive dissonance reduction is discussed in chapter 3.2.1.

3.2 Aspirations and 'non-standard' beliefs

A belief can be understood as "an idea, concept, or value that an individual holds, with some probability, to be true" (MacFadyen 2006, p. 185). Beliefs refer to our understanding of how the world works, including our beliefs about objects and subjects in it and about values we should hold. Hoff and Stiglitz (2010) recently asserted that "[a]ll economists agree that perceptions (beliefs) affect actions (choices)" (p. 141). This quote testifies to the wide-spread acceptance of beliefs by economists on the one hand and to the often unclear usage of the term - here through the comparison to perceptions - on the other hand. The following paragraphs discuss the importance of beliefs for aspiration formation in general terms. Section 3.2.1 discusses the role of beliefs about the world and distortions thereof through the lenses of cognitive dissonance, and section 3.2.2 focusses on beliefs about the self.

Beliefs can be differentiated into positive (how the world works) and normative (how the world should work) ones, which are, however, closely intertwined (MacFadyen 2006). We can furthermore distinguish between hard, sacrosanct beliefs, which build the heart of our representation of the world and are nearly immalleable, and subsidiary beliefs that are not so essential to our belief system. The occasions "in which the individual questions the hard-core beliefs, and [in which] the belief system itself is significantly modified or begins to crumble" (p.

13. The welfare implications of aspirations in light of their adaptive nature are discussed in chapter 10.

185) are very rare but all the more interesting for our understanding of societies and societal change. Another distinction is between beliefs about the world around us and beliefs about ourselves. While people may hold their beliefs to correspond to objective truths, beliefs are, "at best, a partial reflection of the complex reality of the world we inhibit, and often a severely biased depiction of that reality" (p. 183). They are not independent of socio-economic structures and processes, but reflect belief systems that prevail in specific (subgroups of) societies at specific moments of time.

Beliefs about how the world works and about the role of individuals and groups therein bear important consequences for the formation of life goals, political behaviour, and preferences as well as for every-day behaviour. Elkins and Simeon (1979, p. 132), while in principle concerned with political culture, list some of these relevant beliefs. They include, amongst other things, "assumptions about the orderliness of the universe" and "[p]resumptions about the nature of causality. Is the world random? Are events fore-destined?" This is fairly general, but impacts aspirations in a variety of ways.

Think of people living in rigid social hierarchies. Some aspirations and goals are not considered by individuals belonging to specific groups, because this would contradict beliefs about their place in the universe according to the prevailing social hierarchy. Beliefs about causality in life are of high importance, too. People who believe that events are predetermined and that things do not "just happen" (p. 132) will act quite differently from people who believe that they can modify their living conditions and social positions (Fiske and Taylor 2010). Think of an ideology like that of the American dream: people who believe in the possibility of going from rags to riches through hard work will build different aspirations than those believing that little can be done to change one's fate.

Specifically, an important set of beliefs refers to questions about the principal goals of life. Aspirations "are inevitably tied up with more general norms, presumptions, and axioms about the good life, and life more generally" (Appadurai 2004, p. 68): they are not independent of beliefs about what a person ought to do. Aspirations and behaviour of a person who believes that good relations with family and friends are among the most important life goals will differ from that of somebody who puts larger emphasis on work-related or material success. Women who have internalised the social norm that women are not supposed to work but to take care of their children and household will likely not build ambitious career aspirations. This does not mean that individual women will not aspire to having

an active working life and act against prevailing social norms. But the likelihood of their doing so (and in some cases, even their real possibilities to do so) are more limited.

Given that belief systems provide the underlying basis, such priorities are of course not an individual matter, but shaped by society-wide ideas and culture more generally. In this sense, aspirations need to be understood as part of wider ethical and metaphysical ideas. Since such ideas about the future and the past are embedded and nourished by culture, some authors assert that aspirations are a cultural issue, too (Appadurai 2004).[14]

Some beliefs are immediately related to a person's or group's position in society. This is the case of ideological beliefs, which "can be explained through the position or (non-cognitive) interest of some social group" (Elster 1983, p. 141). These beliefs are often rooted in linked with social hierarchies in a society, and contribute to their persistence. In history, there have been many examples of belief systems that supported elites or dominant groups, while other social groups were openly repressed. One might suspect that such belief systems fundamentally depend on elites imposing their belief systems and their direct hegemonic actions. However, in many cases such beliefs systems are as well contributed to by cognitive dissonance reduction mechanisms of the poor or oppressed: "the oppressed believe in the superiority and even the divinity of the ruler because it is good *for them*, although the fact that they so believe also is beneficial for the ruler" (ibid., p. 165). Appadurai (2004) speaks of situations where society members tend to believe in and support norms and beliefs that contribute to their deterioration and even abasement. In such a setting, people will hardly aspire to overcoming oppression and to creating more just social rules. Belief systems that represent specific subordinate groups as inferior can even persist after legal or formal rules establishing inferiority and discrimination have been formally abolished: "that belief system may continue to shape social identities, perceptions, and expectations long after state-sanctioned mechanisms of subordination have been dismantled" (Hoff and Pandey 2005, p. 446).

Mainstream economic theory holds beliefs to be exogenous and consistent. As just discussed and as will be discussed further below, this is not sustained empirically. Hodgson (2010) emphasises that from an evolutionary perspective, beliefs are

14. This sustains the view that belief systems are socially and culturally learned and transmitted, as I have stated before (on page 71). The case of the Italian children, who learn not to behave like the fox in Aesop's fable, is an example of a belief that is held in a specific cultural environment (see page 74).

based upon habits, which are neither exogenous (but derived from instincts) nor necessarily optimal, and contingent on social institutions and environments.

Even utility-based models have been built around issues of interest-induced beliefs and their consequences for utility. Brunnermeier and Parker (2005) investigate optimal expectations, pointing out that objectively incorrect beliefs may not maximise economic outcomes but nonetheless serve a (non-economic) utility purpose in terms of individual happiness and can therefore be optimal. On the one hand, individual well-being benefits from optimistic outlooks on the future. On the other hand, optimistic beliefs should not be too unrealistic in order to not create disappointment or provoke too detrimental decisions. In their model, beliefs need to form a balance between utility in terms of optimism (optimism with regards to the future means current felicity) and costs in form of wrong decisions (due to overoptimism) in order to maximise happiness. Landier (2000) regards this overconfidence bias "as an optimal response of the self to its environment" (p. 1) where the individual faces a trade-off between psychological well-being and the economic efficiency of future decisions, and speaks of "optimal reality denial".

Before proceeding to the discussion of specific (distortions of) beliefs and their impact on aspirations, beliefs in general can be summarised as the underlying basis upon which all aspirations are constructed. Aspirations a person holds cannot be understood without taking account of this person's positive beliefs about how the world works and normative beliefs about what a person's life should aim at. Both these belief systems, in turn, reflect beliefs and norms that prevail in a specific social environment within a specific society at a given moment. As such, beliefs have a great impact on aspirations people build, but they are not necessarily conducive to the well-being or benefit of the person holding them.

3.2.1 Cognitive dissonance

A prominent challenge of standard assumptions about beliefs comes from cognitive dissonance theory. The idea of cognitive dissonance, originating from psychology (Festinger 1954), is that people who simultaneously hold two psychologically inconsistent cognitions find themselves in a state of tension they seek to avoid or reduce. Oftentimes these conflicting views concern worldviews and fundamental beliefs (MacFadyen 2006). The world in general and life in a specific society or place may look unjust, cruel, poor and exclusive. But "persons do not only have preferences over states of the world, but also over their beliefs about the state

of the world" (Akerlof and Dickens 1982, p. 307). Therefore they may suppress, change, ignore or reinterpret information in order to create compatible cognitions (Aronson 2004; Akerlof and Dickens 1982). Such distortions can affect worldviews, beliefs regarding the self, preferences and, in the end, aspirations.

Hirschman (1965) and Akerlof and Dickens (1982) brought the theory of cognitive dissonance from social psychology into economics. Hirschman (1965) discusses changes of attitudes and beliefs in the course of economic and social development. He suggests that changing attitudes and beliefs may change behaviour, but that changed and new behaviour may as well impact and modify beliefs. Whenever behaviour creates dissonance, he sees potential for attitude change. An example he refers to is the modernisation of social norms: imagine a society with conservative social norms for the behaviour of women. When more and more emancipatory role models are brought into this society, this can create conflict with traditional role models, and create dissonance. As a consequence, social norms may change, probably not without social conflict. Following up on this argument, Akerlof and Dickens (1982) criticise the standard assumption that beliefs are exogenous and stable, arguing instead that beliefs can change, that individuals have a certain control over their beliefs and may modify them themselves, and that they have preferences over their beliefs.

A well-known application of cognitive dissonance has been provided by Bénabou and Tirole (2006) in the context of world views on redistributive policies. Using the Marxian notions of "false consciousness" and "motivated beliefs", they propose that people wish to maintain and transmit to their children a "just" view of the world and recur to the suppression or re-interpretation of information when every-day experiences contradict this justness. This mechanism allows them to believe in the (long-term) rewards of personal effort, for example in terms of economic mobility, even if reality tells quite a different story.

In merit of this distortion or neglect, they are able to motivate themselves and their children towards education, effort, determination and perseverance (Bénabou 2008). When aspirations are adapted to reduce dissonance, a trade-off arises between possibly harmful consequences of the denial of one's true aspirations and the psychological relief stemming from the relief of cognitive dissonance (Landier 2000). Recall the case of ideological beliefs, which provide a justification for each group's position in society. These justifications may not serve their interests best, but provide cognitive and psychological relief. Ideological beliefs, in particular those that justify subordinate positions of disadvantaged groups, may be the result

of cognitive dissonance reduction.

In addition, Bénabou studies dissonance in group processes. He develops a model of groupthink upon the premise that "while each person decides how to interpret objective reality, that reality - promising, disappointing, or scary - is itself shaped by the actions of others" (Bénabou 2013, p. 2). Bénabou (2008) proposes a model of ideology, understood as "collectively sustained reality distortions" (p. 324), based upon "subjective mental constructs" of individuals who interact (p. 322). These societal beliefs about "how the world works" (p. 325) may concern the question of whether success depends on luck or effort, trust or religion - thus, questions of attribution. This model adds to the distortions on the individual level the intensification and fortification effects of social processes. The extent to which group behaviour shapes individual behaviour might differ between cultures and contexts (Aronson 2004).

Oxoby (2004) presents a model where dissonance reduction explains the emergence and persistence of distinct social classes with distinct social behaviours. The main argument is that when social recognition and status are strongly influenced by income and consumption levels, poor people feel a discouraging dissonance between the recognition they wish to attain and the recognition they actually experience. The endeavour to reduce this dissonance then leads to the abandonment of mainstream status norms and the creation of an underclass with own norms and, by analogy, own aspirations.

Dissonance reduction with regards to world views can incite the denial of living conditions which would otherwise call for change and action - be it on the personal or institutional level. Dissonance reduction is thus a mechanism that can make people keep still. For example, rationalised beliefs of underclasses can make them believe that their social position is justified and appropriate or that they might be rewarded in some afterlife, and create a tension between short-term psychological benefits and long-term goal achievements and improvements of living conditions (Elster 1983). People might suppress injustices and inequalities in a society because they wish to avoid dissonance with general beliefs about fairness, justice and human societies. This is of high interest when aspirations are used to explain social change.

Wishful thinking is one sub-category of such interest-induced ideological beliefs. The notion refers to "the tendency to form beliefs when and because I prefer the state of the world in which they are true over the states in which they are false" (p. 148). Such preferences are no deliberate, conscious processes but induced

by a non-conscious drive.[15] Wishful thinking is sustained by the availability of apparently supportive evidence, which is characteristic of this kind of biased belief. Reality denial and motivated beliefs are not only a matter of the individual, but might as well work in group processes.

All of these dissonance reduction processes can impact aspirations. Teschl and Comim (2005) point out that cognitive dissonance can provide ease in a situation in which people feel that they cannot control the determinants of a situation. In other words, their outcomes are not contingent on their own actions, and they cannot effectively act upon her aspirations. In principle, this argument is closely related to the idea of sour grapes (section 3.1.2). Recall that sour grapes refer to situations in which people neglect their preferences when these seem to be unattainable. The literature on cognitive dissonance, in turn, is interested in beliefs rather than preferences. For example, a woman may experience dissonance as a result of preferring a career goal that is generally not accepted for women. This situation may provoke dissonance and psychological discomfort: the neglected access to a career or occupation one would like to pursue conflicts with the belief of living in a just world or with the belief that everyone can reach their goals if they only try hard enough.[16] She may reduce this dissonance either by denying her preference for this goal, or by modifying her belief system: if, for example, she comes to believe herself that the career goal is not appropriate for her (adapting the prevalent beliefs and norms of the society she lives in) or that she does not have the required qualifications (but that she could achieve the goal if the had them), she has reduced the dissonance by modifying her beliefs. The modification of preferences and beliefs may go hand in hand; the motivation of both is the relief of psychological dissonance.

While dissonance reduction can certainly help to deal with frustration, drawbacks and disappointment, these apparently positive effects may be short-lived: they may not serve the agent's or group's long-term interest (Elster 1983). While people usually obtain psychological benefits from avoiding unpleasant feelings of insecurity and fear by believing in imperturbable world views, they also face the possibility of making wrong choices or creating aspirations which do not lead to outcomes they would have preferred if they had attained them. This tension anticipates, again, that the normative assessment of aspirations (chapter 10) people

15. The difference between conscious and non-conscious modifications has already been discussed with regards to preferences (see section 3.1.2).

16. Dissonance arises only if women hold these beliefs. If they are disenchanted and do not believe in rather equal opportunities, there is of course no dissonance.

develop is no trivial task.

3.2.2 Self-views, self-biases and attribution errors

Conflicting beliefs about the self are particularly powerful and consequential: they challenge the individual's "face-saving motive" (Schlicht 1984, p. 62). In addition to consistent worldviews, people usually need to feel that they have consistent attitudes and behaviours. Moreover, they usually wish to see themselves as smart, kind, and worthwhile persons. Maintaining these self-views ia a major goal of all cognitive processes. Behaviour serving this goal is referred to as ego-defensive behaviour. Ego-defensive behaviour can take the form of dissonance reduction, which in turn is particularly important and powerful when the self-concept is threatened (Aronson 2004).[17]

With regards to aspirations, dissonance with regards to face-saving motives can arise when people experience that they lack the abilities to achieve aspirations they have set or would like to set for themselves. For example, a person may aspire to obtain a degree in medicine, but then find herself unable to accomplish this aspiration. Such a situation may create dissonance, for example, with beliefs about one's cognitive abilities or one's discipline. Different adjustment strategies can be used to reduce this kind of dissonance.

One strategy is the use of self-serving attribution biases: successes may be attributed to personal achievements, whereas failures are attributed to external or situational reasons (Cramer and Kaufman 2011; Ferreira et al. 2002; Yeager and Dweck 2012; Scalon and Cano 2008; Bandura 1997). External reasons could be, for example, the unfair behaviour of an examiner or unequal access to required resources. A situational justification could be that the conditions under which a person studied or was examined were not appropriate and did not allow her to be successful (because she did not sleep well the night before the exam, she had to work too much before the exam, or the exam room was too noisy, for example).

Conflicting views about the self can as well be alleviated by internal justifications. In order to gain personal consistency, people can change their attitudes and preferences (Schlicht 1984). The student might convince herself that she did not

17. This finding should not be generalised too much. Distortions do not only protect against challenges to positive self-images, but also against negative ones. Receiving positive feedback (or positive information more generally) is inconsistent with a person's self-schemata if these are negative, and leads to dissonance. Empirically, this only holds for self-relevant - that is, information about and views of the self - but not for self-other information (which does not directly concern the self-definition) (Ackermann and DeRubeis 1991).

study enough because the exam was not important to her; had she studied, she would have been more successful. This is similar to the sour grapes mechanisms again, except that here, conflicting beliefs about the self are at the origin of the retrospective adaptation of preferences.

The avoidance of dissonance applies to the autobiographical memory, too. As Markus (1977) points out, people tend to organise their personal history according to their self-schemata. These schemata are "cognitive generalisations about the self, derived from past experience, that organise and guide the processing of the self-related information contained in an individual's social experience". Memories get distorted to make them fit our self-concept, and current experiences are interpreted in the light of our memory of ourself (Aronson 2004).

How are these self-serving biases relevant for the development of aspirations? In particular, how is the reduction of dissonance due to face-saving motives different from the reduction of dissonance more generally? The selective attribution of successes to one's abilities and capacities on the one hand and of failures to other factors on the other hand can impact aspirations a person holds in the future. In an article entitled "Confidence-enhanced performance", Compte and Postlewaite (2004) describe how self-serving self-schemata based on cognitive biases increase optimism, which increases performance and thereby outcomes. In other words, people who experience successes more frequently will attribute this to their abilities and capacities, which will boost their future aspirations and their optimistic outlook on their opportunities.

Self-serving biases combined with selective attribution can thus help to create a gap between rather fortunate people, who experience successes more often, and others who have to deal with setbacks more frequently. Successes are not only a function of a person's capacities and efforts.[18] For example, university students from non-rich backgrounds will have to work in side-jobs more frequently than students from wealthier families, giving them less time to study and prepare for exams. Teachers may be biased in their assessment of students from specific ethnic or class backgrounds,[19] while at the same time awarding higher grades to students from more fortunate backgrounds. Together, the unequal distribution of success and failures and the biased attribution of these success and failures to personal characteristics can create a gap between the future aspirations of rather

18. In chapter 1, I have described some of the conditions that make it harder for disadvantaged people to achieve successes.

19. Recall for example the case of the Indian teachers who had condescending attitudes towards students in from areas (see page 32).

advantaged and rather disadvantaged people.

3.2.3 Selective awareness and mental short-cuts

As has been discussed in the introduction to this section, beliefs about how the world works are not objective or neutral in the sense that they are tied to social norms of a society at a given moment in time. There is no such thing as an objective representation of the world (Schopenhauer 2008[1818/1819]; see also Solms and Turnbull 2002). Humans use manifold explanations, theories, dogmas, and ideologies in order to explain "their" world, even where no such rules exist (or can be supported scientifically) (North 2005). Humans need to make sense of their world, but only have limited cognitive capacities at their disposition to do so. Therefore, the human mind uses strategies that simplify complex issues and save mental energy (Fiske and Taylor 2010; Aronson 2004; Kuran 1993). Human are "cognitive miser[]s" (Fiske and Taylor 2010, p. 12): we only process a small part of all information available, because the world is simply too complex for the human mind.

Psychologists and behavioural economists have discussed a number of mechanisms and heuristics people use to deal with the complex world they live in. Heuristics are mental short-cuts helping the human mind to make decisions in the face of complex realities and limited cognitive capacities. Some of these heuristics are informative for the development of aspirations as well, and will therefore be discussed in this section.[20]

Both psychology and economics look back to a tradition of understanding human reasoning as processes of probabilistic inferences. This conception goes back at least to Enlightenment probabilists. Since the 1970s, however, Amos Tversky and Daniel Kahneman's research program has called into question the ability of average humans to make probability-based decisions accurately. Heuristics and biases have conquered the academic stage as an alternative model of decision-making, and probability-based models and their explanatory power have come under attack. I am discussing these heuristics in relation to beliefs because in my understanding, these heuristics do not primarily refer to situational assessments during a decision-making process, but to beliefs that underlie decisions people make. Each cognitive heuristic constitutes an own large field of research. Only some of them can be briefly summarised here.

20. I will limit my discussion to those who are most relevant for the development of aspirations. Fiske and Taylor (2010) give a general overview.

One heuristic that is of relevance for the formation of aspirations is the *heuristic of social proof*. It describes a kind of free-riding on the expertise and knowledge of others. People choose those options of which their environment would most easily approve and which would seem to be the most 'natural' choices. For example, Tetlock (1992) has shown how people do not always choose the best alternative, but the one they can better justify in social interaction. With regards to aspirations people build, this means that people often - consciously or unconsciously - choose aspirations of which other people in their environment will likely approve. Resulting aspirations will be considered "normal" or "appropriate" for a specific person in a specific environment and with a given specific background.[21] Recall the example of the Indian schoolchildren whose educational ambitions are discouraged and ridiculed on the basis of aspects of their identity.[22] When young schoolchildren build their educational aspirations in environments shaped by pessimism and discrimination, heuristics of social proof can easily discourage these children from building ambitious aspirations that would probably seem ridiculous to most people. Often-times, aspirations conforming to social proof will operate in the literal sense of cobblers who sticks to their last.

Another relevant heuristic is the 'availability heuristic', which describes the phenomenon that individuals pay more attention to a piece of information when they get exposed to it more frequently. The frequency of a belief is taken as a proxy for its truth (Kuran 1993), just like a preference becomes correct or legitimate more easily when we observe it in other people many times. One example is the widespread belief of US-Americans that more people die from shark attacks than from falling air plane parts - which is not true -, probably because shark attacks are covered more vividly in the media and therefore brought to memory more easily (Aronson 2004). Related to this is the neglect of correlation of information: Enke and Zimmermann (2015) use experimental research to show how people neglect how information they obtain through their social and informational networks are typically correlated and therefore tend to overrate the importance of specific pieces of information in the formation of their beliefs.

Against this background, it is highly plausible that more frequent jobs become an occupational aspiration more easily. When most people in a specific environment leave school after eighth grade, this easily becomes a straightforward choice for

21. Considerations of normality or appropriateness rely on people's identities (Akerlof and Kranton 2000, 2011). The role of identity for aspirations people build is discussed in chapter 4, section 4.3.

22. See page 32. Hoff and Pandey (2014) reported the example of schoolteachers who took disparaging and discouraging attitudes towards low-caste students, and thereby discouraged their aspirations.

subsequent students as well. Living in a remote, rural area, to become a farmer is a much more straightforward option than to study chemistry. Of course, material constraints will certainly make it harder to become a chemist than a farmer (a university entrance certificate is required; one has to move to a city to go to university; this requires funding; and so forth), and I am not suggesting that they are not more important than the effects of the use of availability heuristics. However, if more role models were available, it would certainly be easier from students of the region to see themselves pursuing this path, and to engage in it. In contrast, when specific occupations are not available within one's social environment, these may be ruled out just because of a lack of knowledge about and little familiarity with them.

A third heuristic that is of interest to the study of endogenous aspirations is the 'representativeness heuristic' (Kahneman and Tversky 1973). It describes how people draw conclusions about the similarity of two objects or persons based upon a similarity they have in another regard. The logic of this heuristic corresponds to the logic of a spurious relationship (Yule 1926; Höfer et al. 2004). An important consequence of representativeness heuristics is the occurrence of prejudices. For example, consider the relationship between beauty, labour market success and income. It has been found that physical attractiveness has direct and indirect effects on labour market outcomes and employment (Judge et al. 2009; Harper 2000). When attractive people are considered intelligent as a correlate of their physical appearance, representative heuristics are influencing people's judgements. Representative heuristics thus rely on a spurious, but apparently salient relationship between two variables. When people are assumed to have or not have certain abilities based on gender, ethnic prejudices, or other features, this can impact their aspirations. For example, girls may come to believe that *because* of being a girl, they are unable to do certain things.

Heuristics can interact: publicist Gülay (2012) reports the example of male teenager of Turkish or Arab descent in disadvantaged areas of Berlin. Ethnic and socio-economic backgrounds usually are salient features of these teenagers' identities. In disadvantaged areas, he argues, role models they can identify with based on these criteria suggest these young people that material success and recognition can primarily be achieved through criminal activities, violence or occasionally through careers in rap music. At the same time, stereotypes and discrimination in society at large may reinforce these prospects. All three heuristics - recognition, representative, and availability heuristics - only work against the background of

specific belief systems. Of course, spurious relationships and associations of ethnic or socio-economic features with assumptions about a person's abilities or interests do not only impact self-views, but prejudices about other people, too.

What is the value added by the differentiation of these distorting mechanisms? Put differently, why should economists be concerned with how or why exactly pieces of information are suppressed? Heuristics are at the 'mechanical'level, and to really understand observed outcomes, researchers need to understand the processes behind. This is of primary importance for the design of policy interventions (Grüne-Yanoff 2015). When students participate in a program that is supposed to increase their schooling aspirations and to stimulate their motivation,[23], effects will be different when availability heuristics influence students' aspirations, as compared to a situation in which students discard some options because their peers do so, too. This is of course a rather simple example: in reality, many heuristics as well as other factors can interact. For example, students may anticipate discrimination on the labour market and adjust their aspirations accordingly. However, the point that is made here is that if policy interventions are to be successful, it is important to analyse which cognitive mechanisms are relevant for decisions students make.

3.2.4 Mental models and cognitive frames

Amos Tversky and Daniel Kahneman brought up another theme with large repercussion among economists: describing "decision problems in which people systematically violate the requirements of consistency and coherence" due to psychological principles governing the perception and evaluation of options, they coined the term "decision frame" to refer to the "decision-makers' conception of the acts, outcomes, and contingencies associated with a particular choice" (Tversky and Kahneman 1981, p. 453). Based upon this idea, Salant and Rubinstein (2008, abstract) call a frame an "observable information that appears to be irrelevant to the rational assessment of the alternatives but nonetheless may affect choice". The specific frame a decision-maker adopts facing a specific decision problem depends on how the problem is presented or formulated (Tversky and Kahneman 1981).[24] Besides situational frames, there is also a broader concept of framing

23. Recall the experimental interventions studied by Nguyen (2008) and Yamauchi (2007), page 148. They used role models to provide information about the benefits of schooling.

24. These situational decision frames clearly belong to the third 'class of deviation' from standard behaviour: 'non-standard decision-making'. However, situational frames are not of immediate relevance for the formation of aspirations: aspirations are developed over longer periods of time rather than within a specific situation. Therefore decisions frames are only briefly mentioned here.

effects that relies on internal, mental dispositions and mind sets.[25] Mind sets bring together many aspects that have been discussed separately in the previous sections. They are therefore an important step towards an integrative framework for the understanding and analysis of aspirations.

According to the World Development Report, mind sets "capture broad ideas about how the world works and one's place in it" (World Bank 2015b, p. 62). In addition to belief systems, they also include "largely unconscious perceptual screens that determine how one views or understands a situation" (Hoff and Stiglitz 2011, p. 1). Mind sets thus combine a set of beliefs including world views and self-views with corresponding mental short-cuts and heuristics. Together, they provide "the cognitive structure that forms the basis of reasoning, decision-making, and (...) behavior" (Jones et al. 2011, p. 1).

Panther and Nutzinger (2004) understand frames as socially learned and culturally adopted mechanisms of behaviour and interpretation. They rely upon "categories, concepts, identities, prototypes, stereotypes, causal narratives, and worldviews" (World Bank 2015b, p. 62). As such, these concepts emphasise institutional, social, and cultural effects on the frames and lenses through which a situation or choice[26] is perceived. They influence how information is filtered, perceived, registered, structured, processed, and retained or dismissed, and have "the effect of limiting attention to less than the full range of alternative behaviors, problems, and solutions which are logically possible" (Elkins and Simeon 1979, p. 128). Hodgson (2010) emphasises the importance of habits: in addition to belief systems, habits and mental dispositions determine how "our minds are disposed towards the choice outcome before we are aware of our decision" (p. 2).

The concept of mental models or cognitive frames can help to understand how social contexts and structures provide frames for deciding whether specific options and aspirations appear legitimate and plausible for a specific person to choose. Hoff and Pandey (2004, 2005, 2006, 2014) report in a series of papers how the framing of a social situation can activate cognitive frames and influence goals, preferences and effort levels. In their experiments,[27] Indian students with different caste backgrounds were asked to solved mazes. While no performance

25. The concepts of mental models, mind sets or cognitive frames have been used as equivalents in the literature, see Hoff and Stiglitz (2010, 2011) and Hoff and Pandey (2014) and World Bank (2015b). I will use the term mind set in the following.

26. I am not necessarily implying a conscious choice.

27. The original experiments are Hoff and Pandey (2004) and Hoff and Pandey (2005). See Hoff and Pandey (2006) for a comprehensive discussion and comparison. Hoff and Pandey (2014) adds a related experimental study to go deeper into some details about the underlying mechanisms.

differences existed between high-caste and low-caste students when their caste was not publicly revealed, the revelation caused lower performances of low-caste students.

One possible explanation is that the revelation of caste constitutes a framing effect of the situation. This framing effect can be external or internal: in some cases, an individual's outcome depended on the external judgement of another person. In these situations, low-caste students could have expected that their performance would not be valued in the same way as that of a high-caste student. This mistrust could have taken away their incentive to perform well. An internal frame could have been that based upon the society's belief systems, low-caste students had internalised that their outperforming high-caste students was socially undesirable.

Mind sets influence people's outlook on life more generally, which in turn can have strong impacts on aspirations. Bernard et al. (2011) report that many disadvantaged people in Ethiopia share a mind set that limits the options that are available for improving their living conditions to a considerable extent, as they believe that they have limited agency and can only do little to change their future (see also World Bank 2015b). This may well be true; but it may be the case that a mind set limits one's options, going beyond the effects of external constraints. In other words, a mind set may distract our attention from options that are in fact available, and stifle aspirations.

These examples make clear that cognitive frames are a social phenomenon, and that they are closely related to beliefs collectively held in a society. The "infinite set of potentially observable data and the infinite ways in which that data could be processed are limited by the finite set of *socially constructed* categories" (Hoff and Stiglitz 2011, p. 141, italics added). Social rules determine which options a member of a specific group may legitimately consider, and which are excluded from her cognition. Worldviews and opinions held by communities frame human thinking.

Chapter conclusion

Many different, mostly isolated and dispersed approaches to individual preferences and beliefs from the field of behavioural economics have been discussed in this chapter with reference to aspirations.[28] Rather than to provide an unstructured summary of these different and hitherto often unrelated mechanisms, I refer the

28. Some of them - notably adaptive processes - certainly have their origins outside and before the emergence of behavioural economics. But they have also been discussed within this field.

reader to chapter 6, where they will be presented in a condensed and connected way. Before this, the next two chapters provide two important intermediate steps towards an integrative framework, contributing to laying its foundations. Chapter 4 criticises the approach of mainstream behavioural economics for viewing behaviour in isolated terms and as deviations from rational behaviour. I will propose that a broader and more holistic perspective - that is, one that does not concentrate on deviations rather than on motives of behaviour and that uses broader views of rationality - can advance our understanding of aspirations. Chapter 5 contributes perspectives from other social sciences. These views together will merge into an integrative framework in chapter 6.

Chapter 4

Broadening the view: aspirations and different notions of rationality

> Inaccuracies in the science which result from inadequate conceptions of man are not to be rectified, as has been asserted, by a proper allowance for 'disturbing forces.' The actual course of a cannon ball may be determined by a mathematical computation followed by the proper allowance for atmospheric resistance; but the social activities of men can not be accurately determined by assuming that man is a being of a certain kind, elaborating the conclusions with nicety, and then endeavoring to introduce subsequent allowance for the fact that man is, after all, a being of quite a different kind.
>
> John Bates Clark (1877, p. 711)

> What are economists doing? What "should" they be doing?
>
> James Buchanan (1999, p. 28)

To better understand the behavioural and cognitive mechanisms that can explain the process of aspiration formation as well as the effects of aspirations on behaviour, the previous chapter explored selected approaches from the field of behavioural economics. This was natural insofar as the recent research on aspiration traps also belongs to this field. A number of fields of study, approaches, and behavioural mechanisms that may contribute to the analysis of aspirations could be identified. On the other hand, many of these concern specific and rather isolated

deviations from behaviour that is considered 'standard' within mainstream economics. In this chapter, I will argue that for this reason, behavioural economics does not necessarily provide the most beneficial approach to analyse the endogenous development of aspirations and their impact on behaviour.

To argue this point and to defend more comprehensive perspectives of analysis, section 4.1 discusses the approach of behavioural economics and its underlying assumptions. Specifically, I identify two shortcomings for the analysis of aspirations. The first is that mainstream behavioural economics concentrates on "behavioural anomalies" (Kahneman and Thaler 2006), "mis-behaving" (Thaler 2015) and mistakes of real humans as compared to a fully rational utility-maximising agent (Camerer and Loewenstein 2004; Thaler and Sunstein 2010; Diamond 2008; Beshears et al. 2008). Upon this basis, it is difficult to come up with a description of how people *do* build aspirations. Second and related to this, the prevailing notion of rationality provides only a narrow view on motives of aspirations. Section 4.2 opposes different notions of human rationality and highlights how these can be more useful for advancing a comprehensive understanding of aspirations people build. Section 4.3 discusses the relevance of identity for aspirations to illustrate how the analysis of aspirations benefits from less narrow models of behaviour and broader notions of rationality.

4.1 The approach of mainstream behavioural economics

It is no trivial task to briefly describe the approach of behavioural economics and its underlying assumptions insofar as behavioural economics is quite diverse and controversial a field. It is far from uniform to what extent economists consider behavioural economics a mainstream research program, as going beyond or even as a critique to it. Consequently, much of the predominant and successful work in the field is hard to designate according to standard classifications. On the one hand, these contributions can hardly be considered orthodox (in our times, neoclassical): they typically soften assumptions and prescriptions of rationality, selfishness, and equilibria. It is precisely the point of these works that they do not adhere to the principles that are commonly used to characterise the orthodoxy of the profession, and particularly the assumption that fully rational and well-informed individuals maximise their utility in static contexts by behaving and choosing optimally (Colander et al. 2004; Bernheim and Rangel 2007).

On the other hand, though deviating from the orthodoxy, the most successful contributions are widely accepted (and indeed produced) by the economic mainstream, that is, by leading economists in the top graduate schools and by top-ranking journals.[1] For this reason, Colander et al. (2004, p. 487) assert that "one can be part of the mainstream and yet not necessarily hold 'orthodox' ideas". Dobusch and Kapeller (2012) refer to these authors as "mainstream dissenters". Colander et al. (2004) coin the term "edge of economics" to refer to such fields of research that expand the frontiers of mainstream economics. Precisely, they define the edge as "that part of mainstream economics that is critical of orthodoxy, and that part of heterodox economics that is taken seriously by the elite of the profession" (p. 492). The term describes the most successful contributions to behavioural economics well: they gradually change single features of standard models of behaviour without however questioning the framework itself. They use rather standard modelling approaches and do not deviate strongly from neoclassical theory.

But there is also work that goes further. In words of MacFadyen (2006, p. 188), "[t]here seems to be some division in the behavioral economics literature on whether this should be seen as requiring a new discipline as an alternative to neoclassical economics or whether it is largely a matter of adding psychologically relevant variables to conventional economics models". To discuss whether aspirations are most fruitfully to be addressed within mainstream behavioural economics, I will briefly summarise this debate.[2]

By those who think that behavioural economics is quite close to neoclassical economics, behavioural economics is understood as a "natural progression" (Chetty 2015, p. 3), in the sense that it is about improving neoclassical modelling further and further by relaxing critical assumptions and introducing new ones. Critical assumptions are most often those proven wrong by empirical and psychological research. Accordingly, Daniel Kahneman thinks that there is an "interdisciplinary conversation by economists who hope (...) that psychology could be a useful source of assumptions for economic theorizing, and indirectly a source of hypotheses for economic research" (Kahneman 2003, p. 1449). Likewise, Rabin (2002) thinks that psychology helps the economists to identify departures from rational behaviour.

In this understanding, the modifications and improvements of critical or faulty

1. I refer to these approaches as mainstream behavioural economics, see page 66, footnote 2.

2. I will not review the whole field or evidence generated in it. For overviews of what behavioural economics does and insights that have been generated in the fields see Camerer et al. (2003), Pesendorfer (2006), DellaVigna (2009), Rabin (2002), and Heap (2013). See Heukelom (2014) for a history and comprehensive overview of the field and its underlying approaches.

assumptions do not shake the foundations of the neoclassical framework. In fact, Heukelom (2014) claims, early contributors to mainstream behavioural economics searched for ways to "maintain the behavioral axioms, its related models, and the associated normative-descriptive distinction" (p. 97) and "actively tried to prevent a theoretical economic discussion of neoclassical theory, (...) [steering] the discussions toward behavioral terms" (p. 156). Mullainathan and Thaler (2000), intending to give an overview of the research program of behavioural economics, choose to do so by "discussing the most important ways in which the standard economic model needs to be *enriched*" (p. 1, italics added), without however questioning its role as a benchmark. For them, the aim of behavioural economics is to identify deviations of real human behaviour from the behaviour foreseen in a neoclassical model, and to explain why these differences are worth being considered in economic research. As Heap (2013, p. 996) remarks, this is quite noteworthy in retrospect, "given the way it subverts the central model of rational agency in that mainstream".

An even stronger statement comes from Matthew Rabin, who claims that behavioural economics "is not only built on the premise that mainstream economic *methods* are great, but also that most mainstream economic *assumptions* are great. It does not abandon the correct insights of neoclassical economics, but supplements these insights with the insight to be had from realistic new assumptions" (Rabin 2002, p. 658-659, italics in original).[3] More than a decade ago, he asserted that behavioral economics is "on the verge of 'going mainstream'" (p. 657). This does not come as a surprise for Berg and Gigerenzer (2010, p. 134), who criticise that many authors "tend to dramatize differences" between neoclassical and behavioural economics. They view commonalities as a result of "very partial commitments to empirical realism, indicated most clearly by a shared reliance on Friedman's as-if doctrine".

For Pesendorfer, behavioural economics "has reached the status of an established discipline (...) [but at the same time] remains a discipline that is organised around the failures of standard economics" (Pesendorfer 2006, p. 720). The fact that several prestigious academic prizes were awarded to behavioural economists testifies to the similarity many authors perceive (Sent 2005).

This understanding of the role of behavioural economics is well aligned with and illustrated by the heuristics and biases research program by Daniel Kahneman and Amos Tversky, which dominates the psychological inputs in mainstream

3. This procedure and the history of modifications have been ridiculed as a "repair program" for the neoclassical approach (Gigerenzer 2008, p. 90; see also Güth 2008).

behavioural economics. It is "undoubtedly the most influential psychological research program on human reasoning, judgment, and decision making over the past three decades" (Rieskamp et al. 2006b, p. 219), and the fact that Kahneman was awarded the Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel in 2002 testifies to its high influence in economics. The approach is based upon the identification of biases, fallacies, and cognitive illusions provoked by a range of cognitive heuristics human beings employ in decision-making processes. Bounded rationality is interpreted here in "in terms of errors, biases, cognitive illusions, and, ultimately, human irrationality" (p. 220).

This rather narrow focus on biases and errors, derived from a quite "narrow view of norms of sound reasoning" (p. 221) based upon the rules of probability theory, is not shared across the entire economic discipline. Other researchers hold quite different views on the nature of rational human agency and, as a consequence, see much greater distinctions between behavioural and neoclassical economics. Some advocate leaving neoclassical economics behind and creating new paradigms under stronger consideration of psychology. While many of the proponents of this viewpoint are psychologists, one early defender from within economics was Herbert Simon (1955, 1959, 1956, 1957).

Simon shared with other critics of rational choice models (such as Winter 1971, Nelson and Winter 1982, Cyert and March 1963 and other "old" behavioural economists) a common dissatisfaction with neoclassical economics and its assumptions about human behaviour and rationality. Rather than just correcting a few assumptions while maintaining the bulk of mainstream's great assumptions, Simon called for "fairly drastic revision", setting forth that "the task is to replace the global rationality of economic man with a kind of rational behavior that is compatible with the access to information and the computational capacities that are actually possessed by organisms, including man, in the kinds of environments in which such organisms exist" (Simon 1955, p. 99).

Given these controversies, behavioural economics is no universal field, and different conceptions of it have prevailed over time (Heukelom 2014). Behavioural economists accept the principles of neoclassical economics and, in particular, underlying notions of rationality to different degrees. The next section turns to the discussion of different notions of rationality.

4.2 Aspirations and alternative conceptions of rationality

As commonly understood in neoclassical and mainstream behavioural economics, rational behaviour is the maximisation of subjectively expected utility. This view is based upon the "simultaneous axiomization of utility and subjective probability" (Selten 2001, p.13) developed by Neumann and Morgenstern (1953) and established within economics by Friedman and Savage (1948) and Savage (1972) and Friedman (1953). Von Neumann and Morgenstern's (1953) contribution was motivated by their search for "assumptions which have to be made about the motives of the individual" (p. 8) to explain their "attempts to obtain (...) [the] maxima" of utility or profit (p. 9).[4] Their answer was individual rationality, which the authors defined by means of several axioms.[5]

With the work of Savage and Friedman, these axioms went from being understood as standards of behaviour an individual *seeks* to achieve to being understood as accurate descriptions of how humans *do* behave. Around the middle of the past century, the "books by von Neumann and Morgenstern and by Savage became the canonicals standards for reasoning about individual rational behavior" (Heukelom 2014, p. 96). Decades later, they even became normative benchmarks for assessing behaviour and welfare (Friedman 1953; see Hands 2001 and Heukelom 2014 for discussions).

Although many authors first upheld the view that rationality axioms should only be used for descriptive purposes (Berg 2003; Berg and Gigerenzer 2010; Tversky and Kahneman 1986; Thaler 1991), the normative-descriptive distinction was reinterpreted during the 1990s and 2000s (Heukelom 2014). For Elster (1986, p. 1), the "theory of rational choice is, before it is anything else, a normative theory" in the sense that behaving rationally allows agents to reach their goals as well as possible. Kahneman's early "intuition that an individual's cognitive apparatus systematically fails" to do so became explicit in writings on "anomalies", (Kahneman and Thaler 2006) "misbehaving", (Thaler 2015) and the very idea of nudging (Thaler and Sunstein 2003, 2010).

This vision of the individual as fully rational Bayesian maximiser of utility is

4. The understanding that the individual attempts to maximise self-interested utility or profit, in turn, goes back to Edgeworth (1881). See Sen (1977) for a discussion.

5. These axioms are statements made about the completeness, transitivity, continuity and independence of individual preferences (Neumann and Morgenstern 1953, p. 26-27). See Leonard (2010) and Heukelom (2014) for discussions of their background and origins.

taken for granted by large parts of the economic profession (Camerer et al. 2003) and has become so widely accepted that it is rarely reflected, let alone called into question.[6] It is widely neglected that distinct assumptions about the motives of the individual could be made. Yet, debates about the motives of human behaviour have existed since the first days of the discipline.[7] Different conceptions of human rationality competed within the work of Adam Smith (Smith 2003). Max Weber proposed that four types of rationality coexist: in his view, instrumental, belief-oriented (such as those guide by religious or ethical principles), affective, and traditional (that is, conventional or habituational) motives of behaviour matter at the same time (probably to different degrees).

Sen (2005) has argued that concepts of rationality that focus on self-interest - even when understood in broad terms - cannot capture the whole range of reasons that motivate behaviour because they exclude important motives such as social recognition and commitment. In Simon's concept of *satisficing* (Simon 1947, 1979), aspirations serve as a benchmark of rational behaviour: understood as reference points for evaluation, an aspiration indicates which choice option is good enough to provide satisfaction. Seeking sufficient satisfaction through *satisficing* (instead of optimisation) is understood here as a motive of purposeful behaviour.

Many more criteria can be employed for identifying rational behaviour, among them logical reasoning, religion, probability, and emotional forces. Some of these, above all emotional or instinctual ones, are often considered irrational by mainstream economists,[8] but this view is not shared by all conceptions of rational behaviour. In fact, even models within mainstream economics have proposed emotional and psychological relief as a motive of behaviour.[9] The assessment of behaviour against standards of rationality is further complicated by short-run versus long-term considerations, the emphasis of processes or outcomes and the distinction between behaviour that is rational in specific situations but not in general (Sun 2016; see also March 1986).

6. The Bayesian approach to utility-maximisation makes the theory applicable to conditions of risk and uncertainty by means of the proposition that agents use subjective probabilities for computing their expected utilities (Harsanyi 1986).

7. Concepts of rationality are the topic of controversial debates in other disciplines, too. See Stanovich (1999) for a discussion from the perspective of psychology. In the following, I am reffering to descriptive notions of rationality. Normative rationality is the topic of chapter 10.

8. For instance, Harsanyi (1986, p. 83) considers observed behaviour rational when it can be explained by means of "reasonably well-defined (...) objectives", and when there is no need to recur to "'deeper' motivatinal factors and (...) some much more specific assumptions about the psychological mechanisms underlying human behaviour" to account for it.

9. See for example Landier (2000)'s model of optimal reality denial (discussed on page 79) or Bénabou and Tirole (2006)'s model about beliefs in a just world (discussed on page 80).

In the field of neuroeconomics, it has been claimed that limits of neural capacities and constraints faced by the nervous system are a major determinant of individual behaviour that may dominate other motives. “Real animals operating under evolutionary pressure accept errors whenever correcting those errors would be more costly (in terms of a larger or more precise nervous system) than beneficial” (Glimcher 2014, p. 8). For example, in a recent contribution to cognitive sciences, Huang and Bargh (2014) suggest that psychological processes focus people’s attention on the attainment of goals they have consciously or unconsciously set for themselves, while decreasing their capacity to process information and considering other options. Neuroeconomics and cognitive decision-making research call “for a broader theory of ecological rationality (...) that is bounded by neurophysiological constraints” (Tsetsos et al. 2016, p. 3106).

The following paragraphs will concentrate on ecological rationality, an alternative understanding of purposeful human behaviour.[10] The idea that humans are not fully rational in von Neumann-Morgenstein terms but instead boundedly rational decision-makers with limited cognitive capacities was put forward by Herbert Simon, a staunch critic of neoclassical theory (Simon 1955, 1956, 1957, 1959, 1982).[11] According to Simon, “we should not treat rationality as a universal human capacity, one in which the ‘laws’ of reason are invariant, but instead see that principles of rationality vary according to the context or environment of choice” (Harper et al. 2016, p. 84). This view allows for the inclusion of the aforementioned variety of potential motives of behaviour in the sense that it includes instrumental and belief-oriented, habituational and many other motives of behaviour, and accommodates limited cognitive capacities which are emphasised by neuroscientists.

Building upon Simon’s work, an alternative understanding of human rationality has been developed in a research program coming from psychology: the fast and frugal heuristics research program by Gerd Gigerenzer and colleagues. Gigerenzer proposes an understanding of rationality that has become known as ecological rationality. While Simon puts limited cognitive capacities at the forefront, Gigerenzer

10. Ecological and social rationality are sometimes used interchangeably. In my understanding, ecological rationality includes social motives and motives of behaviour that are adapted to social environments. I will therefore speak of ecological rationality.

11. It is beyond the scope of this thesis to summarise Simon’s work on bounded rationality. See Selten (2001) for a short introduction of the concept. Gigerenzer and Selten (2002) and Frantz and Leslie (2016) are collections of articles discussing impacts and extensions of Simon’s work. Heukelom (2014) discusses how Simon’s work in general and bounded rationality in particular has been adopted and appropriated by mainstream behavioural economists (see for instance Kahneman 2003), leading to a certain alienation of Simon from the field and from mainstream interpretations of his concept.

emphasises an understanding of rationality that integrates the human environment as a fundamental driver of behaviour. He claims that economic modelling understanding the individual as primarily isolated from its social environment should be entirely left behind because there are "constraints on human reasoning that emerge from the fact that Homo sapiens is a social animal" (Gigerenzer 2000, p. 197). He therefore proposes to think of rational behaviour in terms of ecological rationality, which "explains human judgment and decision making in terms of the structure of social environments" (p. 199).

Proponents of ecological rationality reject universal norms for rational behaviour and decision-making that are not context-specific, and instead emphasise that decisions and behaviour need to match well with specific contexts and environments (Gigerenzer et al. 1999; Berg and Gigerenzer 2010). Cognition and environment are not investigated in isolation: behaviour and the degree to which it is rational can only be assessed against the background of the specific social environment. The emphasis of social environments and their joint consideration of environments and cognitive and psychological mechanisms make this approach particularly useful for the analysis of aspirations under conditions of poverty, exclusion, and disadvantage.

Ecological rationality starts out by analysing the environment and its structures and investigates modes of reasoning that could perform well and be psychologically plausible under these circumstances. Ecological rationality is achieved when specific rules for behaviour, heuristics or decision-making processes "function well in particular classes of environments" (Berg and Gigerenzer 2010, p. 149). There may exist "behaviors that look irrational from an individualistic point of view [but] can turn out to be well adapted to a specific social environment" (Gigerenzer 2000, p. 199). Simon and Gigerenzer share the perspective that "one cannot understand humans' cognition by studying either the environment or cognition alone" (Rieskamp et al. 2006b, p. 226).

The benchmark for the normative assessment of behaviour is shifted away from universal axioms of behaviour, which in the von Neumann-Morgenstern framework are supposed to optimise behaviour and maximise subjective utility regardless of environments. From the perspective of ecological rationality, behaviour that deviates from these axioms is not necessarily problematic. To the contrary: it can also be a "solution to decision making under conditions of limited time, limited knowledge and limited computational capacities. (...) [It] can yield surprisingly adaptive decisions, choices, and judgments" (p. 226).

From the perspective of ecological rationality, behaviour in general and aspirations in particular are rational if they function well within a specific social environment. Aspirations must match world views, self-views, and identities, be compatible with our social environments and be justifiable before ourselves and others. Aspirations serving these purposes may qualify as ecologically rational: they are adapted to specific living conditions and social environments and do not, for example, create dissonance or dissatisfaction. Moreover, ecologically rational aspirations do not provoke constant social conflict, are socially acceptable and compatible with a person's social roles (see for example Simon 1947, Koumakhov 2016 and Pingle 2016).

Aspirations that are rational in these terms do not, however, automatically serve a person's interest best. Rather, aspirations can involve trade-offs in terms of their rationality. Cautious and adaptive aspirations may protect an individual from experiencing disappointment in vain attempts, but they can also hold people back from goals they would have appreciated if they had pursued them. A given aspiration may match preferences perfectly, but not be socially acceptable. People may adapt their aspirations to their objective opportunities, which prevents them from experiencing setbacks and frustration, but could also block the road towards long-term achievements. Dissonance reduction may create psychological comfort, but at the same time prevent a person from improving her living conditions.

In conclusion, ecological rationality allows to take account of all kinds of behavioural motives and purposeful behaviour; when these function well in a person's environment, behaviour is ecologically rational. However, the inclusion of many different motives of behaviour generates the possibility that an aspiration works in different directions in term of rationality. Aspirations people build can be a double-edged sword serving ambiguous purposes.

The following section uses the example of identity to illustrate that aspirations can be shaped by different features of a person's identity, and that this can serve (ambiguous) ecologically rational motives of behaviour. The discussion of the implications of ecologically rational aspirations for individual welfare will be taken up again in chapter 10.

4.3 Rational aspirations in the light of identities

This chapter aims at making two points about the analysis of aspirations: many cognitive and behavioural mechanisms overlap and interact in the development of aspirations, and many different motives can drive aspirations people build.[12] Identity is a particularly suitable choice for illustrating these points for two reasons. First, many singular mechanisms that were discussed in chapter 3 are related to identity.[13] Indeed, many mechanisms are not easily discussed *without* referring to identity. Second, individual and collective identities motivate and evoke many different reasons for behaviour that can only be grasped when narrow concepts of rationality are abandoned. As such, identities are particularly useful to illustrate how aspirations can be adapted to social environments in order to achieve ecological rationality. At times, identities produce motives of behaviour that point into opposite directions; identities are therefore useful to illustrate how a specific aspiration can be ecologically rational in some regards, but not in others.

"People's identity defines who they are — their social category" (Akerlof and Kranton 2011, p. 13). Identification with social groups and with one's personal roles therein changes what people "know and believe" (Simon 1991, p. 113), and defines a context or framework for evaluating situations. Identities have many ingredients originating from many different layers of a community or society. In words of Sen (1985b, p. 348),

> [w]e all have many identities, and being 'just me' is not the only way we see ourselves. Community, nationality, class, race, sex, union membership, the fellowship of oligopolists, revolutionary solidarity, and so on, all provide identities that can be, depending on the context, crucial to our view of ourselves, and thus to the way we view our welfare, goals, or behavioral obligations.

How people see themselves and their belongingness to social groups and categories influences their preferences, and shapes their beliefs about themselves and their place in the world. Identities group these beliefs into recognisable amalgams that characterise individuals in front of themselves and of others. Identification with specific groups and social categories comes along with differentiation from others. In sociology, "othering" describes the process of the invention of categories and ideas that dominant groups use to define inferior groups. Such processes of othering can create and reinforce collective identities.

12. This chapter reviews a number of empirical studies that are particularly informative for this discussion. The general review of empirical research takes places in chapter 7.

13. The reader may remember that I referred to the importance of identity many times.

Ego-defensive and self-serving cognition[14] rely on the premise that people generally pursue face-saving motives. The idea of ecological rationality adds that behaviour needs to function well within a person's environment. Many concrete meanings of ego-defensive and ecologically rational behaviour are defined by identities. How important is it to be (economically) successful in a specific environment and for a person holding a specific identity? How important is the professional position as compared to social esteem and popularity in the neighbourhood? How important is money? How important is it to have many children, to be an entrepreneur, to be morally conservative, to be risk-taking and courageous, to be considered intelligent, or to be considered attractive? The answers to these questions do not only vary between societies and moments in time, but as well between different groups with different identities.

People often observe other people with whom they share collective identities to learn from their experiences.[15] Many studies have addressed educational aspirations of Mexican Americans in the US - a group with a specific collective identity and highlighted how their shared identity has shapes aspirations in important ways. Kiyama (2010) studies how Mexican American families develop educational aspirations and find that knowledge obtained from the families' social environment merge with academic symbols that prevail in their subgroup. Specifically, many families from this community place a high value on education as a means of achieving progress in the US. These values are reflected in educational aspirations held for teenagers in the Mexican American community under study.

However, there can be important gaps between ideologies, aspirations, and outcomes. St-Hilaire (2002), too, studies educational aspirations of US teenagers of Mexican American descent. The study confirms that education was recognised as key for success in the United States by 90% of the study participants. Notwithstanding, less than 50% indicated they wished to complete a graduate degree, and less than 30% indicated they believed they could actually do so. The author concludes that Mexican Americans on the one hand recognise the cultural hegemony of the value of education in the US, but on the other hand adapt to the norms of their peers and their social environments. Among peers and social environments, Mexican American identity is very salient, and provides the basis for learning from the experiences of other who share this identity. Upon this basis, Mexican Amer-

14. These concepts have been introduced in chapter 3, section 3.2.2.

15. Learning from peers, social environments and role models is a topic of its own. I am concentrating here on the role of identity in this process. Empirical evidence about the effect of role models on aspirations will be discussed with more details in chapter 7, section 7.3.2.

ican students often tend to consider lower educational aspirations more realistic. Related literature on Latino/a educational aspirations and attainments points to similar directions (see Ojeda and Flores 2008, for an overview).

Identities can also influence aspirations when specific achievements are not well accepted in a social group. For an example from an educational context, consider a model proposed by Akerlof and Kranton (2002). They use evidence from sociology and education research to develop a model in which student identity is critical for performance in school: when "students' backgrounds are antithetical to the academic values that schools should promote" (p. 1198), being a successful student conflicts with traits of one's personal identity and is unlikely to function well within the students' social environments. With regards to occupational aspirations, social backgrounds can create similar conflicts. Originating from a family of middle-class intellectuals, a person might have difficulties considering herself (and to be considered) successful when working as a carpenter, while the son of a carpenter might feel perfectly at ease following in the father's footsteps. For the son of a carpenter, experiencing high social mobility could even come at a cost: Akerlof and Kranton (2000) propose that poor people, or more generally individuals belonging to a socially marginalised group, could pay a psychological cost in terms of identity loss if they were to adopt the pattern of behaviour of rich or dominant groups. Their well-being depends negatively on the distance to actions and behaviour of family, neighbours and peers.

Aladin El-Mafaalani (2012) reports such problems facing social climbers from working class backgrounds, who feel alienated from their families because these do not fully understand their new (white-collar) jobs, vocabularies, and ways of dressing. Roland Fryer (2006) analyses a discriminatory practice of Hispanic and Black "adolescents [who] ridicule their minority peers for engaging in behaviors perceived to be characteristic of whites" (p. 54). When Black or Hispanic students perform well in school, they are attacked by their peers for "acting white", and they enjoy less social popularity than white students who perform well. Educational achievements look like rational aspirations from the outsider's perspectives, but they may run counter the goals of experiencing social recognition and identification with peers and family. Specific identities can also discourage individual effort and aspirations when people anticipate that their performance will be assessed on the basis of a trait of their identity, rather than on the basis of their personal achievement (Arrow 1972, 1998; Akerlof 1976). Most often, this occurs when individuals have experienced discrimination based upon these traits. Anticipating statistical

discrimination, they may decide to refrain from embarking on specific career paths when they believe that they will not get an employment or recognition in their job afterwards. Traits upon which discrimination can be based are manifold. Botti and D'Ippoliti (2016) use data about sex work among trans people in Southern Italy to show that gender-identity discrimination has a decisive impact on occupational decisions. Notably, past experiences of discrimination can impact occupational aspirations of many trans people in such a way that they rather opt for jobs in sex services.

Experiences of past discrimination can also impact behaviour through 'stereotype threat'. When confronted with negative stereotypes, for example when it is mentioned that members of specific groups usually perform less well in a given task, people's behaviour can be negatively affected: the fear to confirm the stereotype creates pressure, which can decrease performance. Simple details of situational contexts can make a specific identity or a specific trait salient and thereby influence achievements. Numerous studies have confirmed that stereotype threats can depress test performances of women or minority groups based on ethnic or social schemes (Oakes 1990; Good et al. 2008; Keller and Dauenheimer 2003; Shaffer et al. 2013). Studies have shown that African Americans perform worse when they have to indicate their race on their test sheet. Making race salient - without any additional intervention, information or judgement - can change outcomes (Spencer et al. 1999; Steele and Aronson 1995). The other way around, it has been shown that the performance of women in a math test improves when it is made explicit that they are *not* expected to perform worse than males. People may employ such mechanisms in their aspiration formation as well. Students may be led to believe that they are not gifted enough for specific goals or not apt for certain jobs because of a socio-economic variables such as coming from a rural area. Likewise other people in society can influence aspirations by means of such stereotypes.

The experiments that Hoff and Pandey (2004, 2005, 2006, 2014) used to study task performance in the light of revealed caste identities provide another interesting illustration of how identities impact aspirations and behaviour.[16] Their experiments illustrate how identities are intertwined with world views, self-beliefs, social hierarchies, prejudices and stereotypes. Considering all these mechanisms in their conjunction can be helpful to fully grasp how individuals perceive their opportunities.

16. The design and results of their studies was explained on pages 89-90.

It should have become clear from the previous discussion that an individual's identity by no means selects particularly useful or beneficial traits and beliefs. To the contrary: one argument that Akerlof and Kranton (2000) put forward to justify the inclusion of identity into economic models was that identity can explain behaviour that appears detrimental. People behave in ways that would be considered maladaptive or even self-destructive by those with other identities. For instance, an individual may identify with subordinate positions or negative self-images and assume a corresponding identity. But even when identities are overtly harmful, people's choices are conditioned by their sense of self. Identities are not chosen in accordance with the principles of standard rationality, but nevertheless influence beliefs, preferences and aspirations to considerable extents, leading to potentially suboptimal results (Herrmann-Pillath 2011).[17]

The potentially harmful effects of identities have been made explicit in the above-mentioned studies by Hoff and Pandey (2004, 2005, 2006, 2014). They argue that individuals readily assume harmful identities, such as that of the Indian scheduled castes, since they expect others to treat them according to these roles, or because they have internalised them. Hoff and Stiglitz conclude that "[c]ultural beliefs about a group's ability in a particular domain influence individual perceptions of one's own ability in the domain". The anticipation of discrimination as well as stereotype threats (see section 4.3, pages 105-106) become possible only by evoking specific identities people hold.

To sum up, beliefs about appropriate aspirations, one's abilities and talents, and about one's taste and preferences are closely tied to the concept of identity. Beliefs about "who I am" influence how I want to see and place myself in society, and which positions (I think) I can legitimately occupy. Social learning and the transmission of preferences and tastes play into this process, and preferences, goals, and aspirations adapt to the feasible set that comes along with a specific identity. Identity thus influences which options people recognise and consider for "a person like them", and which ones are discarded right away. Some of them are discarded because they would cause dissonance - either because a specific aspiration would look ridiculous in front of my family, or because discrimination in society would not allow me to reach this goal - to give just two examples. Social as well as mental frames are designed according to features of identities and the

17. Even under the assumption that identities are rationally chosen, agents may end up with a collectively Pareto-inferior outcome. Fang and Loury (2005) present a model in which the behaviour of fully rational agents leads them to suboptimal results even though superior alternative existed. Understanding identity as the endogenous outcome of the interaction of the agents, they compare the process to a dilemma game that individuals cannot solve by themselves.

belongingness to specific groups.

This might sound as if a person's identity largely predetermines aspirations and goals at large in such a way that individuals cannot escape their social roles.[18] But of course individuals can decide to develop preferences that do not quite match that of their social group or family; they can decide to assume dissonance that arises, and find ways to deal with it. El-Mafaalani's aforementioned research portraits young people from working class backgrounds who have done so: they have attained occupations and social positions that contrast with their family's background. Their social climbing came along with difficulties in terms of stereotypes, some discrimination, conflicting self-views and alienation from family members and peer groups, but this does not imply impossibility. Specific identities make specific aspirations and their achievement more (and sometimes extremely) unlikely, but to use Hirschman's words again: just because economic research critically discusses how specific social structures, identities, and inequalities make it harder for some people to attain some goals, this should not take away "the right of a non-projected future as one of the truly inalienable rights of every person" (Hirschman 2013, p. 30).

Chapter conclusion

The brief juxtaposition of behavioural economics at the edge of the mainstream and of a more critical conception of behavioural economics at the beginning of this chapter has illustrated how diverse a field behavioural economics is. Behavioural economics is no universal field, notably because behavioural economists accept the principles of neoclassical economics - both in positive and in normative terms - to different degrees.

It is quite straightforward to defend the view that the aspiration traps literature can be part of research at the edge of mainstream economics. But there is as well a broader conception of behavioural economics, and a broader, more critical perspective bears several advantages for an understanding of aspiration formation as compared to a conception that uses the standards of neoclassical economics as a benchmark.

Narrowly defined, behavioural economics rests upon the observation that observed human behaviour deviates from the rational agent as understood in the

18. The arguments made in this session are similar to Pierre Bourdieu's theories of social distinction and the role of milieus and habitus for behaviour presented in chapter 5, section 5.3. His approach has been criticised for being too deterministic, too.

neoclassical framework of utility-maximising behaviour in three regards: 1) agents may build non-standard preferences, 2) because they may hold non-standard beliefs, and 3) because they may use non-standard procedures of decision-making (DellaVigna 2009). As chapter 3 has shown, many of these relaxations are relevant for the analysis of endogenous aspirations. However, approaching aspirations and aspiration traps through a collection of manifold deviations of observed behaviour from rational behaviour leaves us with a long, unsorted list of alleged failures.

This is problematic for at least three reasons. The first one is that while focussing on specific failures, the researcher has few chances of understanding the whole picture with the overall logic of a goal-setting or aspiration formation process. A long list of deviations from standard economic behaviour builds up like a mountain of unsorted puzzle pieces, which all have their contribution to make to the overall picture, but cannot do so without being placed in their due context, including complex interactions of different mechanisms. To understand how people build aspirations and make decisions, it is much more helpful to ask how people do so, rather than to ask in which numerous ways they deviate from the behaviour a rational agent would show. Focussing on such deviations, the researchers runs the risk of missing the wood for the trees.

The second reason is that it is unconvincing to analyse the ocurrence of aspirations as a poverty trap without paying systematic attention to the role of socio-economic structures and poverty and inequalities in particular. There is a literature about how poverty affects psychological well-being (Haushofer and Fehr 2014), cognitive capacities (Mani et al. 2013; Mullainathan and Shafir 2013) or the capacity for self-control (Bernheim et al. 2015). But this is not the rule: models of behaviour that rely on universal axioms cannot easily account for relations between social contexts and human behaviour. Specific models may include how identity impacts expected utility (Akerlof and Kranton 2000) or how aspirations associated with one's socio-economic background lead to low aspirations (Dalton et al. 2016), but this does not leave behind the benchmark of universal axioms of behaviour.

This leads to a third concern, which is a normative one. Utility-maximisation models of subjective utilities rely on preference-satisfaction as its normative criterion for assessing welfare. Transferred to aspirations, this means that the achievements of subjective aspirations maximises individual utility. But as this and the previous chapter have shown, aspirations are created endogenously under strong influences of a person's social environment. Downward-biased aspirations

can hardly be a meaningful benchmark for welfare assessments. The usual response of behavioural economics to behavioural anomalies is to seek to correct those, and to make real humans behave like a fully rational agent would do. But how to correct aspiration traps when it is unknown what the optimal aspiration level is? Moreover, the concept of ecological rationality implies that there may be good reasons for individuals to pursue aspirations that look non-rational from a standard perspective. All these points make clear that to understand the endogenous development of aspirations, the approach of mainstream behavioural economics presents several shortcomings.

The current state of mainstream behavioural economics research on education illustrates this critique. There is a literature in behavioural economics interested in educational choices, which tries to make sense of the observation that many of the observed education decisions and outcomes "seem puzzling when viewed through the lenses of a standard economic model" (Koch et al. 2015, p. 3). These puzzling observations are addressed from three angles - lack of self-control, responses to competitive pressure and behavioural theories of motivation -, which can ultimately be attributed non-standard preferences, non-standard beliefs and non-standard decision-making.

Such an approach can certainly tell us something about the effect of self-control or the lack thereof, responses to competitive pressure and motivation on educational choices, but at the same time leaves us with many open questions about the process of educational choice as such. To name just a few, are adaptive processes, framing effects or questions of identity not important for educational choices? Why do inequality and poverty play no role here? Generally put, how have the three perspectives been selected? While they are without doubt important, the understanding of educational choices would benefit from an integrative framework investigating factors that influence behaviour and decision-making within a specific environment. This would allow us to put the cart behind the horse again.

As concerns the normative assessment of educational choices, it is difficult for utility-maximisation models with standard notions of rationality to embrace the full range of reasons that may motivate individual choices. Again, defenders of mainstream approaches may defend this as-if procedure upon the notion that it primarily serves the purpose of making predictions (Friedman 1953). But given that empirical evidence runs counter the predictions neoclassical models make, this is not convincing. Neither is it convincing to use standard rationality as a benchmark for welfare assessments, as will be discussed later in chapter 10.

Chapter 5

What drives aspirations? Selected lessons from other disciplines

> The economist may attempt to ignore psychology, but it is a sheer impossibility for him to ignore human nature, for his science is a science of human behavior. Any conception of human nature that he may adopt is a matter of psychology, and any conception of human behavior that he may adopt involves psychological assumptions, whether these be explicit or no. If the economist borrows his conception of man from the psychologist, his constructive work may have some chance of remaining purely economic in character. But if he does not he will not hereby avoid psychology. Rather he will force himself to make his own, and it will be bad psychology.
>
> John Maurice Clark (1918, p. 4)

With the increased importance and acceptance of behavioural economics, it seems economists have somehow addressed the critique that Bates formulated almost a century ago. On the other hand, the previous chapter has argued that the way in which insights from psychology have been incorporated is rather selective and incomplete. Moreover, Bates' claim may be renewed with regards to other social sciences: if economists neglect or create own accounts of social interactions and of the impacts of social influences on behaviour, these will be suboptimal. [1]

1. Some critiques contend that particularly sociological findings have been ignored (Lunt 1996), even though social economics as a sub-field of economics pursues the integration of economics and sociology. It is not within the scope of this chapter to discuss to what extent economists have already integrated and connected to work from other disciplines.

By their very nature, aspirations people develop and pursue are a topic of interdisciplinary relevance and interest: they involve cognitive and emotional and are strongly shaped by social influences. Their nature alone should motivate interdisciplinary research. The previous chapters have shown that approaches discussed in behavioural economics are informative for understanding the development of aspirations, but they may also run the risk of developing rather narrow views on the topic. To open the black box of aspiration formation further, this chapter attempts to complement the discussion with three specific literatures from three different disciplines: anthropology, social psychology, and sociology. My argument is that they can inform the understanding of the development of aspirations, the occurrence of aspiration traps, and the impacts of aspirations on behaviour with particular emphasis on the influence of social environments.

The approach by Appadurai (section 5.1) has already been mentioned earlier: he stimulated the recent debate of aspiration traps in economics to a significant extent. Bandura's approach (section 5.2) has found its way into this literature, too (Bernard et al. 2011). To my best knowledge, no author has integrated Bourdieu's (section 5.3) work yet. Each approach has been selected for a particular reason. Appadurai's work on the "capacity to aspire" is of relevance not only because Debraj Ray's work drew on it, but also because it discusses under which conditions individuals develop the capacity to build and pursue aspirations that serve their interests. Bandura's work provides a framework that allows to consider not only how external (a person's environment) and internal (a person's self-concepts) interact in the production of aspirations, but also to think of aspirations in dynamic rather than only in static terms. This links back to Ray's conceptual work (section 2.2 and Génicot and Ray's model (section 2.3): they had emphasised how dynamics in a person's environment shape aspirations in non-linear ways. Bourdieu's work connects very closely to two important topics previously discussed: the cultural and social transmission of preferences, tastes, world views and aspirations (section 3.1.1) and ecological rationality (section 4.2).

5.1 Arjun Appadurai: The capacity to aspire

Arjun Appadurai motivated the recent work on aspirations in the context of inequality and persistent poverty with his presentation at the World Bank Conference on Culture and Development in 2002 and the consequential book chapter (Appadurai 2004). In this text, Appadurai claimed that poor people are more inclined to aspire

to low goals than rich people. This is due to their "capacity to aspire", a meta-capacity that allows people to build appropriate aspirations. It is a meta-capacity in the sense that it does not refer to task-specific abilities, like the ability to cook or to sew, but to the more general capacity to understand the connections between ends and means, referring to any task or goal. The capacity to aspire makes the difference between aspirations and mere wishes, holding ready the knowledge of the road one needs to take to reach a certain goal.[2]

The capacity to aspire is developed to a major extent through personal practice. Experiences of trial-and-error, that is, when an individual tries to achieve goals and fulfil aspirations by investing a certain type or amount of resources, train the individual's capacity to aspire and provide generalisable knowledge about how to attain goals. Furthermore, these processes teach people about their preferences, resources, capacities, talents and constraints (Appadurai 2004; Heifetz and Minelli 2006). This entails a crucial implication with regard to social structures: Appadurai stresses that the capacity to aspire is lower among the poor, because they have fewer resources and opportunities for such trial-and-error learning processes. In contrast, rather fortunate people will have more experiences that allow them to identify worthwhile aspirations in the context of their talents, preferences and constraints and the ways to reach formulated goals.[3] In Appadurai's words,

> [t]he more privileged in any society simply have used the map of its norms to explore the future more frequently and more realistically, and to share this knowledge with one another more routinely than their poorer and weaker neighbors. The poorer members, precisely because of their lack of opportunities to practice the use of this navigational capacity (in turn because their situations permit fewer experiments and less easy archiving of alternative futures), have a more brittle horizon of aspirations. (Appadurai 2004, p. 69)

Appadurai's capacity to aspire refers not only to the capacity to aspire to activities and goals leading to personal achievements in terms of income and returns, but also to activities and aspirations that shape social structures. The capacity to aspire understood as a navigational capacity refers to a person's capacity to understand how socio-economic environments shape her outcomes, and how she can herself shape this environment in her best interest. In turn, "experience with

2. Appadurai calls it a navigational capacity. This is explained below.

3. Moreover, self-serving biases combined with selective attribution can reinforce the gap between fortunate and disadvantaged people. Fortunate people will experiences successful trial-and-error experiences more often and attribute these to their own abilities, rather than to favourable circumstances. This will make them more optimistic with regards to their abilities and capacities (see page 84.)

articulating these norms and axioms makes the more privileged members of any society more supple in navigating the complex steps between these norms and specific wants and wishes" (Appadurai 2004, p. 69).

Against this background, Appadurai uses the lower capacity of the poor to explain the "ambivalent compliance of many subaltern populations with the cultural regimes that surround them". Questioning norms and rules is at least difficult when people have limited experiences with articulating their interests and contesting social norms. In order to effectively aspire to improving one's living conditions within an oppressive societal context, the capacity to "debate, contest, inquire, and participate critically" (p. 70) is a fundamental capacity. The corresponding paragraph from his book chapter is worth quoting at length:

> Poor people have a deeply ambivalent relationship to the dominant norms of the societies in which they live. Even when they are not obviously hostile to these norms, they often show forms of irony, distance, and cynicism about these norms. This sense of irony, which allows the poor to maintain some dignity in the worst conditions of oppression and inequality, is one side of their involvement in the dominant cultural norms. The other side is compliance, not mere surface compliance but fairly deep moral attachment to norms and beliefs that directly support their own degradation. Thus, many untouchables in India comp with the degrading exclusionary rules and practices of caste because they subscribe in some way to the larger order of norms and metaphysical propositions which dictate their compliance: these include ideas about fate, rebirth, caste duty, and sacred social hierarchies. Thus the poor are neither simple dupes nor secret revolutionaries. (...) The poor are frequently in a position where they are encouraged to subscribe to norms whose social effect is to further diminish their dignity, exacerbate their inequality, and deepen their lack of access to material goods and services. (p. 65-66)

This understanding comes close to Sen's words that have already been quoted earlier to illustrate how preferences and adaptations adapt:[4]

> The most blatant forms of inequalities and exploitations survive in the world through making allies out of the deprived and the exploited. The underdog learns to bear the burden so well that he or she overlooks the burden itself. Discontent is replaced by acceptance, hopeless rebellion by conformist quiet, and - most relevantly in the present context - suffering and anger by cheerful endurance. As people learn to survive to adjust to the existing horrors by the sheer necessity of uneventful survival, the horrors look less terrible in the metric of utilities. (Sen 1984, pp. 308-309)

4. See page 33.

Together, Appadurai's and Sen's perspectives make clear that endogenous aspirations are not only a matter of individual living conditions, but also of compliance with social norms and, thereby, their reproduction.

To argue his point that the capacity to aspire is linked with the capacity to defend one's own interests, Appadurai refers to Hirschman's exit, voice and loyalty framework (Hirschman 1970). To be able to exercise 'voice' corresponds, in his view, to be able to effectively aspire to societal change and to a different place in society. Appadurai understands the capacity to exercise "voice", to contest and oppose social conditions and participate in political processes as "the only way in which the poor might find locally plausible ways to alter what [he is] calling the terms of recognition in any particular culture" (Appadurai 2004, p. 66)

A lack of the capacity to aspire to these goals, in contrast, is the reason why the poorest groups in some societies oscillate between loyalty (in the form of compliance to oppressive rules) and exit (in the form of violent protest or apathy). Without the ability to envision positive change, Sen's underdog may adapt to inequalities and exploitations instead of building aspirations aiming at overcoming disadvantages living conditions. "[S]trengthening the capacity to aspire", he argues, could allow "the poor [to] find the resources required to contest and alter the conditions of their own poverty" (p. 59).

As a complement to the dominant reception of Appadurai's contribution within economics, it seems that he himself had a more political dimension in mind when writing about low aspirations and low capacities to aspire. Not only might future-oriented investment decisions at the personal level - like schooling or business investments - be affected by a low capacity to aspire. As emphasised by Appadurai, poor understandings of how society works keep the poor from questioning its rules and their position within society. The idea that individual aspirations do not only affect people's immediate outcomes, but could also have repercussions on societal structures more generally complicates the welfare assessment of aspirations further.

5.2 Albert Bandura: Social cognitive theory

Social psychologist Albert Bandura's social cognitive theory (Bandura 1977, 1997) framework is an important inspiration of economic research on aspirations. Social cognitive theory has grown into a broad field of research; what is important

here is mainly the two concepts *self-efficacy* and *locus of control*, which together determine whether an individual builds productive aspirations or not. They can be understood as two necessary conditions. Separating them allows to disentangle the mechanisms of the formation of aspirations along two distinct dimensions.

Perceived self-efficacy refers to "the conviction that one can successfully execute the behavior required to produce [specific] outcomes" (Bandura 1977, p. 79). In other words, self-efficacy refers to a person's belief about her own capacities. Self-efficacy is subjective and task-specific: it describes a person's beliefs about her capacity to carry out specific tasks successfully. Self-efficacy beliefs with respect to different tasks are in principle unrelated.

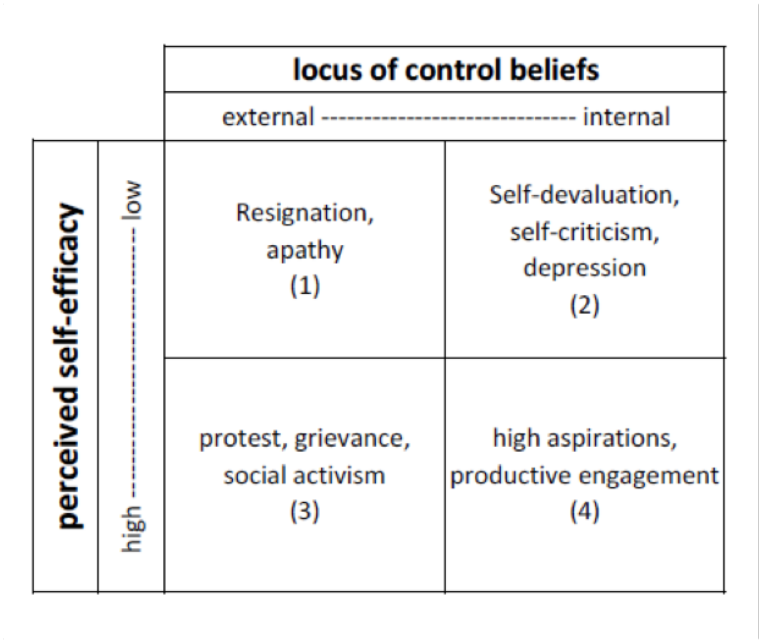
Self-efficacy beliefs effect how people imagine their future. Holding low self-efficacy beliefs, it is quite hard to anticipate scenarios in which one completes a tasks successfully. People with low self-efficacy tend to visualise scenarios of failure. In contrast, with strong beliefs in one's capacities, it is easier to remain focused even in the event of failures and drawbacks. Self-efficacy beliefs impact both an agent's motivation and her information-processing abilities, possibly resulting in self-fulfilling prophecies. Through the motivational channel, pessimistic beliefs about one's capacities can stifle the level of effort a person is willing to exert, as well as perseverance. Futhermore, pessimistic self-efficacy beliefs can cause anxiety and stress in situations in which the capacity in question is demanded, resulting in depressed performance (Bandura 1986, 1989).

The second term, locus of control beliefs, goes back to Rotter (1966). It has received large attention and belongs to the most researched concepts in the social sciences. The original term coined by Rotter was "internal versus external control of reinforcement" and referred to the

> degree to which the individual perceives that the reward follows from, or is contingent upon, his own behavior or attributes versus the degree to which he feels the reward is controlled by forces outside of himself and may occur independently of his own actions (p. 1).

As such, beliefs do not to one's personal capacities with respect to the successful completion of a task, but to external conditions. For example, a person could have not doubts about her personal capacity to study theoretical physics, but believe that her family will not allow her to pursue a career in this field. In this situation, her locus of control beliefs are external: there are external factors beyond her control that prevent her from achieving a specific outcome. Many reasons and

Figure 5.1: Combinations of perceived self-efficacy and locus of control beliefs according to Bandura



Source: own graph, based on Bandura (1977).

environmental conditions can result in external locus of control beliefs, among them beliefs luck, fate, or a predetermined destiny, or the belief the powerful others are in control. Whenever a person believes that a specific outcome is contingent on such factors she cannot influence, she holds external locus of control beliefs. Of course, she need not be right: it could be that the girl who wants to study theoretical physics could eventually convince her family if she tried.

Note that self-efficacy and control beliefs are separate concepts and that they are uncorrelated: any combination of them is possible.[5] Together, different constellations of self-efficacy and control beliefs provoke four different types of behavioural outcomes. Bandura's framework can be visualised as a coordinate system with four quadrants, representing these four ideal-type combinations, as figure 5.1 shows.

Self-efficacy beliefs run from low to high, and locus of control beliefs from external to internal. When low control beliefs meet low self-efficacy beliefs (1),

5. Some authors seem to confuse the concepts, preventing themselves from being able to benefit from the interaction effect emphasised by Bandura's theory. For example, Kaplan (2013, p. 69) writes about "[i]ndividuals who feel in control of their destinies - who have a strong sense of what psychologists call 'personal agency' or 'self-efficacy'". The belief that one is in control of one's destiny rather than being constrained by social, political, and institutional forces, to which Kaplan refers, is a locus of control belief, and is not related with self-efficacy.

individuals experience resignation, apathy and fatalism. In this situation, people believe that they generally have little control over their life, and in addition, their personal capacity to complete specific tasks successfully is low.

Low self-efficacy beliefs combined with internal locus of control beliefs, in contrast, would lead to self-devaluation, despondency, self-criticism and depression (2). In this situation, a person believes that her outcomes are contingent on her own actions, but that she lacks the required capacities to achieve good outcomes. This results in self-criticism: the individual blames herself for her negative outcomes.

Productive aspirations and engagement arise in the case where internal locus of control beliefs meets positive self-efficacy beliefs (3). In other words, to build productive aspirations with respect to a given task, people need to believe in their personal capacity to complete this task and they need to believe that possessing these capacities is sufficient for completing the task and achieving the corresponding goal.

The situation would be different if possessing these capacities is not enough, because outcomes depend on luck or powerful others. In this case, grievance, protest and social activism (4) can result: individuals become frustrated with their social environments.

A number of factors and experiences account for self-efficacy and locus of control beliefs people hold. Starting with self-efficacy beliefs, Bandura distinguishes four main sources of self-efficacy beliefs. The first and strongest one is mastery experiences (Bandura 1997), that is, experiences of personal achievements and successes. They provide the most direct evidence of one's capacities with regard to specific tasks or goals. Bandura proposes that successes help develop a sense of one's capacities and efficacy:[6]

> Developing a sense of efficacy through mastery experiences is not a matter of adopting ready-made habits. Rather, it involves acquiring the cognitive, behavioral, and self-regulatory tools for creating and executing appropriate courses of action to manage ever-changing life circumstances (...) After people become convinced they have what it takes to succeed, they persevere in the face of adversity and quickly rebound from setbacks. (p. 3)

The second source of high self-efficacy beliefs is through vicarious experiences, provided by social models and peers. Successes and failures of people who are

6. Note that self-efficacy beliefs across task-domains are in principle unrelated. However, people can also develop the general belief that their self-efficacy is rather high or rather low in most or all tasks.

similar to us suggest us that we would achieve or fail, too, if we were the agent. Third, self-efficacy beliefs can stem from social persuasion. Being told about one's capacities and abilities in a persuasive manner, people are more likely to invest stronger efforts into a task. However, it is easier to undermine self-efficacy beliefs than to boost them through social persuasion: it is easier to convince a person that she lacks relevant capacities than to make her believe that she does own them.[7] Fourth, physiological and emotional states influence self-efficacy beliefs. When we are feeling good, we are more optimistic with respect to our capacities.

Economic and social environments are of primary relevance for locus of control beliefs, because they determine which opportunities people face and which experiences they make (Kuran 2004; Fishkin 2014). When people experience little control over situations or life courses more generally, this can depress their control beliefs considerably (Chorpita and Barlow 1998). For example, learning about one's place in a social hierarchy or experiencing racial discrimination can impact locus of control beliefs with regards to labour market success: when people expect that their outcomes are not primarily contingent upon their abilities because they are not given a fair chance, this can demotivate their aspirations. "Aspirations reflect an individual's view of his or her own chances for getting ahead and are an internalisation of objective probabilities" (MacLeod 1995, p. 14). Objective probabilities enter aspirations through locus of control beliefs.

Bandura understands his model as a model of "emergent interactive agency", where agents are 'neither autonomous agents nor simply mechanistic conveyors of animating environmental influences' (Bandura 1989, p. 1175). In a process he denotes 'triadic reciprocaul causation', personal capacities interact with environments and - the third dimension - the agents makes a causal contribution to her motivations, perceptions, and actions. As Bandura puts it, '[a]ny accounts of the determinants of human action must (...) include self-generated influences as a contributing factor'. This corresponds closely to the feedback effect of aspirations on actions and vice versa as modelled by Dalton et al. (2016) and can inform our understanding of the processes through which these feedback loops and downward spirals come into existence.

The interaction of individual and environmental factors starts before self-efficacy beliefs meet locus of control beliefs to produce a behavioural outcome. The generation of self-efficacy beliefs is already strongly influenced by social

7. Ertac finds that when information is self-relevant, negative feedback is overrated. When information is not self-relevant, there is little influence of the information on the decision, little deviance from Bayesian rules (Ertac 2011).

environments: all four sources of self-efficacy are closely related with a person's living conditions. In particular, the development of self-confident self-efficacy beliefs can be harmed by a life of poverty and exclusion. As Appadurai had already pointed out, a life of poverty offers much fewer opportunities to develop and learn about personal talents, capacities and preferences. Mastery experiences are much more scarce for children from disadvantaged families. This effect can be reinforced through vicarious experiences: when children observe that their peers experience relatively few successes and achievements, they may generalise that children 'like them' have low abilities.

Social persuasion cannot only influence self-efficacy beliefs through personal interactions. Rather, society-wide images of and prejudices about specific groups can have similar effects. When society at large holds and reproduces the belief that people from specific minorities are less gifted or not very intelligent, this can impact self-efficacy beliefs and stifle aspirations.[8]

Finally, even emotions and psychological factors can be related with poor living conditions. Recent contributions to the psychology of poverty have proposed that poverty causes psychological stress and impacts cognitive capacities (see for instance Mani et al. 2013; Haushofer and Fehr 2014 and Mullainathan and Shafir 2013). Bandura's framework suggests that emotional and psychological stress can impact self-efficacy beliefs negatively.

To conclude, Bandura's framework is useful for conceptualising and analysing how personal characteristics and capacities interact with social environments to produce aspiration levels and behavioural outcomes. It emphasises that several conditions need to be fulfilled to produce productive aspirations. Neither the belief that 'everything is possible' in a society is by itself enough, nor strong beliefs in one's personal abilities. An important lesson from his framework is that the analysis of endogenous aspiration must include both levels and their interactions.

5.3 Pierre Bourdieu: Milieu and habitus

A view into Pierre Bourdieu's sociological theory of milieu, habitus, and social distinction (Bourdieu 1977, 1979, 1990) is particularly instructive for discussing

8. Of course, stereotypes and discrimination do not automatically impact self-efficacy beliefs. It could also be the case that self-efficacy beliefs are not compromised, but that aspirations are stifled because people anticipate discrimination. The latter effect on aspirations would operate through locus of control beliefs rather than through self-efficacy.

social influences on the endogenous formation of preferences, beliefs, and aspirations. Writing about the differences in behaviour between social classes and people from different milieus, Bourdieu emphasised the often unconscious and unnoticed transmissions of taste, habitus, standards of behaviour, norms, worldviews and tacit knowledge within social milieus. Bowles' statement that "acquiring preferences is akin to acquiring an accent" (Bowles 1998, p. 81) reflects the spirit of Bourdieu's theory with its emphasis on the crucial yet often hidden role of social milieus, family and neighbourhoods including their corresponding economic conditions very well.

Bourdieu developed a complex theory of social relations and a "multi-causal understanding of economic and social practices" (Hever 2010, p. 155). Against the background of the large variety of interactive mechanisms that play into the formation of aspirations, it can hardly be claimed that a non-complex theory could do the job. Bourdieu's theory is instructive in the sense that it shows how multifold influences and their interactions can be fruitfully reconciled within a theoretical framework. Moreover, it is particularly well compatible with an aspirations perspective that seeks to make sense of individual behaviour that appears non-rational at first sight, because it proposes several 'non-standard' motives of purposeful human behaviour.

A range of concepts are central for Bourdieu's theory, not all of which can be represented here. One basic concept is an individual's *habitus*. Habitus refers to a system of structured attitudes and dispositions in and towards the social world, ways of living, habits, value judgements, and moral standards (Fuchs-Heinritz and König 2011). It can be understood as a structured system of mental models and mindsets. In Bourdieu's theory, a person's habitus is closely tied with social conditions that produce specific structured sets of mindsets, which then in turn reproduce social structures. This circular relationship of habitus and social structures is a cornerstone of Bourdieu's theory and, at the same time, a quite precise analogy of the description of aspiration traps in economic theory.

Bourdieu's theory provides a compatible and complementary framework for the analysis of endogenous aspirations because Bourdieu, too, sought to explain individual behaviour in a socially embedded way without denying individual agency.[9] As Collet (2009) views it, Bourdieu's concept of habitus

9. The concept of habitus was seen by Bourdieu as a solution to the failure of sociological theory to conceptualise human agency in an encompassing way. As Collet points out with reference to Herbert Simon (1982)'s criticism of armchair economics, this has been criticised in economic theory, too. Collet (2009) argues that Bourdieu's framework is more appropriate for overcoming this problem

> is an invitation to understand what influences the view that agents have of their own actions without reducing them to a model (...). This issue may seem vague or easy to resolve when stated in general terms, but it has proven to be substantial in practice. (p. 419)

Moreover, Bourdieu's theory is not merely a sociological theory, but also - like research on aspirations - incorporates a range of cognitive elements (Lizardo 2004).

A person's habitus facilitates action and decision-making (as well as goal-setting and aspiration formation), as the individual may react and decide on the basis of habitualised patterns (El-Mafaalani 2012). In the sociology of knowledge, it is well established that individuals act upon such mechanisms (Berger and Luckmann 1967). Bourdieu's framework has been criticised for being too deterministic and circular (Jenkins 1982). Note however that this is a misunderstanding of his approach. An individual's habitus can guide behaviour, but it does not take away room for individual agency. A habitus can serve as a tool that provides guidance particularly when the individual is facing new situations and changes, but it does not predetermine how an agent will (re)act: even when guided by a "practical sense of orientation" that their habitus provides, agents are no machines applying fixed rules of behaviour (Collet 2009, p. 421). As research on habitus transformation and social mobility shows (El-Mafaalani 2012), there is still room for individual agency.[10]

While a person's habitus can guide behaviour, there is no guarantee that an existing habitus serves an individual's interests best. This is difficult to circumvent because it is quite hard for a person to reflect upon her dispositions and world values, as these exist without our consciousness. "The notion of habitus relies on the observation that in our most conscious thoughts we cannot but take some things for granted" (Collet 2009, p. 420). Dalton et al. (2016) have described how individuals take aspirations transmitted by their social environment teaches them as given, without ever reflecting upon their origin and adequateness. Bourdieu's understanding of behaviour was quite alike:

> In a determinate social formation, the stabler the objective structures and

and understanding behaviour than Simon's approach of bounded rationality. In particular in times of changes, he finds that Simon's understanding of an agent who relies on habits, intuition and memory is a little bit too simplistic, as it does not leave space for unconscious behaviour. I have not used Simon's bounded rationality in its original terms, but rather used it as a starting point for the discussion in chapter 4, section 4.2. I will therefore not go into further details. Collet's paper is dedicated to the discussion of the differences between Simon's and Bourdieu's frameworks.

10. The empirical study by El-Mafaalani (2012) about the habitus transformation of social climbers has been mentioned on page 105 and will be described further below on page 124.

> the more fully they reproduce themselves in the agents' dispositions, the greater the extent of (...) that which is taken for granted. When, owing to the quasi-perfect fit between the objective structures and the internalised structures which results from the logic of simple reproduction, the established cosmological and political order is perceived not as arbitrary, i.e. as one possible order among others, but as a self-evident and natural order which goes without saying and therefore goes unquestioned, the agents' aspirations have the same limits as the objective conditions of which they are the product. (Bourdieu 1977, pp. 165-166)

Note that for Bourdieu, aspirations adjust to objective conditions, whereas in Dalton et al. (2016), agents fall short of using the full potential of their objective conditions. I have discussed in chapter 3 (section 3.1.2) that agents can both adapt their aspirations to the full realm of their objective conditions or to their subjective conditions which are only a subset of their objective conditions. Bourdieu's quote illustrates that not only the occurrence of psychological traps - the adjustment to subjective opportunities - but the allegedly conscious adaptation to objective conditions is not fully conscious in the sense that the agent takes many things for granted and cannot understand the full scope of her adaptation. I will take up this issue again in chapter 10.

A habitus is thus closely tied with an individual's identity in the sense that the individual *is* her social role(s) and cannot be anything else. The individual does not constitute these roles herself, but they are shaped by the milieu she lives in. In this sense, the social is within the individual, and both spheres cannot be separated (El-Mafaalani 2012; Dahrendorf 1971). "Distinction", another central concept in Bourdieu's theory, describes how people do not only strive to increase their material wealth, but also social recognition and their position in social hierarchies. Thus "identity becomes a source of power or capital, the accumulation of prestige [is enhanced] through the development of identity, and (...) this, in turn, contributes to the structuring of social hierarchies" (Hever 2010, p. 158-159). The strive for distinction can thus help to explain why identities are so powerful an instrument for aspiration formation and why, for example, agents with relatively high positions in the social hierarchy have a pronounced interest in maintaining identities, stereotypes and group beliefs that play aspirations of specific groups down. Recall also the studies presented by Hoff and Pandey (2004, 2005, 2014): the fact that students from lower castes did not seek to compete with students from higher castes (Hoff and Pandey 2014) serves the distinction of higher-caste

students perfectly.[11]

A third concept of relevance for understanding aspiration formation is embodied cultural capital (Bourdieu 1986, 1977).[12] Embodied cultural capital refers to an individual's cultivation, i.e., her cultural abilities and capacities. Social milieus and notable the family shape an individual's use of language, tastes (for music, arts, or sports, and also for food or how to dress), social values and norms, performance awareness, and education affinity and the value placed into educational achievements. What is distinctive about cultural capital is that it cannot immediately acquired or transmitted: the development of mental dispositions, values, and tastes takes a lot of time. In addition, once acquired, cultural capital leaves its traces: Cultural capital "remains marked by its earliest conditions of acquisition which, through the more or less visible marks they leave (such as the pronunciations characteristic of a class or region), help to determine its distinctive value" (Bourdieu 1986, p. 84).

A person's habitus influences aspirations not only because it establishes what is "normal" for a person from a specific background and in a specific position to do on the weekends or for a living, but because it transports the cultural practices and mental dispositions that will make certain aspirations and activities come natural to her and make them achievable. Akerlof and Kranton (2000)'s risk of social distance that social climbers potentially face with regards to their identity stems from these cultural practices: In order to succeed as an investment banker or as a professor, an agent needs to adopt different tastes, ways to dress, body language, and cultural practices in general than in a disadvantaged suburb.

El-Mafaalani (2012) relies on Bourdieu's habitus concept to investigate processes of educational achievements of social climbers with a sample of working class students with German and Turkish backgrounds in Germany. He starts with the premise that social mobility requires habitus transformation, as one leaves one's original milieu and social environment. His study confirms that social mobility of individuals from atypical milieus comes along with changes of way in which people speak or dress and of their hobbies and preferences. Such transformations

11. Hoff and Pandey (2014) also note that one interpretation of their results - the lower achievement gaps of high-caste students when competing with low-caste students - is that they might think that they do not really need to compete. They find their results to be consistent with a study by Kochar (2004), which found that policy efforts aiming at increasing the enrolment of low-caste children did not narrow down the achievement gap between low and high-caste students - as intended - but sharpened it because the high-caste students stayed ins school more often, too.

12. The two other forms of cultural capital are objectified and institutionalised cultural capital (Bourdieu 1986). I will not go into further details, as embodied cultural capital is of primary importance for aspiration formation.

are in part prerequisite and in part consequence of social mobility.

Bourdieu himself however seemed to discard the importance of aspirations for explaining behaviour: for him,

> the assumption that intentions, motives, aspirations etc. stimulate and steer behaviour is absurd. The observable correspondences between practices and subjective motives, aspirations, considerations etc. go both back to habitus, because they are predetermined as relationships of correspondence (Fuchs-Heinritz and König 2011, p. 118)[13]

But in fact, Bourdieu does not discard the importance of aspirations as a mediator between habitus and behaviour: He discards the idea of exogenous aspirations, putting emphasis on the strong influence of social environments and milieus on habitus formation and, consequently, aspirations.

It was not the purpose of this section to do justice to Bourdieu's extensive work and his complex theories of social practice and distinction. It is clear that much more could be elaborated to discuss what can be learned from his work for understanding aspiration formation. This however would go beyond the scope of this thesis. The goal of this section was to outline two important concepts and to show that the mechanisms described in the economic literature are very well underpinned by this long-standing work. Not only can economists find confirmations for the relevance of aspirations as a determinant of behaviour, but they can as well learn about the mechanisms behind. Another take-away message is that aspirations are closely intertwined not only with economic backgrounds but with socio-economic structures in a society understood in a broad sense. A distinction may be made between the strongly deterministic nature of Bourdieu's framework. As will be discussed in chapter 10, economists have not been hesitant to argue that aspirations and, as a consequence, behaviour may be altered, whereas Bourdieu's understanding puts forward that human behaviour tends to reproduce existing social structures.

Chapter conclusion

It was the purpose of this chapter to complement the understanding of the processes underlying the development of aspirations obtained from behavioural economics with selected perspectives from other disciplines. Several additional lessons could be learned.

13. Own translation.

A key message from Appadurai's work on the capacity to aspire is that building aspirations that benefit personal interests is a capacity that needs to be developed and trained. Opportunities people have do not only train task-specific capacities, but also their meta-capacity to develop beneficial goals and aspirations. This is a link that should be taken into consideration when thinking about equality of opportunity. Furthermore, Appadurai set forth that individual aspirations do not only shape their outcomes in their personal lives, but also their engagement with institutional structures and the political sphere of their society. I will not be able to pursue this thread within this thesis, but future research should certainly study how aspirations may contribute to the persistence or overcoming of unequal institutional structures and equilibria.

Bandura's framework was discussed because it provides a useful framework for understanding the interaction of personal characteristics and capacities with social environments. Bandura's approach makes visible that social environments shape aspirations at various levels: they do not only impact how people perceive their opportunities, but also have an indirect influence on individual capacities and, thus, on self-efficacy beliefs. If aspirations are to be addressed by policies, these different levels need to be taken into account. Interventions that only address, say, locus of control beliefs will not be effective if people maintain low self-efficacy beliefs. In turn, attempts to push individual's self-efficacy will elapse without effect if there are no real opportunities.

Bourdieu's theory offered two main contributions. One is that his theory provides new perspectives on the rationality of aspirations and underpins the discussion in chapter 4 (section 4.2). The second is that his habitus approach offers a particular perspective for thinking about how environmental conditions interact with personal characteristics and cognitive and behavioural mechanisms. His approach shows how the effects of individual characteristics and preferences can be reconciled with influences from a person's environment in a balanced way, that is, without under- or overestimating the importance of either level. In this sense, Bourdieu's and Bandura's frameworks pursue comparable goals. However, in Bourdieu's work, (ecologically) rational motives of behaviour are much more at centre stage. In Bandura's framework, in turn, material opportunities play a more prominent role. Both perspectives are insightful for understanding how endogenous aspirations develop.

Chapter 6

Putting the pieces together: An integrative framework

> Neoclassical economics will be dethroned if and when satisficing theory and psychology join forces to produce a simple and robust explanation of aspiration levels, or sociological theory comes up with a simple and robust theory of the relation between social norms and instrumental rationality. Until this happens, the continued dominance of neoclassical theory is ensured by the fact that one can't beat something with nothing.
>
> Jon Elster (1986, pp. 26-27)

> To break with the dominant paradigm [in economics], we must attempt to construct a realist definition of economic reason as an encounter between dispositions that are socially constituted (in relation to a field) and the structures, themselves socially constituted, of that field. In doing so, we need to take note, within an expanded rationalist vision, of the historicity constitutive of agents and of their space of action.
>
> Pierre Bourdieu (2005, p. 75)

Jon Elster's and Pierre Bourdieu's visions - although I do not side with Elster's view that either one of the perspectives he names alone should do the job - together transport the spirit that motivates this chapter. Jointly, they point towards the most important ingredients of an integrative framework within which one can analyse the development of endogenous aspirations in a comprehensive way.

To summarise the first part of this thesis, this short chapter will condense all lessons learned in the previous chapters and attempt to propose an integrated

framework for thinking about aspirations that incorporates the perspectives and concepts raised by Elster and Bourdieu. Let me first briefly summarise and recall the main points raised in the previous chapters (section 6.1) and then proceed to the discussion of how aspiration formation can be envisioned from an encompassing perspective (section 6.2).

6.1 Recapitulation: determinants and drivers of aspirations

Under the heading of non-standard preferences (chapter 3, section 3.1), I discussed how aspirations are acquired through processes of social and cultural transmission. These processes transmit concrete tastes, preferences, and values - in terms of Bourdieu's framework, a person's habitus - as well as habits, mental dispositions, and beliefs. Individuals do not necessarily build aspirations that most benefit them, but internalise many expectations, world views, and aspirations from their environments in often unconscious, quasi-automatic ways. Prevalent aspirations are transmitted between generations and among members of communities and social groups. Moreover, opportunities individuals face throughout their lives shape their preferences, abilities, and aspirations.

This signals the transition to adaptive processes, another important determinant of endogenous aspirations (section 3.1.2). People may adapt their aspirations to the set of options they perceive as their feasible set. Adaptation may be the result either of conscious downgrading of unavailable options or of the unconscious neglect or ignorance of options one would prefer if one had considered them. The unconscious adaptive formation of aspirations - Elster's sour grapes - is by definition highly intransparent, and researchers can hardly judge if an outcome (here, a specific aspiration level) reflects a true preference or results from adaptation.

Beliefs about the world and the orderliness of the universe in general terms as well as about oneself and one's place and roles in this world provide the underlying basis for the development of aspirations (section 3.2). Belief systems establish which aspirations are (believed to be) attainable, suitable, and acceptable for a specific person living in a specific environment. Again, it is by no means guaranteed that the beliefs upon which such adaptations and aspirations are based be accurate. This is so because perceptions of the world are always subjective and incomplete. Moreover, beliefs may become distorted, for instance through disson-

ance reduction: people may suppress and ignore options they believe (erroneously or not) to be unachievable. Belief systems operate through mental models and mind-sets through which people view their possibilities and options.

I have previously pointed out that the separation of preferences, beliefs, and expectations is somewhat an artificial one, and that it proves beneficial only when the researcher is interested in analysing specific mechanisms or aspects influencing behaviour. On the other hand, when one is interested in the whole process of aspiration formation, the separation can hinder the view and obscure that different mechanisms do not operate in isolation. For example, processes of cultural transmission and social learning do not only transmit preferences and tastes, but as well beliefs about the world and the self as well as mind-sets and mental dispositions coming along with these. Beliefs systems and, notably, cognitive dissonance reduction provide the basis for processes of adaptive preferences and aspirations. Cognitive frames and mind-sets do not only shape decision-making in the concrete moment of making and articulating a decision, but any time when options and potential aspirations are processed and assessed. Heuristics and mental short-cuts, operating at the cognitive level, play a role in all these processes.

It must thus be emphasised that the lines between specific mechanisms are very blurred and that the mentioned processes cannot be separated. It turns out that most, if not all, mechanisms discussed in chapter 3 are entangled. For analytical purposes, it can make sense to single out specific aspects of the aspiration formation process and to analyse how, for example, specific heuristics influence aspirations a person builds. For understanding the whole process, however, it is important to not loose sight of the whole picture.

This was illustrated by a discussion of the role of identities (section 4.3). Beliefs about acceptable and appropriate aspirations, talents, or preferences are often tied to social categories and identities. Stereotypes and commonly held beliefs about the inability of specific groups to carry out certain tasks are usually tied to specific features of this group, such as ethnic or racial features or gender. Formal or informal rules can prohibit specific activities for certain people. When shared beliefs in a society hold a group of people to be "untouchable" and believes that it is inappropriate, unacceptable and virtually impossible for these people to do certain jobs, this has a huge impact on aspirations they build and most often on their objective possibilities, too.

The case of identities also illustrated that narrow notions of (von Neumann-Morgenstern) rationality cannot make sense of many aspirations people build.

Many of these aspirations are adapted to their social environment and do not lead to the maximisation of individual utility.[1] Besides, it is far from clear what optimal aspirations are and how they could be identified in the first place. Aspirations could serve an individual's interests in the long term, but (appear) not (to) do so in the short term. A descriptive framework for analysing aspirations must take account of these different motives and conceptions of rationality.

6.2 An integrative framework

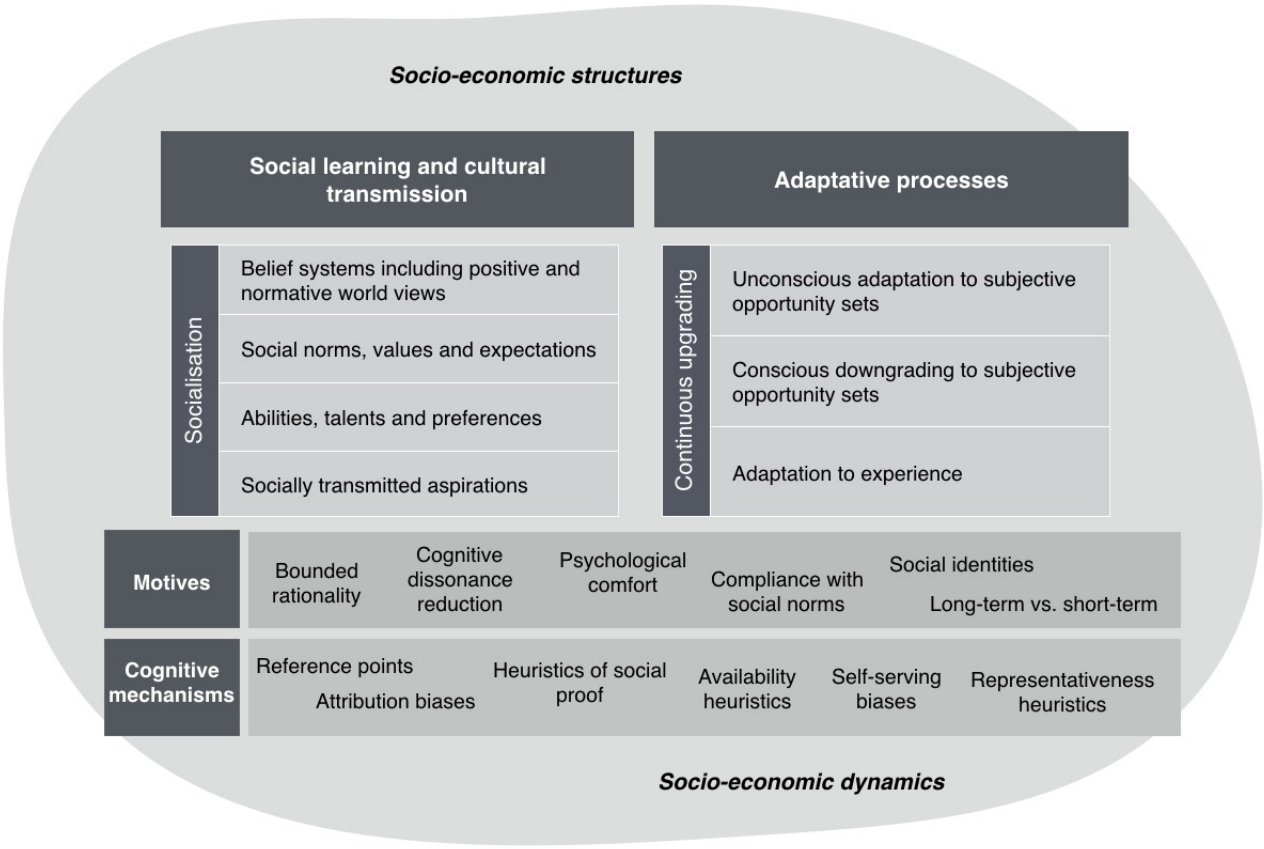
Figure 6.1 summarises and structures the processes behind the development of aspirations at different levels. Two broad processes shape aspirations at an overarching level: social learning and cultural transmission (discussed in section 3.1.1) and adaptive processes (discussed in section 3.1.2). Social learning and cultural transmission refers primarily, but not exclusively, to processes of socialisation as of early childhood. Positive and normative beliefs about the world, social norms and values, dispositions and talents are transmitted and adopted from a person's environment to considerable extents. These processes can shape aspirations indirectly - for instance, through beliefs about one's place in society - or directly, when specific aspirations are socially transmitted. This may be the case, for example, when a strong belief in upward mobility prevails within a social group at a given moment, transmitting ambitious educational aspirations to children born into this community. This process has been described and analysed in detail by Pierre Bourdieu's work (discussed in section 5.3).

Socially and culturally adopted beliefs, world views, tastes, preferences and aspirations are not carved in stone: over a person's life course, they can be changed and adapted to new environments and experiences (discussed in section 3.1.2). Notably, aspirations will be adapted to opportunity sets a person perceives, as Sen has emphasised. Adaptive processes may happen consciously or unconsciously, as suggested by Elster's sour grapes mechanism. Adaptive processes may themselves be impacted by cultural norms and strategies.

Social learning and cultural transmission occur primarily - but of course not exclusively - during socialisation, while adaptations play a greater role over the life course, when socially learned and transmitted beliefs, world views, norms, and preferences are continuously updated in the face of new experiences, perhaps in

1. Although it is clear that optimal aspirations are hard to detect, I think that some aspirations can be identified as not being optimal.

Figure 6.1: How do aspirations develop? An integrative framework



Source: own graph.

new social environments. Of course, children can already adapt to experiences they make. The two processes are complementary rather than mutually exclusive.

Different motives of purposeful human behaviour and of purposeful aspirations have been discussed and opposed. The notion of standard rationality that prevails in the economic mainstream has difficulties to explain a large part of observed behaviour (both concerning aspirations and in general), and is therefore not very helpful for understanding how aspirations develop, and much less why. An alternative perspective on rationality comes from Gigerenzer, who has proposed to understand a person's behaviour from an ecological or social viewpoint (discussed in chapter 4, section 4.2). Against the background of social environments, it could be an important motive for a person to comply with social norms or to behave like other persons one shares collective identities with. Seeking psychological comfort is another motive that has been stressed in the context of dissonance reduction.

Views from cognitive sciences and neuroeconomics may go further and argue that ultimately, human behaviour is motivated by the optimal usage of brain power. Rationality is bounded by neurophysiological constraints, and people need to find ways to be able to act in complex environments. The motives that are presented in figure 6.1 should not be understood as an exhaustive list, but rather as examples of potential motives behind aspirations people develop.

Several cognitive mechanisms have been discussed because of their particularly obvious relevance for processes of aspiration formation. On the part of heuristics, these were heuristics of social proof, availability heuristics, and representative heuristics (discussed in section 3.2.4). Furthermore, attribution biases and self-serving biases are two concepts that may potentially explain why people conform to aspirations that do not really benefit them. This brief discussion is of course not an exhaustive review of the relevant work in the cognitive sciences. Moreover, cognitive sciences is a fast-growing field of research, and many more relevant insights can be expected to be proposed in the future.

This framework emphasises that aspirations cannot be thought of without taking account of social environments. Social hierarchies, norms, and (inequalities of) material living conditions are an important determinant of options that are effectively accessible for an individual on the one hand and those the individual believes to be accessible on the other hand.Resource constraints can impact aspirations both in their own right and through cognitive or psychological channels. Bandura's and Bourdieu's theories discusses different modes of interaction between individual characteristics and processes at the individual level on the one hand and living conditions on the other hand.

As a consequence of socio-economic inequalities, some goals are simply not affordable for some students, for instance when school or college admission fees are to high for a family's budget or when opportunity costs are too costly. Related to this, different levels of information may account for socio-economic differences in aspirations. Parents with a college education may simply be better informed about pathways through the educational system and give their children more detailed advice about their opportunities. They may also be better informed about possibilities of receiving financial support and scholarships and so forth.

When aspirations are adjusted to material constraints, this does not qualify as an aspiration trap because no cognitive or psychological mechanisms are at work.[2]

2. This is not to implicate that a situation is desirable just because no aspiration trap exists. As I will argue in chapter 10, the existence or absence of an aspiration trap alone does not allow

But socio-economic structures can also shape aspirations through a range of psychological and cognitive channels. An individual's personal and social identity as well as virtually all non-standard preferences, beliefs, and decision-making processes can be related to them. This is of course no surprise, as identity and socio-economic structures are themselves closely related. To name just a few examples, unequal social structures can result in the internalisation of one's subordinate social status including conservative beliefs about one's abilities, talents, and possibilities. This can result in a restricted (perceived) set of feasible options, the anticipation of discrimination and stereotype threats. Consider the caste system for an extreme example of how socio-economic structures and a steep hierarchy are linked with beliefs about which occupations and activities are appropriate and allowed for people from different castes. The impact of identity, stereotypes, self-views, world views, and beliefs about the appropriateness of specific aspirations for specific people cannot be fully understood without investigating how inequalities based upon socio-economic status, race, gender, or whatever category determine these beliefs and how these beliefs are maintained.

Before closing this short chapter, a remark about the role of power is in order. The role of socio-economic structures on aspirations through the cognitive channel cannot be understood without considering power. As Kaushik Basu (2003) remarked about a decade ago, considerations about power lie "at the periphery of conventional economics" (p. 319). But power is of immense importance for understanding how beliefs about the orderliness of the universe and identities of specific groups are created and nurtured in a society.[3] Not only the individual herself has an interest in her aspirations: other groups may benefit from other people's and groups' aspirations, too. Notably, elite groups benefit from oppressed groups who do *not* aspire to improving their living conditions, but who have internalised beliefs saying that their caste status is predetermined by destiny, for example, and who have adapted to their subordinate position. Powerful groups shape stereotypes, discrimination, and belief systems to considerable degrees. An understanding of how societal structures and belief systems shape aspirations (and their evolution) therefore cannot be complete without taking account of which groups and agents in a society dispose of the power to shape shared beliefs about the world and position of specific groups and individuals in it.

judgements about welfare or desirability.

3. This is of course a huge research field of its own. See for instance Cohen (1976), Hall (1992), and Lasswell and Kaplan (1952). It would exceed the scope of this thesis to go deeper into this issue; notwithstanding, it is important for economists to keep the importance of power structures in mind.

Part II

Empirical evidence

Chapter 7

Empirical evidence about aspirations and aspiration traps

This chapter reviews the empirical literature relevant to the investigation of aspiration traps. The review includes empirical work from economics and other social sciences, the goal being to confront the theoretical discussions from the previous chapters with empirical evidence, regardless of the respective disciplinary background.

Table 7.1 contains all issues raised and discussed in the previous chapters and shows how the overview is structured according to the aspirations literature. With the inclusion of aspiration windows and aspiration gaps, the empirical review comes back to concepts that had been introduced in the economic research of aspiration traps (chapter 2). Being primarily relevant for the effects of aspirations on behaviour, these concepts had not played a role in the discussion of drivers of behaviour.

Section 7.1 addresses the basic underlying assumption of the aspirations literature and discusses a major difficulty of the empirical identification of aspiration traps. While non-rational aspirations play no role at all in neoclassical modelling, their influence on decision-making and behaviour has been taken for granted in the aspirations literature. It is undisputed across the social sciences that aspirations and goals are an important determinant of behaviour. However, it is not totally clear whether effects of aspirations persist once economic and other constraints have been accounted for. In addition, it is unclear if, how, and to what extent

Table 7.1: Questions for empirical research

Question	**Theoretical idea discussed in**	**Discussed in section**
Is the basic premise about the role of endogenous, adaptive aspirations empirically supported?	Basic premises of the research field	Section 7.1: Are aspirations really an important determinant of behaviour and achievements?
What is the relation of socio-economic variables with aspirations?		Section 7.2: Are aspirations really biased along socio-economic lines?
Cultural transmission, social learning, and habitus	Sections 3.1.1 and 5.3	Section 7.3: What do we know about specific drivers of aspirations?
Aspiration windows, role models, and peer effects	Sections 2.2, 3.1.1, and 4.3	
Are self-efficacy and locus of control important?	Section 5.2	
Do inequality, growth and their interplay influence aspirations?	Sections 2.2 and 2.3	Section 7.4: Are aspirations really linked with macro-level developments?
Does dissonance reduction play a role for explaining pessimistic aspirations?	Section 3.2.1	No evidence yet
How do heuristics influence the development of aspirations?	Section 3.2.4	

aspirations are endogenous and adaptive.

Section 7.2 proceeds to related issue and asks if there is empirical evidence for the existence of psychological or cognitive biases along socio-economic lines. In other words, if aspirations are adaptive, do they adapt to different socio-economic conditions differently? It can easily be shown that aspirations are correlated with a range of socio-economic variables. However, it is unclear to what extent such correlations simply reflect the unequal access to economic opportunity, or to what extent distortions and downward-biases exist. The theoretical literature proposes that *in addition* to economic constraints and informational deficits, psychological dynamics play a role in provoking downward-biased aspirations of disadvantaged people or groups, influencing their endogenous aspiration formation. As I will

discuss in this section, this question is difficult to address empirically due to identification problems.

Section 7.3 addresses several of the drivers and determinants of aspirations that have been proposed in the theoretical literature and reviewed in the previous sections. The goal is to go into details about specific mechanisms and channels separately. Of course, in the end, these mechanisms do not operate in isolation but most often overlap and interact. Nevertheless, there is a large pool of empirical research focussing on specific issues.

Section 7.4 tackles the theoretical claim that aspirations are linked to macroeconomic variables. As I will show, empirical evidence testing this hypothesis is scarce.

Two issues cannot be evaluated empirically, as no attempts have been made to test them yet. One is the role of cognitive dissonance for aspiration formation, and the other one refers the role of heuristics for aspiration formation processes. In section 3.2.1, I have pointed out that little has been written about the connection of cognitive dissonance reduction and aspiration formation, and much less empirical research has been conducted. To my best knowledge, no empirical research has tested whether the reduction of cognitive dissonance qualifies as a determinant of aspirations. While it is quite compelling in theory that individuals abstain from aspiring to goals they don't believe they can achieve, it is less clear if this happens through a conscious decision or through dissonance reduction. Recall that the latter process leaves the individual believing that she did not want to achieve the discarded goal in the first place. This is hard to operationalise, of course, but future research should take up on this issue.

Moreover, it has remained an open question to what extent specific heuristics (see section 3.2.3) may steer aspirations into specific directions. Hopefully future research will shed light on these questions. This dissertation will not pursue these three ideas further.

Before the review proceeds, a cautionary comment is in order. The empirical literature on aspiration traps faces several challenges and shortcomings. One issue is that researchers do often not discuss sufficiently how they define aspirations in the specific context of their research question, and different theoretical concepts may get mixed. Another severe problem is that the measurement of aspirations is often poor. Aspirations cannot be observed, they constitute a latent construct the researcher needs to approach by means of observable variables. Researchers

do often not seem to reflect how they intend to measure aspirations and how they intend to separate them from wishes, expectations or preferences. As a consequence, it often remains unclear if aspirations are really the driver of observed achievements or just represent spurious correlations when researchers do not control for other relevant variables like, for example, information (Böhme 2012). This problem is of course driven to a considerable extent by the fact that researchers make use of existing data sets.

Interestingly enough, to the author's best knowledge, Bernard and Taffesse (2014) are the first economists to explicitly address the measurement of aspirations for economists' purposes. They develop a set of survey instruments for different dimensions of life, as well as a procedure to integrate the numerical indicators of these separate dimensions into an aspirations index. Like in most empirical papers, the authors propose to ask people about their aspirations rather than inferring them from actual choices. They discuss two problems arising from this procedure: First, respondents may not be willing to report private knowledge and personal aspirations to the researcher; and second, measurement errors may not be randomly distributed, but related with aspiration levels as such. This problem is common in research on attitudes, and procedures have been developed to test for the presence of such biases, notably in psychology and psychometric research. For the moment, it shall suffice to point out that the empirical research discussed in this chapter has often used existing data sets which are suboptimal in terms of aspirations measurement; that measurements are quite heterogeneous across studies, making results hardly directly comparable; and that aspirations may have been confused in some cases with general hopes, wishes, or expectations. It should be pointed out that the measurement of aspirations in some studies leaves much to desire, and that measurement of aspirations as such is - or should be - a field of transdisciplinary research in progress.

7.1 Are aspirations really an important determinant of behaviour?

It is the basic premise of all research on aspiration traps that aspirations are an important determinant of human behaviour. All models reviewed in chapter 2 rest upon this assumption. If it was not true, the aspiration traps literature would be pointless.

Indeed one easily finds studies investigating educational or career aspirations to illustrate that students with higher aspirations usually achieve better results. To quote just a few examples,[1] in a study using data from the US, Cochran et al. (2011) find that educational and occupational aspirations of adolescents in the US are linked with mid-life career success. Dercon and Singh (2013) show that lower educational aspirations for girls than for boys in India are followed by lower achievements of girls. This finding is supported by Galab et al. (2013), who analyse the same data set with a slightly different approach. El-Mafaalani (2012)'s qualitative study[2] studies why both educational aspirations and achievements of students from specific groups of society, like those from working class and migration backgrounds he focuses on, are typically lower than those of students from families in which upper secondary and tertiary education are the norm.

Most of the studies in the field use standard regression designs and therefore commonly face endogeneity problems, owing to several potential sources. One source is the circular causality of aspiration traps: aspirations influence behaviour and outcomes, which in turn influence aspirations. This circular causation is a problem for econometric estimation techniques. Consider the following two equations, each representing one of the causal effects implied in theory:

$$\text{aspiration}_i = \beta_i x_i + \gamma_i \text{ achievement}_i + u_i \tag{7.1}$$

$$\text{achievement}_i = \beta_i x_i + \delta_i \text{ aspiration}_i + v_i \tag{7.2}$$

β_i is a vector of individual and environmental characteristics of individual i influencing both aspirations and outcomes, and u_i and v_i are the error terms. The simultaneity of both equations and effects causes a violation of the strict exogeneity assumption, which requires error terms to have a conditional mean zero. With $E(\text{achievement}_i u_i \neq 0)$, this is clearly not the case: neither achievement nor aspirations are exogenous variables in this system of two equations.

The second source of endogeneity is due to possible omitted variables. Suppose that aspirations are estimated as

$$\text{aspiration}_i = \alpha + \beta \text{ abilities}_i + u_i, \tag{7.3}$$

1. There are many more studies confirming these correlations. Some will be discussed in later sections.

2. This study has been summarised before, see pages 105 and 124.

that is, as a function of a student's abilities. Imagine there is another determinant of aspirations, the student's socio-economic background, which is not included in the analysis, and which is also related with the abilities of the student, such that

$$\text{socio-economic background} = \gamma + \delta \text{ abilities} + v_i, \tag{7.4}$$

where γ is an intercept and the coefficient δ indicates the strength of their relationship.

Equation 7.3 then becomes

$$\text{aspiration}_i = (\alpha + \mu\gamma) + (\beta + \mu\delta) \text{ abilities}_i + (u + \mu v_i), \tag{7.5}$$

where μ is the regression coefficient of the socio-economic background variable that would have had to be included in equation 7.3. If the regression is computed using equation 7.3, the actual estimation will correspond to equation 7.5, and the coefficient β will in fact not only capture the impact of the student's abilities on her aspirations, but also include the impact of her socio-economic background (thus, $\beta + \mu\delta$).

As the previous chapters have shown, aspirations are determined by a wide variety of factors. It seems hard to be sure that no relevant factors have been excluded. To avoid omitted-variable bias, the researcher must be sure that no variable that is excluded from the regression exists that could drive both aspirations and other determinants. Many studies that have been presented suffer from these problems.

For example, Galab et al. (2013) study the relationship of parental aspirations with educational achievements in India. They estimate a binary probit model where private school choice is the dependent variable, and parental aspirations enter as explanatory variable. Contrary to what the authors claim, multivariate probit regression cannot confirm that there is a causal relationship going from parental aspirations to school choice: a number of competing causal mechanisms could account for the observed correlation, too. For instance, it may be that families with higher parental education levels and higher incomes are better able to support their children in school, thereby boosting their children's skills and performance, and eventually higher aspirations. At the same time, richer households will more likely send their children to private schools. In this scenario, household income

and background drives both aspirations and school choice without there being a causal channel from (biased) aspirations to school choice.

Consider the above-mentioned study by Dercon and Singh (2013) for another illustration of these difficulties.[3] Their study finds that schooling aspirations of Indian parents for their children and, at later ages, of their children positively related with the level of subsequent educational achievements. Aspirations for boys are generally higher, as are their achievements. The authors suggest that processes of intra-family transmission could be the driving force behind the alignment of students' and parents' aspirations, and thus create the gap observed between girls and boys.

It might well be that their results reflect an aspiration trap: it may be that girls have been brought up to believe that they should or could not succeed in school, and therefore refrain from trying. They may have internalised societal norms and expectations towards them and do not believe they could be successful in obtaining an education. This adaptation of the girls' aspirations could have happened consciously or unconsciously. By definition, an aspiration trap in the sense of Dalton et al. (2016) only exists if they adjusted their aspirations unconsciously.

Both scenarios are plausible: it might simply be the case that aspirations simply become more realistic as children grow older, and that girls' aspirations reflect their limited set of possibilities and lower abilities (which result from lower investments of their parents in their education) accurately. If an aspiration trap exists, the girls' aspirations overshoot, making them achieve less than they could have, given their objective opportunity set.

These two scenarios are difficult to identify: the simple observation that girls aspire to lower goals is compatible with both explanations. In particular, if no aspiration trap exists, the effect of other, potentially unobserved variables may explain the conscious downgrading of girls' aspirations. Consider the case where parents invested more resources into their sons' education than into that of their daughters, and gave them more time to study. In this case, boys will most likely develop better skills and obtain better grades at school, and as a consequence boys will likely aspire to higher educational degrees. In this case, the origin behind both lower aspirations and lower achievements of girls lies in the favourable education of boys. Girls cannot develop their cognitive abilities in the same way as boys can, and therefore perform less well in school. Aware of their constraints, they

3. Their data set, originating from the Young Lives Study of Childhood Poverty (YL), is the same one that is used in chapter 9 of this thesis.

adjust their aspirations. In this case, aspirations and achievements correlate, but aspirations are not causal for lower achievements.

Simple regression designs cannot tell us which of the two scenarios is right in this particular case. Moreover, regression estimates are not reliable because of the above-mentioned problems of reverse causality. Dercon and Singh (2013) are aware of the limits imposed by their study in terms of causal interpretations, but their study still provides interesting insights.

Pasquier-Doumer and Brandon (2015), in a study using the Peruvian YL data set, attempt to handle these potential sources of difficulties using an instrumental variable technique. They confirm the correlation between educational and occupational aspirations and subsequent achievements of Peruvian students. They measure occupational aspirations by the profession the children indicate at age 8 they wish to have as adults. The occupations are then grouped according to the socio-economic status that is associated with them.

In the next step, the authors measure aspiration gaps as the difference between the socio-economic status associated with the desired profession and the current SES of the household. Generally, there are only small differences among occupational aspirations of 8 and 12 year old children, but the calculated aspiration gap is almost doubled for indigenous children, basically because their current status is lower.

In turn, large aspiration gaps of indigenous students at age 12 are associated with higher probabilities of grade repetition. Drawing on Ray's work on aspiration gaps, the interpretation the authors give to this finding is that indigenous students probably feel discouraged from large gaps. But this is by no means the only possible explanation: it might just as well have been the case that aspiration gaps are simply an accurate reflection of material constraints, which may be (and likely are) more severe for the indigenous students. In other words, aspirations and achievements of indigenous students may correlate, but the driving force behind this correlation could be the lack of economic resources (rather than a causal link going from aspirations to achievements).

To circumvent this problem and to exclude the possibility that omitted variables impact both aspirations and achievements, the authors use an instrumental variable approach. Their instrument is the share of the employed labour force in the district where the child lives (taken from survey data) that corresponds to low SES (including occupations like handicraft worker, tailor, or bricklayer).

This variable is assumed to be related with the students' aspirations, but not with their educational performance. This way, the authors seek to exclude the effect of unobserved characteristics that may be behind both aspirations and performance and could bias their parameter estimates.[4]

This is not totally convincing: even though teachers may attempt to balance their grade averages every year, as the authors claim quoting De Landsheere (1980), it cannot be plausibly assumed that repetition rates are *not* correlated with district characteristics. For example, Gomes (1984) study causes of repetition rates in Brazil and provide empirical evidence showing that repetition rates vary considerably with between urban and rural areas and are particularly high in rural low-income areas. In the case of Brazil, repetition rates are higher in richer areas. Lee and Barro (2001) study the impact of schooling quality for student performance, measured amongst other indicators through repetition rates, in a cross-section of countries and conclude that school resources have a decisive impact on repetition rates. School resources, in turn, can hardly be claimed to be unrelated with the socio-economic composition of a district and the composition of the labour force. Moreover, if this instrument had worked, it had only alleviated the the circumstance that the students' ability is not observed in the data, but could not have accounted for other unobserved characteristics.

Overall, the study by Pasquier-Doumer and Brandon (2015) confirms interesting correlations but cannot isolate causal mechanisms. In their sample, it seems to be the case that all students who succeed in terms of educational achievements have built ambitious aspirations beforehand. But in turn, not all students who had built ambitious aspirations reached their goals. Building ambitious aspirations thus seems to be a necessary, but no sufficient condition in their sample, and it remains unclear why some students failed to reach the goals they had reported before.

Psychologists are less hesitant to establish a causal relationship going from aspirations to achievements. In a seminal contribution, psychologists Locke and Latham (2002) summarise 35 years of empirical research in this field.[5] Summing up, they find that goals affect performance through several channels. One of them is that they determine a person's effort level, higher goals coming along with greater effort levels than lower ones. Moreover goals affect persistence and direct attention to goal-relevant information or activities. The authors also review

4. The authors exclude reverse causality problems (that is, the adjustment of aspirations to achievements) by measuring aspirations at an earlier age than achievements.

5. I have stated in the introduction that I will treat goals and aspirations as equivalents.

studies showing that people use the knowledge they possess and that is relevant for the attainment of a specific goal automatically and unconsciously (Latham and Kinne 1974). This is interesting for explaining higher aspirations of people who are more acquainted with or experienced at specific tasks: pursuing aspirations requiring these tasks comes a little natural to them. Overall, it is consensual in the field of psychology that when one persons forms higher aspirations on a task than another person, the first will achieve higher goals, anything else equal.

A few studies from several fields also suggest that aspirations adapt in a not totally conscious way, and that aspirations may have causal effects on behaviour. Barr and Clark (2010) show that people's opinion about the income and education levels that are "necessary to get by" correlate and adapt to people's actual income and education levels and levels in a reference-group. Stutzer (2004) shows that people adapt to increasing income easily, implying an upward-bounded feedback effect. In a widely known study with New York taxi drivers, Camerer et al. (1997) show that taxi drivers stop working relatively early on busy days (which bring them high hourly wages) and work longer on less successful days. This finding contradicts standard assumptions about labour supply and wage elasticities. The authors interpret that the behaviour they observe is driven by aspiration levels: once a target (an aspiration level) in terms of daily income is achieved, labour supply and effort are sharply reduced. If the target has not been reached yet, drivers continue working.

The study that probably produced the clearest evidence with regards to future-orienteed aspirations so far comes from Beaman et al. (2012). The authors benefit from the introduction of gender quotas for village council positions as of 1993 in randomly selected villages in India. In the 2000s, the authors use survey data in these areas and in villages where no gender quotas were implemented to test educational aspirations of parents for their daughters and the girls' achievements in school and find that both are higher in villages where gender quotas were implemented over two election periods (the maximum number). Given the specific design of the intervention, it is in principle not totally clear whether parental aspirations for girls played a decisive role for outcomes: not only did the female council leaders represent role models that could have raised aspirations for girls, but they could as well have implemented different policies, changing the real opportunity structure for girls. If these policies had enhanced opportunities and therefore outcomes, the final effect was not mediated through aspirations. The rise of aspirations would simply reflect increased opportunities: aspirations could have

increased simply because it became easier for women to occupy positions in village councils through the quota, as well as through increased acceptance of women in these positions over time,[6] or because women typically invest more in areas that matter for girls.

However, the authors exclude that such effects may have dominated and attribute at least a large part of their observed effects on increased aspirations stemming from role model effects. One reason for this interpretation is that public spending in relevant areas like education did not substantially change in the women-led councils, leading the authors to exclude the possibility that material opportunities for girls changed so much. Moreover, they find that time-use patterns of girls changed in councils with female leaders: the girls had to spend less time with household chores. They interpret that this observation stems from the fact have parents had higher educational aspirations for their girls and gave them more time for their studies.

7.2 Are aspirations really biased along socio-economic lines?

As shown in the previous section, many studies sustain that socio-economic variables and aspirations correlate, and there is little doubt that aspirations are strongly associated with a range of socio-economic indicators and variables capturing the socio-economic background of a person. While the previous section concentrated on technical endogeneity issues facing regression studies, this section comes back to the question of whether correlations between socio-economic variables and aspirations represent accurate reflections of objective constraints, or if aspirations are rather biased along socio-economic lines.

As intensively discussed in the previous section with the example of Dercon and Singh (2013)' study, only if pessimistic aspirations go beyond reflecting objective constraints does it make sense to talk of an aspirations trap. Recall the agent in Dalton et al. (2016)'s model (section 2.4). If lower aspirations of poorer agents just match their possible outcomes and if agents foresee how aspirations, efforts, and achievements are co-determined, there is no trap. But if this connection is not clear and excessively low aspirations have poor agents end up in downward-spirals,

6. The authors note that acceptance only increased after two periods of exposure to female leaders. In some villages, gender quotas only lasted for one period, and turned out to have no effect. They interpret that acceptance needs some time to develop.

precluding him from achievements that would have been possible, there is an internal trap.

Some experimental studies suggest that people do not evaluate their opportunities in a (von Neumann-Morgenstern) rational way. First consider an experimental study by Jensen (2010).[7] In a rural area in the Dominican Republic, he finds that most eighth-grade schoolboys expect few benefits from secondary education, despite evidence to the contrary. Their educational aspirations are thus driven downwards by informational deficits. As a consequence, enrolment is lower, and — predictably — so are achievements. Then a randomly chosen subset of students is informed of the value of attaining an education. While these students responded more positively to the return to education afterwards, they did not substantially outperform the less informed students. A possible explanation for this is that despite knowing the value of schooling in general terms, students did not regard this information as applicable to their lives. This shows that a lack of information cannot fully explain low aspirations. Still it is not fully clear if aspirations necessarily play a role, or if material constraints were so severe that even though they knew the long-term benefits of obtaining an aspiration, students were unable to afford the immediate investment.

Now consider a similar experiment carried out by Nguyen (2008) in Madagascar. She conducts an experiment where people with successful educations share their experiences with sceptical parents in order to improve how much value the parents place on education. The study finds that parents tend to be influenced only if the 'role model' comes from a similar socio-economic background — in this case, from a poor background. Similarly, Yamauchi (2007) investigates social learning and neighbourhood effects on schooling investment in India. Although he does not address aspirations explicitly, the results are informative: the social environment increased investment in schooling. But the origin and transmission channel of information seems to make a difference, as well as the quantity of the information. Yamauchi argues that people need a sufficiently huge sample of role models or sufficient information in order to infer lessons and project outcome probabilities. Taken together, this evidence strongly suggests that aspirations do not simply reflect opportunities and constraints accurately, but that they are shaped by subjective factors and cognitive mechanisms, too. In particular, in order to build ambitious aspirations, parents need to effectively see their children succeeding at school in their mind's eye.

7. This study has already been summarised in the introductory chapter on page 31.

Some additional interesting insights into the role of socio-economic backgrounds and information comes from qualitative evidence reported in a study by Rowan-Kenyon et al. (2011). They study occupational aspirations among high-school students in the US who plan to attend college. The authors collect data from comparative case studies, focus groups and semi-structured interviews with students, parents, teachers and counsellors from high-schools in different US-American states. The majority of students who were unsure about their career choice came from middle-resource schools. However, being unsure was not a reason to worry for the students from middle or high-resource schools: they were mostly confident that "going to college [would] help them to 'figure things out'" (p. 340). These students had learned in school and at home that going to college was a usual and viable path. These findings suggest that students do not always make active, 'rational' decisions, but follow paths that appear 'natural' to them.[8] The findings in this study could also be interpreted in light of Appadurai's navigational capacity: students who are confident that going to college will 'work out' for them will be more willing to embark on this path than students for whom college would represents travelling into the unknown.

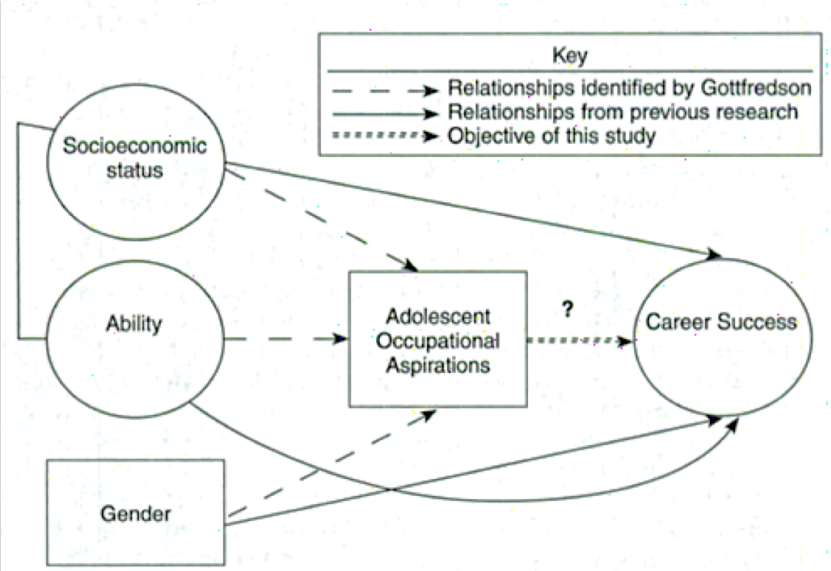
A study by Cochran et al. (2011) takes a different approach. They use representative survey data from the NLSY79 to investigate career aspirations of 15-17 year old adolescents and investigate these aspirations against the background of their parental socio-economic status, ability and gender. Higher and more prestigious occupational aspirations were found among participants with higher socio-economic background scores, regardless of their abilities (measured using a multiple-aptitude test). The authors of this study use structural equation modelling to explore causal links of socio-economic backgrounds, abilities and gender on aspirations on the one hand and of aspirations on later career success on the other hand.[9] Figure 7.1 shows the relationships the authors estimate. The focus is on a possible mediation effect going from ability, gender, and socio-economic status *through aspirations* on career success, in addition to direct effects of the former variables on the outcome.

Their results show that ability is the strongest predictor not only for mid-life income, but also for occupational aspirations. Students with higher abilities aspired for jobs with higher prestige and were then also more successful in terms

8. What appears natural, in turn, may be determined by social and cultural learning, peers, role models and other factors that have been discussed in the first part of this thesis. Section 7.3 will take up the empirical discussion of specific drivers.

9. Structural equation modelling is the approach applied in chapter 9 as well. It will be discussed with more detail there.

Figure 7.1: Model estimating a mediation effect



Source: Cochran et al. (2011, p. 414, fig. 1). Reprinted with permission from Jon Wiley and Sons.

of income afterwards. This might be due to simply realistic aspirations, if higher abilities are reflected in higher incomes. However, parental aspirations and socio-economic status also had significant influence on the kind of jobs the students aspired to. This study is an exception in the empirical literature in terms of the empirical model the authors use and of the degree to which they are able to isolate a causal effect. To my best knowledge, there is no study within economics employing structural equation modelling for addressing questions of aspiration traps. The above cited literature on educational aspirations in developing countries suggests that similar effects may be found as well when employing a methodology able to isolate them. I will take up this discussion in chapter 9.

Before concluding this section on socio-economic influences on aspirations, it is worth a mention that recent studies challenge the view that poor people are generally prone to “underaspire”. Tafere (2014) presents insightful evidence from the Young Lives study in Ethiopia, using both quantitative and qualitative data. In his study, students from disadvantaged backgrounds tend to build overly ambitious aspirations, leading the author to conclude that over-aspiring can be problematic, too. Qualitative evidence highlights that many children regard education as their route to better living conditions, and that many parents wish to support their children on this route. Tafere warns that the aspirations of many students will

likely be disappointed. Ames (2013) analyses the Peruvian YL study and also finds partly very ambitious aspirations. For all children in the study, college and higher education were associated with well-being, and the majority of parents viewed education as a way out of poverty and agricultural lives. In particular, women and girls saw obtaining a formal education as "a way out of oppressive gender relations and economic dependence on men" (p. 272).

Too high aspirations are clearly a topic of its own and have received rather little attention in the aspiration traps literature discussed so far. Evidence and knowledge about (too) high aspirations are scarce, and high aspirations have not been in the focus. Based on Hirschman and Rothschild (1973)'s idea that optimistic aspirations can turn over into frustration or grievance when not met after some time, Ray (2010) and Génicot and Ray (2015a) have studied how ambitious aspirations can lead to frustration and disappointment. Flechtner (2016) argues that the Chilean education protests in recent years can be explained by means of disappointed aspirations. For several years, Chileans upheld the optimistic and promising ideology that effort and investments in the educational careers of young students would pay off in terms of better employment chances and payments. When Chilean parents and students experienced that upward mobility was not as easily achieved as expected, frustration and disappointment could easily arise. It has as well been suggested that frustrated labour market expectations in some Arabian countries contributed to the arousal of protests in some Arab spring countries (Campante and Chor 2012). In ongoing research, Flechtner and Gräbner (2016) investigate the underlying behavioural dynamics in an agent-based model.

7.3 What do we know about specific drivers of aspirations?

This section aims at enriching the previous debate by discussing evidence focussing on specific drivers of aspirations. These include the role of cultural transmission, social learning and habitus (section 7.3.1), aspiration windows and gaps (section 7.3.2, and the variables from Bandura's social cognitive theory (section 7.3.3).

7.3.1 Cultural transmission, social learning and habitus

I have pointed out earlier that the debate about social learning, cultural transmission and endogenous preferences in economics is very well compatible with

Bourdieu's work from sociology. This section therefore reviews evidence that connects to these fields jointly.

A study by Archer et al. (2012), using data from the US, studies how a family's habitus influences whether children develop an interest in science and corresponding educational and occupational aspirations. Although they do not find straightforward linear influences of particular family characteristics on the children's aspirations, their analysis suggests that a family's habitus can shape the children's propensity to develop science-related aspirations. The authors argue that most children have an interest in natural sciences at ages 9 or 10. In the following years, family attitudes have a pronounced influence on whether these interests translate into viable aspirations or not: in this study, children from wealthier families tended to develop science-related aspirations more often. The authors contend that this effect operate not through economic constraints, but through social and cultural resources. To build science-related aspirations, children need to develop and maintain the belief in their ability to live up to their aspirations in the future. This, in turn, is a belief that wealthier families transmit. In words of the authors, when "families [are] able to foster and capitalise on their child's interest, enabling them to occupy a strong and privileged position from which to potentially pursue these aspirations further" (p. 903), an interest can become an aspiration. When this happens, it seems to happen as a natural consequence of the children's interest. But in fact, interests need to be nurtured and underpinned by positive and encouraging beliefs and attitudes. In contrast, when 'science' is a very remote field of activity and not very familiar to the children, a science-related aspiration easily becomes an unthinkable goal. In these cases, it would probably seem 'non-natural' for children to aspire to scientific occupations.

Other studies from education research and sociology confirm the influence that the family's habitus exerts on children's imagined futures and the beliefs they learn and adapt from their (familial) environment. A study by Baker and Brown (2008) is worth a mention because it shows that not only families, but also reference groups more generally can transmit beliefs and attitudes that matter for aspirations students develop. They study educational aspirations of social climbers in Wales and find that the students' symbolic resources, values, attitudes and ideas about the self and their place in the world were decisive factors for the aspirations they developed. In particular, those values and beliefs that had mattered most for the development of ambitious aspirations had been transmitted by the students' social milieus.

The aforementioned study by El-Mafaalani (2012)[10] also uses case studies of social climbers for a study with a similar interest. El-Mafaalani confirms that students' habitus and the cultural capital transmitted by their families or close social environments were important determinants of educational aspirations social climbers had developed. In order to achieve social mobility and to accomplish an educational degree that is rather atypical given one's socio-economic background and environments, students to some extent need to undergo habitus transformation and to adapt to new environments. For this to happen, many students in El-Mafaalani's case studies were challenged and motivated by a person outside their own milieu, for instance by a teacher, who stimulated their beliefs in themselves and encouraged them to consider unconventional options for their future.

Zhao (2009) studies how aspirations and educational choices of Chinese college students are shaped by cultural capital. The study finds strong differences in the ways in which students from rural (peasant) and urban (middle-class) families deal with the challenges of the structural changes undergoing the Chinese economy. Their strategies are markedly characterised by their family's habitus and their attitudes towards these changes. Future studies of how agents in developing countries perceive their educational or professional futures could certainly produce interesting and worthwhile evidence helping to understand how cultural transmission shapes thinkable and unthinkable futures in contexts of stark poverty on the one hand and, in many cases, of fast economic and social changes on the other hand.

7.3.2 Aspiration windows, role models, and peer effects

Ray had proposed that aspirations people build are influenced by the people in their aspiration windows (see chapter 2, section 2.2). Typically, he argued, neighbours and peers are important role models. But under specific circumstances, larger parts of the society one lives in could influence people's aspirations as well.

Studies focussing on the literal aspiration window and aspiration gaps are rather scarce. This might be because the operationalisation of aspiration windows and gaps is challenging. Copestake and Camfield (2010), in a study interested in the impact of aspiration gaps on well-being in Bangladesh, Thailand and Peru, measure multidimensional aspiration gaps as the difference between a person's current standard in a domain (for instance, housing or employment) and the

10. See pages 105 and 124 for descriptions of his study.

standard they would like to achieve.[11] The authors do not analyse the determinants of these gaps, but rather use them to construct a subjective measure of poverty.

To my best knowledge, no studies have attempted to pinpoint aspirations windows and their determinants. However, there is research on peer effects, neighbourhood effects, and the exposure to role models through TV shows that may inform the discussion. For future research, it would certainly be interesting to address aspiration windows more explicitly.

There is a large literature on peer effects in education (see Epple and Romano 2011, for a recent survey) that may allow some insights into how peer effects may influence aspirations. Peer effects are defined as a peer influence such that "[f]or given educational resources provided to student A, if having student B as a classmate or schoolmate affects the educational outcome of A" (p. 1054). In analogy, one may speak of peer effects on students' educational aspirations if a specific class composition or the presence of specific peers impacts aspirations. Likewise, parental aspirations may be influenced by class composition or the interaction with other parents with specific traits.

Most empirical works studying peer effects focus on educational test results. Boisjoly et al. (2006) are an exception in that they study the influence of randomly assigned room-mates on racial attitudes and beliefs of US college students. They find that attitudes towards racial inequality, diversity and affirmative action as well as a range of goals - including the promotion of racial equality, but as well goals with respect to income and social position - were influenced by the interaction with room-mates. This suggests that attitudes and beliefs concerning other realms of life, for instance beliefs about upward mobility, may as well be shaped by peers. Epple and Romano (2011) conclude from their survey that peer effects on educational achievements do mostly not operate through academic abilities, but through role model effects, habits, and behaviours.

A study by Fruehwirth (2014) comes closer to addressing aspirations by investigating students' decisions to exert effort in school. They assume that effort levels are related with aspirations because investing costly effort only makes sense if the students have a goal. The authors study effort levels with regard to their effects based on race and find that peer effects exist mostly within ethnic groups, but rarely across them. Effort levels of non-white students increase with increasing achievements of their non-white peers, but are not affected much by the performance of white peers.

11. See page 44 for Ray's definition.

A related field of study concerns neighbourhood effects and role models from people' physically close environments. Macours and Vakis (2009) investigate the formation of aspirations with regards to household investments in Nicaragua. They use a randomised transfer program to research the influence of households' interactions with local leaders on their future expectations and aspirations. The leaders were women who lived nearby the beneficiaries of the transfer program, and who came from similar socio-economic backgrounds. The study revealed that optimistic leaders were able to open up the beneficiaries' aspiration window, as they put it, and that their aspirations were boosted as a consequence of observing success stories of "natural leaders living in people's close proximity" (p. 29).

A study by Altamirano et al. (2010) addresses the question of how the development of aspirations of Mexican teenagers in Mexico DF is influenced by their family's social environments. They understand aspirations as "an indicator of a person [sic!] willingness to participate in society and advance in whatever goals he/she deems appropriate for his/her life" (p. 7). Randomly selected teenagers and one of their parents from three socio-economic status groups were interviewed with questionnaires about their educational aspirations and the household's interactions with other people. The schooling level of relatives, friends and word-related colleagues was recorded, too. The authors concluded that educational aspirations benefit from having relationships with relatives with higher educational degrees. There we almost no effects for other groups.

Well-known studies by Beaman et al. (2009) and Beaman et al. (2012) show that effective role models can stem from less personal relationships as well.[12] As reported above, the authors study the effect of gender quotas in Indian village councils and the consequential exposure of people to female leaders on attitudes, beliefs, and stereotypes. They find that successful female leaders can at least partly change beliefs about women's ability to perform tasks that were traditionally reserved for men (Beaman et al. 2009).

Moreover, a number of papers addressing the effects of TV series and soap operas on behaviour suggests that not only physically and socially close individuals can be chosen as role models. Jensen and Oster (2009) study the effect of the introduction of cable TV on attitudes in rural India and find that the availability of cable TV had significant impacts on the acceptance of domestic violence, son preference, women's autonomy, fertility, and school enrolment of younger children.

12. Both studies rely on the same data base. The study by Beaman et al. (2012) has already been described in session 7.1, page 146.

La Ferrara et al. (2012) also find that the exposure to soap operas influences fertility; the same goes for divorce rates (Chong and Ferrara 2009). Both studies benefit from the sequential introduction of a major novela provider to different regions and find that fertility drops in regions where telenovelas are already available, while divorce rates increase. They attribute this behaviour to the fact that operas usually feature small families and represent women as morerather independent individuals. Vaughan and Rogers (2000) confirm that a radio-soap in Tanzania has impacted family planning behaviour among listeners.

So-called entertainment-education has been used for public health interventions and for changing gender norms in several countries (Singhal et al. 2003). Based upon this body of literature and their own evidence Bernard et al. (2014) and Bernard et al. (2015) conclude that videos can be an effective means of influencing behaviour in developing countries when role models in the videos are sufficiently similar to viewers, permitting the latter to relate to the character.

Overall, what seems to be decisive for role model selection is a person's ability to identify with the role model. There is no general rule as to when this happens: often, people choose role models they can identify with because they belong to the same family; in other occasions, because they belong to the same community or neighbourhood; and in other times, it seems to be sufficient to have the same gender. It seems to be important that the features of the role models upon which selection is based refer to the task in question.

To conclude, aspiration windows can be diverse and include people from the close social environment as well as TV characters. What has remained open is the effect of inequalities on aspiration windows and aspiration gaps. In particular, it would be interesting to know how the exposure to people from very different socio-economic backgrounds impacts aspirations. For example, rather poor people who are employed in wealthy households are exposed to high levels of wealth on regular basis. In countries with huge levels of inequality, these differences can be extreme. Future research should study how these differences impact aspirations.

7.3.3 Social cognitive theory

Several studies from different disciplines have explicitly addressed social cognitive theory and the roles of self-efficacy and locus of control beliefs (see chapter 5, section 5.2) for the development and achievement of aspirations.

Some of these studies come from career research. Hannah and Kahn (1989)

are interested in the link between socio-economic background and occupational choices in the US. They propose that the relation is mediated by task-related self-efficacy beliefs: students in their study tended to aspire to and choose occupations when they were confident that they had the abilities required to succeed in them. Their task-specific self-efficacy beliefs, in turn, were related to their socio-economic backgrounds.

Bernard et al. (2011) test the variables of Bandura's social cognitive theory with regards to aspiration failures and fatalism in a study using household survey data from rural Ethiopia. They are interested to know how both variables operate and interact in the creation of fatalism of disadvantaged people at the individual level. In Bandura's terms, fatalism results from external locus of control beliefs combined with low self-efficacy beliefs, and constitutes a severe case of an aspiration failure. Subjective social status is correlated with both. The propinquity of fatalism and external locus of control beliefs is evident in all shapes of the definition of fatalism which range from

> the strict sense of a system of beliefs which holds that everything has an appointed outcome which cannot be altered by effort or knowledge, to a sense of resignation based on the realities of a difficult life-situation, to a more imprecise set of connotations covering cynicism towards established values of work and order. (Whelan 1996, p. 46)[13]

Piatek and Pinger (2010) use data from the German Socioeconomic Panel to investigate the relationship of locus of control beliefs, schooling and wages. They find that people with more internal control beliefs earn higher wages, which is mediated through education. Teenagers with more internal control beliefs obtain more education, which is then reflected in their earnings later on.

The above-mentioned study by Beaman et al. (2012)[14] investigating the effect of female leaders in Indian village councils on educational aspirations for girls does not test locus of control or self-efficacy beliefs directly. Nevertheless, the authors argue that the role models effects of women in leadership positions boosted the self-efficacy beliefs of girls living in villages with gender quotas. Moreover, it is plausible that when larger opportunity sets were perceived for girls, locus of control beliefs became more internal. As the authors of the study note, no experiment with their design and research interest can ever fully distinguish

13. For this reason, differences between strong fatalism, which is a deep and rather unmalleable belief, and (temporary) aspiration failures as a smoother variation of fatalism should not be overlooked.

14. See page 146.

between effects of real opportunities and the perceptions of these. On the other hand, Bandura's theory clarifies that if locus of control beliefs remain external while only self-efficacy beliefs grow, this will not result in productive educational aspirations, but in grievance and frustration. Since this did not happen, it is likely that parents and girls in the presented study did perceive increased opportunities for the girls.

7.4 Are aspirations really influenced by macro-level developments?

It has generally be assumed in the economic literature that aspirations are influenced by macro-level developments.[15] But to my best knowledge, the impact of inequality, growth, or income and wealth levels on aspirations has not been tested empirically. However, two pieces of somehow related research are worth being reviewed.

It was reported in section 2.2 that theoretical reflections on possible impacts of macro-level dynamics on aspirations have drawn on Hirschman's tunnel effect. Ravallion and Lokshin (2000) test the tunnel effect with respect to the support for governmental redistribution in Russia in the 1990s. If a tunnel effect exists, they argue, not only people's current income status should matter for preferences for redistributions, but expectations about the future as well. The study finds that support for governmental redistribution is higher among those who expect their income to decrease, all the more when current income is high. The authors conclude that this result goes back to a tunnel effect. Besides this study, I am not aware of any serious testing of Hirschman's hypothesis.

A second piece of research that is informative is Cobb-Clark and Schurer (2013)'s study of the stability of locus of control beliefs over time. As I will argue more extensively in chapter 8, macro-level variables enter an people's aspirations through their locus of control beliefs. This is because reductions of inequality or increases of social mobility do not influence people's beliefs about their personal abilities, but beliefs about their - externally determined - possibilities to make use of those, given their country's or region's current shape. In this sense, the study by Cobb-Clark and Schurer is relevant for the question at hand. The authors study locus of control dynamics in the context of economic changes with data from an

15. See sections 2.2 and 2.3, in particular table 2.1 on page 45, as well as the introduction to chapter 8 for more details.

Australian survey and find that changes of locus of control beliefs over time are neither huge nor easily predictable. But there are changes: for instance, when a child is born or when a person's financial situation worsens, locus of control beliefs tend to become more external. In turn, improvements of the financial situation or job promotion can increase perceptions of internal locus of control. On the other hand, a realm of similar events is not associated with changes in control beliefs, and effects are not easily predicted. For example, the authors do not observe changes related to labour market or health events. Furthermore, the changes they do observe are rather modest.

7.5 Summary and open questions

Table 7.2 summarises the results from the literature review in this chapter in light of the open questions asked at its beginning (see table 7.1, page 138).

While the review of specific empirical behavioural mechanisms and their impact on aspiration largely supports theoretical claims and models, evidence supporting the underlying premise of the aspiration traps literature - that aspirations are an important determinant of behaviour and that aspirations can be psychologically biased, resulting in psychological aspiration traps - have remained ambiguous. As section 7.1 has argued, the importance of aspirations for behaviour is not generally questioned by the empirical literature, but a causal channel running from aspirations to behaviour has not been confirmed in an econometrically robust way, either. The problem has been in empirical techniques and the inability of existing studies to circumvent endogeneity problems resulting from potential reverse causality and the impossibility to exclude unobserved variables - on the one hand and in the lack or at least scarcity of data sets allowing for different empirical techniques on the other one. Related to this is the partly open question of whether socio-economic biases of aspirations exist, as section 7.2 discussed. Another open question concerns the influence of macroeconomic dynamics on aspirations (section 7.4).

Results are less ambiguous with respect to determinants of aspirations. That aspirations are subject to social influences from families, peers, and one's social environment is generally confirmed. Role models can boost aspirations when the individual can identify with them. There is no universal role of who exactly qualifies as a relevant role model for a given task; it is important that people can identify with them on the basis of shared features that are relevant for the task

Table 7.2: Answers and open questions in empirical research

Question	**Discussed in section**	**Result**
Is the basic premise about the role of endogenous, adaptive aspirations empirically supported?	Section 7.1: Are aspirations really an important driver of behaviour and achievements?	Importance confirmed, but some open questions about causality remain.
What is the relation of socio-economic variables with aspirations?	Section 7.2: Are aspirations really biased along socio-economic lines?	Correlations with socio-economic variables clearly exist, but unclear to what extent they reflect objective opportunities or psychological traps.
Cultural transmission, social learning, and habitus	Section 7.3: What do we know about the drivers of aspirations?	Scarce evidence (from other fields) suggests importance.
Aspiration windows, role models, and peer effects		Scarce evidence on aspiration gaps, but lots of evidence of the importance of role models.
Are self-efficacy and locus of control important?		Several studies confirm their relevance.
Do inequality, growth and their interplay influence aspirations?	Section 7.4: Are aspirations really linked to macroeconomic variables?	No explicit studies and no clear evidence yet.

in question, and that role models can thus help the individual to imagine herself in the place of the role model. The existence and relevance of aspiration windows has not been explicitly tested. Several studies have been able to related reported aspirations with self-efficacy and locus of control beliefs as theorised by Albert Bandura (section 5.2), and these in turn were typically negatively associated with poverty and inequality.

I will address these two open issues in part II of this thesis. Chapter 8 explores the role of inequality and growth dynamics and their interplays for aspiration

formation. Chapter 9 attempts to address the possible existence of psychological traps that bias aspirations downwards in addition to material constraints and lack of information and the causality issue discussed in sections 7.1, alongside the question of socio-economic biases discussed in section 7.2.

Chapter 8

Locus of control, inequality and growth: a cross-country perspective with data from the World Values Survey

As chapters 2 and 7 reported, the theoretical literature has proposed that individual aspiration levels may be influenced by levels and dynamics of inequality in a society, as well as by macroeconomic outlooks. But the hypotheses about possible influences from the macro-level still lack empirical underpinning: to my best knowledge, it has not been attempted to test them yet. This may be so because they are not easy to test, given data restrictions as well as other challenges. This chapter attempts to gain first empirical insights using data from the World Values Survey (WVS) and a multi-level modelling approach.[1]

The next section will briefly recapitulate what has been written about the relationship of aspirations, inequality and growth in the theoretical literature. I will then explain why I use a locus of control variable to gain insights about aspirations. Section 8.2 explains the model and presents the data set, before section 8.3 presents the results. Section 8.4 discusses and concludes.

Having mentioned that testing the theoretical hypotheses about macro-level influences on aspirations is no trivial task, I should point out that the evidence

1. The data used in this publication come from the World Values Survey Wave 6 2010-2014 Official Aggregate v.20141107 and Five-wave Integrated Data File 1981-2009. World Values Survey Association (www.worldvaluessurvey.org). Aggregate File Producer: Asep/JDS, Madrid SPAIN.

presented in this chapter cannot provide definite conclusions. This is mainly the case because data availability has restricted the possibilities of the analysis in important ways. Therefore, the evidence presented should be interpreted with caution. Notably, I will interpret the results of the multi-level regression as correlations that can be observed in the data, rather than to claim that directional effects exist. However, these correlations are worth being discussed: interestingly, they are compatible with the theoretical hypotheses. It is clear that more research is needed in the future, but it is relevant to know that the evidence available so far does not contradict them.

8.1 Theory and relevant literature

Most authors in the field of aspirations have related the occurrence of aspiration traps with social and economic structures. In general terms, Ray (2006) and Génicot and Ray (2015a) have suggested that inequality can stifle aspirations, at least for the less well-off groups of society, whereas economic growth can motivate high aspirations.[2] A more dynamic relationship between economic growth, inequalities and aspirations proposed in Ray (2010), drawing on Hirschman's tunnel parable (Hirschman and Rothschild 1973).[3] Transferring the tunnel parable to aspirations, Ray argued that inequality - as side effect of uneven growth - may stimulate aspirations for a while, because people expect to catch up with those who have benefited from uneven growth earlier than themselves. Holding these expectations, people are willing to endure increasing inequalities for a certain time. However, their optimistic expectations may turn into frustration if growth does not become inclusive. If the catching-moment does not arrive after a while, people's aspirations become frustrated as a result of economic growth that does not benefit them, but rather leaves them behind.

Against this background, it is not very promising to test simple correlations between, say, inequality and aspiration levels. The theoretical literature suggests that aspirations are influenced by complex interplays of different variables rather than connected with single variables in linear ways. The analysis will therefore put emphasis on the joint relationships of economic growth with aspirations, taking account of time. This motivates the choice of a multi-level modelling approach.

2. See sections 2.2 and 2.3, in particular table 2.1 on page 45.
3. The tunnel parable and its lessons that have been transferred to the field of aspirations have been summarised on page 47.

According to Bandura's social cognitive theory (see chapter 5, section 5.2) productive aspirations require two ingredients: on the one hand, people need to believe that achievements and successes regarding a specific task or goal are contingent on their actions. If they do not feel that they are themselves in control of their life, that is, if they do not have internal locus of control beliefs, they will not build productive aspirations. Second, they must believe in their personal capacity to carry out the task successfully, that is, they need high self-efficacy beliefs.

Influences from the macro-economic level, such as inequality dynamics or economic growth, most plausibly shape aspirations through their impact on locus of control beliefs. Economic growth, for example, will likely not affect a person's beliefs about her own capacities as a mechanic, but rather the extent to which she believes that labour market outcomes are contingent on mechanical capacities and qualifications in general. More generally, the economic environment can be one important determinant of perceived chances and possibilities, and thus of locus of control beliefs. In a situation of crisis, it may well be the case that no matter how well an entrepreneur manages her firm, she will incur losses. In turn, when the economy is going well, prospects look much more promising and people will likely perceive that their economic success is much more contingent on their own action. I therefore rely on a locus of control variable for the analyse, and leave self-efficacy beliefs aside.

8.2 Data and model

8.2.1 Measuring locus of control with World Values Survey data

The locus of control data I use come from the WVS. My data set contains observations from 64 countries and six waves. The WVS comes along with a number of shortcomings, but it is the only data set - to my best knowledge - that inquires locus of control beliefs in a considerable variety of countries and for several points in time.

Following Rotter's original contribution,[4] the measurement of locus of control beliefs has received large attention. In psychology, it is consensual that locus of control beliefs represent a latent concept that should be measured using multiple-item scales. A variety of measurement scales for specific contexts and topics have been developed and confined over decades in the psychological literature. Specific

4. See chapter 5, page 116.

scales have been adjusted for single domains such as health (Wallston et al. 1978) or weight (Saltzer 1982), and there is as well an economic locus of control scale (Furnham 1986).[5]

Two shortcomings of the WVS data set with regards to the measurement of locus of control beliefs should be mentioned. One concerns the variable that is available to measure locus of control beliefs. Instead of a multiple-item scale, the WVS contains one variable than can be used for a broad-based cross-country comparison.[6] The full text of the item is: "Some people feel they have completely free choice and control over their lives, while other people feel that what they do has no real effect on what happens to them. Please use this scale where 1 means 'none at all' and 10 means 'a great deal' to indicate how much freedom of choice and control you feel you have over the way your life turns out."

In principle, the data set comprises 311,876 observations from six waves with a response to this item. However, the data set is unbalanced, since the item has not been included in the questionnaire of each country in each wave. For 27 out of a total of 96 countries, for example, responses of only one wave are available. Those countries are excluded from the analysis, because a primary interest of the analysis is in the dynamics between different points in time.

The second issue is that the WVS is a longitudinal study, but it does not track the same respondents in each wave. To study how locus of control beliefs evolve over time, panel data would be desirable. To my best knowledge, no cross-country data set is available that would come anywhere close to these requirements. To make measurements from the WVS comparable over time, I construct a pseudo panel (Deaton 1985) with ten income groups as subjects.

Using this procedure, the analysis does not necessarily follow the same cohort or group. It may well be that income groups contain different people each time. For example, it may happen that respondents who had belonged to the fourth decile in the last round belong to the fifth round in the current wave. On the other hand, social mobility is usually not so high as to expect that considerable parts of the income groups be made up by movers. Moreover, social mobility usually involves movements from one income group into a neighbouring one, rather than jumps

5. See Halpert and Hill (2011) for an overview of 28 measures.

6. In principle, two variables come close to locus of control items: one asking for freedom of choice and control over one's life, and another that asks whether hard work usually brings success. Unfortunately, the latter question only has a relatively small number of observations. Therefore a stand-alone analysis will be carried out with the first question that has been included in the surveys relatively often and in a variety of countries and occasions. A similar strategy is used by Haushofer (2013).

Table 8.1: Observations per wave and country

Wave	# Obs. (income groups)	% of total sample	# of countries
1981-1984	48	2.95	5
1989-1993	137	8.42	17
1994-1999	377	23.16	41
1999-2004	321	19.72	34
2005-2007	383	23.53	42
2010-2014	362	22.23	40

across the whole scale of the social ladder. Moving from one decile to the next should not impact results strongly. Another argument that justifies this strategy is that the primary interest of the analysis is in the current perceptions of all individuals who are part of a specific income group at that given point in time.

The income groups are based on the responses to an item that asks to which income group (1= poorest decile, 10= richest decile) the respondent belongs. Country questionnaires tie the responses to this item to country-specific income scales in the country's currency in order to reduce measurement error. Naturally, the size of income groups within countries differs strongly. In particular, income levels 9 and 10 are small in some countries and waves. The data set used for the regressions excludes all groups with less than ten respondents.[7] Table 8.1 reports how the included observations are distributed between waves.

For each income group in each country and wave, I compute the average response to the locus of control item. While the original response went in categories from 1 to 10, the computed averages have up to 6 digit decimals and rarely do two groups end up with the same average score. Therefore, the dependent variable is not treated as a categorical variable, but as a continuous response.

8.2.2 Model specification

Taking account of the nesting structure of the data, I estimate a three-level model for continuous responses using the command mixed in Stata (Rabe-Hesketh and Skrondal 2008). Repeated survey waves (level 1) belong to income groups (level

7. All regressions were repeated with the original data set as a means of control. No substantial differences resulted from the exclusion of the small groups.

2), which are nested in countries (level 3). This nesting structure takes account of the fact that observations of respondents from the same country might not be independent (reflecting, for example, possible country-specific response patterns), just as repeated observations over time are not independent of each other because they were given by the same income group. The locus of control score for each group *j* at wave *i* in country *k* is estimated as

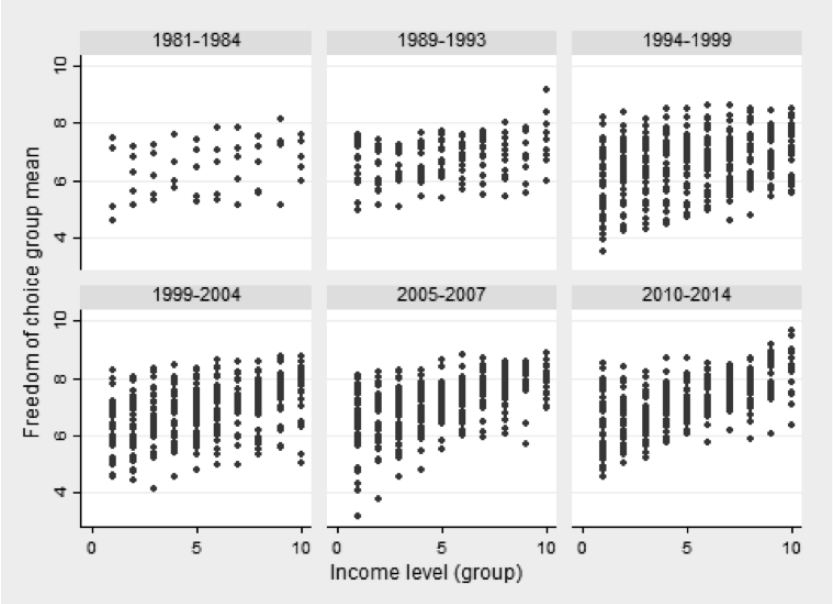
$$loc_{ijk} = \beta_0 + \beta_1 x_{ijk} + \beta_2 w_{jk} + \beta_3 x_{ijk} w_{jk} + \xi_{jk}^{(2)} + \xi_k^{(3)} + \xi_{2k}^{(3)} t_{ij} + \epsilon_{ijk}, \qquad (8.1)$$

where β_0 is the intercept, β_1 represents a vector of coefficients of individual regressors x_{ijk}, β_2 is a vector of time-varying regressors at country level w_{jk} and β_3 represents regressors of the interaction terms. $\xi_k^{(3)}$ is a country-level random intercept that is assumed to capture country fixed-effects, $\xi_{jk}^{(2)}$ is a random intercept at individual level, $\xi_{2k}^{(3)} t_{ij}$ is a random coefficient at country level (for the variable "income level") and ϵ_{ijk} is an error term. As reported with the results, most specifications include as well a random coefficient for income groups at country level.

It may be objected that this specification could suffer from endogeneity problems due to reverse causality. It may be, for example, that locus of control beliefs held by a population impact economic growth and inequality dynamics, rather than the other way around. However, this is not very plausible. Chapter 1 discussed that manifold factors at the national and global level jointly impact income levels, economic growth, and human development in a country. Against this background, it is not plausible that locus of control beliefs should be an important driver behind economic growth and changes of inequality at the national level. Of course, locus of control beliefs matter for behaviour, and behaviour ultimately contributes to economic growth and inequality dynamics at the macro-economic level. However, there are many more factors that exert much more direct influences, ranging from the global business cycle over social policies to food prices and the volatility of currency exchange rates. I therefore argue that endogeneity effects due to reversed causality cannot play an important role. In any event, results will be interpreted first and foremost as correlations, rather than as directional effects.

At group level, besides the income level of each group, group averages of age and educational levels are included as controls. At country level, regressors include GDP per capita levels, Gini coefficients at different points in time and

Figure 8.1: Response scores of group means by income groups, waves 1-6



GDP growth rates of different periods.[8] Moreover, the survey year is included as a control.[9] As reported above, there is a general tendency for scores to increase over time. This might be associated with increases in GDP, for instance, but controlling is useful with respect to other, unobserved differences between survey years. All specifications contain country dummies in order to control for unobserved heterogeneity between countries. Residuals are modelled independently between countries in order to allow for heteroskedastic errors across countries.

8.2.3 Descriptive statistics

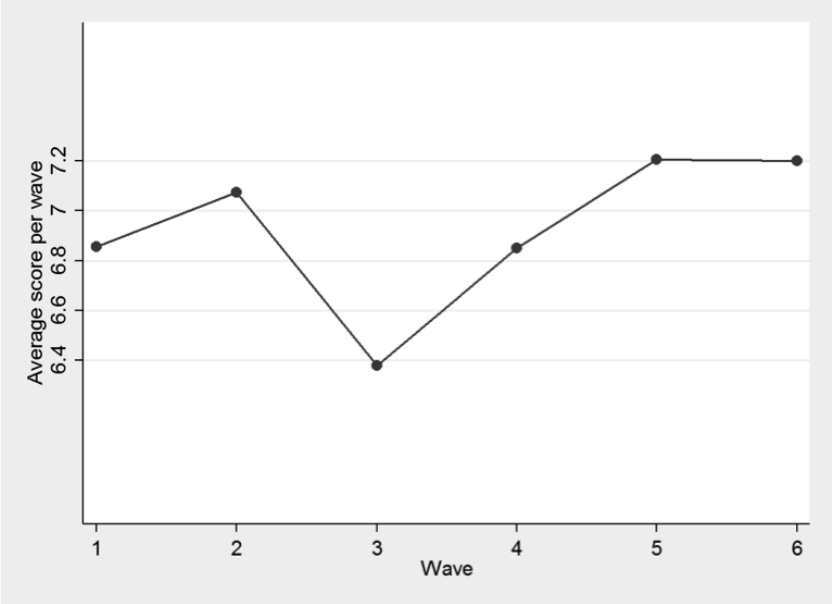
The average score of the locus of control item is 6.97, with a standard deviation across the whole sample of 1.02 (within income groups: 0.56; across income groups: 0.88). The standard deviation between countries is 0.69, that within countries 0.76. This variation over time both between and within countries justifies a panel analysis (see Wilson and Butler 2007, for a discussion on this issue).

Figure 8.1 shows that although there is substantial variation, there is a tendency of response scores to increase with income over all observations. On the other

8. GDP per capita is current GDP in US dollars from World Bank (2014). GDP per capita growth is annual growth in % from World Bank (2013). Gini coefficients come from UNU-WIDER (2014).

9. The survey year variable is normalised such that 1981, the first survey year in the present sample, represents year 0, 1982 year 1 etc.

Figure 8.2: Average response score over all observations per wave



hand, this tendency varies importantly between waves. There is no general upward trend over survey years, which is due to response scores below average in wave 3. Excluding this wave, there would be a general upward trend. Figure 8.2 reports average response scores over all observations per wave.

8.3 Results

8.3.1 Wealth, growth, and inequality

In order to broadly test for the mechanisms suggested in theory, many specifications were tested against each other. Table 8.2 shows the results from a basic baseline specification, analysing how GDP per capita, growth rates and levels of inequality of a given year are related with country average scores of perceived control. As expected, none of these relations is statistically significant. This confirms that there are no straightforward linear relationships between wealth, growth and inequality with the overall level of perceived control in a country. In this and all other specifications, most country dummies are significant, but their inclusion does not change the significance of the other parameters.[10]

10. Models without country dummies are not reported here, but were tested comparatively. The regression results are not substantially changed by the inclusion of country and year dummies. Actually, some models are slightly improved after their inclusion.

Table 8.2: Regression result of basic specification

Model	(1)
Income group	0.958**
Gini coefficient	-.0096 (n.s.)
GDP per capita	-1.48e- (n.s.)
GDP growth rate of current year	0.0060 (n.s.)
Constant term	3.7034**
# obs.	957

Notes: **= significant at 0.1% level; *= significant at 1% level; $^{+}$= significant at 5% level; n.s. = not significant. Residuals modelled as independent by country. Coefficients of income groups are random at country level. All specifications include dummies for countries and survey years (not reported).

GDP per capita levels

Although GDP per capita is not related with the level of perceived control,[11] countries with higher GDP levels tend to have more homogeneous distributions of locus of control. Figure 8.3 shows standard deviations of group scores from the country average in a given survey year on the vertical axis, illustrating degrees of dispersion of perceived control within countries. Graphs with past GDP per capita levels look alike.[12]

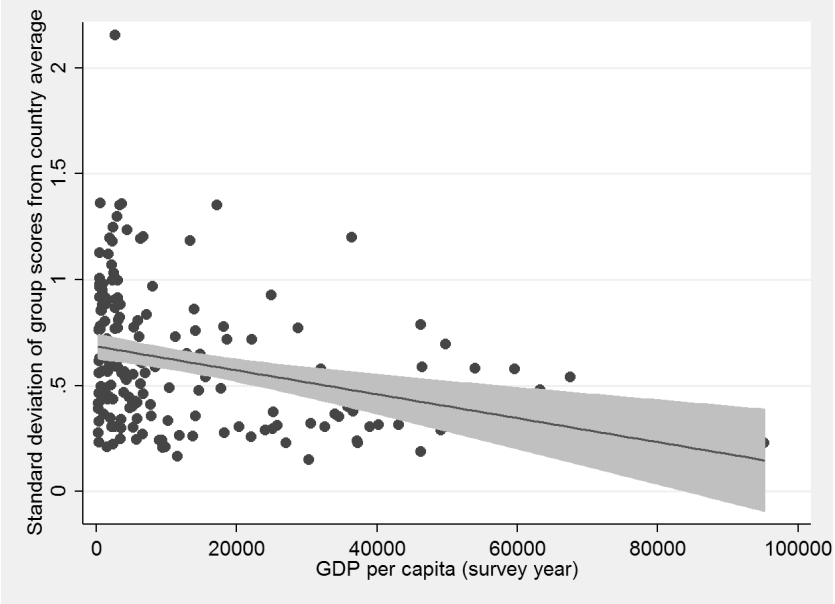
Economic growth

Table 8.3 reports regression results that include growth rate averages over different periods. Averages of 5, 10, and 15 years include the current year and 4, 9, and 14 years backward, respectively. While the average growth rate of the shortest period is not significantly associated with lower or higher feelings of control (not reported), positive significant relationships can be found for the longer periods.

However, the magnitude of the relation is problematic to interpret since the average growth rate of the current year is as well significant and negative, which may outweigh the positive relationship for those countries with high growth rates in the current year relative to others. Furthermore, the Gini coefficient is statistic-

11. See table A.1 in Appendix A.1, page 294.
12. The corresponding regression table can be found in the appendix in section A.1, table A.2, page 295.

Figure 8.3: Variation of perceived control between income groups and GDP per capita



ally significant. Due to the additive structure of the model, the interpretation of all three country level regressors taken together is that perceived control is higher in countries with high growth rates over 15 years and where income inequality is higher, but not so much in countries with currently high growth.

Model (4) suggests that this observation is in fact driven by the interaction of the level of inequality with the 15-year growth rate. This implies that higher country averages of perceived control occur where there has been high average growth over 15 years (corrected downwards for high current growth rates) and where inequality is high. This interaction dominates the positive relationship of the variables standing alone. This result still seems puzzling for the moment. But as the following models will show, they need to be seen against the background of different inequality dynamics. There is a tendency for countries with currently higher growth rates to experience more heterogeneous distributions of control across income groups.[13]

13. See table A.3 in appendix A.1 on page 296.

Table 8.3: Economic growth

Model	(2)	(3)	(4)
Income group	0.1016**	0.1008**	0.0997**
Survey year	0.0293**	0.0288**	0.0248**
Gini coefficient	-0.0120 (n.s.)	0.0259**	0.0085 (n.s.)
GDP per capita	-6.55e- (n.s.)	1.27e- (n.s.)	1.09e- (n.s.)
GDP growth rate of current year	-0.0005 (n.s.)	-0.0253*	-0.0203^{+}
Growth rate average 10 years	0.0218*		
Growth rate average 15 years		0.1227**	-0.0743 (n.s.)
Growth rate 15 years * Gini			0.0041^{+}
Constant term	3.7189**	2.8985**	3.6127**
# obs.	881	751	751

Notes: **= significant at 0.1% level; *= significant at 1% level; $^{+}$= significant at 5% level; n.s. =not significant. Residuals modelled as independent by country and coefficients of income groups are random at country level. All specifications include country dummies (not reported).

Inequality

Table 8.4 reports the relations of locus of control beliefs with inequality dynamics over time. Model (5) includes the Gini coefficient 10 years before the survey, while model (6) uses the percentage change since then.[14] Results are similar: on country average, control scores are higher the higher the level of inequality was 10 years ago, and the larger the relative change - that is the reduction of inequality - has been since then. At country level, inequality dynamics turn out to be more important than the Gini coefficient as such, which loses statistical significance. Neither the Gini coefficient of 5 years before the survey nor the change relative to this point in time are significant regressors (not reported).

Perceived control does not seem to differ between income groups in a country

14. Theory is not precise about the relevant periods. Therefore past variables were systematically tested for 5, 10 and 15 years before the survey. Past inequality was only tested for 5 and 10-year periods, because extending the period further dramatically reduces the number of available observations.

Table 8.4: Income inequality - levels and changes

Model	(5)	(6)
Income group	0.1073**	0.1104**
Survey year	0.0189**	0.0170**
Gini coefficient	-0.0057 (n.s.)	0.0080 (n.s.)
GDP per capita	1.93e- (n.s.)	7.49e- (n.s.)
GDP growth rate of current year	0.0056 (n.s.)	0.0019 (n.s.)
Gini 10 years ago	.0186**	
Gini % change compared to 10 years ago		-.0073**
Constant term	3.7090**	4.234**
# obs.	819	819

Notes: **= significant at 0.1% level; *= significant at 1% level; $^{+}$= significant at 5% level; n.s. =not significant. Residuals modelled as independent by country and coefficients of income groups are random at country level. All specifications include country dummies (not reported).

at a given point in time. This is surprising because such interactions have been strongly suggested by the theoretical literature. The very starting point of the aspirations literature is Appadurai's idea that aspirations are distributed unequally between members of different income groups (Appadurai 2004). On the other hand, Hirschman and Rothschild (1973) as well as Ray (2010) relate this unequal distribution to economic growth: both argue that growth is most often unbalanced and comes along with changes in distributional patterns in a society in the first place. Growth might nevertheless stimulate positive expectations in a whole population, at least for a certain time. The next section will put the dynamics in context with each other.

8.3.2 Growth and inequality dynamics in context

Table 8.5 reports specifications that analyse the relationship of locus of control beliefs with inequality against the background of economic growth. All the specifications reported in this table refer to a sub-sample of the data set: only countries with a GDP per capita level below $20,000 are included. None of the reported relationships were found in the complete data set.

Table 8.5: Subsample: GDP per capita <$20,000 USD

Model	(7)	(8)	(9)	(10)
Income group	0.2697**	0.2801**	0.2856**	0.3056**
Survey year	0.0225*	0.0508**	0.0457**	0.0699**
Gini coefficient	0.0572**	0.0624**	0.0520**	0.0385 (n.s.)
GDP per capita	0.0001**	-0.0001**	-0.0001*	0.00001 (n.s.)
GDP growth rate of current year	-0.0527**	-0.0405**	-0.0384*	-0.0341^{+}
Growth average 5 years	0.0227 (n.s.)	0.0020 (n.s.)	0.0038 (n.s.)	0.0170 (n.s.)
Growth average 10 years	0.0445^{+}	0.0300 (n.s.)	0.0354 (n.s.)	0.0309 (n.s.)
Growth average 15 years	0.0512 (n.s.)	0.1958**	0.1790**	0.0495 (n.s.)
Income group * Gini	-0.0040*	-0.0041*	-0.0042*	-0.0047*
Gini 5 years before survey				0.0163 (n.s.)
Gini 10 years before survey		-0.0209**		-0.0547*
Gini % change to 5 years before survey				0.0212 (n.s.)
Gini % change to 10 years before survey			0.0057*	-0.0134*
Constant term	1.4877*	3.0866**	2.5336**	4.5183**
# obs.	537	455	455	417

Notes: **= significant at 0.1% level; *= significant at 1% level; $^{+}$= significant at 5% level; n.s. =not significant. Residuals modelled as independent by country and coefficients of income groups are random at country level. All specifications include country dummies (not reported).

For the sub-sample of low- and middle-income countries, there is a significant interaction term of income level and Gini coefficient in model (7). The Gini coefficient and the GDP per capita level become statistically significant as well. The specification is robust to the introduction of growth rate averages of different periods, but only the 10-year average is statistically significant (and positive). Model (7) shows that on country average, countries with higher income levels and higher 10-year average growth rates report higher scores. However, this is less so for countries with high levels of inequality and for higher income groups. Overall, higher GDP levels, higher 10-year average growth rates and higher inequality levels - taken together - come along with higher average scores of perceived control. Models (8) adds that countries which experienced a reduction of inequality over the last 10 years have higher control scores, too.

This picture might tell one part of the tunnel story: it might be that we observe here promising scenarios of rather sustained high growth over more than a decade in low- and middle-income countries, coming along with increased inequality, but as well with high levels of control - among all parts of the population, since higher inequality is associated with more homogeneous distributions of perceived control. This would of course only be one part of the story: the other one would be a tipping point following after some time of non-inclusive growth. Whether such tipping points arrive would have to be tested for longer data series.

Table 8.6 adds two more specifications, trying to shed some more light on the interpretation of these findings. Splitting the sample (the whole data set, again) into one half where inequality increased and one where inequality decreased over the past 10 years before the survey, I investigate if among these sub-samples, growth rates are related with locus of control beliefs in different ways.

Only the results from the sub-sample with increased inequality over the past decade are reported, since no substantial results were found for the other one. Model (11) includes growth rates for different periods and their respective interactions with income levels, as well as Gini levels and changes and their interactions with income levels. Interestingly, on country average, countries with higher growth rates in the 5-year period report higher control scores, whereas positive growth over 10 years is negatively associated with them. The 15-year-average is not significant, neither are differentiations of these effects within countries along income lines.

Furthermore, in this specification, countries with higher Gini coefficients 10 years before report higher scores, whereas the 5-year-period is not significant.

Table 8.6: Subsample: Gini coefficient increased over past 10 years

Model	(11)	(12)
Income group	.0526 (n.s.)	.0579 (n.s.)
Survey year	.0163 (n.s.)	.0642^{+}
Gini coefficient	-.0382 (n.s.)	-.2212**
GDP per capita	-.00003*	-.00002 $^{+}$
GDP growth rate of current year	-.0041 (n.s.)	.0643*
Growth average 5 years	.1224*	.1236*
Growth average 10 years	-.2081*	-.4025**
Growth average 15 years	-.1503 (n.s.)	-.3322 (n.s.)
Income group * growth average 5 years	-.0036 (n.s.)	-.0048 (n.s.)
Income group * growth average 10 years	-.0105 (n.s.)	-.0057 (n.s.)
Income group * growth average 15 years	.0166 (n.s.)	.0126 (n.s.)
Gini 5 years before the survey	-.0458 (n.s.)	-.0410 (n.s.)
Gini 10 years before survey	.0779**	.3727**
Income group * Gini	.0051 (n.s.)	.0059^{+}
Income group * Gini 5 years before the survey	-.0002 (n.s.)	-.0003 (n.s.)
Income group * Gini 10 years before survey	-.0051^{+}	-.0059^{+}
Gini % change compared to 5 year earlier		.0058 (n.s.)
Gini % change compared to 10 year earlier		.0719**
Constant term	5.4794**	1.778 (n.s.)
# obs.	353	353

Notes: **= significant at 0.1% level; *= significant at 1% level; $^{+}$= significant at 5% level; n.s. = not significant. Residuals modelled as independent by country and coefficients of income group are random at country level. All specifications include country dummies (not reported).

These variables can be further differentiated within countries: higher inequality 10 years earlier is associated with more homogeneous distributions of perceived control across income groups.

How to make sense of this picture? The two growth period coefficients must be seen as over-lapping. A high 5-year growth average is part of what enters into the 10-year average. Since the coefficient of the 10-year growth rate is substantially larger than that of 5-year-average, the negative effect of sustained growth over 10 years outweighs the positive effect of high growth of 5 years, particularly if growth has been higher over 10 years than over 5 years (that is, if growth has been higher in earlier years of the average). This might well indicate the presence of a turning point in the tunnel story: when growth has been high over 10 years while inequality increased, this is associated with lower locus of control beliefs.

Model (12) introduces Gini change rates over 5 and 10 years. High inequality scores 10 years ago as well as increases since then are associated with higher average control scores. The growth averages of 5 and 10 years keep their sign, and the coefficient of the latter increases substantially. Since the Gini coefficient has become significant, the interpretation of the overall effect of inequality and its dynamics is difficult, but goes into the same direction as (11). Short-term growth is beneficial for the level of perceived control, 10-year non-inclusive growth is not.

Having testing all these different specifications, some words about diagnostics are in order. Appendix A.2 presents plots of the standardised residuals of all 12 specifications in this chapter. Those of the models that are the most important ones in terms of interpretation and results are particularly good, that is, distributed normally. In most specifications, there are one or two eye-catching outliers in the lower left corner. These two cases are the United States in wave 3 and Spain in wave 4. It is unclear what drives their different outcomes. To be sure, all specifications were repeated without them, without however finding differences in the results.

8.4 Discussion and conclusion

The purpose of the analysis presented in this chapter was to investigate the empirical relationship between aspirations, economic growth, and inequality (dynamics). Aspirations were operationalised as locus of control for this purpose, because it was argued that economic dynamics enter aspirations through the channel of locus

of control perceptions. In order to investigate how aspirations relate to growth or inequality, one needs to investigate how they affect locus of control beliefs. The following paragraphs summarise and discuss the findings.

First, the GDP level of a country, economic growth or income inequality as such can hardly be associated with the magnitude of perceived control in a country. As one exception, countries with higher GDP levels had more homogeneous distributions of control among their population, yet independently of the level of perceived control.

In part, this is so because dynamics turned out to trump levels. Changes in the level of income inequality were more important regressors than the levels as such. A relevant reference period for these changes was 10 years, whereas changes over 5 years were not significant. It might well be that inequality dynamics over longer periods like 15 or 20 years would allow for more meaningful insights, but testing would only have been possible at the price of a substantially smaller data set, due to limited availability of time-series inequality data.

Ceteris paribus, decreasing inequality over a period of 10 years was associated with higher perceptions of control on country average. The same result was found for positive growth rates over periods of 10 and 15 years. These results, which were found over the whole sample, are in principle compatible with theoretical predicitons. It is interesting though that decreasing inequality comes along with stronger perceptions of control over one's life on country average, rather than only for the poor. It would be interesting to pursue this further, following up on results like those from Wilkinson and Pickett (2010), who found that inequality has effects on the whole population rather than only on the most disadvantaged groups.

In the sub-sample consisting of low- and middle-income countries (below $20,000 US), higher sustained economic growth over 10 years coming along with *increased* inequality was associated with higher levels of control, on country average. This effect was not found in the whole sample. This finding reflects exactly the scenario described by Hirschman's tunnel parable and might well indicate expectations of catching-up processes and optimistic perceptions of economic possibilities in rather fast-growing economies. Unfortunately, given large gaps in available inequality data, it is problematic to enlarge the period of investigation in order to see if a tipping point, as described in the tunnel parable, arrives after longer times, when growth does not become inclusive.

Additional lessons can be learned from the sub-sample of countries in which

inequality had increased over the past decade. Within this group, countries with increased growth over a 5-year period experienced higher average levels of locus of control and a quite homogeneous distribution of control perceptions across income groups. In turn, high growth over 10 years had the opposite effect. This is probably the most interesting insight from the investigation at hand: it might suggest that people feel they have more control over their lives during a short period of higher growth and increasing inequality, but lower control when inequality does not decrease while growth is already high for longer times. This is again very much in line with the logic of the tunnel parable, where economic growth loses its promising signals when inequality increases not only temporarily, but also in the medium run.

Overall, the analysis has found some evidence that is compatible with theoretical predictions. First, the combination of economic growth and increasing inequality came along with increased perceptions of control in low- and middle-income countries. Control increased in all income groups of a society. This finding might thus indicate expectations of catching-up processes and optimistic perceptions of economic possibilities in non-rich, fast-growing economies. Second, perceived control was higher in all countries that had experienced both high growth over a 5-year period and, during this period, increased inequality. In turn, when increased inequality came along with a 10-year growth phase, the opposite effect was observed. I interpret that after 10 years of non-inclusive growth, perceived control and economic possibilities are turned down, whereas after 5 years, perceptions are still more optimistic.

Chapter 9

Do aspirations impact behaviour? Evidence from structural equation modelling

This chapter addresses another open question: the question of whether aspirations influence achievements in their own right, or whether they are rather correlates of other determinants of aspirations. To this end, I study the link between educational aspirations and achievements in school of teenager students in India.[1] The review of the empirical literature in chapter 7 has shown that many empirical papers testing the impact of aspirations on behaviour have suffered from endogeneity problems (see for instance Dercon and Singh 2013; Pasquier-Doumer and Brandon 2015; a detailed discussion is provided below). At the same time, evidence from related fields suggests that aspirations do play a role. Moreover, economic research on related topics backs this hypothesis, as the previous chapter has shown.

The goal of this chapter is to provide new evidence using a different empirical technique that has rarely been used by economists: structural equation modelling (SEM). SEM has several particular features in comparison with more standard regression techniques. Among the most relevant for the present analysis is SEM's ability to estimate several equations with more than one dependent variable at a time. This can be used to estimate complex relationships between variables,

1. The data used in this publication come from Young Lives, a 15-year study of the changing nature of childhood poverty in Ethiopia, India, Peru and Vietnam (www.younglives.org.uk). Young Lives is funded by UK aid from the Department for International Development (DFID), with co-funding from Irish Aid. The views expressed here are those of the author(s). They are not necessarily those of Young Lives, the University of Oxford, DFID or other funders.

including mediation effects.[2] This is very appealing because the impact of aspirations on behaviour can be understood as a mediation effect, going from a variety of influences through aspirations to behaviour. Other relevant features include SEM's ability to control for the influence of omitted variables. The results confirm that aspirations can affect behaviour in addition to other influences like economic resources or socio-economic background.

I use data from the Young Lives Study on Childhood Poverty. Young Lives (YL) carries out household surveys in Ethiopia, Andhra Pradesh (India), Peru and Vietnam and covers a large variety of topics to study the living conditions of children. The analysis presented in this chapter uses data from the Indian sample. The Vietnamese sample was used to replicate the analysis; results are presented in appendix B.3. This choice is motivated by the low variance of reported aspirations of Peruvian and Ethiopian students: most of the students report uniform and high aspirations, precluding any analysis.

To be sure, the fact that the vast majority of the children in these samples report high aspirations does not call into question the possibility of downward-biases aspirations and aspiration traps. The possible occurrence of situations in which poverty and exclusion stifle aspirations does not imply that aspirations of poor people are low everywhere and all the time. To the contrary, it is well understood that aspirations depend on specific contexts and moments in time, as chapter 8 discussed. In Flechtner (2016), I report how Chilean students developed very ambitious educational aspirations in the specific context of society-wide optimism regarding social mobility through education. These ambitious aspirations were not accomplished by many students, which resulted in frustration. It will be interesting to revisit the Peruvian and Ethiopian samples when later rounds are made available.[3]

The chapter is organised as follows. Section 9.1 briefly summarises the identification problems with reference to the review of the empirical literature in chapter 7 (in particular, sections 7.1 and 7.2). Section 9.2 presents SEM, before section 9.3 proposes how a structural equation model of endogenous aspiration formation can be specified on sound theoretical grounds. Section 9.4 presents the data set and some descriptive statistics. Section 9.5 presents the estimation results, before

2. A mediation effect exists when the effect of a variable X on another variable Y is mediated through a third variable M. In the context of aspiration traps, an example could be that poverty impacts aspirations, which in turn impact effort (Cheong and MacKinnon 2012). This way, the effect of poverty on effort is mediated through aspirations.

3. The Chilean case has been discussed with more details on page 151.

section 9.6 discusses and concludes.

9.1 Brief summary: The identification problem

Empirical studies interested in testing the hypothesised effect of aspirations on behaviour have faced two kinds of endogeneity problems: reverse causality and omitted variable bias. Reverse causality is the less serious problem, as it may be alleviated when aspirations and outcomes are measured at different moments, that is, when aspirations are supposed to influence subsequent outcomes. Omitted variables that potentially influence both aspirations and outcomes pose a more severe problem.

Consider a study by Dercon and Singh (2013), who find that schooling aspirations of Indian parents for their children and, at later ages, of these children themselves are associated with the level of subsequent achievements.[4] Aspirations for boys are generally higher, as are their achievements. The authors suggest that processes of intra-family transmission are the driving force behind the alignment of students' and parents' aspirations, and thereby of the gap between girls and boys. Following their interpretation, this evidence reflects an aspiration trap where girls are brought up to believe that they should or could not succeed in school and therefore do not even try. But there is another possible explanation: it might as well be that aspirations simply become more realistic as children grow older.

Imagine, for example, that parents invest more resources into their sons' education than into that of their daughters, and give them more time to study. As a consequence, boys will most likely develop better skills, obtain better grades, and then aspire to higher educational degrees. Girls may downgrade their aspirations because they understand that they have fewer possibilities to develop their skills and to succeed in school. In this case, aspirations and outcomes are correlates, but the driving force behind lower aspirations and outcomes of girls is to be found in lower cognitive skills and abilities, due to reduced possibilities.

Pasquier-Doumer and Brandon (2015) attempt to circumvent this identification problem by means of an instrumental variable approach. Using the Peruvian YL study,[5] they study occupational aspirations of 8-year-old children. Occupational aspirations are measured as the profession the children indicate they wish to have as adults. The professions are then grouped according to the socio-economic

4. This study has already been discussed in chapter 7 on page 143.
5. Both studies discussed in this section used the YL data set as well.

status (SES) that is associated with them. In the next step, the authors measure aspiration gaps as the difference between the SES of the desired profession and the current SES of the family. The calculated aspiration gap is almost doubled for indigenous children, whose current status is lower than that of non-indigenous students. In turn, these large aspiration gaps are associated with higher probabilities of later grade repetition. The interpretation the authors give to this finding is that these students probably feel discouraged from large gaps. But this is by no means the only explanation: it might just as well have been the case that material constraints are the cause of both low aspirations and low achievements.

To exclude the possibility that omitted influences at the district level impact both aspirations and achievements, the authors use an instrumental variable approach. Their instrument is the share of the employed labour force in the district where the child lives (taken from survey data) that corresponds to low SES (including occupations like handicraft worker, tailor, or bricklayer). This variable is assumed to be related with the students' aspirations, but not with their educational performance. This way, the authors seek to exclude the effect of unobserved characteristics that may be behind both aspirations and performance and could bias their parameter estimates.

However, the argument that their instrument is unrelated with performance in school is not totally convincing. Even though teachers may attempt to balance their grade averages every year, as the authors claim quoting De Landsheere (1980), it cannot be plausibly assumed that repetition rates are *not* correlated with district characteristics. For example, Gomes (1984) study causes of repetition rates in Brazil and provide evidence showing that repetition rates vary considerably between urban and rural areas and are particularly high in rural low-income areas. Lee and Barro (2001) analyse the impact of schooling quality for student performance, measured among other indicators through repetition rates, in a cross-section of countries and conclude that school resources have a decisive impact on repetition rates. School resources, in turn, can hardly be claimed to be unrelated with the socio-economic composition of a district and the composition of the labour force.

Moreover, if this instrument had worked, it had only alleviated biases resulting from omitted variables at the district level, but could not have accounted for other unobserved characteristics within a family or elsewhere. But such influences need to be considered: it is highly plausible that common causes are at work all the time: the regions or city's economic conditions may shape both educational possibilities

and aspirations as well as the economic condition of households; social norms may influence both the educational background of mothers and the aspirations for girls; the social and cognitive skills of a mother likely influence both her child's cognitive abilities as well as the educational degree achieved by the mother; and so forth. Accounting for all potential causes through the inclusion of instrumental variables is unrealistic. Overall and like many other studies, this study confirms interesting correlations but cannot isolate causal mechanisms.

9.2 Method: Structural Equation Modelling

Structural equation modelling (SEM) refers to a group of statistical methods that are able to integrate, generalise and extend narrower statistical methods such as multiple regression analysis or more standard ways of variance analysis. As such, they allow the modelling of relations between variables in a flexible and comprehensive way (Hoyle 2012). SEM features two important differences as compared to more standard statistical methods which make it possible to overcome some of the most pressing problems facing the econometric testing of the relationship between aspirations and outcomes: SEM can handle the simultaneous estimation of several equations and account for the omitted influence of unobserved variables.

SEM is able to integrate, generalise and extend narrower statistical methods such as multiple regression analysis or more standard ways of variance analysis. In a standard regression design, a variable can be either dependent or independent. For the investigation of endogenous aspirations, this was a major shortcoming: circular relationships between aspirations and achievements were theoretically understood to be the norm, but made standard regression techniques inapplicable. SEM, in contrast, can accommodate analytical situations in which a variable is both dependent and independent (Kupek 2006).

Moreover, SEM can investigate to what extent commonalities between two variables stem from a common (observed or unobserved) influence, allowing the researcher to test the statistical role of several channels of influence against each other (Hoyle 2012). Models in SEM can calculate the contribution of each independent variable to the covariance structure, thus clearly going beyond the additional information that standard regression designs can provide through the use of interaction terms (Kupek 2006).

Another feature of SEM is the possibility of including unobserved variables, which are referred to in SEM language as latent variables. Latent variables can be included through the integration of factor analysis in the model: factor analyses can be estimated within the structural equation model (Hoyle 2012). In a standard regression design, the researcher would have to choose only one indicator representing the whole concept or build an index before the regression. SEM combines two models in one estimation: a structural model, containing the effects between variables and latent constructs, and a measurement model, containing the factor analysis and thus the measurement of latent variables.

Although SEM is taken by many to provide clear causal analysis through multiple regression analysis, it should be clear that SEM is no easy or automatic cure to aforementioned issues of (potential) reverse causality. This is very clearly expressed by Kline (2012, p. 113, italics omitted): there is a "critical characteristic of SEM, one not fully appreciated by all researchers: Interpretation of statistical estimates of direct effects as indicating causality assumes that the researcher's model is correct". For a given data set, it is the researcher's model and its assumptions about directionality that will determine whether an association between two variables will be identified as $X \rightarrow Y$, $Y \rightarrow X$, or $X \rightleftarrows Y$, and not the structure of the data itself. There is nothing a researcher can do to avoid that things be that away, except putting the empirical analysis an sound theoretical footing. Other regression designs face of course the same problem, but are sometimes less charged with claims about causality than SEM (Pearl 2012). Instead of referring to causal effects, I will refer to direct, indirect, and total effects instead (Schreiber et al. 2006).

9.3 Model specification

The model to be estimated in SEM can be represented in two ways: First, in a structural model including only the variables (and their respective relationships) that have been laid out in the theoretical framework, and second, in an estimation model including all the variables that are not of interest *per se* but that are used to measure unobserved or unobservable variables. Unobserved or unobservable concepts are referred to as latent variables, as they are supposed to capture underlying latent concepts that are not directly measurable or measured. Typical examples are abilities or socio-economic background. Factor analysis is used to capture these unmeasurable concepts through observed factors or indicators, either

because these indicators are assumed to reflect the underlying latent construct (reflective measurement model) or because they are assumed to constitute it (formative measurement model) (Bollen and Hoyle 2012; Brown and Moore 2012). The measurement model thus incorporates the factor analysis part of the analysis, while the structural model rather corresponds to the logic of regression analysis.

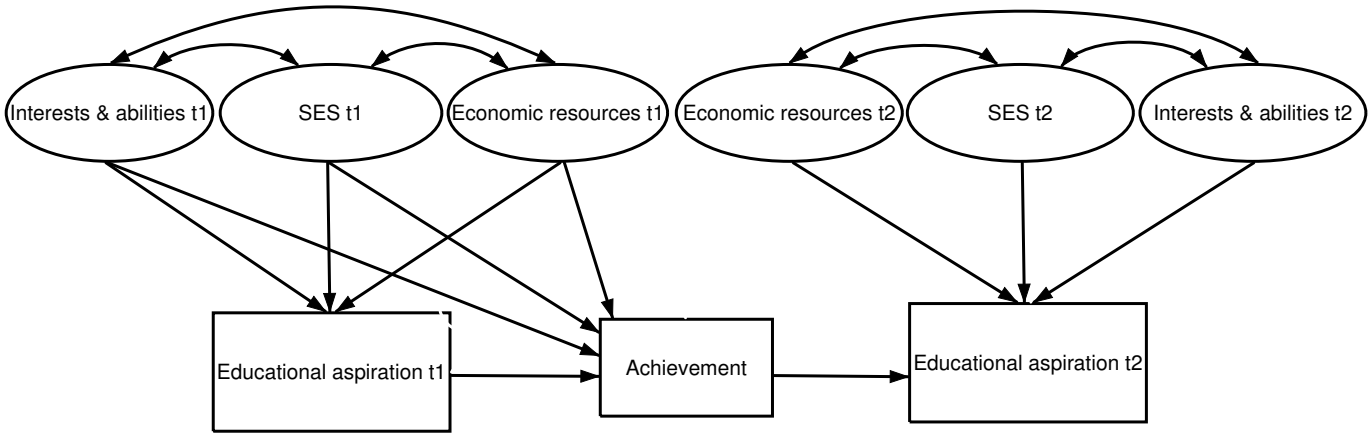
In graphical SEM path diagrams, squares are used to refer to observed variables, circles signify a latent variable, directional straight arrows refer to direct effects, and curved bidirectional arrows refer to the covariance of two variables as well as to the variance of an exogenous variable. Small circles are used to depict the error terms.

9.3.1 The structural model

Consider figure 9.1 for the structural model. The variables at the core of the diagram represent the essence of the aspirations literature: aspirations in t_1 impact subsequent behaviour and achievements, which in turn impact aspirations in t_2 (Dalton et al. 2016). Aspirations in both periods are developed endogenously and influenced by a variety of factors like economic resources, socio-economic status, and personal interests and abilities. These factors, in turn, do not only impact aspirations (and thereby, outcomes), but also have a direct effect on outcomes. Given this specification, the model qualifies as a mediation model: I assume that there is a causal effect going from a range of relevant variables to achievements directly as well as indirect effects going from theses factors to achievements through aspirations. Abilities likely impact achievements directly as well as through their influence on aspirations. Likewise, the socio-economic background of a person shapes real possibilities, but may additionally impact outcomes through aspirations. If aspirations perfectly reflect the direct effects of these factors, they should have no additional effect on outcomes. If the estimation of this model identifies an additional effect going through aspirations, this means that aspirations do not accurately reflect the direct effect of abilities or socio-economic situations on outcomes but influence outcomes in their own right.

Besides these directional effects, SEM allows to specify variances and covariances between variables. This is useful to handle the problem of potential omitted variables. As discussed in section 9.1, there are innumerable potential relations between the explanatory variables of the model. If these covariances were not specified, the variables would be introducd to the model as exogenous.

Figure 9.1: Structural model



Note: Covariances between the two periods are omitted for reasons of visibility.

This would imply that the distribution of this variable give no information about the parameters; that there are no effects going from the exogenous variable to any other variables other than the one specified; and that they are unrelated to the error terms of the endogenous variables, that is, that they are not related to any omitted variable (Deaton 2010a). As discussed above, it has been a major difficulty for previous empirical studies that it could not be ruled out that some common underlying cause of, to name just one example, socio-economic backgrounds and aspirations was omitted. The structural model as specified in figure 9.1 therefore contains covariances among all latent variables that are supposed to impact aspirations and achievements.[6] This procedure is not standard and comes at a cost in terms of reducing the model's degrees of freedom (Kline 2012), but theory suggests substantial reasons for doing so: this model specification reflects the theoretical ideas discussed in the first part of this thesis.

In conclusion, SEM offers a large variety of ways in which a model can be specified even when only a few variables are part of the game. The theoretical foundation of the structural model is therefore of utmost important. As Kline (2012) emphasises, if any of the assumptions about direct or indirect effects and covariances are incorrect, the results my be hugely mistaken, as the data have no way to tell us that assumptions made about them are incorrect. However, there

6. Note that in the estimated model, covariances are specified between the rounds, too. Economic resources in t_1 are probably related to economic resources in t_2, and so forth. These covariances have been omitted in figure 9.1 for the sake of clarity, as have error terms.

are good theoretical reasons to believe that the relationship put forward in this mediational model is actually well represented: the structural model corresponds exactly to the theoretical reflections elaborated in the previous chapters and has not been derived empirically by fitting data, but is grounded solely in theory. Some adjustments were necessary due to the naturally limited availability of variables in the YL data set, but the basic assumptions will remain based upon a theoretical causal model. As written above, paying attention to the primordial rule of theory for SEM models as well as to the other underlying assumptions is crucial for attaining meaningful results.

9.3.2 The measurement model

Three latent constructs are part of the theoretical model in figure 9.1 (in each period).[7] These are the child's cognitive abilities, the household's economic situation, and the child's socio-economic background. Aspirations are no latent constructs, because only two variables are used in the YL survey to inquire student's aspirations. I will discuss their measurement in the next section alongside the presentation of descriptive statistics.

Latent variables can be specified in two different ways. In a formative measurement model, the latent concept is a function of the observed variables. The composite latent variable is composed and determined by its indicators. In this case, directionality goes from the observed variables to the latent construct. In my model, latent variables are specified in reflective measurement models. Here, it is assumed that the indicators are all determined by the latent constructs and thus to reflect it. The observed indicators are assumed to be a function of the latent construct, but they do not constitute it. For instance, I assume that the grade or the test scores a child has achieved in a writing test reflect her abilities, but that abilities do not change as a consequence of achieved writing skills or grades (Kline 2012).

Table 9.1 lists the variables available in the YL questionnaire to estimate these latent constructs and the corresponding item wording from the YL questionnaires.[8] The three latent concepts are labelled "Socio",[9] capturing the socio-economic back-

7. This choice is motivated by measurability and data availability. From a theoretical perspective, it would be desirable to include also social norms and expectations that prevail in a community, for example.

8. Based upon the factor analysis results, not all variables were retained for all estimations. Estimation result tables will report which indicators have been used in each estimation.

9. "Socio" basically represents the educational degrees achieved by the parents and, in the case of

Table 9.1: Indicator variables in the measurement model

	Latent variable	Variable name	Item wording in YL questionnaire
Round 2	**EconR2**	RaiseR2	Would your household be able to raise 230,000 VND [1000 Rupees] in one week if you needed it? (p)
		HHcomparedR2	Compared to other households in this village [village/suburb] how would you describe your household? (p)
		WealthR2	*Wealth index (composite index)*
	SocioR2	MumedR2	What is the highest education grade attained [completed] by this person [the mother, excluding preprimary]? (p)
		DadedR2	What is the highest education grade attained [completed] by this person [the father, excluding preprimary]? (p) (p)
		MumethR2	Which of the following origins does the mother belong to? (p)
	AbilitiesR2	WritinglevelR2	*Child's writing level during test*
		ReadinglevelR3	*Child's reading level during test*
		ppvtR2	*ppvt test score administered by YL*
		mathR2	*math test score administered by YL*
		GradeR2	Which grade/class are you in now? (c)
Round 3	**EconR3**	HHcompared	see above
		RaiseR3	see above
		WealthR3	Would your household be able to raise 300,000 VND [1000 Rupees] in one week if you needed it? (p)
	AbilitiesR3	ppvtR3	see above
		mathR3	see above

Notes: (p) indicates that the question was part of the questionnaire for parents, (c) of that for children. Items in italics were not asked directly to the respondents but administered by the survey staff, either because the interviewer reported a test result or because several responses were collapsed into a composite index. Where wordings differ between countries, square brackets comprise the text used in Vietnam.

ppvt: The Peabody Picture Vocabulary Test Dunn et al. (1965) and Dunn and Dunn (2007) is a test used to measure the receptive vocabulary of children as of early ages. The YL questionnaire contains 17 sets of 12 words each, which are all accessible in the YL Data dictionaries.

MumethR2: This variable refers to caste and is only included in the Indian sample.

Wealth: The wealth index is a composite index calculated as the average of three other composite indices: the Housing Quality Index, comprising information about the number of rooms and the substance of the building material of walls and roofs; the Consumer Durable Index, containing information about assets that are available in a household like TVs, refrigerators, or cars; and the Services Index, that groups information about the availability of electricity, drinking water, toilets, fuel and similar resources in a household. Stata and SPSS codes used for the construction of all indices from the original data sets are available from YL.

ground of the parents, "Econ", capturing the households economic situation, and "Abilities", capturing the child's cognitive abilities. R2 designates variables from Round 2, R3 those of Round 3.

Most of the indicators have nominal or categorical response scales. For some estimations, responses had to be collapsed into fewer categories in order to avoid empty categories. For instance, very few children had attained grades 9 or 10 in R2.

9.3.3 Software choice: SEM Modelling and estimation in R

Given the requirements of my structural model and the presence of many categorical variables, I estimate the model using the R package 'lavaan' (Rosseel 2012; Rosseel et al. 2015). This package uses diagonally weighted least squares (DWLS) for the estimation of the model parameters and the full weight matrix for the computation of the standard errors and test-statistics. The DWLS estimator computes the polychoric correlation matrix of the data and uses this matrix for the parameter estimation, following the procedure described by Muthén (1984). As such, it handles categorical data without difficulty. In turn, this choice forces me to work with list-wise deletion. It is clear then that my results are biased and not representative of the full sample included in the YL study. However, I prioritise this package because it allows to specify covariances between latent variables. The R code is reproduced in appendix B.3.

A large variety of software packages is available for SEM, all with their respective advantages and disadvantages (Byrne 2012; Fox et al. 2012). In the analysis reported below, I use R with the lavaan package (Rosseel 2012; Rosseel et al. 2015).[10] The choice of this software was primarily guided by several features of R that can accommodate the structures of the theoretical model particularly well.

A major advantage of R is that it allows the researcher to specify the full (theoretically possible) range of covariances and variances between variables. Other software packages, like AMOS or the gsem package in Stata, have not implemented the specification of covariances between latent variables. As outlined above, the ability to account for omitted variables is crucial for the analysis at

India, caste membership. As the intuition comes close to the intuition of a person's socio-economic background, the concept has been named as such. However no information about occupations or the like are included.

10. I use R version 3.2.3 (2015-12-10) on the platform x86_64-apple-darwin13.4.0 (64-bit).

hand. A second advantage of R is the detailed possibilities it offers the researcher to study the fit of an estimated model.

A disadvantage of R in comparison with other packages, notably Mplus and AMOS, is that it does not yet offer Bayesian estimation. As my data set includes missing values as well as many non-continuous variables, this would have been a desirable feature.[11] The reason is that standard procedures to deal with missing data in SEM (Graham and Coffmann 2012) cannot be used with non-continuous data.[12] It would be an option to use a Bayesian estimation technique (rather than weighted least squares, which is the standard for non-continuous data), which however has not yet been implemented in the lavaan package. AMOS could accommodate Bayesian estimation, but does not allow the latent variables to covary. I therefore choose R's lavaan package over AMOS and conduct the estimation with list-wise deletion of observations with missing values. It is clear then that my results are biased and not representative of the full sample included in the YL study, but this seems to be the better choice. I come back to the issue of missing data below.

For the estimation of models with categorical data, R uses limited-information estimators. These do not require the data to follow a multivariate normal distribution, which is violated in most cases when variables are non-continuous (Edwards et al. 2012). R uses diagonally weighted least squares (DWLS) for the estimation of the model parameters and the full weight matrix for the computation of the standard errors and test-statistics. The DWLS estimator computes the polychoric correlation matrix of the data and uses this matrix for the parameter estimation, following the procedure described by Muthén (1984).

The estimation of the model will aim at identifying a single value for each parameter in the model, that is, for each specified relation between two variables. Only if this is successful is the model identified (Hoyle 2012; Kenny and Milan 2012). The degree to which this is achieved will determine the model fit. Using a limited-information estimator comes along with the advantage that quite a lot indices of fit are available. How exactly the fit of a model is evaluated is still a topic of research and debate among SEM methodologists (West et al. 2012). I will

11. I report the structure of missingness in my samples with more details in the next section.

12. Standard SEM assumes that the endogenous variables are jointly multivariate normal. Most, if not all, statistical packages are nowadays able to accommodate non-continuous variables as well. In this case, the model is fit to the polychoric correlation matrix calculated from the data set. Full-information maximum likelihood (FIML), a procedure that may be employed when values are not missing at random, however requires raw data (Graham and Coffmann 2012; Bovaird and Koziol 2012).

benefit from the circumstance that the lavaan package provides a variety of fit parameters and test statistics that I will report and interpret.

9.4 Data Set: The Young Lives Study of Childhood Poverty

I use panel survey data from the Young Lives International Study of Childhood Poverty. Young Lives (YL) carries out household surveys in Ethiopia, Andhra Pradesh (India), Peru and Vietnam and is currently in its fourth round. Data sets from the first three rounds in 2002, 2006/07 and 2009 were available at the time of analysis. Data are available for two cohorts. I work with the older cohort because their age permits the researchers to ask for their educational aspirations in round 2 (R2) and round 3 (R3).

Not much attention in the economic literature has been given to the measurement of aspirations. As in this study, this is sometimes due to the fact that data were not gathered explicitly with the purpose of measuring aspirations, but researchers worked with existing data sets.[13]

The YL questionnaire approaches educational aspirations with two questions. The first asks students and parents about the grade they would like to complete, and the second question asks if they think this level is achievable. Most studies using the YL data set to investigate aspirations have concentrated on the first question only, but it is an essential feature of aspirations that they exceed mere wishes (Bernard et al. 2011; Bernard and Taffesse 2014). The way in which the first question is asked could easily reflect wishes rather than aspirations: the exact wording is

- Imagine you had no constraints and could stay at school as long as you liked, what level of formal education would you like to complete? (R2)
- If you could study for as long as you liked what level of formal education would you like to complete? (India, R3)

13. Reviewing the empirical literature through these lenses, Bernard and Taffesse (2014) criticise that different studies use very diverse indicators the reliability and validity of which has largely remained unclear. Some studies use direct questions to ask people about levels of education or income they would like to achieve (Beaman et al. 2012), while others approach aspirations through related concepts like locus of control beliefs (Bernard et al. 2011). Typically studies do not use a battery of items to measure the unobservable concept of aspirations, as psychometric research on attitudes would recommend.

- What level of formal education would you like to complete? (Vietnam, R3)

When respondents are asked about their aspirations directly, Bernard and Taffesse (2014) warn against different types of biases that may arise. First, measurement error may bias the collected information when individuals are not willing to report private knowledge and when this is correlated with other variables of interest or with aspiration levels. Social desirability as well as the anchoring of the question in the questionnaire and response scales are potential influences one should be concerned about. Psychometric research has long-standing experience with the previous testing of survey questions to ensure validity and reliability. No such tests are possible before the use of the YL data set. The question tackling educational aspirations of children is placed in a battery of questions enquiring beliefs about future prospects, the use of formal schooling for the child's life, and the job the child would like to be doing at age 20. Without specific testing, it is uncertain how these questionings may influence answers to the question about educational aspirations.

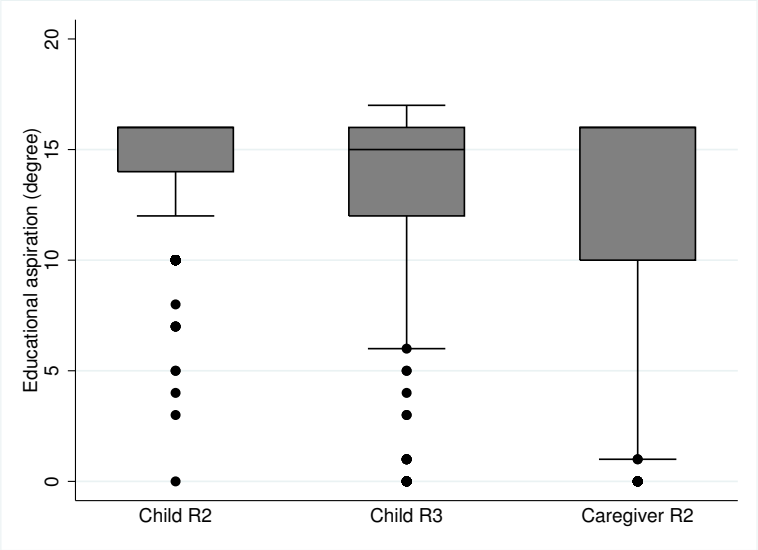
While this is a shortcoming in the YL data set, there is a second question the use of which at least alleviate the issue of the distinction between aspirations and pure wishes: "Given your current situation do you expect you will reach that level of education?" This question forces respondents to indicate whether an indicated level of education is more than wishful thinking, given their current situation.[14]

If students do not believe that they can reach their reported aspiration level, the interaction term of both variables is set to 0. This is not a perfect solution, given that a respondent may have indicated that going to university would be their ideal level of aspiration, but they do not believe they will reach it. They think instead that they will have to stop after completing secondary schooling. Setting their aspiration level to 0 does not reflect this kind of reasoning. Asking first about potential achievements and then about individual aspirations would leave the researcher with more precise information.[15]

14. Bernard and Taffesse (2014) recommend to first ask individuals about the maximum educational achievement a person from their background can achieve, and then to ask about the personal aspiration. Using the YL data set, it is not possible to follow exactly this procedure, but it is possible to separate aspirations from mere wishes. The wordings stimulate respondents not to report their aspiration, but wishes and levels they do not necessarily aspire to. The second question may correct for this: the current situation may include economic resources and constraints as well as the student's current performance at school and other aspects of relevance for the student's assessment.

15. All estimations reported below were carried out without this adjustment as well, but results were more pronounced and generally statistically significant at stricter threshold levels with it.

Figure 9.2: Distribution of educational aspirations

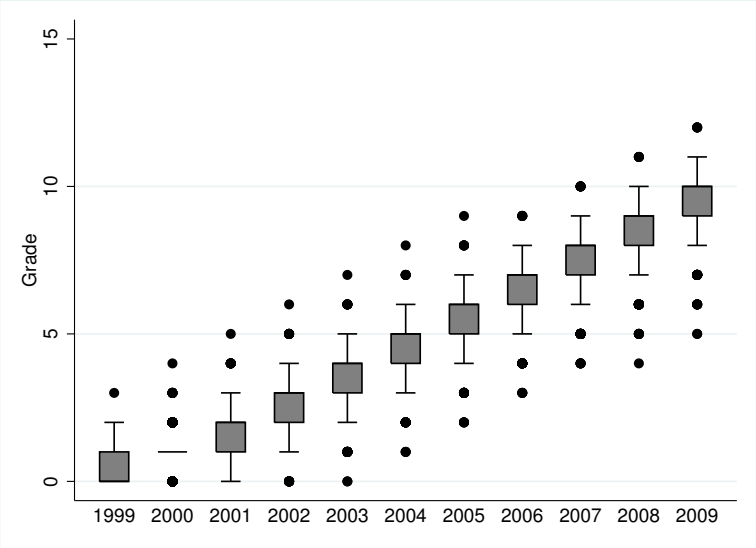


General aspects and socio-economic variables

The Indian sample maintained for the study at hand in principle includes 976 observations. The original data set contained 994 children in Round 2. I dropped from the data set all those children who had not been tracked in R3, shrinking my data set to 976 observations. Due to missing values of single variables, the number of observations included in the estimation below is considerably smaller with 687 observations. The main reason for this are missing values in reported aspirations in R2 (non-enrolled children were not asked about their aspirations) and the ppvt test in R3. Missing values are clearly not missing at random: it seems as though the analysis excludes the poorest students from the most disadvantaged backgrounds because their aspirations or ppvt scores were not recorded. The analysis is therefore not representative of the whole YL sample. In addition to the estimation reported in section 9.5, I have also estimated only the left part of figure 9.1 with 818 observations available from R2 (not reported). Signs and levels of significance of estimated direct and indirect effects are very close.

50.9% of the surveyed children were girls. 75% lived in rural areas; 35% in Coastal Andhra and Telangana; and the remaining 30% in Rayalaseema. Instead of ethnicity, the Indian Young Lives survey provides information about caste. I include the mother's caste (which is very closely aligned with father's and child's caste) into the analysis. 21% belong to scheduled castes (SC), 10% to scheduled

Figure 9.3: Grades attended, 1999-2009



tribes (ST), 49% to other backward castes (OC) and 20% to other castes.

The educational background of the children's parents vary strongly between mothers and fathers. 42% of all fathers had no formal education, and 12.5% had stopped at grade 10.6% had a university degree, and additional 5% had completed secondary schooling. As to the mothers, 60% had not attended formal schooling, but only 4% had completed secondary schooling, and 2.4% of these women had achieved a university degree. The bulk of the mothers in the data set had stopped school before grades six or seven. Notwithstanding, caregivers overall report having good access to information about schooling for their children (93%) or not to require any information (2.6%). Interestingly, the latter response does not seem to be very much related with the parents' level of schooling. The most important sources of information include teachers, neighbours, and relatives.

Schooling and educational achievements

The educational achievements of surveyed children are quite diverse. Most of the children in the study - all except nine - have at some point attended formal schooling. In R2, however, 99 had already left school. Drop-out had happened at basically all grade levels, with a small peak in grade 5. Drop-out rates increased with age.[16] The main reason for drop-out indicated by the children themselves was

16. See table B.5 in the appendix for details on grades at the moment of drop-out as reported in R2.

that the fees were too expensive. However this was only indicated by 14 children; there were quite a lot of other singular reasons, and many reasons remain unclear from the data set. The grades the students who had stayed in school had attained at age 12 (that is, in R2) are also quite diverse. In R3, another 120 students had dropped out from school, while 6 had become enrolled again.[17] Figure 9.3 presents the grades attended by the cohort between 1999 and 2009 as reported in R3.

In R2, the survey comprised tests of the children's reading and writing competencies, in addition to the ppvt and math tests. As to reading and writing skills, 70% of the children were able to write without difficulty, but 25% only with difficulty or error and 5.4% could not write at all. As to reading, about 5% were not able to read; 6% could only read letters, and 8% were able to identify words. 81% were able to read complete sentences.[18]

Educational aspirations

Educational aspirations are available in R2 only for those children who were then enrolled in school, except for 5 children who had either dropped out or never been enrolled. The bulk of dropped-out or never enrolled students however had not reported their educational aspirations. It would have been interesting to include them in the analysis in order to test if students aspire to returning to school, but unfortunately these data are not available. I therefore exclude the five exceptional cases from the analysis, too. Educational aspirations of enrolled students in R3 as well as caregivers' aspirations in R2 are available for all respondents. No caregiver aspirations are available from R3. Table 9.2 summarises all responses.

For the sake of comparison, column 4 (R3, enrolled students) only includes reported aspirations of those students who were still enrolled in R3, as opposed to column 3. It is remarkable how the intermediate grades that do not imply any kind of completed degree (grades 4-9, 11) disappear from the set of reported aspirations. This may well indicate that some of the non-enrolled students either are not well-informed about the school system, or appreciate some years of schooling without seeing or appreciating the goal of a completed degree. Excluding the non-enrolled students moreover increases the percentage of students aspiring to university degrees. Figure 9.2 shows that children's aspirations become more diverse and

17. In R2, one student indicated a current grade despite having also indicated having dropped out from school. This happened in four cases in R3 as well. These students' grades are included in the analysis. For the analysis, the current grade of dropped out or never enrolled students is set to 0.

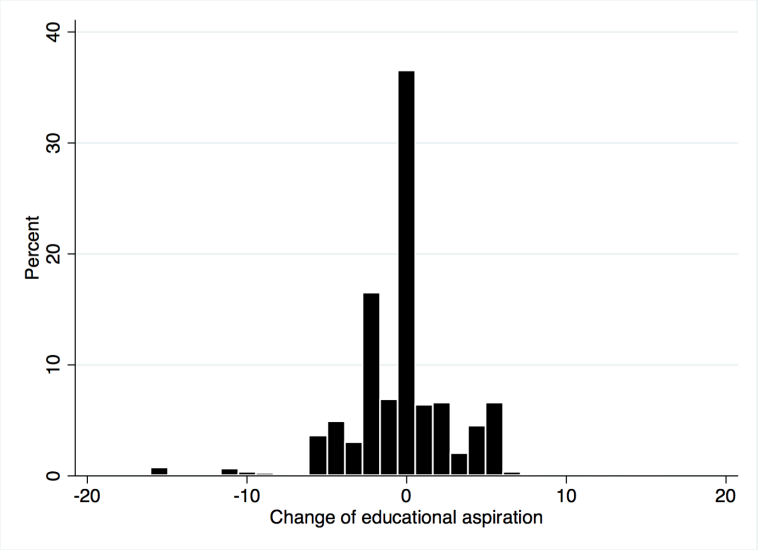
18. See table B.7 in the appendix for details on tested reading and writing skills.

Table 9.2: Educational aspirations of children and parents, in %

Grade	Child			Caregiver
	R2	R3	R3 enrolled	R2
None	-	2.3	0.3	2.2
1	-	0.6	0.1	0.2
3	0.1	0.2	0.1	-
4	0.1	0.1	-	0.3
5	0.1	0.2	-	1.2
6	-	0.1	-	0.1
7	0.5	0.6	-	1.4
8	0.1	0.2	-	0.1
9	-	0.4	-	0.1
10	14.6	11.9	4.4	24.5
11	-	0.3	0.4	-
12	8.0	9.1	8.1	8.5
Incomplete technical or pedagogical formation	n/a	4.1	4.1	n/a
Post-secondary, vocational, technical, or pedagogical formation	8.3	16.0	19.4	7.3
Incomplete university	n/a	7.4	9.3	n/a
College, university	68.2	40.4	46.2	53.9
Master's degree	n/a	5.9	7.5	n/a
Total #	864	948	744	942

Note: Unfortunately response options and scales of the survey were changed between rounds 2 and 3. While in R2, respondents could choose between two types of post-secondary degrees, more options were available in R3. I adjusted the responses such that responses are comparable, grouping post-secondary and vocational training (R2) with complete technical or pedagogical formations (R3). College and university (R2) was set equal to Complete University (R3). No higher degree than a university was available in R2, whereas respondents in R3 could indicate that they aspired to a Master's degree as well. I grouped all university degrees into one category to avoid apparent increases in aspirations between the rounds that may just stem from making the Master's degree option available to respondents who had previously chosen the university degree response.

Figure 9.4: Changes of individual aspirations between rounds 2 and 3



partly less optimistic as the children grow older. Parental aspirations in R2 are more diverse and partly less ambitious than those of their children.

97% of all children in R2 said they believed they would actually achieve the indicated goal, but only 91% of the parents. In R3, children had become far more pessimistic, 17% indicating that they did not expect to reach their educational aspiration. The reported aspirations of children who indicated that they considered their reported goal realistic were significantly higher by more than two school years.[19] In R3, the significant difference amounted to one degree. The difference in parental aspirations is even stronger: the average aspirations of those who were pessimistic about the achievement was 8.5 years of schooling, whereas optimistic parents aspired to a 13.9 years (corresponding roughly to a post-secondary degree).

Another finding from the descriptive exploration is quite interesting. Consider the following changes of the aspirations of individual children alongside their educational advancements between the rounds (see figure 9.4. 68% of the students advanced three grades within the three years between the two rounds. 12.7% dropped out, 10.4% reported the same grade in both rounds, about 6% advanced only one or two grades, and a few students advanced quicker than expected or returned to school after not being enrolled in round 2. Figure 9.4 shows how individual aspirations have changed between the rounds. 36% of the students had stable aspirations. whereas 37% lowered their goals - half of them by two

19. T-test results are reported in the appendix, tables B.2-B.4 (pages 304*ff.*).

degrees -, and the remaining 27% increased theirs, most of them by one or two years. Advancements are significantly higher for those students who reported to consider their aspirations attainable (in both rounds).

Finally, an interesting correlation is worth a mention.[20] First, changes in aspirations and of advanced degrees are significantly correlated at 1% significance. Moreover, aspirations in both rounds are more strongly correlated with the attended degree in Round 3 as compared to Round 2. This may well indicate that aspirations become more realistic and mature as students grow older. It may as well suggest that achievements between the two rounds influence aspirations through a feedback effect. This does not contradict the former argument but rather reinforces it.

9.5 Results

As SEM is an evolving empirical technique and the models are most often more complex and extensive than more standard regression models, there is no established practice yet as to which results and diagnostics should be reported and discussed. However several authors and journal editors have launched a discussion about this issue. The report of my results is oriented by Boomsma et al. (2012), Schreiber et al. (2006), and Gefen et al. (2011). Table 9.3 reports the estimation results. I present the estimated path diagram, basic summary statistics, parameter variances and specified covariances, correlation matrices and fitted covariance matrices of observed and latent variables, thresholds of categorical variables, and residuals in appendix B.2.

The upper part of table 9.3 shows the measurement model comprising the confirmatory factor analysis of the latent constructs. The items used to estimate the socio-economic background were not inquired in R3's questionnaire, but since changes in these indicators between the rounds a very unlikely, I use the latent variable "SocioR2" as a constant. All factor loadings are considerable and significant.[21]

The lower part of table 9.3 shows the results of the estimation of the structural model. Students with higher cognitive abilities and those living in Coastal Andhra

20. See table B.8 in the appendix, page 307.

21. The loading of WealthR2 on EconR2 was so low that it was excluded from the analysis. The loading of WealthR3 on EconR3 is low as well, but separate factor analysis with and without its inclusion revealed that the overall power of the latent variable is stronger with it.

and Rayalaseema, as opposed to those in Telangana, attend higher grades in R3. There is no direct effect of SocioR2 and the child's gender on achievements. The economic resources in a household increase achievements at 8% significance. As to aspirations, there is a mediation effect going from aspirations as reported in R2 to achievements in R3. Children who reported higher aspirations in R2 achieve higher results in R3 after the direct effects of socio-economic variables and cognitive abilities have been accounted for. Aspirations, in turn, are higher with higher abilities, the student's socio-economic background and gender, girls building lower aspirations than boys. Students from Coastal Andhra build higher aspirations as compared to those from other regions. Overall, the indirect effect of these factors - abilities, socio-economic background, gender, and living in Coastal Andhra - through aspirations on achievements in R3 is significant at 1% and positive.

To account for the circumstance that both the student's abilities in R2 and R3 as well as the economic situation of a household are likely to be highly correlated, I specify both direct effects going from R2 to R3 and covariances between both. As reported in table B.9, the covariances as well as the parameter variances are not significant, indicating that the whole variance is captured by the direct effects reported with the regression results. To account for unobserved variables, I specify a number of other covariances. The covariance structure confirms that there are relevant covariances between latent variables, for instance between the economic situation of a household and the socio-economic background or the economic situation and cognitive abilities. As discussed above, this is highly plausible, and reinforces the importance of accounting for such omitted effects.

Several indicators of model fit are reported at the bottom of table 9.3. To start with, the χ^2 test is a test of the discrepancy between the observed and the model-implied covariance matrix. It tests the null hypothesis that residuals are zero, that is, that the specified model corresponds exactly to the observed covariance structure.[22] When the p-value of the χ^2 test is smaller than 0.05, the null hypothesis is rejected and the model is rejected as "non-fitting" (Barrett 2007). Note therefore that the p-value of 0.000 is not an indicator of great model fit in this test. On the other hand, the χ^2 test generally tends to be significant in estimations involving more than 400 observations (West et al. 2012). In large samples, very small discrepancies are attributed a great value, and large samples can hardly fit using this measure. As Barrett (2007, p. 819) remarks, "[f]ew of the models in any

22. Residuals refer to the differences between the covariances of the fitted model and those of the observed covariance matrix. Residuals are reported in table B.14 in the appendix.

Table 9.3: Estimation results

Measurement model

Latent variable	*Observed variable*	*Estimate*	*Std.Err.*	*z-value*	*P(> |z|)*
AbilitiesR2	WritinglevelR2	1.000			
	GradeR2	0.402	0.063	6.411	0.000
	z1ppvt	0.754	0.064	11.772	0.000
	z1math	0.977	0.066	14.717	0.000
	ReadinglevelR2	0.863	0.073	11.900	0.000
SocioR2	MumedR2	1.000			
	DadedR2	0.952	0.053	17.990	0.000
	EthnicR2	0.574	0.049	11.722	0.000
EconR2	HHcomparedR2	1.000			
	RaiseR2	0.819	0.098	8.343	0.000
AbilitiesR3	z2math	1.000			
	z2ppvt	0.866	0.044	19.738	0.000
EconR3	HHcomparedR3	1.000			
	WealthR3	0.229	0.023	10.109	0.000
	Raise3	0.741	0.110	6.729	0.000

Structural model

Dep. variable	*Regressor*	*Estimate*	*Std.Err.*	*z-value*	*P(> |z|)*
GradeR3	AbilitiesR2 (a)	0.595	0.074	8.012	0.000
(direct effect)	SocioR2 (b)	-0.094	0.093	-1.015	0.310
	EconR2 (c)	0.208	0.116	1.789	0.074
	Female (d)	-0.012	0.084	-0.139	0.890
	Coastal Andhra (e)	0.538	0.101	5.326	0.000
	Rayalaseema (f)	0.246	0.104	2.373	0.018
AspirationR2	AbilitiesR2 (A)	0.493	0.091	5.396	0.000
	SocioR2 (B)	0.301	0.122	2.468	0.014
	EconR2 (C)	-0.247	0.155	-1.592	0.111
	Female (D)	-0.441	0.105	-4.186	0.000
	Coastal Andhra (E)	0.262	0.132	1.991	0.047
	Rayalaseema (F)	0.107	0.130	0.821	0.411
GradeR3	AspirationR2 (M)	0.155	0.050	3.102	0.002
(mediated effect)					
AspirationR3	GradeR3	0.108	0.052	2.078	0.038
	AbilitiesR3	0.036	0.079	0.459	0.646
	EconR3	-0.139	0.206	-0.676	0.499
	SocioR2	-0.061	0.127	-0.478	0.633
	Female	-0.369	0.088	-4.179	0.000
	Coastal Andhra	0.257	0.110	2.329	0.020
	Rayalaseema	-0.073	0.112	-0.651	0.515
AbilitiesR3	AbilitiesR2	1.360	0.140	9.724	0.000
EconR3	EconR2	0.988	0.118	8.368	0.000

Estimator: Robust DWLS. # obs.: 687. Degrees of freedom: 160. **Test statistics:** P-value (Chi-square): 0.000. Tli: 0.925. Nfi: 0.926. RMSEA: 0.069.

of these journals [the flagship journals in the behavioural, business, and social sciences] fit via the χ^2 test".

A number of alternatives have therefore been developed, attempting to adjust for effects of sample size, number of variables and other influences in order to assess approximate model fit. These measures attempt to indicate to what degree a model fits the observed data rather than giving a binary assessment of model fit.[23] The Normed Fit Index (Nfi) or Bentler-Bonett Index (Bentler and Bonett 1980) is an incremental measure of fit and compares the fitted model to the null model (that is, the worst possible model). Values above 0.95 are understood to indicate good fit, values between 0.90 and 0.95 are acceptable and values below 0.90 indicate poor fit. A problem of this index is that the value cannot decrease when more parameters are added to the model. Many authors therefore recommend the use of the Tucker-Lewis index (Tli) instead. The Tli follows the same logic as the Nfi but has a penalty for introducing additional parameters. Both indices are interpreted in the same way. Values of 0.925 (Tli) and 0.926 (Nfi) are in an acceptable realm. The Root Mean Square Error of Approximation (RMSEA) is currently among the most popular measures of fit. Values smaller than 0.01 reflect excellent model fit, values smaller than 0.05 are good, those until 0.08 are mediocre and 0.10 is a cut-off value for poor-fitting model. A value of 0.069 reflects a model fit that is not outstanding but acceptable (West et al. 2012).

Barrett (2007) criticises the use of these alternative indicators altogether, despite their widespread use, upon the notion that there is no such thing as approximate fit. In the case of models who fail to fit by means of the χ^2 test, he remarks that model fit is not necessarily of stronger interest than the empirical implications of a fitted model. Indeed I am not interested in developing an empirical structural equation model that accurately reproduces the social formation of aspirations. Aspiration formation is a very complex and socially interactive process, and a model involving rather general variables is unlikely to provide an exact fit of an observed covariance structure. The residuals show and it is well understood that the model cannot absolutely accurately explain aspiration levels an individual child builds, or grades an individual child achieves at a certain age. However, even though residuals remain and the proposed model is unable to replicate the observed covariances exactly - probably because lots of information about siblings, children in the household, local circumstances, other family members than the parents, teachers, and many more influences are missing -, it can tell us

23. All these indices have their flaws, see West et al. (2012) for a comprehensive discussion. See Barrett (2007) for a more general discussion of these indices.

something about the role of aspirations for behaviour: even after direct effects of general influences like the economic situation of the household, the socio-economic background and cognitive abilities have been accounted for, there is a mediated effect on educational achievements through aspirations a child builds.

9.6 Discussion and conclusion

The results presented in the previous section[24] sustain the arguments made in the theoretical literature regarding the importance of aspirations for behaviour, as well as empirical evidence from previous studies. This conclusion can be drawn against the background that contrary to earlier studies using standard regression designs, issues of reverse causality and omitted variables are much less a matter of concern here.

In the Indian YL sample, educational aspirations are related both with a student's socio-economic background and abilities and with educational achievements. But it turns out that aspirations do not merely reflect economic resources, the educational resources of a household or a child's abilities: they can exert additional effects on aspirations in their own right. In India, being a girl is not *per se* related with lower achievements in school, but girls tend to build lower aspirations and, then, lower achievements. This sustains and refines the result reported by Dercon and Singh (2013): they found that aspirations of girls were lower and suspected that these lower aspirations, transmitted by their parents, negatively impacted their later achievements. The analysis reported here sustains that aspirations are indeed the mediator between gender and achievements. Moreover, there are no direct effects of the parents' educational background in the Indian sample, but only indirect effects mediated through aspirations.

Direct effects of the parents' educational degree may occur, for example, when success at school requires parents to help their children with homework. If the parents do not have the educational resources required to help their children, the family's educational background directly impacts the child's performance in school. A straightforward example of a direct effect of gender could be a situation in which girls are banned from school: being a girl would be a straightforward and direct hindrance to obtaining an education. But such direct effects do not

24. The same analysis has been conducted with the Vietnamese YL data set. The results are reported in appendix B.3. The results differ in some country-specific details, but the essence is the same. Selected interesting points will be addressed in the discussion.

seem to be the only critical momentum in this data set: the effects of the socio-economic background and of gender go through aspirations. Girls and children the parents of which have attained low degrees of formal schooling tend to pursue lower aspirations, which then influence educational outcomes.

This does not at all imply that external constraints do not exist: direct effects have been found, too. Moreover, aspirations can (excessively) reflect objective constraints. Consider the role of gender again. Given that being a girl does not generally impact educational achievements, the main reason that the Indian girls in the study tend to achieve lower grades does not directly come from external constraints, but it may well be related to the internalisation of more severe constraints for girls. Girls have most likely internalised socially held expectations, parental aspirations, and social norms which favour higher educational levels for boys. Maertens (2013) shows that social norms in rural India influence educational aspirations for girls because girls are expected to get married earlier, and returns to their education are therefore perceived to be lower.[25] It may well be that if girls did not build cautious aspirations for this or another reason, they could achieve better results in school (because being as girl does not *per se* result in lower achievements, at least not at the age of the children in the study). On the other hand, even though they could excel in school, being expected to marry early could be interpreted as a lagged material constraints. If girls build lower aspirations because they do not expect to be able to make use of their education, this aspiration results from the anticipation of external constraint in the future. It must thus be emphasised that aspirations are socially and endogenously developed and cannot be fully disentangled from external constraints that shape them in the first place.

In the case of Vietnam (see appendix B.3), many details are different. The most obvious difference is that girls in the Vietnamese data set aspire to higher goals and tend to achieve higher grades at earlier ages. In R2, the economic situation of a household was directly linked with outcomes, but not through aspirations. The influence of the parents' educational degree is different from the case of India: there is no direct effect, meaning that low levels of education of their parents does not necessarily hold students back directly, but they tend to build lower aspirations, which then results in lower grades achieved. In the case of abilities, there is both a direct and an indirect effect. Students with higher abilities simply perform better at school, but in addition, they aspire to higher achievements, which pushes their

25. Parents in the YL study are also asked about the age at which they want their children to leave education and to marry, and indeed girls are generally expected to get married earlier than boys.

achievements further.

In contrast to India, girls in the Vietnamese data set aspire to higher goals and tend to achieve higher grades at earlier ages than boys. There is both a direct effect on achievements of being a girl and an indirect effect. Horton (2013) argues that in Vietnam, expectations towards behaviour of girls favours their being diligent and hard-working at school more than expectations towards boys do. This is one possible explanation for the direct effect of being a girl on achievements and could also explain higher aspirations of girls. This finding corroborates that determinants of aspirations are highly context-specific.

The regional differences of aspirations and achievements observed in Vietnam are probably at least partly driven by differences among ethnic communities. The large part of the sample belongs to the majority Kinh population who live in all regions, whereas respondents belonging to the Tay, H'Mong, Nung, Dao, and Giay live exclusively in the Northern Uplands. This probably accounts for a part of the observed differences, which may stem from different social norms and expectations prevailing in some ethnic minorities as compared to the majority of the Vietnamese population. Consider for an example the difference in responses to the survey question asked to parents about at what age the child should contribute to the household income. Among the Kinh population, ages are higher than average, while expected ages in ethnic minorities are more diverse. Among the H'Mong, a large majority expects the child to earn money between 15 and 18 years, among Tay between 19 and 22 years.

The literature suggests that socio-cultural values as well as experiences of each community translate into educational aspirations and social norms among some minority groups. Some communities, often those living in remote locations, are less mobile and travel outside of their community or province less often. This exposes them less frequently to livelihoods and identities foreign to their own community. Furthermore, when education requires migration outside of remote locations, social values that emphasise the united family might prevent educational migration. Also, some communities are long-settled agriculturalists with expectations towards the children to follow up on this tradition. Having said this, there are however large diversities regarding values, expectations and living standards between and within members of different ethnic communities (World Bank 2009).

The discussion of singular effects should not be taken too far. As the path diagrams illustrate well, the estimations presented are extremely complex and involve a lot of different effects and covariances. Many factors play into aspirations,

and it is impossible to disentangle the parts of specific determinants. Moreover, all latent constructs are related to each other. The model has attempted to account for both covariances of observed factors and influences of unobserved influences, but this does not take away the fact that the estimated relationship is complex. Single estimators and particularly the sizes of single effects should not be taken too much at face value. The key message from the analysis presented in this chapter is that socio-economic structures and environmental influences cannot only operate directly on educational achievements, but that aspirations - which are themselves related to these structures - play an important role. In contrast to earlier research, this conclusion is not questioned by possible endogeneity problems.

The analysis reported here has some important limitations that future research should attempt to overcome. One shortcoming is that having concentrated on the identification of mediation effects, the estimations presented here were unable to analyse in depth how students' aspirations in specific environments and moments are built. This is unsatisfactory to the extent that it is unclear what it means that students living in specific regions of a country on average attend higher grades or build higher aspirations. Statistical analyses of this kind are simply unable to fully account for the wide range of determinants of aspirations and for the heterogeneity and complexity of the social processes of aspiration formation. It is well understood that a long list of unobserved an unmentioned factors have most likely impacted the aspirations that children reported in the YL study. It was not the goal of this study to identify them, but to account for them in order to analyse if aspirations are an additional determinant of achievements, on top of external constraints that economists usually consider.

Another limitation is that it cannot be inferred from the presented estimations to which degree aspirations students report reflect their opportunities accurately and to which degree students get their opportunities and abilities wrong. The separation of direct and indirect effect relies on the covariance structures of the data. To give a simple example, when living in a poor household only depresses the achievements of those students who also report relatively lower aspirations but not of poor students with ambitious aspirations, it can be inferred that the economic situation does not directly preclude students from successful performances, but that the effect is mediated through aspirations (which may themselves be related to economic constraints, but as well to a range of other influences). Based upon this reasoning, direct and indirect effects can be separated. However no clear conclusions can be made about the extent to which aspirations accurately reflect

opportunities, preferences, talents, and all kinds of individual circumstances. It may well be that students from poor households living in urban regions without role models underestimate their opportunities and build low aspirations, whereas poor students in urban areas do not. Even when in both areas students have the opportunity to finish secondary schooling, this says nothing about future opportunities to find employment or the degree to which this secondary degrees increase earnings. Medium and long-term effects of aspirations, schooling decisions and achievements are hard to assess, and no conclusions about the accurateness of aspirations for specific individuals can be drawn from the analysis presented here.

Another shortcoming and potential source of bias concerns issues of reverse causality. I have stated before that in the YL study, aspirations and achievements are measured at different moments, and that it is impossible for achievements and test scores in R3 to have influenced aspirations reported previously. Earlier studies have used this argument as well (Pasquier-Doumer and Brandon 2015). Notwithstanding the possibility exists that aspirations reported in R2 do not only shape achievements documented in R3, but cognitive test scores in R2. Aspirations can of course not change cognitive abilities within seconds, but students with higher aspirations may be willing to exert more effort during the tests. It may well be the case that aspirations students hold as well as related unobserved influences like the student's motivation have impacted recorded abilities. As a consequence, the effects of abilities on aspirations may be overstated in the study. On the other hand, motivation is certainly not the main driver behind test scores in math, ppvt, or cloze tests. Aspirations cannot make up for missing knowledge and abilities, and even unmotivated students with high levels of knowledge and abilities are likely to perform rather well. I therefore assume that possible biases, if they exist, are probably rather small.

Chapter conclusion

This chapter contributes to the empirical literature on aspirations in development economics in that it proposes an identification strategy that is able to overcome some problems of previous studies. The structural equation model presented here is able to show that aspirations can affect behaviour in addition to other influences like economic resources or socio-economic background. This chapter thus sustains a conclusion that many researchers have formulated without being able to fully rely on their empirical evidence: poverty and the unequal access to resources and life chances do not only persist because they shape objective opportunity structures,

but also because they shape aspirations, that is, future achievements people can see in their mind's eye. Aspirations therefore deserve closer scrutiny by scholars interested in the persistence of poverty and inequalities.

Part III

Normative considerations

Chapter 10

Should aspirations be a matter of policy concern?

> Washing one's hands of the conflict between the powerful and the powerless means to side with the powerful, not to be neutral.
>
> Paulo Freire (1985, p. 122)

Many times throughout this thesis, whenever normative concerns and questions of the desirability or harmfulness of individual aspirations came up, the reader was put off until this final chapter.[1] The large number of occasions in which this happened testifies to the necessity of taking normative concerns seriously. As I have emphasised in the introductory chapter, assessing and addressing individual aspiration levels through policy is a delicate issue, and if it should be done at all, it must be put on solid grounds.

Paulo Freire's quote at the headline of this chapter expresses an overt dilemma that arises when it comes to the policy implications of downward-biased aspirations and aspiration traps: once we know of the possibility that people may become trapped with low aspirations, and once we know that the occurrence of such traps is linked with poverty, deprivation, social exclusion and experiences of inequality, policy-makers, researchers and development practitioners can hardly ignore

1. At the moment of submission, a paper version of this chapter has been submitted to the *Journal of Human Development and Capabilities*.

them and pretend that aspirations play no role for the perpetuation of poverty and inequality. But on the other hand, operating on people's aspirations carries the negative connotation of what Bowles (1998, p. 102) has called "paternalistic attempts at social engineering on the psyche".

Who should know which aspiration is right for which person in which situation and with reference to which task and medium or long-term life goals? Who has the right to tell people what they ought to want? Should policy-makers aim at raising aspirations, in particular those of the poor? Would it be a good idea to stimulate students in developing countries to achieve as much education as they can? How can we know whether it is appropriate for an individual to aspire to becoming a nurse rather than a doctor?

Moreover, how to deal with real constraints and socio-economic conditions that originated aspiration traps in the first place? Would it be legitimate to raise aspirations when it is unclear whether they can be achieved? It seems cynical at best to push the belief that 'everything is possible' in a world where we know that unequal chances and discrimination do exist, and to neglect material constraints. Unequal access to economic and informational resources, power relations, discrimination and stereotypes including their reproduction and so forth are probably not - at least not immediately - affected by mere interventions on aspiration levels of disadvantaged people. On the other hand, consider the example of education. How could it be justified not to attempt to raise everyone's educational aspirations and achievements? Should education not seek to open up students' horizons and encourage them to believe in their own strengths? In fact, does education not manipulate beliefs, self-views and capacities by definition (Gintis 1974)?

This discussion is so difficult because aspirations cannot easily be translated into the metrics of utility. Prescribing the highest possible aspiration for everyone would imply that all people have the same preferences over aspirations in the sense that higher aspirations are always better. But this is not necessarily the case. As mentioned in the introductory chapter, pursuing secondary and tertiary education is associated with higher life-time earnings in most places of the worlds (Montenegro and Patrinos 2013, 2014; Colclough et al. 2010). Can we infer from this that policy-makers should attempt to push all students into tertiary education (if this was possible)? In fact, it is far from clear that higher education levels raise well-being from an individual perspective when understood in terms of happiness

or functionings.[2] Even when higher incomes are at stake, not everyone is interested in pursuing university studies. Pursuing a career in handicraft or in underpaid jobs such as nursery or care of the elderly may result from genuine interests and desires, rather than from aspiration traps. Sen has framed such differences under the heading of "diverse humanity" (Sen 1992, p. 1), arguing that equality and justice do by no means imply that the same outcome is equally good for everybody.

On the other hand, the statistical correlation between parents' and children's socio-economic status and aspirations and the analysis presented in the previous chapter strongly suggest that genuine talents and interests are not the only determinant of aspirations. In the face of systematic relationships and biases along socio-economic lines, it is hard to advocate that students should be left alone with their aspirations.

The crucial difficulty for a welfare[3] assessment thus lies in the separation of three cases: one in which aspirations are biased, one in which aspirations reflect genuine preferences and constraints and yet another one in which agents have adjusted their aspirations to their (low) objective possibilities. In the latter case, aspirations do not reflect true preferences, but the agent is rightly aware that her material conditions do not allow her to fulfil her true preferences, meaning that she is not trapped with her aspirations.[4]

Against this background, two normative questions need to be addressed. First, should aspiration traps be a matter of policy concern? If the answer is yes, a second question follows: what exactly should a policy intervention aim for? To answer these questions, economists need to clarify how endogenous aspirations relate to welfare. This chapter is devoted to the discussion of this issue. To do so, it aims to sort out which policy implications can be derived from the perspectives of different normative approaches. These include a desire-fulfilment criterion[5], a hedonistic approach, Sugden's opportunity criterion, Roemer's equality of opportunity, and

2. I am referring to functionings in the sense of Sen. The concept will be explained in section 10.2.5.

3. I follow Kuklys (2005) and refer to 'welfare' as a generic term. I do not equate welfare with utility.

4. Recall Dalton et al. (2016)'s model presented in chapter 2, section 2.4: only when the agent in this model failed to internalise how her achievements and aspirations adjust to each other could an aspiration trap arise. When she was fully aware of these feedback loops, low aspirations reflected her awareness of her low possibilities, but within these possibilities, she aspired to the outcome that maximised her utility. An aspiration trap would have made her aspire to an outcome that would not have reached her full potential. The third case thus corresponds to Sen's tamed housewife or the hopeless beggar provided they have consciously downgraded their aspirations to their objective opportunities.

5. 'Desire-fulfilment' is the more general expression taken from philosophical debates, while 'preference-satisfaction' reflects how this criterion is used in economics. I will use both terms interchangeably.

Sen's capability approach.

Discussions the normative groundings for policy interventions addressing aspirations have remained scarce so far. Although researchers across the disciplines have started to implement and evaluate policy interventions, the discussion of how aspirations relate to welfare has only begun. Dalton and Ghosal (2011) use the standard welfare criterion in economics, the satisfaction of individual preferences, as a benchmark for their policy discussion. However, the general debate about welfare measurement has shown that subjectivist welfare criteria bear several problems. Recall from chapter 3 that adaptive processes can be one important source of low aspirations. Dalton and Ghosal (2011) suggest that individual welfare is not compromised when the individual consciously downgrades her aspirations, that is, when she fully internalises how her achievements and aspirations interrelate, and if she does not waste her potential. Welfare is compromised only if psychological mechanisms play aspirations down. But as I will detail below, Sen and others have argued that individual welfare should not be assessed based upon the satisfaction of individual preferences alone, because these could have adapted to adverse circumstances. Accordingly, focusing on psychological aspiration traps alone loses sight of the fact that aspirations are endogenous, and their achievement therefore cannot serve as a benchmark for welfare.

Section 10.1 summarises how policy implications of aspiration traps have been presented in the literature. Section 10.2 turns to the normative discussion of policy implications from five different perspectives: desire-fulfilment and welfarism (section 10.2.1), hedonistic welfare criteria (section 10.2.2), Robert Sugden's opportunity sets (section 10.2.3), John E. Roemer's equality of opportunity (section 10.2.4), and Amartya Sen's functionings and capabilities (section 10.2.5). Section 10.3 discusses and concludes.

10.1 Policy interventions in the aspirations literature

What may policy interventions correcting psychological aspiration traps look like? Consider as one example from a development context the Classical Music Orchestras Program that has been operating in Venezuela for many years and in which students from poor family backgrounds are provided an instrument and participate in orchestra rehearsals and public performances. The goal of these initiatives is not only to train children to play an instrument, but to provide them with an experience they would usually not have had. Discovering that they are able to

perform successfully in activities they would usually not consider, it is the hope of the initiative that spillover effects to other activities in the children's life occur, and that the children transfer their learned self-esteem and self-efficacy to other areas of life (Dalton et al. 2013).

Another intervention has been proposed and tested by Bernard et al. (2014). In an experimental setting in rural Ethiopia, they implement a one-day-treatment aiming at modifying pessimistic mental models through movies showing stimulating role models.The addressees of their intervention are shown documentaries of people from similar backgrounds who have been successful in setting up a small business or an agricultural project. Success, as reported in these stories, was achieved through goal-setting, hard work, and perseverance rather than external assistance from governments or NGOs. Through this intervention, the researchers want to investigate the role of people's understanding of their own opportunities for subsequent behaviour. They conclude that this intervention has had positive effects on the spectators' future orientation and optimism regarding the future. In the treatment group, reported aspirations as well as subsequent saving, use of credit, and investment in education had increased six months after the intervention. However, the authors finish their paper by stating that it is unclear whether they have stimulated false hopes among the participants about their prospects of escaping poverty. This statement illustrates well that the internal aspiration trap of an agent who does not live up to her possibilities as modelled in Dalton et al. (2016) is not independent from objective opportunities, which in turn are determined by socio-economic structures.

Conradie and Robeyns (2013) discuss the example of a small-scale development program called Someleze in the South-African township Khayelitsha, located 25 kilometres from Capetown. In this project, which was realised between 2005 and 2010, women gathered to reflect upon their aspirations and life goals and to support each other in reaching these goals. Limited resources were available to help the women realise some of their goals, e.g. for buying sewing machines or for training courses. Fieldworkers accompanied the project throughout. The documentation of the project illustrates that skills, awareness, and confidence in one's abilities is one important ingredient of aspirations, and reflections upon one's possibilities, capacities, and limitations can help to articulate aspirations that will improve one's well-being. Notably, the researchers clearly see the "agency-unlocking" role of aspirations confirmed, because participating women tended to voice stronger senses of agency and aspiration-awareness and because women participating in

the program engaged in many initiatives that women outside the project would not. The role of material resources for achieving many of the aspirations the women held (and the limitations set by the lack thereof) was of course not negligible. On the other hand, the researchers also find that experimentation with aspirations and reflections upon one's possibilities helped to attenuate initial adaptation problems: first, aspirations became better informed and women saw some opportunities in different lights when thinking about how to achieve specific goals. Second, sharing one's aspirations with other women facilitated collective action.

Not many contributions have designed and tested policy interventions, but it seems fair to say that most, if not all, contributions to the field have involved the conclusion that whenever aspiration traps arise, they should be overcome in order to increase individual welfare. For Dalton et al. (2016), the "key policy implication [of their model] is that policies that address aspiration levels can, at the very minimum, enhance the effectiveness of policies that address material deprivation; moreover, there are situations in which such policies on their own can enhance welfare, without any change in material circumstances". The World Development Report 2015 is as well rather optimistic about such interventions: about Bernard and Taffesse (2014)'s experimental intervention in Ethiopia, the report states that "[t]he study illustrates the ability of an intervention to change a mental model — one's belief in what is possible in the future" (World Bank 2015b, p. 4). Zipin et al. (2015) confirm that interventions aiming at raising educational aspirations of young people in low socio-economic regions has become a widespread policy recommendation in educational research.

10.2 Contrasting five normative perspectives

Which aspirations make someone's life go best? Borrowing from Derek Parfit (1984), this is the question that needs to be clarified for understanding the welfare implications of aspirations. Parfit distinguishes three types of theories about what makes a person's life go best and, in this particular context, which aspirations serve an individual's interests best. Desire-fulfilment theories posit that a life goes the better the more a person is able to fulfil her desires. Hedonistic theories take a person's happiness as an indicator: best is what makes her life happiest. Thirdly, objective list theories propose specific items which are good for an individual, and other ones which are bad.

Economists are most familiar with the traditional criterion of preference sat-

isfaction – thus, a desire-fulfilment criterion. But the traditional reliance upon choices for the assessment of (revealed) preferences has been questioned more and more because of insights gained in behavioural economics. The endogenous formation of aspirations is a strong case in point: to use the above-mentioned example, it is hard to claim that school choices reveal individual preferences over educational achievements when educational aspirations are strongly adaptive and biased along social and institutional contexts. Unfortunately, economists have not yet developed a framework within which the welfare of non-rational agents can be assessed without difficulty.

As I will argue with more details in section 10.2.1, the normative assessment of policy interventions to correct or avoid aspiration traps in particular and non-rational behaviour more in general is so difficult because economists still need to develop new welfare criteria beyond welfarism in the face of human behaviour that does not conform to the theoretical principle of rational choice. Even when welfare assessments are able to deal with non-rational agents (Dalton and Ghosal 2011), the circumstance that aspiration traps are partly driven by psychological mechanisms and partly by external conditions (and notably their mutual feedbacks) entails serious difficulties for welfare assessments based upon the satisfaction of individual preferences. I will therefore also consider a hedonistic welfare criterion (section 10.2.2) and three objective list criteria: Sugden's opportunity sets (section 10.2.3), Roemer's equality of opportunity (section 10.2.4), and Amartya Sen's functionings and capabilities (section 10.2.5).

10.2.1 Desire-fulfilment and welfarism

In much of the economic mainstream and its history at least over the 20th century, the dominant approach to welfare relies upon a desire-fulfilment criterion: mainstream economic analysis has long measured well-being through revealed preferences, assuming that rational individuals follow their preferences and make choices in their own best interest. Inferring from observed choices, welfarist theories use the degree to which individual preferences are satisfied to measure individual welfare. According to its proponents, this understanding "accepts each individual's own judgements as decisive in assessing the relative well-being she derives from alternative options" (Sugden 2008, p. 227). The more an individual is able to achieve what he prefers, the higher her welfare, and "the individual is the most competent judge of his own desires" (Sumner 2006).

Two problems arise in the face of low aspirations and aspiration traps. Consider first an individual who is born into a very unfavourable situation and who is aware of the numerous constraints her life is subject to. For her, it might be very rational to decide that "having high-minded desires will only lead to frustration" (Binder 2010, p. 35) and to downgrade her aspirations. If she aspires to a low degree of education because this is the only goal she can realistically expect to reach, it turns out that her revealed preference, derived from her observed choice, has been satisfied. However it is hard to maintain that a person living under objectively miserable conditions enjoys high welfare just because she has adapted her aspirations. This point has been forcefully articulated by Amartya Sen: "[a] person who is ill-fed, undernourished, unsheltered and ill can still be high up in the scale of happiness or desire-fulfilment if he or she has learned to have 'realistic' desires and to take pleasure in small mercies" (Sen 1985a, p. 14). Should the welfare of this person be considered high? According to Elster (1990), the contrary should happen: when preferences have adapted to misery, welfare assessments need to take these adjustments into account.

A second dilemma arises when low aspirations are not the result of a conscious decision to downgrade one's goals, but of a cognitive or psychological aspiration trap as modelled by Dalton et al. (2016): how should preferences and aspirations that are endogenous and serve a range of different, potentially contradictory, motives be able to say anything meaningful about welfare? For an illustration, think of the case where children of parents who work in unskilled jobs are brought to believe that they are unable to obtain or perform well in better jobs. It cannot be convincingly claimed that these beliefs should serve as a benchmark for welfare.

In such situations, as Rebonato puts it, "the viewers may get stuck in a very local maximum. They just do not know, and are not given the means, to discover that, if they were enabled to overcome a 'potential barrier', a much higher maximum may be available" (Rebonato 2012, p. 250). Theories using preference satisfaction and thus a "subjective metric [that] is relative to one's own expectations and to the comparative standard of one's social situation" (Sen et al. 1987, p. 28) unavoidably face endogeneity problems.[6] In words of Hausman and McPherson (1994, p. 396), "the dependence of preferences on unreliable beliefs is a pervasive feature of social life which makes a preference-based standard of welfare generally problematic".

6. This problem is also implicit in Rieskamp et al. (2006a, p. 631)'s definition of preferences: "[p]references are inherently subjective and arise from a mixture of aspirations, thoughts, motives and emotions, beliefs, and desires". Aspirations, themselves adjusted to considerations of feasibility and possibility, give rise to what becomes a person's preference.

Some attempts have been made to generalise the standard welfare criterion in such a way that it can be used even when behaviour does not follow standard models of choice. Bernheim and Rangel (2009) and Bernheim (2009) propose a general normative framework that can handle some of the violations of rational choice assumptions. Instead of relying on choices because of the underlying assumption that choices reflect true preferences, they propose to use choices as such for a definition of welfare. Even if choices do not necessarily reflect a person's true interest, the authors claim, they can be compelling as an indicator of welfare in their own right when self-determination is considered an important personal right. On these grounds, Bernheim and Rangel (2009) develop a model that is choice-driven without recurring to rationalisations of choices for a justification. As long as the process through which a specific choice was made is not too distorted,their model may do a good job for welfare assessments in many situations that are discussed in behavioural economics – but it is not applicable when "behavioral anomalies" (Bernheim 2009, p. 310) become too large.

Dalton and Ghosal (2012, 2016) recur to Sen (1971) to infer from choice data by axiomatic restriction whether individuals are acting rationally that is, if they have simply adjusted their aspirations to their real constraints and pursue the option from their feasible set that best serves their interest – or whether they are psychologically trapped.[7] This approach may allow researchers or policy-makers to know that agents are psychologically trapped, but they could still not know what the rational alternative would have been.

To circumvent some of these problems, several authors have proposed to consider "true" or "informed preferences" instead of revealed preferences for an assessment of well-being. Harsanyi (1996, p. 133; italics in original) understands informed preferences as those preferences an agent "would have if he were better informed about the relevant facts".[8] In such a state, aspiration traps could not occur, because every person would possess all the relevant information about her possibilities, resources and talents and only form aspirations that maximise well-being. True or informed preferences, however, are but a theoretical possibility

7. When Sen's axiom α - stating that a choice correspondence is (weakly) increasing as the choice set shrinks when all alternatives chosen in the larger set are also present in the smaller set - and Sen's axiom γ - stating that if an action is chosen in each set in a class of sets, it must be chosen in their union, too – are falsified, they infer that the agent is behaving non-rationally. If axiom α and β – the latter stating that when two actions are both chosen in a given set, and one of them is chosen in a larger set that includes the first set, then both are chosen in the larger set – are verified, the agent is behaving in accordance with the assumptions of rational choice theory (Dalton and Ghosal 2016, p. 15).

8. The difference between true and informed preferences is minor, details are explained in Harsanyi (1996).

and hard to distinguish in the case of aspiration traps, where the effects of true preferences, objective constraints and cognitive and psychological mechanisms can hardly be disentangled. What we can derive from an informed preference criterion is that for considerations of well-being, one should not only consider the choices an individual has made or the degree of pleasure she experiences, but as well the choice she would have made or the level of pleasure she would have enjoyed "in the various alternatives that were, at different times, open to [her]" (Parfit 1984, p. 496). Out of these alternatives, an individual could choose the one that fulfils her preferences best without any of the problems discussed above.

A body of literature under the umbrella of "libertarian paternalism" (LP)[9] has proposed behavioural interventions for the agent's own good on these grounds. For cases in which individual preferences are unstable, context-dependent or internally inconsistent and thus allegedly fail to provide what is in the individual's best interest, it is suggested that policy interventions should provoke outcomes the individual would have preferred if she had benefited from full knowledge of the situation and if she had been in full control of her actions. Richard Thaler and Cass Sunstein propose "libertarian-paternalistic" interventions that are "selected with the goal of influencing the choices of affected parties in a way that will make those parties better off" (Thaler and Sunstein 2003, p. 175). These policy interventions, known as "nudges", operate on the basis of soft behavioural incentives instead of bans or prohibition. A typical example would be to arrange products in a cafeteria in such a way that the consumer more easily buys healthy food instead of chocolate or sweets.[10]

A lively normative debate has emerged about the welfare effects of such interventions (Schubert and Cordes 2013; Binder 2014; Binder and Lades 2015).[11] Rather than re-telling the rest of the story of the LP debate, the following paragraphs apply the debate to the case of aspiration traps. To start with, it should be clarified that there is a considerable difference between the cases and examples

9. The main references are Thaler and Sunstein (2003, 2010) and Sunstein and Thaler (2003); see Loewenstein and Haisley (2008), Rebonato (2012), and Binder and Lades (2015) for overviews.

10. In fact, LP addresses two problems: wrong preferences or a lack of self-control. The latter one is of minor relevance for the discussion in this paper.

11. I will only briefly address those points that are of immediate relevance for the discussion in this paper. Comprehensive and critical overviews can be found in Loewenstein and Haisley (2008) and Rebonato (2012) and Binder and Lades (2015). Critiques have addressed issues of liberty and freedom (Binder 2014; Schubert and Cordes 2013). If individuals were to be steered towards specific aspirations, these issues would arise in the case of aspiration traps, too. However autonomy is a separate welfare criterion that I am not discussing. As another argument in favour of nudges, it has been put forward that no world free of social frames and reference points exists (Thaler and Sunstein 2003; Sunstein and Thaler 2003). If this is so, it is reasonable to attempt to find the frame that helps individuals to fulfil their preferences best.

discussed by the proponents of LP and aspiration traps. While the focus of nudging is mostly on spontaneous preference formation and framing effects of consumption decisions, aspiration traps refer to outcomes of complex, socially embedded processes. Both proponents and opponents agree that non-rational preferences are revealed in *unstable* preferences and "not in preferences that *consistently* run counter to the individual's best interest" (Sugden 2008, p. 232; italics in original). This, however, is the case of aspiration traps by definition. On the other hand, Thaler and Sunstein (2010) even propose nudges for improving educational choices parents make for their children. In this sense, nudging is not limited to every-day consumption decisions or the like.

As mentioned earlier, critiques of LP have contended that policy-makers may know that agents are not acting in their own best interest, but they can still now know what their true preferences would have been. Dalton and Ghosal (2011) argue that LP interventions can only increase welfare when the policy-maker has perfect knowledge of the agent's true preferences and the psychological or cognitive distortion at work.[12] In the absence of such knowledge, Thaler and Sunstein have proposed three criteria for the implementation of interventions. First, they propose to use as a benchmark the options "*the majority would choose if explicit choices were required and revealed*" (Thaler and Sunstein 2003, p. 178; italics in original); second, in order to help people identify possible distortions, they may be forced to make their choices explicit; and third, the number of options from which to choose may be limited in order to refrain people from choosing the wrong ones. Choosing the aspiration level of the majority is certainly not convincing for the problem of aspiration traps. If one accepts the informed preference criterion, "one would want social policy to be based on the *best*, most cognitively justified, assessment of the probabilities, not the most popular or the most intensely held" (Hausman and McPherson 1994, p. 398). The next one, limiting the number of choices, seems infeasible and not helpful for the case of aspiration traps either. The last proposal - forcing individuals to make schooling decisions explicit - seems at least partly infeasible, too, but points into an interesting direction. Reflections on how aspirations and goals are built may help making decisions more transparent to the individual herself. This may not help in the case of aspiration traps that rest upon deeply internalised beliefs about social hierarchies, for instance, but may be helpful at least for less severe cases.

Interestingly, this is quite similar to the alternative policy that Dalton and

12. In this approach, deviations from standard rational behaviour is understood as a bias or an anomaly, regarding from distortions. Chapter 4, section 4.1 discussed this approach at length.

Ghosal (2011) propose while refusing LP policies. Recurring to Elster (1983), they advocate the view that only the individual herself can identify her true preferences, but not a policy-maker. From their standpoint, useful policy interventions must therefore consist of helping the individual to fully internalise the feedback effect of her own actions on aspirations and vice versa. They then propose psychological therapy as a policy tool and emphasise that this is to be taken in a literal sense: "psychological therapies are about identifying the appropriate coping strategies (i.e. the feedback effects) to modify thoughts, beliefs, behavior, and environments to improve people's psychological states" (p. 14). The goal is to help the decision-maker to live a life that best suits her interests; her, this seems to imply a life that is best adjusted to living conditions, however harsh these may be. This is a dangerous argument, at least in the case of aspiration traps, as it suggests that the decision-maker alone is at the origin of her experienced welfare level. Failing to quit smoking is different from failing to aspire to that educational degree that best meets one's interests because of a lack of role models (Beaman et al. 2012) or rigid social hierarchies (Hoff and Pandey 2004, 2005, 2006, 2014),[13] although both represent cases of agents who fail to internalise feedback effects of aspirations and behaviour in technical terms. Material living conditions and their effect on aspirations are ignored when the individual is expected to learn to cope with her situation. As mentioned earlier, the hopeless beggar's welfare should not be considered high just because he has realistic conceptions of his situations and internalises the feedback effect of his actions on his aspirations and vice verse. While it is true that the policy proposal improves welfare in the sense that psychological traps are avoided, I will argue in sections 10.2.3, 10.2.4, and 10.2.5 that welfare criteria that are not derived from preference-satisfaction and that incorporate objective opportunities do a much better job for assessing welfare implications of aspirations. Psychological states and material circumstances go together; a measure of welfare should be able to take account of this fact. A preference-satisfaction criterion that cannot assess the scope of one's objective opportunities and in which an individual who lives up to his miserable potential is attributed a high welfare level is therefore unsatisfactory.

10.2.2 Hedonistic approaches

Hedonistic approaches (Kahneman et al. 1997; Ng 2003; Fleurbaey 2015, and many others) in a way return to the origins of welfarism as understood by Jeremy

13. I have reviewed these studies on pages 89-90.

Bentham. They share with modern utilitarianism the reliance on methodological individualism, proposing that things have a value because an individual desires or values them. This is not necessarily equivalent to preference satisfaction: Kahneman et al. (1997) distinguish between the hedonistic quality of a decision - "experienced utility" - and "decision utility", the latter being equivalent to the standard usage of the term "utility". Hedonistic approaches are interested in experienced utility, which can differ considerably from decision utility: even though a person may succeed in achieving her preferences, the resulting outcomes may not maximise her experienced pleasure. Hedonistic theories thus propose to measure experienced pleasure instead of relying on observed choices to infer insights about welfare. This supposes that experienced pleasure is measurable - an issue that has provoked intense debates, but that is of minor importance for the discussion in this chapter.

Hedonistic approaches face similar problems of material emptiness as the standard welfarist approach: "[t]o achieve its function in the control of immediate consumption or escape, hedonistic value must accurately reflect the needs of the moment", Kahneman et al. (1997, p. 379) write. Aspiration traps, however, show that this is not always the case. Through adaptive processes and cognitive distortions, individuals may well draw high gratification from suboptimal goals and achievements because they do not consider more difficult ones. "To some extent, the individual can only become 'informed' by doing", as Rebonato (2012, p. 251) puts it, but "a freely choosing individual who has not been exposed at considerable length to these experiences cannot know if she will be similarly moved by them - and, often, can hardly imagine she will". Unfortunately, hedonistic approaches have nothing to say about such adaptive processes. If the pleasure experienced by the individual is the only thing that counts, there is no difference between "real" pleasure and the illusion of it. Hedonistic theories do not discount welfare when experienced pleasures rely on false beliefs about one's talents or objective opportunities. Recall the hopeless beggar who does not expect much and manages to psychologically adapt to his situation and to draw pleasure from small gratifications: should we think that his welfare is high and that his humble aspirations for his life make his life go best?

From a hedonistic perspective, the assessment of policy interventions to correct aspiration traps needs to compare the experienced benefit derived from the adaptation process and the avoidance of frustration that may have occurred otherwise to the experienced loss of pleasure stemming from the foregone enjoyment that would

have resulted from higher aspirations and achievements. The net effect is far from clear: on the one hand, note that adaptation processes do not occur without a reason, but may offer the individual psychological relief. In social psychology and sociology, such strategies are discussed in a variety of cases and situations, e.g. strategies to cope with long-term unemployment (Groh-Samberg 2006). On the other hand, strategies people use to cope with deprivation, inequalities or a subordinate social status most often tend to reproduce at least some inequalities. People may try to accept subordinate roles and to benefit from it in form of new advantages the role entails. They may as well build subcultures or opt for accepting and adapting to the subordinate position and make one's self reasonably comfortable within these circumstances (Schwalbe et al. 2000). On a theoretical level, such adaptive behaviours have been discussed as cognitive dissonance reduction (Festinger 1957; Akerlof and Dickens 1982; Bowles 1998).

Higher aspirations, in turn, do not necessarily lead to higher experienced well-being. The process that comes along with the process of pursuing them may cause costs. Imagine a student from a working-class background who decides to pursue university studies. If as a result he enjoys a high income, social recognition, and the pleasure of doing a job that matches his talents and interests, these ambitious aspirations have led to higher well-being. But if instead he experiences social alienation from his peers and families and a lack of recognition from his new peers (El-Mafaalani 2012), his ambitious aspirations may have reduced his experienced pleasure. The same happens if a person with a preference for a non-academic job pursues university studies because her aspirations have been pushed into this direction.

Overall, an assessment of the welfare implications of policy interventions seems to pose insurmountable challenges to the hedonistic approach as long as it is impossible to distinguish between genuine and adapted aspirations, and as long as the costs and benefits coming along with more ambitious aspirations are unknown.

10.2.3 Sugden's opportunity criterion

In its original conception, Robert Sugden's opportunity criterion can be understood as diametrically opposed to policy interventions based upon informed desire criteria: his publications centring around the opportunity criterion (Sugden 2004b, 2006, 2007, 2008) aim at reformulating the idea of consumer sovereignty and at showing that consumer sovereignty holds even when preferences adapt (Binder

2010). Interestingly though, the lessons derived from his approach to the question at hand will be quite similar to the one from the previous section.

Consumer sovereignty rests upon the idea of normative individualism (Schubert 2005). Respecting the consumer's sovereign decision implies that policy-makers should abstain from paternalistic interventions, as none can judge better than the individual what is in her best interest. In this understanding, interventions lack a normative underpinning and are unlikely to improve well-being. But although Sugden defends normative individualism and individual responsibility for choices, his welfare criterion represents a total departure from traditional welfare concepts, as he concentrates solely on opportunities and not on outcomes or choices (Sugden 2004b, 2006, 2007, 2008). Instead of evaluating to what extent individuals are able to satisfy their preferences, he evaluates the opportunities an individual faces to do so, and holds the individual responsible for the outcomes she chooses out of this opportunity set, as non-rational as these decisions may be. An increase of opportunities is considered an increase in welfare, regardless of the individual's assessment of those or of the individual's choices (Sugden 2004b).

Transferring Sugden's approach to aspiration traps reveals one obvious conflict: the development of aspirations includes the way in which opportunities are perceived and made use of. Appadurai's understanding of an individual's capacity to aspire rests among other things upon the individual's ability to assess opportunities adequately and to make best use of them. It is often overlooked, as in Sugden's approach, that "[t]he fact that options are objectively available to an agent cannot enter into the explanation of his behavour isf he has no rational grounds for believing that they are available" (Elster 1986, p. 4). On these grounds, the aspirations approach implies that the perception of opportunities is as endogenous as endogenous preferences themselves. Ignoring preferences and choices, as Sugden does, thus does not help avoid the initial endogeneity problem. He may measure the objective opportunities an individual faces, but it is unlikely that this be related with the individual's welfare (Loewenstein and Schkade 1999) because focussing on objective opportunities lacks psychological underpinnings (Schubert 2015).

Consider the example of how German students with an entrance permit to university make use of their objective opportunities: strong biases along socio-economic lines exist, and it is hard to hold individuals accountable for them. In Sugden's approach, when opportunities are equal, individual choices account for differences in behaviour and the individual should be held accountable for the

choices she makes. It is not convincing though to apply this reasoning here: we cannot plausibly assume that genuine preferences, interests and talents are heterogeneously distributed *within* society at large but at the same time strongly correlated *between* people from similar backgrounds.

Instead, the aspirations literature suggests that social structures are partly responsible for aspirations. Should this responsibility be passed over to the disadvantaged individual? According to Sugden, "[h]ow people use these opportunities lies outside the domain of the theory of justice" (Sugden 2004a, p. 213). Following Dworkin (1988), he further writes that "as a matter of empirical psychology, people have tastes which are to some degree outside their control. Thus, some people really may have more expensive tastes than others. But that is a form of bad luck for which no compensation is fairly payable".[14] It may well be that some individuals hold false beliefs without being themselves responsible for holding these beliefs, and that these false beliefs make them less successful in a market economy, Sugden argues. But this seems fair to him, because in principle, everybody has the same access to information and false beliefs are stochastic (Sugden 2004a).

But beliefs are not stochastic. This is illustrated very well by another experiment carried out by Hoff and Pandey (2005) in India, presented in a paper with the informative title "Opportunity is not Everything". The authors show that when social hierarchies are made salient, low-caste students perform worse than high-caste students in a cognitive task (solving mazes), which they were able to do equally well when identities were not revealed. They interpret that low-caste students let existing opportunities forego and did not aspire to perform as good as possible because this would not have been in accordance with social hierarchy rules and expected behaviour.[15] On a more general note, Fishkin (2014) forcefully pleads that opportunities we face at some point of our lives shape our preferences, interests, abilities, and perceptions and, hence, how we perceive and make use of later opportunities.Recurring to John Stuart Mill (1869)'s work on the the nature of women - possibly written jointly with Harriet Taylor Mill -, Fishkin claims that opportunities women have faced for decades and centuries have shaped how society at large thinks about traits and characteristics of women. In turn, beliefs about one's abilities and talents resulting from such inequalities shape how people are able to perceive and make use of new opportunities.

To conclude, in a setting where aspirations are structurally instead of stochastic-

14. This argument should be read as part of a larger discussion in which Roemer engaged as well. The next section will come back to this point.

15. As mentioned earlier, I have discussed their contribution in previous chapters, see pages 89-90.

ally biased along socio-economic lines, Sugden's reasoning seems hardly applicable. While he argues that information is available freely for everybody, insights from psychology and behavioural economics show that this is a rather theoretical, if not cynic, claim. Cognitive and psychological determinants of choice or power issues are deliberately excluded from Sugden's criterion.

The strict application of Sugden's opportunity criterion thus does not seem to be very appropriate for the case of aspiration traps. On the other hand, and paradoxically so, his own policy proposal - "to set up the economic system so that every individual has the same opportunity, and then to leave those individuals free to make their own choices, whatever they may be" (Sugden 2004a, p. 229) seems to be useful advice when interpreted in a way that takes account of cognitive and psychological processes that happen when individuals assess these opportunities. The difference of such an intervention to Sugden's approach is this: Sugden assumes that opportunities in an opportunity set do exist or not, as simple as that. From an aspirations perspective, however, opportunities are subjective. Those opportunities that exist in an opportunity set must be visible to the individual. Making opportunities accessible increases the set of possible choices an agent effectively considers. When put upon a more sound psychological basis, Sugden's approach appears in a different light and may indeed provide a case for policy interventions.

10.2.4 Roemer's equality of opportunity

Despite being concerned with opportunities too, John E. Roemer's equality of opportunity (EOp) approach comes to quite different conclusions as compared to Sugden. Following up on a philosophical discussion about individual responsibility, Roemer developed his EOp approach over several contributions (the approach is fully presented in Roemer (1998); see Roemer and Trannoy (2015) for a recent discussion). In his model, Roemer separates two different factors determining an individual's outcome: effort and circumstances. Quite intuitively and undisputedly, circumstances are beyond the individual's control, while effort is to some extent the individual's choice and to some extent exogenous. Roemer partitions society into a set of groups with the same set of circumstances which he denotes $\tau = 1, 2, ..., T$. For each type, there exists a "set of efforts one can reasonably expect of a person in those circumstances and provided with those resources" (Roemer 1998, p. 14). It is important that no specific effort level is 'assigned' to a type, but a range of effort levels within which there is scope for individual choice, taste etc. Roemer then

goes on to measure the *degree* of effort an individual chooses out of her type's set of (absolute) effort ranges, which allows for interpersonal comparisons of (relative) effort choices.

Roemer's welfare criterion is that of equal opportunities. With regards to this criterion, he proposes that individuals should be held accountable for degrees of effort they choose from within the range of typical effort levels, but not for levels as such. The other way around, he defends that an individual cannot be held accountable for a detrimental choice that is nevertheless reasonable or normal for a person under given circumstances to do. A 100% opportunity-equalizing policy would mean that all individuals exerting the same degree of effort reach the same and corresponding outcome.

The welfare implications for aspirations can be studied in this framework by including them as a mechanism that mediates between circumstances and efforts. In Roemer's framework, aspirations would be part of an individual's type, and there is a range of aspirations that can reasonably be expected from an individual. The part of aspirations that is determined by circumstances should not be attributed to the individual in terms of responsibility, but the part that stems from genuine preferences and talents. In a society with perfect equality of opportunity, socially determined aspirations and, for that matter, downward-biased aspirations should not provoke differences in outcomes. Roemer distinguishes ex-ante EOp policies that act on the effort range and ex-post compensation for that part of unequal outcomes the individual is not held responsible for. Policy interventions to act on aspirations clearly qualify as ex-ante policies.

When including aspirations in the framework, the line between circumstances and efforts is not unambiguously drawn. Aspirations are clearly conceptualised as being influenced by both material resources and constraints and cognitive mechanisms (and their interactions). In the philosophical discussion, there exists the view that individuals should be held accountable for their preferences if they identify with them (Dworkin 1988).[16] Roemer objects that if preferences follow circumstances, an individual might well identify with her preferences, but still the social and biological endowments which shaped her preferences are beyond her control (this is the adaptation problem again). According to this stance, a variety of aspects can be summarised as circumstances. Identities and available role models shape the (set of) level(s) of effort one can reasonably expect from a person. Similarly, the access to economic, financial and informational resources is a

16. This is also the view Sugden follows.

straightforward influence. The point that aspirations adapt as a defensive response to poorly resourced environments, subordinate positions in social hierarchy and the like is again relevant here.

As a consequence, it is implicit in Roemer's approach that he ascribes the effort ranges he thinks he can reasonably expect from specific types τ to subjective opportunities, and not to objective opportunities alone.[17] Consider the case of an individual whose subjective opportunity set is only a subset of her objective opportunity set due to an aspiration trap. The opportunities this individual perceives represent only a subset of the opportunities she actually faces, accounting for all material and societal constraints. In Roemer's view, "one must ask to what extent preferences are formed as a defensive response to poorly resourced environments" (Roemer 2012, p. 190) and cannot hold the individual responsible for preferences (and aspirations) built under these influences.

Ex-ante equality of opportunity would exist if all types τ had the same range of effort that one could reasonably expect from them. For Sugden, this is achieved when all individuals dispose of the same set of objective opportunities and the same stock of knowledge. In contrast, I interpret Roemer's model to refer to subjective opportunity sets. This means that a policy intervention to correct an aspiration trap would attempt to expand the limits of the effort range one can reasonably expect from an individual of a type whose effort levels systematically fall short of benefiting from his objective opportunities.

In principle, the EOp criterion allows us to plead in favour in policy interventions in order to increase equality of opportunity. Imagine an intervention attempting to provide all students with broad knowledge of career prospects and to consider all of them in an open way, making students' career choices contingent on nothing else than personal interests and talents. If all students dispose of the same objective opportunity sets but initially only consider a subset due to aspiration traps and cognitive distortions, an intervention might weaken the link between socio-economic background and career choice and thus increase welfare, measured as equality of opportunity.

However there is a reason to be cautious: the difference of objective and subjective opportunity sets entails an important implication. In a world where

17. Roemer differentiates two children regarding the learning effort one can expect from them according to their family's study culture and cultural values that are present in their families. This clearly reflects a subjective understanding of opportunities. Björklund et al. (2012) compute the effect of circumstances on income with a large data set of Swedish men and find that there are both direct and indirect effects of circumstances on outcomes, the indirect one being mediated through the effect of circumstances on effort.

material choices are not equally distributed, an intervention may easily result in frustration: when objective opportunity sets are not equal across types, it is questionable to raise aspirations suggesting that all options are open to everybody, and thus to expand the set of subjective opportunities to the extent that they exceed the set of objective opportunities. Imagine a university system where no credits are available to deal with credit constraints of students from poorer households. Why should the cognitive opportunity sets be opened up, when the material opportunity sets do not keep pace?

Policy interventions correcting cognitive and psychological traps face an overt dilemma that becomes apparent, again, at this point: if not met by material opportunities, the effects of raising aspiration levels are unclear. This dilemma was already discussed in section 10.2.2: the pursuit of ambitious aspirations can come at a psychological cost because they cause frustration or require the individual to exert considerably higher levels of effort than those they would have had to exert with less ambitious aspirations. On the other hand, does this mean that we should conform to unequal aspirations because they are a good reflection of the distribution of material chances? Should policy interventions aiming to correct aspiration traps stop at the frontier of what is objectively possible for an individual at a given moment? Or is there a case to push beyond this frontier? This is a question Roemer's approach cannot help to answer. I will come back to this below.

10.2.5 Sen's capability approach

Amartya Sen (1985c; 1985d, and many other works) has forcefully criticised subjective approaches to welfare referring to the problems discussed above. He initially criticised the concentration on subjective well-being and the narrow informational basis of utilitarianism with its limited understanding of well-being as utility (Sen 1979a, 1979b, 1979c). According to him, focussing solely on revealed preferences and their satisfaction is a non-starter for assessing an individual's welfare: utility is, for him, fully grounded on mental attitudes of a person, neglecting physical states and the individual's valuation of a good or outcome. As discussed above, if an individual lives in poor physical conditions but manages to adapt to these and feels satisfied, utility would be ranked high despite poor physical and material conditions (Sen 1985c), which Sen rejects.[18]

18. Some authors have questioned if Sen's approach is really objective (Binder 2010; Sugden 1993). I will also show below that capabilities as understood by Sen have a subjective component, which has important implications for the question at hand. Nevertheless I will not go into further details of this discussion, as it is not central for this paper.

As opposed to subjective assessments of preference satisfaction or happiness, Sen's approach initially concentrated on basic needs.[19] This approach was then further developed to eventually distinguish between *functionings* - what a person can effectively do or be - and *capabilities*, the set of different functionings between which a person can choose and which represent her freedom of choice (Sen 1980, 1985c, 1985d, 1985a, 1991; Kuklys 2005). Functionings can be understood as an individual's actual and achieved activities and states of being (such as being healthy or being educated), while capabilities reflect all potential functionings a person can achieve and implies that the individual has a choice between them. An individual's capability set can thus be understood as her opportunity set (Kuklys 2005).

It is not the goal of this section to evaluate Sen's approach and to engage with the extensive literature his work has provoked, but to discuss its applicability to and lessons for the normative evaluation of policy interventions to correct aspiration traps. Let me start by pointing out that although Sen is critical of subjective accounts of well-being, he does not claim that totally objective accounts of welfare – like Sugden's opportunity criterion – can do the job, either. For him, functionings are not merely objective, but depend on what a person can effectively do with an object or how she can benefit from opportunities. Sen models a person's functionings as depending on commodities she has access to, under consideration of conversion factors that describe how well she can make use of these commodities:

$$b = f(c(x \mid z_i, z_e, z_s)) \tag{10.1}$$

The vector of functionings b is a function of the conversion function f, that maps characteristics of the commodities c an individual has access to into the space of functionings F. This process is conditioned by the conversion factors z_i, z_e and z_s. The first one refers to personal characteristics such as gender, physical abilities, or intelligence; the second one to environmental factors such as the climate or the availability of natural resources like water or clean air; and the third one to social factors like legal regulations, informal rules or traditions. The vector of capabilities Q comprises all possible functionings an individual can achieve and is specified as

19. In his 1979 Tanner Lectures (Sen 1979a), he centred on the satisfaction of revealed preferences as a welfare criterion and the satisfaction of basic needs as an alternative one. As Fleurbaey and Blanchet (2013) remark, he abandoned this focus opening up this theory of well-being to all levels of basic needs satisfaction.

$$Q_i(X_i) = \{b_i \mid b_i = f_i(c(x_i \mid z_i, z_e, z_s) \forall f_i \in F_i, \forall x_i, \in X_i, \tag{10.2}$$

where X_i is the set of all possible commodity vectors of which x_i is an element, and f_i is an element of the set of all possible conversion functions F (Kuklys 2005).

Similarly to the aspirations approach, Sen's model thus states that personal, social and environmental factors play an important role for the way in which people can make use of commodities and opportunities. The capability set, which can effectively be understood as the set of potential functionings and thus as the subjective opportunity set, depends on how a person perceives opportunities and functionings, which in turn is influenced by these conversion factors. Endogenous aspirations are implicitly included in Sen's writings:"[c]onsiderations of 'feasibility' and of 'practical possibility' enter into what we dare to desire and what we are pained not to get" (Sen 1985a, p. 15).[20]

The capability set thus only includes those options a person can effectively aspire to, but not those which are theoretically available but excluded by means of cognitive distortions or social mechanisms that suggest that a specific option is not available (e.g. when certain professions are not socially accepted for women). The concentration on subjective possibilities under consideration of personal, social and environmental conversion factors is thus particularly well compatible with the aspirations approach. In a sense, the aspiration traps literature inquires how well individuals can make use of opportunities (whenever they exist) and how social, environmental and personal factors may impact this process. Against this background, policy interventions to correct aspiration traps can be understood as attempts to improve how well people can grasp opportunities and to avoid adaptive processes and psychological biases that preclude such benefits.

One may add to his conception of the capability vector Q by stating that the conversion factors are related to each other and specify the overall ability of an individual to make use of objective opportunities, z, as

$$z = z_i * z_e * z_s \tag{10.3}$$

The individual ability cannot be understood without environmental and social factors. Individual conversion factors are of course not limited to psychological and cognitive aspects, but they represent an important part of z_i . In turn, psycholo-

20. I have used this quote before. See also Sen (2002).

gical and cognitive barriers are closely intertwined with socio-economic positions, hierarchies, social norms, institutional settings and other social and environmental aspects.

As mentioned above, both Sugden's and Sen's approaches are concerned with the evaluation of opportunity, and naturally there is a controversy as to which approach is more appropriate for the evaluation of welfare (see Qizilbash 2011, for a general account of this controversy). Sugden holds his criterion – the direct evaluation of opportunity sets – to be superior to Sen's assessment of opportunities in terms of capability sets because he interprets that Sen wants individuals to publicly prove that their choices are not the product of adaptation problems. He acknowledges that Sen's focus on reasoned evaluations allows his approach to deal with adaptation problems, but at the same time criticises that it requires the agent to constantly justify her decisions: "Sen wants to free us from the unwanted demands of our communities (. . .); but his proposals do not release us from what may be the equally unwanted demands of public reason" (p. 53). He further argues that opportunities as such should be valued by agents, even if their preferences are not coherent.

I have two objections: first, and as argued above, the problem with his approach in the light of endogenous aspirations is not primarily with incoherences, but with coherent downward-biases and adaptations – which Sen's approach can handle. Second, when conceding that opportunities are not directly measurable (Sugden 2010, p. 55), one should also concede that capabilities are not directly measurable, and that Sen's approach does not require agents to justify their decisions. Even without public control over its outcomes, Sen's criterion can be used as an abstract guidance towards enhancing capabilities as much as possible.

Overall, Sen's approach leaves spaces for individual preferences and choices, but does not hold the individual responsible for choices she makes as an adaptive response to her poorly resourced environments, to use Roemer's words again. The question of how an agent is able to make use of objective opportunities is at the core of both the aspirations literature and Sen's understanding of capabilities. Sen's approach shows that there is a justification of policy interventions to correct aspiration traps: welfare depends on the sizes of both objective and subjective opportunity sets, and cognitive and psychological barriers are one aspect of Sen's conversion factors. The potential functionings of a person depend on the set of objective opportunities and the way in which the individual is able to make use of those. There are then two components one needs to take into account to improve

welfare: objective opportunities and conversion factors (that is, the subjective capacity to aspire). As Conradie and Robeyns (2013) phrase it, aspirations "can unlock the agency that is needed in order for the necessary changes to happen" (p. 565).

Policy interventions manipulating aspirations directly - entering Sen's model through the conversion factors – is only one option and comes along with two flaws. One is that manipulating aspirations may in practice be limited to the extent that social rules, traditions and so forth make such manipulations hard or even infeasible when beliefs and social rules are very strong. Aspirations do not come from nowhere, but are conditioned by social and environmental influences. As long as world views, social hierarchies, and norms remain unchanged, it may be hard to change aspirations when the changes conflict with beliefs, habits, and world views.

The second flaw has already been encountered above and consists in the expectation that ambitious aspirations may reach a "glass ceiling" when the boundaries of the objective opportunity sets are reached. Sen's model thus shows again that raising aspirations alone has limited effects on welfare: raising aspirations can push an individual's functionings at the frontier of the objective opportunity set, but not beyond. At some point, if welfare is to be further increased, material opportunities need to be addressed.

10.3 Discussion and conclusion

As the discussion of five different approaches has shown, it is quite difficult to find a normative basis for arguing that policy-makers should *not* attempt to avoid and reduce aspiration traps when these occur and impact economic decision-making, precluding people from improving their living conditions and from potentially achieving social mobility. Preference-satisfaction and hedonistic approaches would not necessarily subscribe to recommendations of policy interventions to correct those, but they were found not to apply to the problem at hand because they cannot handle adaptation problems and endogenous aspirations well. Informed-desire criteria are difficult to apply because "true" aspirations are hard to identify. The recent libertarian paternalism debate which relies on this criterion is of little help because it refers to the problem of inconsistent and unstable choices, which is however quite different from structural and consistent aspiration traps. Notwithstanding, one of the policy interventions the LP literature recommends - that of broadening the horizon of options an individual considers - can potentially

be applied. Dalton and Ghosal (2011)'s approach solves some of problems that rational choice models face when agents are not fully rational, but it still involves the common problem of preference-satisfaction criteria in that it ignores material living conditions, which is not convincing for a welfare criterion.

Sugden's opportunity criterion recommends to abstain from policy interventions influencing choices people make and recommends to focus on objective opportunity sets to assess and improve welfare. Unfortunately his stance that the options people choose are not of normative concern is in conflict with the very starting point of the aspiration literature and behavioural economics more generally: these fields show that the use people make of opportunities can be strongly influenced by poverty, inequality, and a range of cognitive and psychological processes. Roemer's equality of opportunity criterion, the fifth approach, measures welfare as equality of opportunity and I have argued that his approach supports ex-ante interventions addressing aspirations traps. Policy interventions enlarging the set of options that people aspire to represent an increase of equality of opportunity. Finally, Sen's capability approach measures welfare as the choice between different functionings people effectively consider. This approach is also an argument in favour of policy interventions to avoid or correct aspiration traps.

It is important to point out that my argument that Roemer's EOp approach and Sen's capability approach support such policy interventions should not be overstretched. No argument has been made in favour of policy interventions that aim at influencing decision-making into specific directions or in favour of specific choices. Both Roemer's and Sen's approaches support policy interventions that are based upon a procedural, but not on a content-based argument.[21] If future research is able to "open the black-box of the utility function" (Binder and Lades 2015, p. 12) and to eventually assess which choices make people better off, the question discussed in this paper may be revisited. On the other hand, aspirations and choices regarding one's life course will always remain subject to an individual assessment at least to some extent, as human beings are diverse and not all choices will satisfy all human beings equally (Sen 1992).

Consider the example of education again. Policy interventions that are supported by this paper include, for instance, workshops that are about finding out about one's options and possibilities, ways of relieving credit constraints, as well as about one's talents and interests.[22] In such a workshop, students may as well reflect upon

21. This conclusion is reached by Heap (2013) as well.

22. The development program discussed in Conradie and Robeyns (2013) presented previously in this chapter on page 217 seems to fulfil these criteria.

to what extent their career aspirations are influenced by stereotypes, false beliefs, or culturally transmitted preferences. In a second step, they may decide if in the social world they live in, they have reasons – such as a pronounced interest in a specific occupation – to deviate from the aspiration level that seemed "normal" for "a person like them" before or not. Such a workshop would not be about, for example, inciting as many students as possible to undertake university studies. Approaches like the latter one might easily run the risk of not improving individual well-being but optimising individual biographies according to external criteria.Opportunities and capabilities should be enlarged, but not shifted from some options to others. In this sense, supported policies would be autonomy-increasing, as they aim at increasing an individual's ability to make "critically reflected, i.e. autonomous, decisions" (Binder and Lades 2015, abstract) that are as independent as possible from socio-economic structures and hierarchies. If policy interventions cannot guarantee to fulfil this criterion, they are likely not backed by the approaches discussed here.

Another cautious comment concerns the power of policy interventions on aspirations. As both Roemer's and Sen's approaches have helped to understand, aspirations alone can of course not correct the inequalities and material deprivations they originated from. If policy aims at increasing welfare in terms of equal opportunities or in terms of capabilities, one important channel is to increase people's ability to make use of their opportunities, but another important aspect concerns objective opportunities themselves. Recall the World Development Report's enthusiastic evaluation of an experimental policy intervention that had changed a mental model and the beliefs of what people deem possible. This is indeed important, but it is also clear that people are not poor or disadvantaged just because of aspiration traps or mental models. Aspiration traps are a consequence of poverty that contributes to maintaining disadvantaged living conditions and inequalities. As such, policy-makers should not be overambitious regarding the use of policy interventions correcting psychological and cognitive traps: they can only contribute to poverty reduction on meaningful scales if they are part of a policy mix that tackles material constraints as well.

Having said that, it is important to note that there has been no research yet investigating the consequences of aspirations that exceed objective opportunities. Just pushing the belief that "everything is possible" without real material possibilities is likely to lead to frustration at least in the short run (Bandura 1977, 1997; Hirschman and Rothschild 1973; Flechtner 2016; Flechtner and Gräbner

2016).[23] This is why it is recommended to tackle aspirations as part of a policy mix. Frustration is not a good candidate for improving well-being. On the other hand, it may well be the case that frustrated aspirations can modify social institutions in the medium or long term. Future research should address the effects of situations in which aspirations go beyond objective opportunities and investigate how this may provoke changes in institutional settings and social structures.

Consider the process of women's insertion into the labour market. When women were strictly excluded from the labour market, it would have seemed odd to pursue policy interventions aiming at pushing their occupational aspirations to raise their equality of opportunity or capabilities. On the other hand, social institutions regulating women's access to the labour market have gradually changed over decades and centuries. Women aspiring to unusual goals played important roles in these gradual processes of change. Without a theory of how aspirations, beliefs and goals on the one hand and institutions on the other one interact and reproduce or modify each other, it is hard to assess if it may be justified to push aspirations only within or also beyond actual objective opportunity spaces, which implies to incite agents to attempt to provoke social change. This task must be left for future research.

23. This point has been discussed at length in various previous chapters.

Conclusion

> Economics is the art of making the most of life.
>
> George Bernard Shaw (quoted in Becker 1976, p. 3)

The potential of the approach presented here lies not in the substitution of earlier approaches, but in their enrichment: thinking from the side of aspirations provides new perspectives on many old questions. Aspirations take us to the grain of a life of poverty: they urge the researcher to analyse how a life of poverty, exclusion and disadvantage impacts the meaning of purposeful behaviour. To understand the diverse motives behind purposeful aspirations and behaviour, it is obligatory to study how the world presents itself to people living in poverty, and how human agency can be conceived under these conditions. Attempting to understand what 'makes sense'- and what doesn't - from the individual perspective - given a person's beliefs, world views, values, norms, preferences, mental models, and so forth - can reveal the motives of allegedly irrational behaviour.

I therefore conclude that a wholehearted attempt to understand aspirations can indeed advance our understanding of why poverty persists. People have good reasons and plausible motives to build the aspirations they build. Notwithstanding, this does not mean that these always serve their interests best. Some aspirations may make it even harder to overcome poverty than it already is in the face of the manifold constraints and disadvantages that a life of poverty involves. The reasons for his are much more complex and diverse than might have been expected. Many different reasons and rationales can motivate goals and aspirations people pursue, and trade-offs between them may arise. The discussion of ecologically rational aspirations in the light of identities people hold has shown, for example, that for members of some teenager groups, it is rather unacceptable to "act white" (Fryer 2006) and to conform to the principles of a dominantly white society, even though this would serve the purpose of obtaining an educational degree. On closer inspection, it is no easy task to determine which aspirations ultimately serve

individual interests better than others.

Moreover, in a world of uncertainty and numerable constraints beyond the individual's control, it is often unclear which aspirations are feasible, which yield the most beneficial results, and which consequences are involved in the medium and long run. Experimental studies by Nguyen (2008) and Yamauchi (2007), carried out in Madagascar and India, revealed that providing information about educational paths is not enough to allow people who have little experience with the educational system to see themselves navigating through these paths in their mind's eye. Sometimes, people may doubt the attainability of educational aspirations they are tempted to consider; and sometimes, it turns out that these doubts were justified. Aspiring to obtaining a university degree is necessary, but not sufficient for succeeding when the pathway to the achievement is paved with numerous material obstacles. To conclude this thesis, let me summarise the chapters before presenting some final thoughts.

Chapter 1 placed the aspirations approach within the broader context of development economics. This was to point out that aspirations - and behavioural approaches to development more generally - are no potential new 'magic bullet' but can only be helpful for understanding persistent poverty in conjunction with many other perspectives. Given that aspirations are shaped to large extents by a person's living conditions, it is of utmost importance to take account of these. This is all the more important as it turned out that living conditions influence aspirations in many different ways. To understand aspirations, they have to be placed within the context of other hindrances to overcoming poverty.

Chapter 2 presented the most prominent conceptual and analytical models that have been built around the idea of aspiration traps in economics (Ray 2006; Génicot and Ray 2015a; Dalton et al. 2016). In these models, aspirations are assumed to be built and adapted in social processes. But precise mechanisms are not discussed: both analytical models study the effects of endogenous aspirations, but do not intend to study how precisely aspirations are developed.

Chapter 3 therefore delved into behavioural economics to identify potential behavioural mechanisms that could help to open the black box of endogenously developed aspirations. Indeed, a number of social and cognitive mechanisms that have been discussed by behavioural economists can be fruitfully transferred to the analysis of aspirations. At the same time, the approach of behavioural economics entails its own problems: it usually focuses on specific mechanisms and patterns of behaviour in isolated ways and makes it difficult to analyse complete processes

and dynamics. Moreover, the isolated mechanisms are most often understood as irrational deviations as compared to the standards of rational choice. As an outcome, we know how individuals may not behave when they build aspirations, but we have no conceptual framework of how this process works.

Chapter 4 discussed these problems and proposed to employ other understandings of rationality to overcome them. Specifically, ecological rationality allows to take account of diverse motives of purposeful human behaviour. This perspective made clear that aspirations may be driven by many diverse, and sometimes even contradictory motives. These are purposeful and adapted to specific social environment, but may be non-rational by standard criteria.

Chapter 5 complemented this discussion with three approaches from other fields - Arjun Appadurai's discussion of the capacity to aspire, Albert Bandura's social cognitive theory, and Pierre Bourdieu's sociology of habitus formation, distinction, and cultural capital. Rather than providing alternative explanations, they each added a particular perspective. Appadurai made clear that building future-oriented aspirations is a capacity that can - and needs to be - trained. He also emphasised the political dimension of individual aspirations. Bandura provided a useful framework for conceptualising how determinants from the personal and from the environmental level interact and jointly impact aspirations that people develop. Bourdieu underpinned that diverse purposes and rationales can motivate behaviour, notably those that are adapted to a person's milieu and condensed in her habitus.

Chapter 6 condensed all these inputs into an integrative framework. This framework provides a starting point for studying specific (open) questions in more detail without losing sight of the whole process of aspiration formation.

A key lesson from the first part is that for a profound understanding of aspirations, an interdisciplinary approach is helpful and in fact, I would argue, strongly required. Examining aspirations from many different perspectives, it becomes clear that many different reasons and rationales can motivate goals and aspirations people pursue. These reasons and rationales may sometimes be short-lived, overly cautious or ideologically biased, but this does not take away that aspirations are purposeful. Some of these motives may be lost on the economist who has remained faithful to rather narrow notions of rationality, and suspects that people's aspirations may be simply irrational. The inclusion of broader perspectives can teach better. Economists should therefore make an effort to join forces with other social scientists and put their analyses on a sound basis.

Part II addressed aspirations from an empirical angle. As chapter 7 illustrated, many scholars have attempted to put their finger on aspirations and their role for behaviour in empirical research. Overall, empirical results have been supportive of the ideas about aspirations that have been put forward in theory, but it has been difficult to find empirical designs allowing researchers to test the precise impact of aspirations on behaviour. In particular, it has remained unclear to what extent aspirations are simply a correlate of objective opportunities and to what extent they exert their own bit of influence on effort levels and outcomes.

I have addressed this issue in chapter 9 and used structural equation modelling to show that aspirations can but need not have an additional impact on behaviour. Aspirations can sometimes be rather well aligned with opportunities and constraints that socio-economic backgrounds and abilities hold for a specific person in a given environment. In other situations, belief systems, social rules, family experiences and the like can shape aspirations in such a way that students do not aspire to their theoretical potential, as was the case for the schooling aspirations of Indian girls. Theoretically, it seemed to be the case gender did not influence schooling outcomes of girls directly, but depending on a girl's socio-economic background, aspirations could be relatively cautious and thereby influence behaviour.

A second issue that had not been studied empirically before was the subject of chapter 8. I addressed the question of whether individual aspirations may be influenced by developments at the macroeconomic level, as the theoretical literature suggests. Although this analysis could not deliver definite results due to a lack of appropriate data, the preliminary evidence does not contradict the theoretical hypotheses that have been proposed in the field. For future research, it would be relevant to evaluate the idea of aspiration windows empirically. It is of high relevance to know how aspiration windows are composed. In particular, it would be interesting to study how the exposure to people from very different socio-economic backgrounds impacts aspirations. By the same token, future studies of how people in developing countries perceive their educational or professional futures could certainly produce interesting and worthwhile evidence helping to understand how stark poverty on the one hand and fast economic and social changes shape thinkable and unthinkable futures, aspirations, and behaviour.

A number of other empirical questions have not yet been answered. On the rather mechanistic level, it has turned out that we know little about the impacts of cognition on aspirations. In particular, it remains unclear what the role of cognitive dissonance reduction is for aspirations people build or not. However,

it would be of high importance to know whether people deny goals they deem unattainable. Likewise, researchers interested in heuristics may like to know which heuristics influence aspiration formation, and how. The latter point may benefit from cooperation with the cognitive sciences.

The last part of this thesis was dedicated to the discussion of policy implications. Understanding how aspirations relate to welfare goes to the core of the issue: if aspirations were not related to welfare, economists would not be interested in them. If the message of this thesis should be condensed into one phrase, it would probably be that aspirations are related to countless social, environmental and individual influences and as such highly complex, evolutionary, and diverse. How then should it be possible for researchers and policy-makers to assess whether they benefit people that hold them or not? On the other hand, I have argued that it is hard to ignore aspirations: the empirical evidence leaves little room for doubt that aspirations can contribute to the perpetuation of poverty and inequalities.

Addressing individual aspirations through policy therefore is a delicate issue. At the individual level, it is certainly hard - if not impossible - to assess whether a given aspiration level serves a person's interest best under consideration of their personal and environmental characteristics at a given moment. Consequently, it cannot be reasonable for policy-makers to adopt policies aiming at steering aspirations into specific directions. Exceptions may exist when a policy intervention is about very basic achievements, for instance the completion of primary or even secondary educational degrees. As a consequence, I have argued, policies addressing aspiration levels can only aim to enlarge the scope of options an individual can truly consider, but not force individuals into specific decisions. I have concluded that Sen's capability approach is very appropriate for discussing the policy implications of aspiration traps, and aspirations in turn are helpful for understanding the concept of capabilities.

This conclusion, in turn, implies a whole range of new questions. In particular, under which conditions can disadvantaged people aspire to not only make the best of their limited opportunity sets, but to expand it? What does it take to change those world views, mind sets, institutional equilibria and social rules that shaped pessimistic aspirations in the first place? In which moments does human agency claim its right of a non-projected future?

Human development, as stated in the beginning of this thesis, means to make a better life for everybody. A better life for everybody means that every person can make the most of their lives, and this involves that people can aspire to moving

the boundaries of their opportunity sets to pursue those aspirations that reflect their preferences, values, and talents. These can be very diverse and serve a broad spectrum of purposes. Even though on a case-to-case basis, some aspirations are difficult to assess, from a more general view-point it is clear what aspirations should do: they should allow people to make the most of their lives. To identify and create the conditions under which aspirations can serve this purpose is the task of society, policy, and academic research.

Aspirations people build have repercussions beyond the sphere of individual advancement. They are not only about achieving a higher income or providing a better education to one's children: aspirations people pursue influence thoughts and aspirations of other people, lead to unexpected dynamics, and can even reproduce or call into question institutional and social structures. Research on aspirations is therefore not only concerned with the optimisation of individual behaviour, but with the understanding of how economic and social progress occur.

For the academic side, this does not mean that new magic bullets, to use Deaton's phrasing, are required. It is not a purpose of this thesis to present the consideration of aspirations or behavioural insights more generally as a new solution to old problems that could replace earlier approaches to economic and human development. An aspirations perspective can enrich other approaches, but they cannot take away that poverty, exclusion and inequalities persist for many reasons. All of these reasons need to be addressed jointly.

Behavioural development economics should therefore not lend itself for propagating policies trying to optimise poor agents who are allegedly not behaving rationally. The main problem certainly lays elsewhere: in poverty, inequality, and the lack of material opportunities. What an aspirations perspective has to offer to advance the understanding of these problems is a comprehensive framework for analysing how these material and non-material constraints at the societal level interact with individual cognition and behaviour. Understanding these interactions, I would like to suggest, holds hold ready the understanding of how human agency can be strengthened under adverse circumstances.

It might be objected that this does not sound like a proper task for an economist. Of course it isn't. Economics is the science that seeks to understand how humans can make the most of their lives. Economists should therefore be willing to do what it takes to understand how persistent poverty and inequalities can be overcome. But they can hardly do the job alone. It therefore is the task of the economist to make alliances with other social and cognitive sciences to advance the

understanding of how this can be done. To give an answer to James Buchanan's question, this is what the economist should be doing.

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Appendix

Appendix A

Appendix to chapter 8

A.1 Additional specifications

Table A.1: Past GDP per capita levels

Model	(A)	(B)	(C)	(D)
Income group	.0931**	.1031**	.0849**	.0955**
Survey year	.0361**	.0367**	.0329**	
Educational level	.1313	.1111**	.1437**	.1588**
Gender	.5204*	.5380*	.5480*	.4592^{+}
Age	-.0130**	-.0132*	-.0126*	-.0046 (n.s.)
Gini coefficient	-.0129 (n.s.)	-.0141^{+}	-.0063 (n.s.)	.0349**
GDP per capita	-6.17e-$^{+}$	-2.36e- (n.s.)	4.06e- (n.s.)	2.26e- (n.s.)
GDP growth rate of current year	.0067 (n.s.)	-.0095 (n.s.)	-.0096 (n.s.)	-.0120 (n.s.)
GDP per capita 5 years ago	.0000135 (n.s.)			
GDP per capita 10 years ago		-1.23e- (n.s.)		
GDP per capita 15 years ago			-.0000146**	-5.08e- (n.s.)
Growth rate average 15 years				.0866*
Constant term	3.6566**	3.8142**	3.4334**	2.5952**
# obs.	930	828	816	716

Notes: **= significant at 0.1% level; *= significant at 1% level; $^{+}$= significant at 5% level; n.s. = not significant. Residuals modelled as independent by country and coefficients of income group are random at country level. All specifications include country dummies (not reported).

Table A.2: Interaction effects of income group and GDP per capita levels

Model	(E)	(F)	(G)	(H)	(I)
Income group	.1074**	.1147**	.1154**	.1092**	.0897**
Survey year	.0376**	.0354**	.0378**	.0383**	.0362**
Educational level	.0838**	.0728**	.0767**	.1109**	.1042**
Gender	.5519*	.5924**	.6025**	.5470*	.6755**
Age	-.0215**	-.0207**	-.0204**	-.0136**	-.0122*
Gini coefficient	-.0120 (n.s.)	-.0180^{+}	-.0159^{+}	-.0139^{+}	-.0149^{+}
GDP per capita	5.81e-*	3.01e- (n.s.)	-2.81e- n.s.)	-1.60e- (n.s.)	2.65e- (n.s.)
GDP growth rate of current year	.0045 (n.s.)	.0021 (n.s.)	.0047 (n.s.)	-.0094 (n.s.)	-.0102 (n.s.)
GDP per capita 5 years ago			.000017^{+}		
Income group * GDP per capita	-1.16e-**				
Income group * GDP per capita 5 years ago		-1.84e-**	-1.95e-**		
Income group * GDP per capita 10 years ago				-8.09e- (n.s.)	
Income group * GDP per capita 15 years ago					-1.61e-**
Constant term	4.2567**	4.4023**	4.2334**	3.7798**	3.9282**
# obs.	957	930	930	828	816

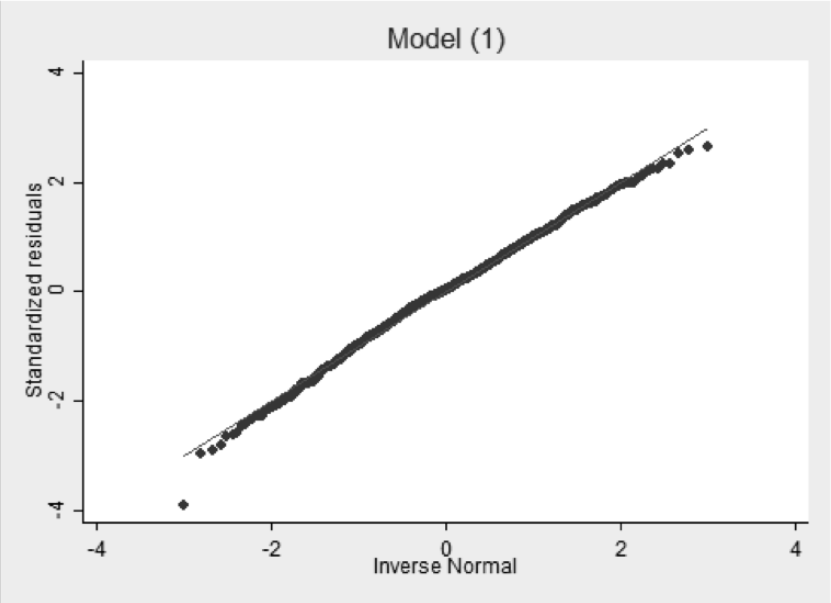
Notes: **= significant at 0.1% level; *= significant at 1% level; $^{+}$= significant at 5% level; n.s. = not significant. Residuals modelled as independent by country and coefficients of income group are random at country level. All specifications include country dummies (not reported).

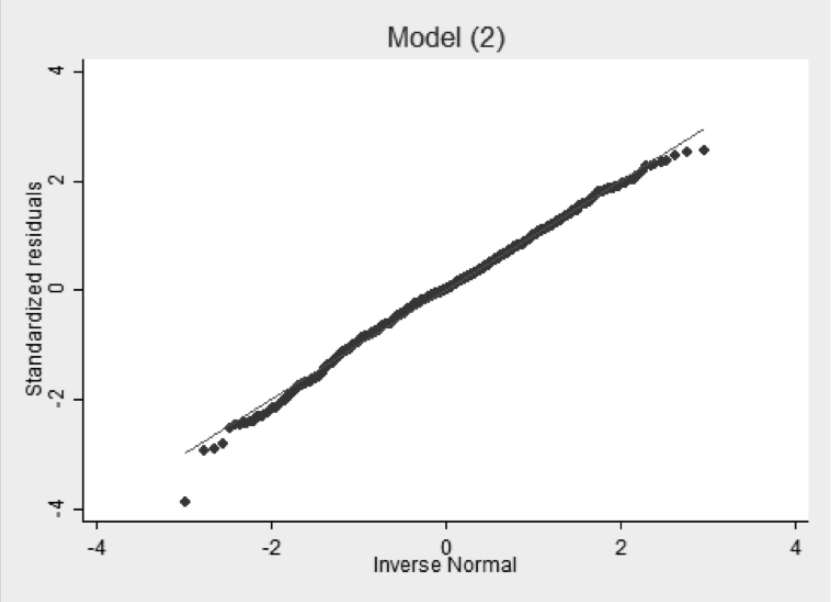
Table A.3: Interaction effects of income group and growth rates

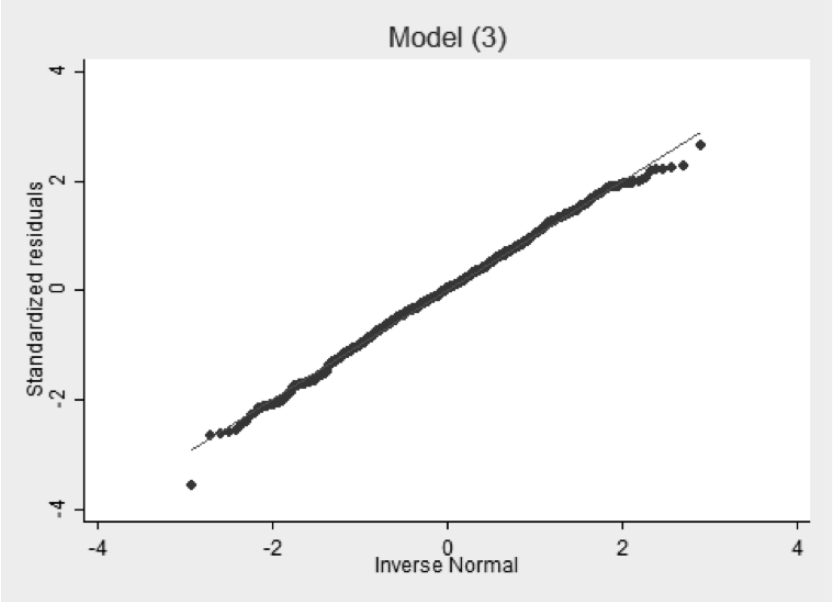
Model	(J)	(K)	(L)	(M)
Income group	.0815**	.1038**	.1112**	.0936**
Survey year	.0301**	.0185**	.0183**	.0287**
Educational level	.1063*	.0982**	.0821**	.1537**
Gender	.5064*	.4762*	.4841**	.3917^{+}
Age	-.0077 (n.s.)	-.0126*	-.0111*	-.0018 (n.s.)
Gini coefficient	.0241*	-.0035 (n.s.)	.0054 (n.s.)	.0257**
GDP per capita	6.50e- (n.s.	2.44e- (n.s.)	1.93e- (n.s.)	1.52e- (n.s.)
GDP growth rate of current year	-.0568**	.0078 (n.s.)	-.0023 (n.a.)	-.0252*
Growth average 15 years	.1484**			.1139**
Gini 10 years before survey	-.0052 (n.s.)	.0177**		
Gini % change to 10 years before			-.0062**	
Income group * GDP growth rate	.0049^{+}			
Income group * growth rate average 5 years		.0005 (n.s.)		
Income group * growth rate average 10 years			-.0007 (n.s.)	
Income group * growth rate average 15 years				.0018 (n.s.)
Constant term	4.5501**	3.4868**	6.1179**	2.9241**
# obs.	600	799	762	751

Notes: **= significant at 0.1% level; *= significant at 1% level; $^{+}$= significant at 5% level; n.s. = not significant. Residuals modelled as independent by country and coefficients of income group are random at country level. All specifications include country dummies (not reported).

A.2 Residual diagnostics



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Standardized residuals
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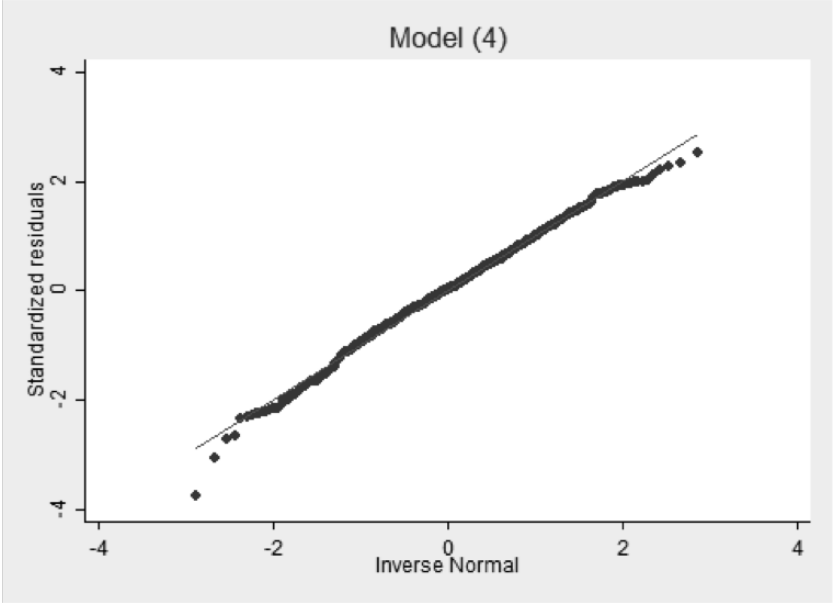
-2
0
2
4
Inverse Normal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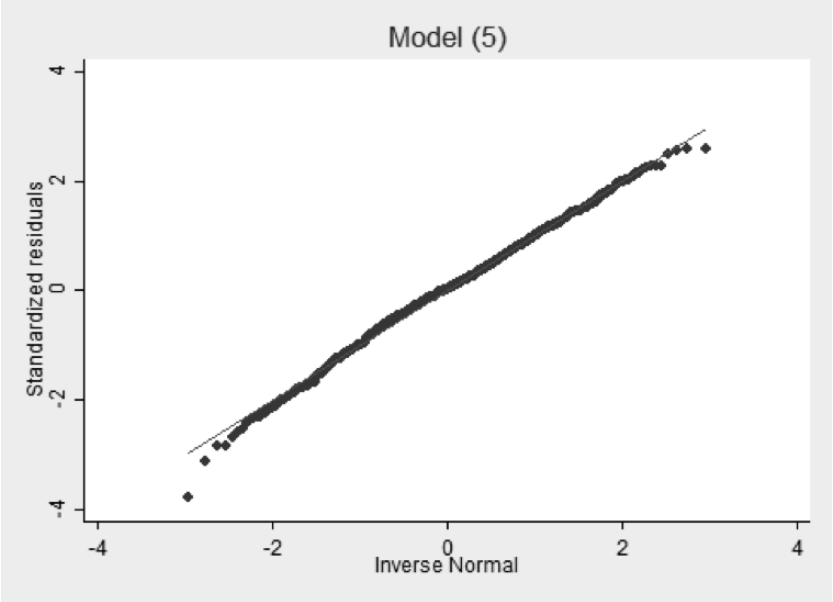
0
2
4
Inverse Normal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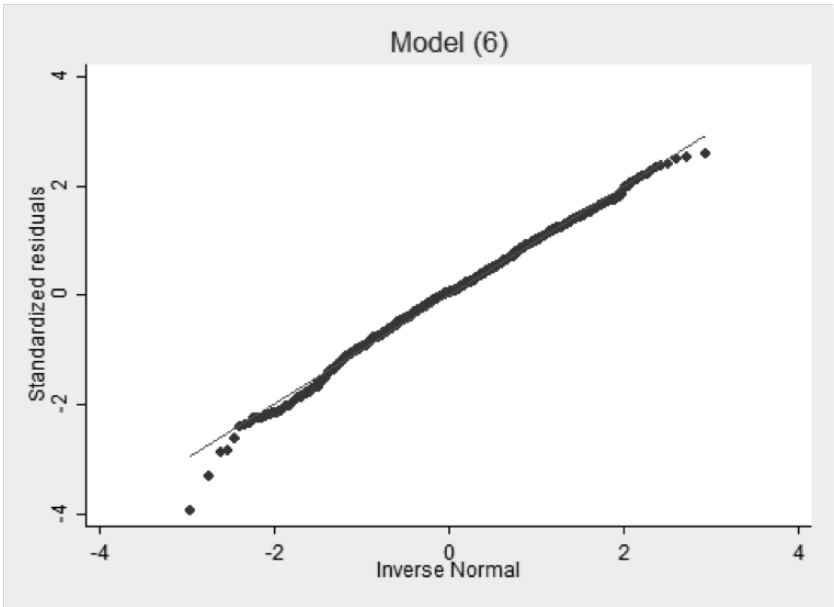
-2
0
2
4
Inverse Normal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Standardized residuals
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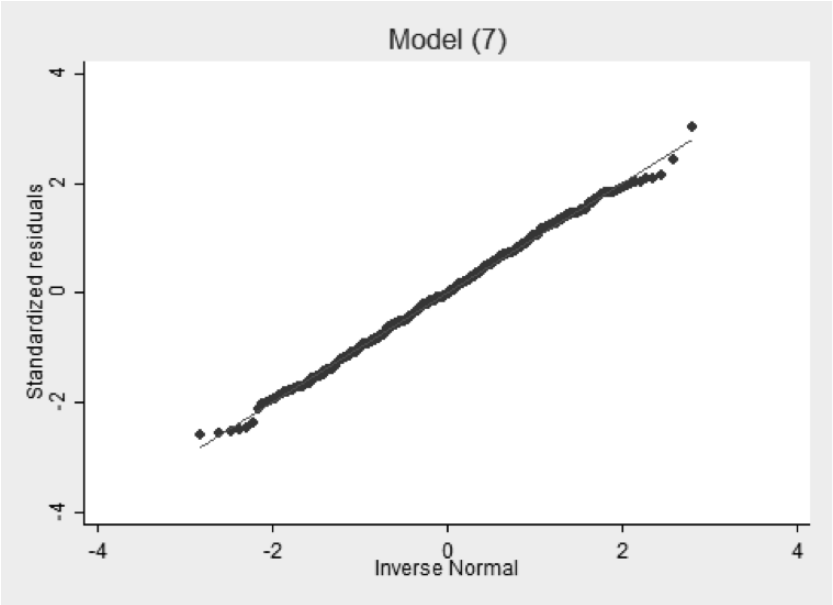
-2
0
2
4
Inverse Normal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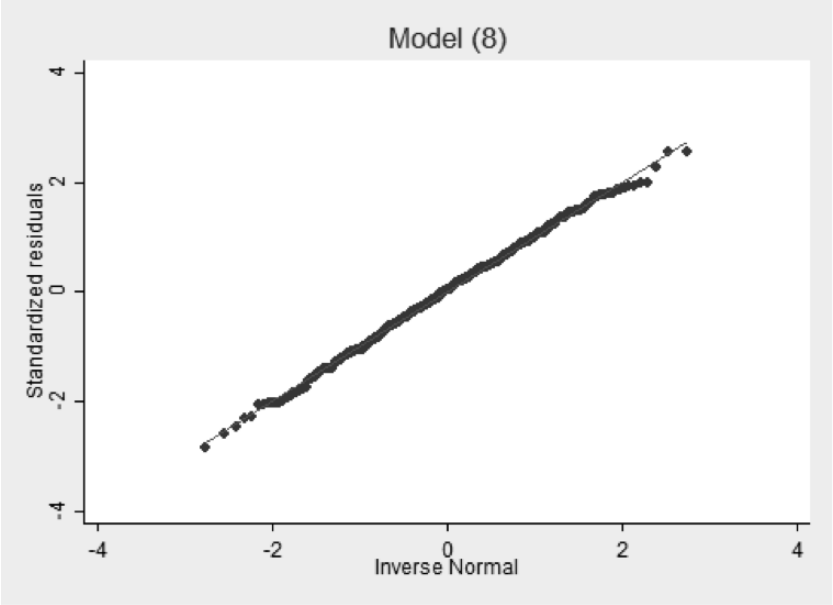
0
2
4
Inverse Normal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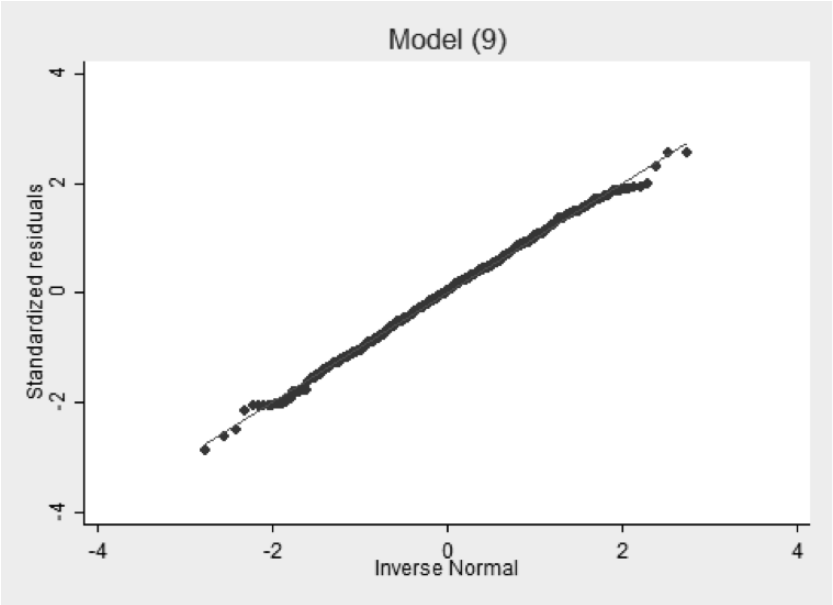
2
4
Inverse Normal


Model (9)
Standardized residuals
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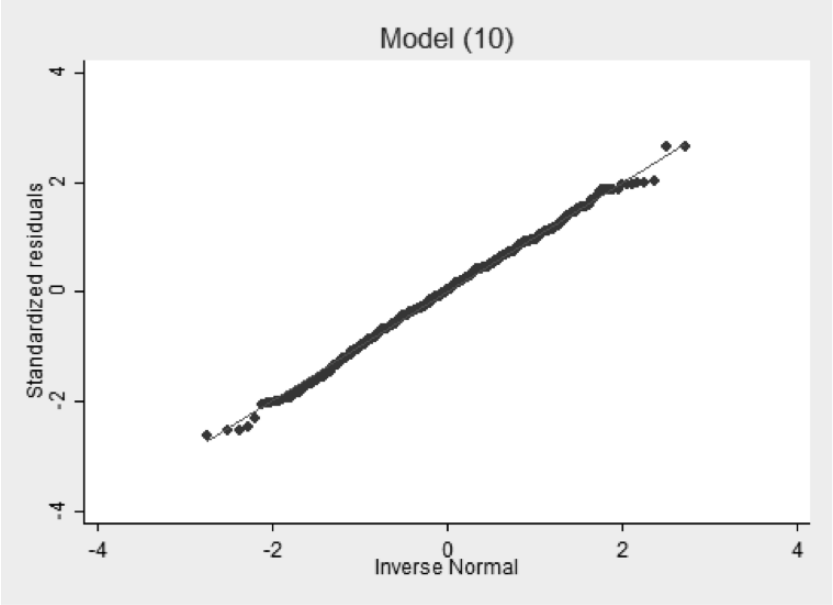
0
2
4
Inverse Normal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Standardized residuals
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4
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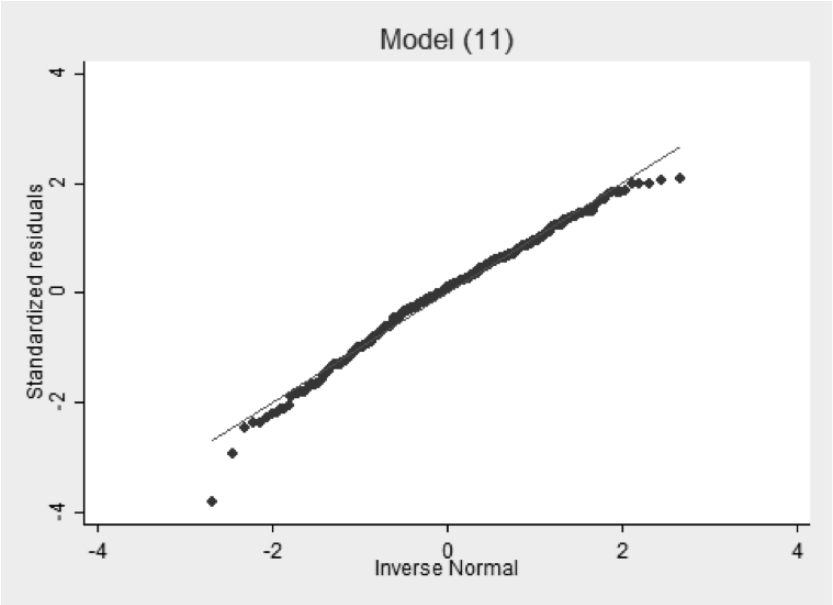
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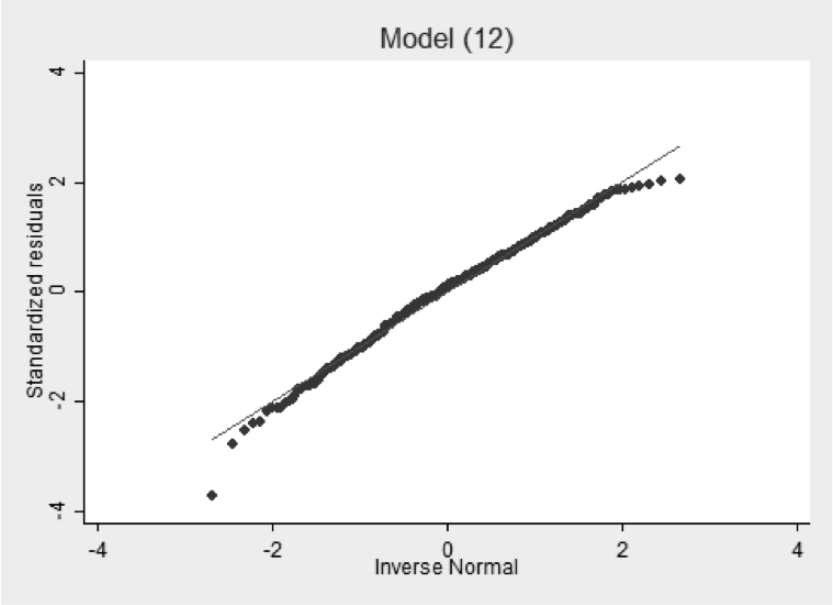
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2
4
Inverse Normal

Appendix B

Appendix to chapter 9

B.1 Additional descriptive statistics

Table B.1: Summary statistics of non-categorical variables

Variable	# obs.	Mean	Std. Dev.	Min	Max
WealthR2	976	0.4680265	0.1996982	0.0069444	0.9259259
z1ppvt	955	-0.0061047	1.005648	-3.40482	1.430612
z1math	963	-0.0053705	1.001754	-2.568648	0.9945946

Table B.2: T-test: Children's aspirations by optimistic and pessimistic beliefs about actual attainment, Round 2

Survey question: Do you actually expect...

Group	**# obs.**	**Mean of aspiration**	**Std. Error**	**Std. Dev.**
No	28	12.18	0.99	5.22
Yes	826	14.55	0.08	2.39
Combined	854	14.47	0.09	2.57
Difference		-2.37	0.49	

diff = Mean(no) - Mean(yes)		t=-4.8680
H_0: diff=0	Degrees of freedom = 852	
H_a: diff<0	H_a: diff!=0	H_a: diff>0
Pr(T<t)=0.00	Pr(|T| >t|)=0.00	Pr(T>t)=1.00

Table B.3: T-test: Children's aspirations by optimistic and pessimistic beliefs about actual attainment, Round 3

Survey question: Do you actually expect...

Group	**# obs.**	**Mean of aspiration**	**Std. Error**	**Std. Dev.**
No	155	13.27	0.24	2.98
Yes	753	14.40	0.09	2.35
Combined	908	14.20	0.08	2.50
Difference		-1.12	0.22	
diff = Mean(no) - Mean(yes)				t=-5.1632
H_0: diff=0			Degrees of freedom = 906	
H_a: diff<0		H_a: diff!=0		H_a: diff>0
Pr(T<t)=0.00		Pr(|T| >t|)=0.00		Pr(T>t)=1.00

Table B.4: T-test: Caregivers' aspirations by optimistic and pessimistic beliefs about actual attainment, Round 2

Survey question: Do you actually expect...

Group	**# obs.**	**Mean of aspiration**	**Std. Error**	**Std. Dev.**
No	79	8.47	0.53	4.71
Yes	826	13.88	0.10	2.89
Combined	905	13.40	0.11	3.45
Difference		-5.41	0.36	
diff = Mean(no) - Mean(yes)				t=-14.8396
H_0: diff=0			Degrees of freedom = 903	
H_a: diff<0		H_a: diff!=0		H_a: diff>0
Pr(T<t)=0.00		Pr(|T| > |t|)=0.00		Pr(T>t)=1.00

Table B.5: India: Last grade completed before drop-out (asked in Round 2)

Grade	# obs.	%
1	4	4.0
2	9	9.1
3	10	10.1
4	16	16.2
5	27	27.3
6	19	19.2
7	14	14.1
Total	99	

Table B.6: India: Age when stopped school (asked in Round 2)

Age	# obs.	%
1	2	2.0
6	2	2.0
7	5	5.1
8	7	7.1
9	13	13.1
10	23	23.2
11	32	32.3
12	15	15.2
Total	99	

Table B.7: India: Reading and writing levels, children Round 2

Writing level	**# obs.**	%	**Reading level**	**# obs.**	%
Can't write anything	51	5.7	Can't read anything	47	4.9
Yes, with difficulty or error	233	24.5	Reads letters	55	5.7
Yes, without difficulty or error	688	70.2	Reads words	77	8.0
			Reads sentence	783	81.4
Total	952		**Total**	962	

Table B.8: India: Correlations between aspirations and achievements, Rounds 2 and 3

	Δ Aspiration	Δ Grade	Grade R2	Grade R3	Aspiration R2	Aspiration R3
Δ Aspiration	1					
Δ Grade	0.1666*	1				
Grade R2	-0,0385	0.3303*	1			
Grade R3	0.1530*	0.9090*	0.6117*	1		
Aspiration R2	-0.5428*	0.2652*	0.2692*	0.3222*	1	
Aspiration R3	0.6686*	0.4983*	0.4510*	0.5663*	0.2617*	1

Pairwise correlations. *= significant at 1%. Δ = changes between Rounds 2 and 3.

B.2 Additional reporting of results

Table B.9: Parameter variances and covariances

Variances (only continuous variables)				
	Estimate	*Std.Err*	*Z-value*	*P(> |z|)*
z1ppvt	0.494	0.034	14.705	0.000
z2ppvt	0.306	0.025	12.346	0.000
WealthR3	0.013	0.001	8.815	0.000
AbilitiesR2	0.463	0.049	9.464	0.000
SocioR2	0.711	0.047	15.112	0.000
EconR2	0.473	0.073	6.508	0.000
AbilitiesR3	0.080	0.056	1.432	0.152
EconR3	0.203	0.067	3.042	0.002
Specified covariances				
z1ppvt - z1math	0.126	0.029	4.388	0.000
z1ppvt - Readinglevel	-0.106	0.033	-3.183	0.001
WritinglevelR2 - ReadinglevelR2	0.296	0.040	7.309	0.000
SocioR2 - EconR2	0.351	0.034	10.223	0.000
AbilitiesR2 - SocioR2	0.266	0.034	7.894	0.000
AbilitiesR2 - EconR2	0.149	0.023	6.444	0.000
EconR2 - EconR3	-0.192	0.062	-3.085	0.002
AbilitiesR2 - AbilitiesR3	-0.116	0.063	-1.847	0.065
GradeR2 - GradeR3	0.529	0.026	20.089	0.000
AspirationR2 - AspirationR3	0.479	0.044	10.800	0.000

Table B.10: Covariances and correlations of latent variables

Covariances					
	abltR2	sociR2	EconR2	abltR3	EconR3
AbilitiesR2	0.462				
SocioR2	0.267	0.692			
EconR2	0.145	0.339	0.301		
AbilitiesR3	0.509	0.353	0.192	0.606	
EconR3	0.145	0.331	0.279	0.192	0.271
Correlations					
	abltR2	sociR2	EconR2	abltR3	EconR3
AbilitiesR2	1.000				
SocioR2	0.472	1.000			
EconR2	0.389	0.743	1.000		
AbilitiesR3	0.961	0.545	0.448	1.000	
EconR3	0.410	0.764	0.979	0.473	1.000

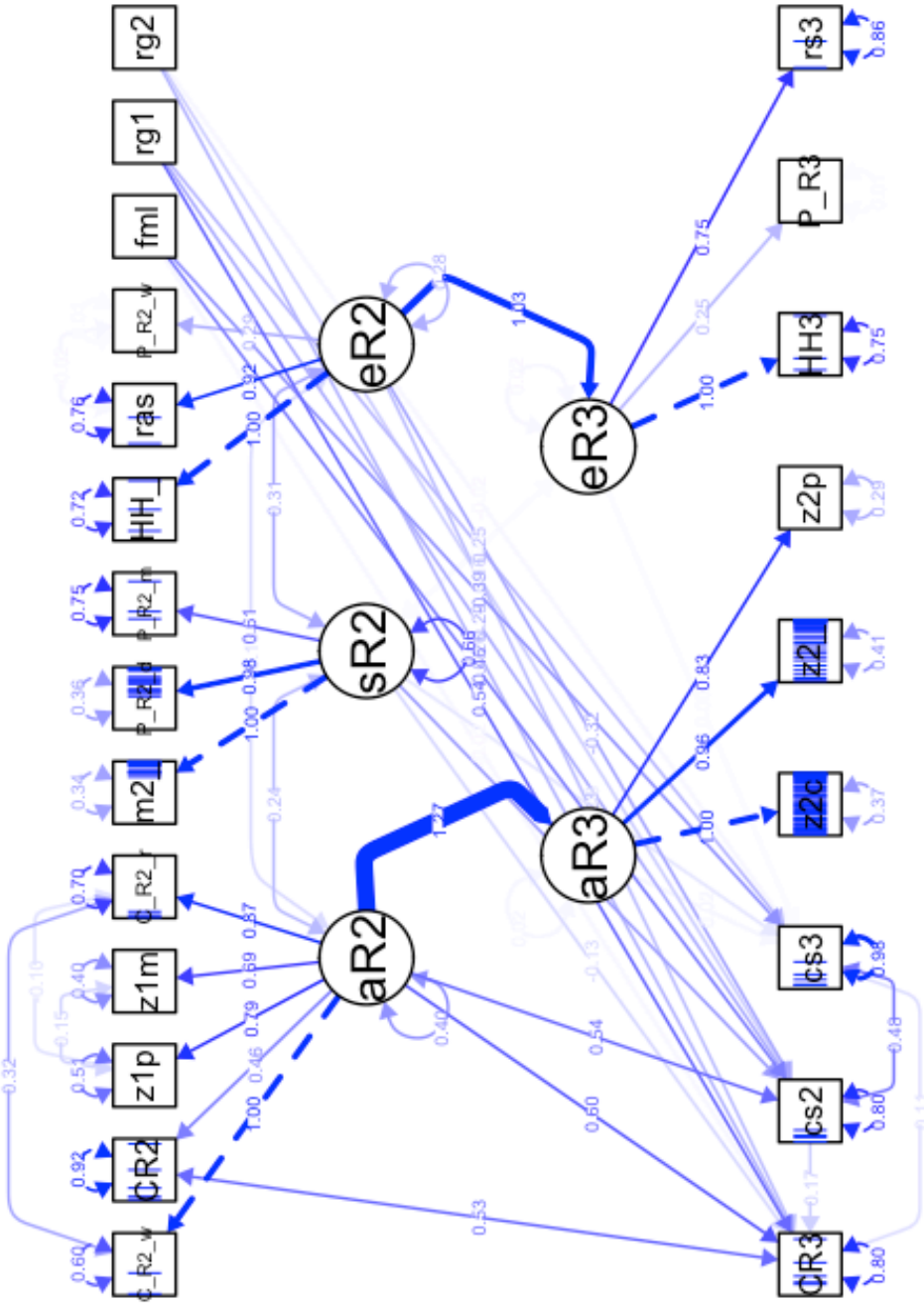

Figure B.1: Estimated path diagram

Table B.11: Fitted covariance matrix - Observed variables

WriR2	GrR2	z1ppvt	z1math	ReadR2	Md	Dd	Enic	HHcR2	ReR2	z2math	z2ppvt	HHcR3	ReR3	WeR3	GrR3	AspR2	AspR3	
WritingR2	1.000																	
GradeR2	0.186	1.000																
z1ppvt	0.349	0.140	0.757															
z1math	0.453	0.182	0.468	1.000														
ReadingR2	0.696	0.161	0.195	0.391	1.000													
Mumed	0.266	0.107	0.200	0.260	0.229	1.000												
Daded	0.253	0.102	0.191	0.247	0.218	0.677	1.000											
Ethnic	0.153	0.061	0.115	0.149	0.132	0.408	0.388	1.000										
HHcompR2	0.149	0.060	0.112	0.146	0.129	0.351	0.335	0.202	1.000									
RaiseR2	0.122	0.049	0.092	0.119	0.105	0.288	0.274	0.165	0.387	1.000								
z2math	0.514	0.207	0.388	0.503	0.444	0.361	0.344	0.207	0.203	0.166	1.000							
z2ppvt	0.445	0.179	0.335	0.435	0.384	0.313	0.298	0.180	0.175	0.144	0.538	0.771						
HHcompR3	0.147	0.059	0.111	0.144	0.127	0.347	0.331	0.199	0.276	0.226	0.200	0.173	1.000					
RaiseR3	0.109	0.044	0.082	0.107	0.094	0.257	0.245	0.148	0.204	0.167	0.148	0.128	0.212	1.000				
WealthR3	0.034	0.014	0.025	0.033	0.029	0.079	0.076	0.046	0.063	0.052	0.046	0.040	0.065	0.048	0.028			
GradeR3	0.324	0.660	0.244	0.316	0.279	0.204	0.195	0.117	0.164	0.134	0.362	0.314	0.129	0.096	0.030	1.019		
AspR2	0.272	0.109	0.205	0.266	0.234	0.258	0.246	0.148	0.062	0.051	0.312	0.270	0.109	0.081	0.025	0.306	1.000	
AspR3	0.017	0.064	0.013	0.017	0.015	-0.056	-0.054	-0.032	-0.035	-0.028	0.012	0.010	-0.040	-0.029	-0.009	0.167	0.492	1.009

Table B.12: Correlations - Observed variables

WriR2	GrR2	z1ppvt	z1math	ReadR2	Md	Dd	Enic	HHcR2	ReR2	z2math	z2ppvt	HHcR3	ReR3	WeR3	GrR3	AspR2	AspR3	
WritingR2	1.000																	
GradeR2	0.186	1.000																
z1ppvt	0.401	0.161	1.000															
z1math	0.453	0.182	0.538	1.000														
ReadingR2	0.696	0.161	0.224	0.391	1.000													
Mumed	0.266	0.107	0.230	0.260	0.229	1.000												
Daded	0.253	0.102	0.219	0.247	0.218	0.677	1.000											
Ethnic	0.153	0.061	0.132	0.149	0.132	0.408	0.388	1.000										
HHcompR2	0.149	0.060	0.129	0.146	0.129	0.351	0.335	0.202	1.000									
RaiseR2	0.122	0.049	0.106	0.119	0.105	0.288	0.274	0.165	0.387	1.000								
z2math	0.514	0.207	0.445	0.503	0.444	0.361	0.344	0.207	0.203	0.166	1.000							
z2ppvt	0.507	0.204	0.439	0.495	0.437	0.356	0.339	0.204	0.200	0.163	0.613	1.000						
HHcompR3	0.147	0.059	0.128	0.144	0.127	0.347	0.331	0.199	0.276	0.226	0.200	0.197	1.000					
RaiseR3	0.109	0.044	0.095	0.107	0.094	0.257	0.245	0.148	0.204	0.167	0.148	0.146	0.212	1.000				
WealthR3	0.202	0.081	0.175	0.197	0.174	0.476	0.453	0.273	0.378	0.309	0.274	0.270	0.392	0.290	1.000			
GradeR3	0.321	0.653	0.278	0.313	0.277	0.202	0.193	0.116	0.162	0.133	0.359	0.354	0.128	0.095	0.175	1.000		
AspR2	0.272	0.109	0.235	0.266	0.234	0.258	0.246	0.148	0.062	0.051	0.312	0.308	0.109	0.081	0.149	0.303	1.000	
AspR3	0.017	0.064	0.015	0.017	0.015	-0.056	-0.053	-0.032	-0.035	-0.028	0.012	0.012	-0.039	-0.029	-0.054	0.165	0.490	1.000

Table B.13: Thresholds of categorical variables

Variable	Estimate	Std.Err	Z-value	$P(>\|z\|)$
WritinglevelR2 t1	-1.751	0.143	-12.285	0.000
WritinglevelR2 t2	-0.345	0.100	-3.439	0.001
GradeR2 t1	-1.698	0.150	-11.285	0.000
GradeR2 t2	-1.325	0.121	-10.950	0.000
GradeR2 t3	-0.753	0.100	-7.497	0.000
GradeR2 t4	0.020	0.095	0.215	0.830
GradeR2 t5	1.368	0.110	12.492	0.000
z1math t1	-2.224	0.159	-14.005	0.000
z1math t2	-1.804	0.117	-15.408	0.000
z1math t3	-1.509	0.102	-14.755	0.000
z1math t4	-1.094	0.090	-12.098	0.000
z1math t5	-0.752	0.087	-8.657	0.000
z1math t6	-0.327	0.084	-3.891	0.000
z1math t7	0.161	0.084	1.923	0.054
z1math t8	0.781	0.086	9.060	0.000
ReadinglevelR2 t1	-1.963	0.148	-13.266	0.000
ReadinglevelR2 t2	-1.569	0.139	-11.255	0.000
ReadinglevelR2 t3	-1.156	0.134	-8.603	0.000
MumedR2 t1	0.658	0.097	6.776	0.000
MumedR2 t2	1.330	0.098	13.526	0.000
MumedR2 t3	1.407	0.099	14.178	0.000
MumedR2 t4	1.631	0.109	14.955	0.000
MumedR2 t5	1.707	0.111	15.330	0.000
MumedR2 t6	1.905	0.114	16.707	0.000
MumedR2 t7	2.422	0.142	17.111	0.000
MumedR2 t8	2.446	0.144	17.031	0.000
MumedR2 t9	2.696	0.158	17.011	0.000
MumedR2 t10	0.844	0.096	8.821	0.000
MumedR2 t11	0.884	0.096	9.216	0.000
MumedR2 t12	0.917	0.096	9.573	0.000
MumedR2 t13	1.024	0.098	10.456	0.000
DadedR2 t1	0.041	0.089	0.458	0.647
DadedR2 t2	0.636	0.090	7.023	0.000

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Variable	Estimate	Std.Err	Z-value	$P(>\|z\|)$
DadedR2 t3	0.782	0.091	8.576	0.000
DadedR2 t4	0.824	0.091	9.041	0.000
DadedR2 t5	0.957	0.091	10.472	0.000
DadedR2 t6	1.528	0.099	15.472	0.000
DadedR2 t7	1.578	0.100	15.735	0.000
DadedR2 t8	1.833	0.117	15.703	0.000
DadedR2 t9	1.927	0.121	15.873	0.000
DadedR2 t10	0.150	0.089	1.681	0.093
DadedR2 t11	0.227	0.089	2.543	0.011
DadedR2 t12	0.302	0.090	3.357	0.001
DadedR2 t13	0.331	0.090	3.682	0.000
DadedR2 t14	0.573	0.091	6.329	0.000
EthnicR2 t1	-0.664	0.088	-7.573	0.000
EthnicR2 t2	-0.342	0.088	-3.873	0.000
EthnicR2 t3	1.048	0.094	11.129	0.000
HHcomparedR2 t1	-1.022	0.094	-10.855	0.000
HHcomparedR2 t2	-0.017	0.088	-0.196	0.845
HHcomparedR2 t3	1.661	0.114	14.569	0.000
RaiseR2 t1	-1.650	0.137	-12.071	0.000
RaiseR2 t2	-0.114	0.102	-1.122	0.262
z2math t1	-1.772	0.107	-16.511	0.000
z2math t2	0.499	0.082	6.055	0.000
z2math t3	1.871	0.097	19.209	0.000
z2math t4	2.065	0.109	18.947	0.000
z2math t5	2.333	0.131	17.811	0.000
z2math t6	2.553	0.158	16.170	0.000
z2math t7	2.685	0.182	14.760	0.000
z2math t8	2.874	0.208	13.786	0.000
z2math t9	3.012	0.233	12.918	0.000
z2math t10	-1.385	0.096	-14.383	0.000
z2math t11	-1.068	0.087	-12.245	0.000
z2math t12	-0.815	0.084	-9.697	0.000
z2math t13	-0.582	0.083	-7.040	0.000
z2math t14	-0.354	0.082	-4.335	0.000
z2math t15	-0.206	0.081	-2.532	0.011

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Variable	Estimate	Std.Err	Z-value	$P(>\|z\|)$
z2math t16	-0.080	0.081	-0.985	0.324
z2math t17	0.059	0.082	0.725	0.469
z2math t18	0.228	0.082	2.793	0.005
z2math t19	0.350	0.082	4.250	0.000
z2math t20	0.610	0.083	7.369	0.000
z2math t21	0.813	0.085	9.582	0.000
z2math t22	0.956	0.085	11.309	0.000
z2math t23	1.103	0.085	12.941	0.000
z2math t24	1.222	0.087	14.120	0.000
z2math t25	1.335	0.089	15.057	0.000
z2math t26	1.498	0.090	16.660	0.000
z2math t27	1.623	0.092	17.673	0.000
z2math t28	1.814	0.095	19.059	0.000
HHcomparedR3 t1	-1.306	0.109	-11.988	0.000
HHcomparedR3 t2	-0.585	0.095	-6.131	0.000
HHcomparedR3 t3	1.720	0.122	14.133	0.000
RaiseR3 t1	-2.003	0.155	-12.906	0.000
RaiseR3 t2	-0.152	0.099	-1.539	0.124
GradeR3 t1	-0.837	0.103	-8.153	0.000
GradeR3 t2	-0.726	0.100	-7.287	0.000
GradeR3 t3	-0.449	0.095	-4.752	0.000
GradeR3 t4	0.105	0.093	1.126	0.260
GradeR3 t5	1.305	0.105	12.375	0.000
AspirationR2 t1	-2.469	0.162	-15.288	0.000
AspirationR2 t2	-1.419	0.111	-12.818	0.000
AspirationR2 t3	-1.232	0.109	-11.340	0.000
AspirationR2 t4	-0.869	0.106	-8.160	0.000
AspirationR3 t1	-1.504	0.109	-13.845	0.000
AspirationR3 t2	-1.423	0.102	-13.955	0.000
AspirationR3 t3	-1.007	0.101	-10.018	0.000
AspirationR3 t4	-0.727	0.097	-7.496	0.000
AspirationR3 t5	-0.146	0.094	-1.551	0.121

Table B.14: Residuals

	WriR2	GrR2	z1ppvt	z1math	ReadR2	Md	Dd	Enic	HHcR2	ReR2	z2math	z2ppvt	HHcR3	ReR3	WeR3	GrR3	AspR2	AspR3
WritingR2	0.000																	
GradeR2	-0.035	0.000																
z1ppvt	-0.023	0.042	0.000															
z1math	0.012	-0.049	0.000	0.000														
ReadingR2	0.000	0.034	0.000	0.054	0.000													
Mumed	-0.005	0.030	0.046	0.020	0.073	0.000												
Daded	0.029	-0.055	0.017	-0.006	0.048	0.019	0.000											
Ethnic	-0.048	-0.003	-0.035	-0.019	0.000	-0.034	-0.057	0.000										
HHcompR2	-0.057	0.009	0.005	-0.001	-0.024	-0.016	-0.010	0.095	0.000									
RaiseR2	-0.022	0.043	0.113	0.059	-0.109	-0.057	0.035	-0.035	0.009	0.000								
z2math	0.034	-0.077	-0.043	0.050	-0.054	-0.017	-0.050	0.044	0.023	-0.027	0.000							
z2ppvt	-0.033	0.041	0.063	-0.039	-0.028	0.018	-0.021	0.014	-0.015	-0.035	0.000	0.000						
HHcompR3	0.044	0.059	-0.062	-0.119	-0.037	-0.057	-0.008	0.018	0.050	0.074	0.029	0.004	0.000					
RaiseR3	0.014	0.045	0.052	0.010	-0.078	-0.052	-0.004	0.025	-0.002	-0.005	0.051	0.035	-0.119	0.000				
WealthR3	0.002	0.010	-0.008	-0.008	-0.001	-0.004	0.003	0.018	-0.007	-0.005	0.000	0.005	0.005	0.002	0.000			
GradeR3	0.026	0.000	-0.013	-0.066	0.038	0.040	-0.005	-0.096	-0.011	-0.009	0.016	0.013	0.071	0.026	-0.006	-0.019		
AspR2	0.021	0.063	-0.036	-0.033	0.064	0.010	0.047	-0.047	0.003	0.046	0.002	0.000	-0.116	0.071	-0.004	0.034	0.000	
AspR3	0.113	0.011	-0.070	-0.082	0.159	-0.029	0.040	-0.045	0.022	0.027	0.020	-0.010	0.013	0.004	-0.004	0.021	0.004	-0.009

B.3 SEM: R Code

```
library(lavaan)
$textLavaan\_India2 <- '$
# measurement model/ latent variable definitions
AbilitiesR2 =~ WritinglevelR2 + GradeR2 + z1ppvt + z1math + ReadinglevelR2
SocioR2 =~ MumedR2 + DadedR2+ Ethnic
EconR2 =~ HHcomparedR2 + raise + WealthR2
AbilitiesR3 =~ z2cloze + z2math + z2ppvt
EconR3 =~ HHcomparedR3 + WealthR3 + Raise3
# REGRESSIONS
# direct effect on GradeR3
GradeR3 ~ a*AbilitiesR2 + b*SocioR2 + c*EconR2 +d*female+ e*reg1 + f*reg2
# mediator
AspirationR2 ~ A*AbilitiesR2 + B* SocioR2 + C*EconR2 +D*female+ E*reg1 +
F*reg2
GradeR3 ~ M*AspirationR2
# indirect effect through AspirationR2
indirect := A*B*C*D*E*F*M
# total effect
total := (a*b*c*d*e*f) + (A*B*C*D*E*F*M)
# direct effect on AspirationR3
AspirationR3 ~ GradeR3 + AbilitiesR3 + EconR3 + SocioR2 + female + reg1 + reg2
AbilitiesR3 ~ AbilitiesR2
EconR3 ~ EconR2
# variances and covariances
z1ppvt ~~ z1math + ReadinglevelR2
WritinglevelR2 ~~ ReadinglevelR2
WealthR2 ~~ raise
EconR2 ~~ SocioR2
AbilitiesR2 ~~ SocioR2 + EconR2
EconR2 ~~ EconR3
SocioR2 ~~ EconR3
AbilitiesR3 ~~ AbilitiesR2
GradeR2 ~~ GradeR3
AspirationR3 ~~ AspirationR2
'
fit <- sem(Lavaan_India2, data=YLmvin2b, ordered=c("WritinglevelR2", "
ReadinglevelR2", "GradeR3", "GradeR2", "MumedR2", "DadedR2", "AspirationR2",
"HHcomparedR2", "raise", "Ethnic", "AspirationR3", "Raise3", "HHcomparedR3",
"z2math", "z2cloze"))
```

Replication: results from Vietnam

Table B.15: Vietnam: SEM Model 2 - Estimation results (1)

Measurement model

Latent variable	*Observed variable*	*Estimate*	*Std.Err.*	*z-value*	*P(>|z|)*
AbilitiesR2	ppvt1	1.000			
	z1mathrec	0.933	0.090	10.380	0.000
	WritinglevelR2	0.753	0.129	5.841	0.000
	GradeR2	0.884	0.092	9.612	0.000
SocioR2	Mumed2	1.000			
	DadedR2	0.969	0.050	19.383	0.000
EconR2	Raise2	1.000			
	HHcomparedR2	0.974	0.094	10.392	0.000
AbilitiesR3	z2math	1.000			
	z2ppvt	0.862	0.065	13.322	0.000
	z2close	0.887	0.067	13.299	0.000
EconR3	Raise3	1.000			
	HHcurr3	0.887	0.067	13.299	0.000

Table B.16: Vietnam: SEM Model 2 - Estimation results (2)

Structural model

Dep. variable	*Regressor*	*Estimate*	*Std.Err.*	*z-value*	*P(>|z|)*
GradeR3	AbilitiesR2 (a)	0.808	0.132	6.097	0.000
(direct effect)	SocioR2 (b)	0.130	0.091	1.427	0.153
	EconR2 (c)	0.189	0.083	2.272	0.023
	Female (d)	0.276	0.089	3.108	0.002
	Red River Delta (e)	0.590	0.141	4.181	0.000
	Central Coastal (f)	0.105	0.133	0.793	0.428
	Mekong River Delta (g)	0.316	0.152	2.087	0.037
	UrbanR2 (h)	0.603	0.141	4.284	0.000
AspirationR2	AbilitiesR2 (A)	0.635	0.142	4.479	0.000
(mediation)	SocioR2 (B)	0.196	0.110	1.779	0.075
	EconR2 (C)	0.061	0.110	0.558	0.577
	female (D)	0.180	0.100	1.802	0.072
	Red River Delta (E)	0.690	0.153	4.503	0.000
	Central Coastal (F)	0.359	0.150	2.385	0.017
	Mekong River Delta (G)	0.560	0.159	3.525	0.000
	UrbanR2 (H)	0.325	0.157	2.074	0.038
GradeR3rec	AspirationR2 (M)	0.100	0.052	1.925	0.054
AspirationR3	GradeR3	0.234	0.049	4.769	0.000
	AbilitiesR3	0.217	0.091	2.375	0.018
	EconR3	0.341	0.143	2.378	0.017
	SocioR2	0.231	0.106	2.190	0.029
	Female	0.144	0.088	1.641	0.101
	Red River Delta (E)	0.261	0.135	1.930	0.054
	Central Coastal (F)	0.093	0.131	0.714	0.476
	Mekong River Delta (G)	0.443	0.135	3.285	0.001
	UrbanR2 (H)	0.504	0.145	3.470	0.001
AbilitiesR3	AbilitiesR2	1.159	0.103	11.268	0.000
EconR3	EconR2	0.902	0.131	6.890	0.000

Estimator: Robust DWLS. # obs.: 667. Degrees of freedom: 153. **Test statistics:** P-value (Chi-square): 0.000. Tli: 0.882. Nfi: 0.893. RMSEA: 0.082. 1=urban, 0=rural.

Eidesstattliche Erklärung

Ich erkläre hiermit an Eides Statt, dass ich die vorliegende Arbeit selbstständig und ohne Hilfsmittel angefertigt habe; die aus fremden Quellen (einschließlich elektronischer Quellen, dem Internet und mündlicher Kommunikation) direkt oder inrekt übernommenen Gedanken sind ausnahmslos unter genauer Quellenangabe als solche kenntlich gemacht. Insbesondere habe ich nicht die Hilfe sogenannter Promotionsberaterinnen/ Promotionsberater in Anspruch genommen. Dritte haben von mir weder unmittelbar noch mittelbar Geld oder geldwerte Leistungen für Arbeiten erhalten, die im Zusammenhang mit dem Inhalt der vorgelegten Dissertation stehen. Die Arbeit wurde bisher weder im Inland noch im Ausland in gleicher oder ähnlicher Form einer anderen Prüfungsbehörde vorgelegt.

Flensburg, 22.06.2016 .....

Svenja Flechtner