A New Political Divide?

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Chapter 5

How student's beliefs and values vary across and within disciplines

This chapter is based on Laméris, et al. (2018d), titled 'What have we done?! The impact of choosing and studying different academic disciplines on beliefs and values'

5.1 INTRODUCTION

Most teachers and professors likely consider, or hope, that they foster the way their students understand how the world works by providing them with new information. Accordingly, most disciplines officially take a positive, as opposed to normative, stand. This is, in particular, the case for many subjects taught in business schools. Economics is for example defined by Robbins (1932, p. 15) as 'the science which studies human behaviour as a relationship between ends and scarce means which have alternative uses'. Likewise, organisational behaviour can be defined as 'the study of human behaviour in organisational settings, the interface between human behaviour and the organisation, and the organisation itself', and organisational psychology as 'the science of human behaviour relating to work'. Those definitions emphasise the positive nature of these subjects that are meant to teach 'what is' and not 'what ought to be', as John Neville Keynes (1891) puts it. As such, they aspire to be value-free or 'wertfrei' following Max Weber's (1922) definition. In line with this view, higher education focuses on knowledge transfer as opposed to the more holistic concept of education proposed by Humboldt, as Hummel, et al. (2018) point out.

Yet, many subjects taught in business schools are value-laden, and either explicitly or implicitly contain value judgments. The reference to ethical value is, by definition, explicit in business ethics and corporate social responsibility, in which teaching has expanded worldwide (Matten and Moon (2004); Neubaum, et al. (2009); van Liederkerke & Demuijnck (2011)). Other disciplines taught in business schools are also ultimately prescriptive, because they are meant to train decision-makers, thereby blurring the lines between science and art. For instance, Hunt (1976) argues that marketing is the study and management of transactions that include some type of value exchange, which emphasises the practical implications of the subject for management. Even subjects that are defined as purely positive have normative implications. Economics has, for instance, been argued to be embedded in the values of homo economicus, therefore emphasising instrumentally rational behaviour and the pursuit of self-interest as a norm of behaviour (Ferraro, et al. (2005); Racko (2017)).

Determining whether business studies affect either beliefs, values, both, or neither is critical, considering the fact that business students often pursue careers in leadership functions. They will make decisions affecting the organizations for which they work, their collaborators, and society at large. Business schools were precisely invented to

provide students with the tools, the know-how, and the mind-sets to make such decisions. This matter has gained additional importance following scandals where business leaders were accused of unethical behaviour. The teaching of business schools was subsequently blamed for those leaders' unethical conduct (Ghoshal (2005); Haski-Leventhal, et al. (2017); Hummel, et al. (2018)).

In this chapter, we address these concerns by examining how business studies affect the values and beliefs of students using a survey of students registered in a leading Belgian business school. We asked a series of questions about these students' beliefs and values both in their first week and at the end of their first year of study. Doing so allows us to observe the effect of studying business for one year. We refer to this effect as socialisation. Specifically, we refer to socialisation as the outcome of studying a discipline and passing exams. It, therefore, captures the changes that occur at the level of the individual student and at the level of the group of students who eventually graduate. However, if socialisation occurs, it operates on students who have self-selected in a discipline. To sift the effect of socialisation from the effect of self-selection, we administered the same survey to students of four other fields of study in the same university: economics, psychology, law, and social sciences. We can, thus, compare business students to other students at the beginning and at the end of their first year, and determine how different they are from students in other fields. In addition, we study variation over time in beliefs and values of both business students and students of other disciplines, so as to compare the socialisation effect of studying business to that of other disciplines.

A key characteristic of the business school that we study is that it is a department of a public university, like the departments to which it is compared. It is, therefore, organised in the same way, ensuring greater comparability. Most of all, the fees paid by the students of the business school are exactly the same as those paid by other students. The effects that we observe on beliefs and values can, thus, not be driven by differences in these tuition fees. On the contrary, the self-selection effect is driven by the interest of students for a certain discipline and the socialisation effect through the influence of studying that discipline. A second characteristic that makes the Belgian business school that we study an interesting case is that it not only offers a bachelor in business, but also an independent bachelor in economics. The two bachelors differ not only in their names, but more importantly, also in the share of economics and statistics in their curricula. These courses represent a larger share in the curriculum of

the bachelor in economics. By comparing the two bachelors we can gauge the role of the exposure to economics, which has been viewed as the main culprit for the assumed deleterious effects of business schools (e.g. Ghoshal (2005); Racko (2017)).

Before we carry on, we must define more precisely what we mean by beliefs and values in the rest of the chapter. We consider beliefs to be 'any simple proposition, conscious or unconscious, inferred from what a person says or does ….' (Rokeach (1968), p. 113). We define values as a special type of belief about what ought to be or how someone ought to behave. Values, thus, have a normative character (Rokeach (1968); Rokeach (1973); Schwartz (1992)). Following these definitions, all values are beliefs but not all beliefs are values. For conciseness's sake, we refer to the beliefs that are not values simply as beliefs. We consider, what Rokeach (1968) calls descriptive beliefs, i.e. the kind that portrays its object as correct or incorrect, or true of false (e.g. 'I believe that the earth is a sphere' or 'I believe that the earth is flat'). These are typically the type of beliefs that should be affected by socialisation. Both values and beliefs can be deduced from an individual's claims (Rokeach (1968)). Hence, the opinions of the students in our sample are expressions of their underlying beliefs and values. To the best of our knowledge, we are the first to look at both beliefs and values, while at the same time distinguishing between business students and economics students, as well as students from other disciplines.

Previewing our results, we find significant differences between business students and students from other disciplines at the start of their academic career in both their beliefs and values. There is, thus, self-selection of students into the business school. We also find that, after a year of socialisation, some of these differences are persistent, while others are not. In other words, for some beliefs and values differences between business students and other students endure. This finding suggests that it is not just higher education that influences beliefs and values, but that disciplines matter (see also Hastie (2007) for a review). When considering changes over time, we find that business school students over the course of the first year change more of their beliefs than students from other disciplines. Additionally, even though it is claimed that values are relatively stable and durable over time (Rokeach (1973); Schwarz (1992)), we also find changes in values for students of business that take only one year to manifest.

The rest of the chapter is organised as follows. The next section surveys the existing literature to provide the framework in which this study is embedded. Section 5.3 describes the survey and our empirical strategy and section 5.4 reports our findings. Section 5.5 concludes.

5.2 THE DIFFERENCE OF BUSINESS STUDIES

In this section, we start by discussing in what respect business studies are different from other studies. We then review how they may make business students different, and why students that choose business studies may be different from other students.

5.2.1 How different are business studies?

The first step of a study into the effect of business studies on the values and beliefs of students is to determine what beliefs and values may be affected. In other words, we should determine what is propagated by the teaching of business studies. The notion that business studies affect the beliefs and values of students gained momentum following Ghoshal's (2005) influential paper blaming corporate scandals on the economic ideas that business school academics propagated in the 30 years leading up to them. The paper contributed to a strand of literature emphasising the ethical implications of economic ideas in the teaching of business schools.

Huehn (2008) argues that economics rests on hypotheses leading to an unethical ideology that is based on the pretence of knowledge and fosters a 'gloomy vision' of human behaviour. In his view, economics describes self-interested and brutish individuals, and therefore, legitimises selfishness. Ghoshal (2005) traces the values of the teaching of economics back to the influence of Milton Friedman on management-related disciplines. He, in particular, emphasises Milton Friedman's statement that the only responsibility of managers is to make as much money for their stockholders as possible. Ghoshal (2005) more generally claims that the reliance of economics on agency theory, transaction cost theory, and game theory has reduced business students' sense of moral responsibility, resulting in ruthless managers. Huehn (2008, p. 830) goes a step further by stating that such theories 'are inherently bad (…) – because they destroy the basis for a civilised society'.

Other contributions are more specific with regards to the values promoted by economics. Wang, et al. (2011) argue that economics blurs the distinction between self-interest and greed, resulting in more positive attitudes toward the latter. Fotaki and Prasad (2015) claim that economic concepts promulgate values of individualism and profit maximisation, which are thereupon treated as unavoidable human traits. They even claim that business schools are the spearheads of new liberalism and the rise in inequality.

Racko (2017) provides a detailed discussion of the specific values that the teaching of economics may instil in the minds of business students. He argues that economists' assumption of utility maximisation legitimises hedonism and delegitimises universalism, understood as a concern for social well-being and the preservation of nature. Moreover, the emphasis on efficiency legitimises the seeking of power both as a means and as an end. Finally, Racko (2017) argues that because economics describes the homo economicus as being motivated by external rewards, it de-emphasises intrinsic motivation, thereby depreciating self-determination as a value.

A final argument, put forward by Rubinstein (2006) and Fotaki and Prasad (2015), rests on the notion that the reliance of economics on mathematics tends to treat human problems as mathematical ones. As a result, profit maximisation becomes a legitimate and sufficient objective, at the expense of other objectives. Overall, these claims echo George Stigler's (1959) contention that economics should make students more conservative.[62]

In line with these contentions, differences have been observed between the beliefs and values of business students and those of other students.[63] For instance, McCabe, et al. (1994) show that management students attach more importance to material success and less to intrinsic values than law students. Likewise, Wang, et al. (2011) report that business school students taking more economics courses display more

62. The works referenced here (e.g. Ghoshal (2005); Huehn (2008); Racko (2017)) do, of course, not show that economists, especially the classic writers, intended economics (as a science) to prescribe certain 'homo oeconomicus' behaviour, to take some ethical position or to have any other normative implications. In fact, these writers see economics as a purely positive, i.e. descriptive, science (see e.g. Friedman (1953)).

63. Most studies cited here rely on samples from one country or one university (e.g. Racko (2017); Beekun, et al. (2017); McCabe, et al. (1994)). As such, their results may, to some extent, be sample specific.

positive attitudes towards greed. Racko, et al. (2017) and Racko (2017) observe that the teaching of economics increases the values of hedonism and power, and decreases the values of self-direction and universalism of business students. Beekun, et al. (2017) find that business students rely more on self-interest when confronted with an ethical dilemma than other students. If we view exams as contexts in which students' ethical behaviour is put to the test, Smyth and Davis (2004) and Klein, et al. (2007) observe that business students hold more lax attitudes towards cheating in exams than their peers majoring in other disciplines. These differences in attitudes, however, do not necessarily result in a higher propensity to cheat.

As exposure to economics is viewed as the main factor that deteriorates students' moral standards, it may not be surprising that students exposed to economics have drawn the attention of researchers. Marwell and Ames (1981) have spurred this research by observing that economics students contribute less than non-economists in a public-goods experiment, and thus, are more inclined to free ride than others. Moreover, these students differ with regard to what they consider a fair contribution to the public good and do not consider fairness nearly as much as other students when deciding on their contribution. More recently, Rubinstein (2006) reports that in a scenario, in which students are asked to choose between maximising profit and saving jobs in a firm, economics students tend to maximise profit. Other students, however, weigh profit maximisation against its cost in terms of jobs.

Not all studies report differences between business or economics students and other students. For instance, McNichols and Zimmerer (1985) and Malinowski and Berger (1996) observed no specificity of business students when presented with hypothetical scenarios, in which morally ambiguous behaviour is described. Likewise, Hummel, et al. (2018) do not observe any statistically significant differences between students in economics and business and students of other disciplines in terms of moral judgement competence. Neubaum, et al. (2009) assess the moral philosophies of undergraduate students. They observe that neither at the start of their studies nor over the course of their studies are business students different from other students with regard to these moral philosophies. Neubaum, et al. (2009) even find that senior business students have more ethical attitudes compared to those that just entered business education. Finally, in a classic paper, Yezer, et al. (1996) run a lost letter experiment in economics and non-economics classes and observe that the former are more likely than the latter to return the lost letter they found.

5.2.2 How business studies make students different

The claim that the purpose of higher education is to provide students with knowledge, information, and know-how is consensual. Studying disciplines like business and economics is accordingly bound to affect the way in which students perceive the workings of the economic system. The notion that studying a discipline affects beliefs, therefore, does not need to be discussed in detail.[64] Whether and why studying business may alter the values of students is, however, less straightforward and needs further scrutiny. At first pass, one may reply that values are stable, as Rokeach (1968; 1973) and Schwartz (1992) point out, and should, therefore, not change over time. Nevertheless, there are three channels through which studying business may affect values: learning, social interactions with peers and staff, and congruence through differential attrition.

Learning is the most direct way whereby studying business may affect values. As Neubaum, et al. (2009) argue, ethics can be taught. More generally, even if one does not take a course directly related to ethics, all disciplines carry implicit values. Ghoshal (2005), for instance, emphasises that no social theory can be value-free. Racko (2017) asserts that students tend to align their values with the normative priorities of their field of study. As such, business students will align their values with those that the teaching of business carry. In line with this contention, Desplaces, et al. (2007) observe that taking a course in business ethics positively relates to moral competence among students. Likewise, Cantoni, et al. (2017) observe that the introduction of a new curriculum through a textbook reform affects the ideology of Chinese students. In line with the aim of the government, students exposed to the new curriculum displayed, for instance, more support for constrained democracy and less trust in unconstrained markets.

Social interaction is the second channel through which students may change their values. During higher education, students will interact with both faculty members and peers. This will prompt them to internalise the values of their field (Hastie (2007); Racko, et al. (2017); Weidman (1989)). Mayhew, et al. (2016) even go as far as concluding that the effect of peers is larger than that of the interaction with faculty members or exposure to a curriculum. Dey (1996) finds peer and faculty effects to be of similar magnitude. Algan, et al. (2015) illustrate the role of interaction with

64. See Hastie (2007) and Mayhew, et al. (2016) for comprehensive reviews of the literature.

peers using the random allocation of first-year students to tutorial groups as a quasi-experiment. They observe that the political preferences of peers tend to converge as soon as six months after the beginning of the academic year.

The third channel affecting the values of students is differential attrition. Van Laar, et al. (1999) argue that institutions evaluate individuals more positively when there is a stronger correspondence in ideologies. This in turn results in the resignation of some individuals who have different values and beliefs. People not only tend to be more successful when their views correspond to the views that are shared in their work environment, but they are also more likely to report higher levels of job satisfaction than people whose views diverge (Adkins, et al. (1996); Chatman (1991); O'Reilly, et al. (1991)). Similar effects have been found among university students: a higher level of congruence between university students and their educational institution has been found to be associated with better academic performance and higher satisfaction (Kemmelmeier, et al. (2005); Nafziger, et al. (1975); van Laar, et al. (1999)). This existing work implies that students, who's values do not adhere to the values of business studies, will be more likely to drop out or fail their exams. As a result, the preferences of the students who graduate or complete an extra year of study will be more aligned with those of the discipline. To be clear, this mechanism induced by differential attrition does not prompt values of individual students to change, but selects the pool of students that continue with their studies. This, in turn, increases the congruence between the values of these students and those of the field.

Throughout this chapter, we use the term 'socialisation' to refer to the total effect of the three channels that can affect values and beliefs of students over the course of studying a certain discipline. As such, we refer to socialisation as what makes a typical business student different from a typical student from another discipline.

Even though there are several potential channels through which socialisation may alter values of students, the empirical evidence is mixed. McCabe, et al. (1994) show that management students' values remain relatively stable over the course of two years, while for law students the importance of intrinsic values increases and the importance of accomplishments decreases. Gandal, et al. (2005) observe little change over the course of the first year in the importance that economics students give to values of self-enhancement. Likewise, Hummel, et al. (2018) observe no change over time in the cognitive moral development of business students. Finally, Delis, et al. (2018) report no evidence of a causal effect of majors in business or economics on students' political

ideology. Yet, some studies using other samples and studying different attitudes do observe changes over time. This is reported by Racko, et al. (2017) and Racko (2017), who find that studying business results in increases in the values of power, hedonism, and decreases in the values of self-direction and universalism. Additionally, van Laar, et al. (1999) find changes in anti-egalitarian values after studying what they refer to as hierarchy-enhancing disciplines, which include business and economics.

5.2.3 How different students choose business studies

Regardless of its size or robustness, the effect of studying a discipline must be compared to initial differences across students in different disciplines. Van Laar, et al. (1999) suggest that people prefer to be in an environment that corresponds to their ideologies, and thus, are likely to choose these environments.[65] Subsequently, students choosing different disciplines should have different values and beliefs from the onset, precisely because those differences prompted them to choose that specific discipline in the first place. Business students should, therefore, be different from other students when they start their studies. As such, differences in values and beliefs observed during or at the end of their studies may simply reflect initial differences, rather than changes due to the study itself. In other words, the impact of studying business must be weighed against the self-selection bias of students.

This point was initially made by Yezer, et al. (1996). Sidanius, et al. (2003) find that there is a lower propensity among students from disciplines other than business to support the belief that group-based inequality in society should be maintained or promoted. They report evidence showing that this is due to self-selection processes. Frey and Meier (2005) study differences in real-world donations to funds supporting needy and foreign students between students of economics and business on the one hand and students of other disciplines on the other. They observe that the former students tend to donate less and argue that this effect is driven by the self-selection of students in different disciplines.

65. Van Laar, et al. (1999) also point out that institutions can choose to select individuals who are expected to fit in with the dominant views within the institution resulting in 'institutional selection'. This mechanism cannot be at play in our study, because in the Belgian system any student having completed his/her secondary education can choose to register in the university and discipline of his/her choice. Admittedly, there are some exceptions but not in the disciplines that we study.

Some studies report both a socialisation and a selection effect. When this is the case, the latter is typically stronger and more systematic. Looking at the political attitudes of students, Elchardus and Spruyt (2009) report evidence of strong self-selection of students across fields. They also find small discipline-specific effects of socialisation on attitudes relating to ethnocentrism, authoritarianism, and individualism, but not on attitudes relating to equality and redistribution. Cipriani, et al. (2009) also report evidence of self-selection and socialisation. They find strong evidence that students who prioritise profit maximisation over avoiding worker layoffs in a scenario where the two objectives conflict are more likely to enrol in economics. Surprisingly, they find that students who specialise in management prioritise profit-maximisation less in their third year than in their first year, while there is no variation observable among students specialising in accounting or in economics.

Fischer, et al. (2017) observe both a self-selection and a socialisation effect of studying economics on stated political preferences. They interpret these findings as the result of changes in the belief about how market economies work, which are driven by studying this discipline. Their interpretation can be backed by the findings of Haucap and Just (2010), who study preferences for different allocation mechanisms that can be used to deal with the shortage of a given good. They also find both a self-selection and a socialisation effect. That is, students of business and economics have a higher propensity to prefer a market mechanism to allocate the scarce good. Moreover, this propensity increases during the course of their studies. The findings of Haucap and Just (2010) suggest that self-selection and socialisation effects apply to beliefs that are directly addressed by economics courses, while the results of others apply to values or the implication of certain values.

While self-selection has been repeatedly observed, it is not systematic. Hummel, et al. (2018) could for instance observe no such effect when studying cognitive moral development. Whether beliefs and values are subject to either self-selection, socialisation or both is, therefore, an empirical matter. Hence, we test a series of six hypotheses related to the self-selection and socialisation channels, using two sets of dependent variables.

To test the existence of self-selection into studying business, we look at the beliefs and values of students at the beginning of their studies and test the two following hypotheses:

H1a (self-selection): The beliefs of the typical business student are different from those of other students at the beginning of their studies.

H1b (self-selection): The values of the typical business student are different from those of other students at the beginning of their studies.

Basically, we test whether business students initially differ from students in other fields when they start their studies. Finding evidence in favour of these hypotheses implies that there is a self-selection effect.

With regards to socialisation, one may think of two ways to test its existence. The first way is to examine whether students enrolled in different disciplines are still different at the end of their first year. We, therefore, test the following hypotheses:

H2a (socialisation): The beliefs of the typical business student are different from those of other students at the end of their first year at the university.

H2b (socialisation): The values of the typical business student are different from those of other students at the end of their first year at the university.

Not finding evidence for these hypotheses, while finding evidence in favour of the previous two reveals that the beliefs and values of the typical student have somehow changed over the course of their first year at the university.[66] This could be indicative of socialisation effects.

In any case, socialisation can be examined in a more direct way by comparing the beliefs and values of students in the same discipline at the end of their first year with their beliefs and values at the beginning of the year. We therefore test:

H3a (socialisation): The beliefs of the typical business student change over time during their studies.

H3b (socialisation): The values of the typical business student change over time during their studies.

66. The same line of argumentation holds when finding evidence in favour of H2a and H2b, while not finding evidence for H1a and H1b.

Finding results in line with these hypotheses implies that the beliefs and values of business students have been affected by their first year of study. Furthermore, the beliefs and values of students of other disciplines may also be affected by studying, thereby contributing to business students being different from them. Thus, to get a better grasp of such possible differences, we also test these hypotheses on the students from other fields.

5.3 THE SURVEY

In this section, we first introduce the questionnaire and discuss the individual questions that we use to measure the beliefs and values under consideration. We then describe the process of administering the survey. We lastly specify our empirical strategy to uncover any selection and/or socialisation effects on these beliefs and values.

5.3.1 The questionnaire

To address our research question, we needed to prompt students to report their beliefs and values.[67] As we want to measure the impact on beliefs of studying business and of exposure to economics, we focus on beliefs that are likely affected by this. We, therefore, consider beliefs about whether firms abuse their size, about whether exchange is mutually beneficial, about the origin of someone's lot in life, about the behaviour of the state, and about mobility expectations. To measure these beliefs, we rely on both existing survey questions from large cross-national surveys, such as the World Values Survey and the General Social Survey, and questions specifically designed for the purpose of our research.[68]

Introductory courses in economics routinely discuss the welfare loss of monopolies after they have argued that competitive markets maximise social welfare. To capture beliefs about the existence of deadweight losses created by market power of firms, we

67. As the teaching language of the university at the BA level is French, the questionnaire was drafted in that language. The original French questionnaire is available on request.
68. We acknowledge that the beliefs we measure with those questions have an implicit normative dimension. This is due to the fact that we had to ask questions pertaining to economics without using the jargon of economics so as to be intelligible by all students.

ask the following question: *'Generally speaking, do you think that when a firm grows it abuses its size?'*. It allows us to test to what extent students are exposed to and influenced by theories and models of monopolistic firms.

Related is the belief that exchange is mutually beneficial. This notion lies at the heart of standard economics courses (Blaug (1996); Goossens & Méon (2015)) and is often taught as such. Business school students are exposed to these courses, however, students from other disciplines are not (economics students being the exception) and might think differently. We, therefore, ask whether students believe exchange is beneficial for everyone involved. More specifically, we ask: *'Generally speaking, do you think that when two individuals exchange a good or a service for money, it is that it makes them both better off?'*. This question is also examined by Goossens and Méon (2015) in their paper on differences between economics versus other students regarding views on market transactions.[69] For this and the previous question, answer options range between 1 (disagree) and 5 (agree).

Economics courses also discuss the relative merits of laissez-faire versus public intervention. As such, it discusses market and government failure. Students can, therefore, be expected to update their beliefs about the extent to which they can trust the state to implement efficient policies, since the level of trust is an indication of government performance and support for the state (Easton (1975); Keele (2007)). We assess students' trust in the state by asking: *'Generally speaking, would you say that the State can be trusted to achieve the missions that it has been given?'*. The answer options range between 1 and 5, where 1 corresponds to disagreeing with the question and 5 to agreeing with it. A version of this question appears for instance in the World Values Survey.

We use a question that appears in the same form in the World Values Survey and the General Social Survey to measure beliefs regarding the origin of someone's lot in life: '*Generally speaking, do you think that whatever one's lot in life, it has always been deserved?*'. Answer options range from 1 (disagree) to 5 (agree). Introductory courses

69. The paper by Goossens and Méon (2015) is based on the same dataset and questionnaire. However, their focus is on selection and learning effects across and within disciplines regarding this specific question. Moreover, they are specifically interested in economics students versus other students regarding the mutual benefits of market transactions. We also chose to include this belief in this study in order to give a more complete picture of the differences between business students on the one hand and students from other disciplines on the other.

in economics emphasise that in a competitive economy, all factors of production, including labour, are remunerated at their marginal productivity. Accordingly, differences in wages and incomes are presented as a consequence of differences in productivity. We, therefore, expect students exposed to economics to agree more with the statement and future students who hold this belief to self-select in business studies. Existing studies show that these beliefs affect attitudes towards redistribution and inequality on both individual and societal level (e.g. Alesina & Angeletos (2005); Benabou & Tirole (2006); Fong (2001); Piketty (1995)).[70]

We also measure beliefs regarding students' intergenerational mobility expectations. Studying business and economics is perceived to improve students' prospects on the labour market resulting in upward mobility. We expect students who have chosen these disciplines to hold different beliefs in that respect, possibly revising them as they learn the workings of the labour market. The literature on redistribution has shown that individuals' redistributive preferences are affected by their prospects of upward mobility (e.g. Alesina, et al. (2018); Alesina & La Ferrara (2004); Rainer & Siedler (2008)). An implication of field-specific differences and/or changes in expected mobility could, thus, be changes in redistributive preferences. We measure these beliefs by asking whether respondents think their standard of living in twenty years will be better, equivalent or worse than that of their parents. The answer categories for this variable range from 1 (worse) to 3 (better).

We define values as being special types of beliefs with a normative character (Rokeach (1968); Rokeach (1973); Schwartz (1992)). We measure values that may be affected by studying business and economics and rely on existing questions to do so. From the previous section, we learned that business and economics studies have been accused of fostering selfishness, self-enhancement, and materialistic values. Therefore, we chose questions that capture whether students value equality, their aversion to inequality, and how much they value wealth.

We first rely on Schwarz's (1992) value questionnaire and ask students whether they consider equality to be a guiding principle in their life. We use the following statement:

70. The original answer categories belonging to the beliefs (except for mobility expectations) were: 1 (fully agree), 2 & 3 (rather agree), 4, 5 & 6 (rather disagree), 7 (fully disagree). We rescaled these such that low values correspond to disagreement and high values to agreement. A 1 is rescaled as a 5, 2 & 3 are rescaled in to 2, 4 as 3, 5 & 6 as 2 and 7 as a 1.

'*As a guiding principle in my life, equality (equal chances for all) is …'*. Answer categories range from 1 (against my values) to 7 (fundamentally important). We complement this more abstract question with a question on a hypothetical scenario used to gauge how averse students are to inequality. Students are asked to choose between an unequal pay rise for themselves and an equally capable colleague or an equal but lower pay rise for both of them. A student's choice for the equal pay rise reveals an aversion to inequality. This question originates in Bazerman, et al. (1992). Equality values may be motivated in part by protection of the welfare of every individual, and is considered a universalism type value (Schwarz (1992)). Examining students' differences in and evolution of equality values could, thus, also shed light on (differences in) students' redistributive, political and policy preferences.

Also, based on Schwarz (1992), we ask students to react to the following statement: '*As a guiding principle in my life, wealth (material possessions, money) is …'*. As above, answer categories range from 1 to 7, where 1 stands for 'against my values' and 7 for 'fundamentally important'.[71] As stated by Schwarz (1992), wealth is considered a power type value. Those that value wealth highly likely aim for status, prestige and control. In line with the literature surveyed in Section 5.2, we expect business and economics studies to foster this value. We also expect future students valuing wealth to opt for studies in business and economics.

The questionnaire also included questions on students' demographics: age, gender and which faculty they belonged to.

5.3.2 Administration of survey

We administered the survey in the 2006-2007 academic year at the Université libre de Bruxelles (ULB), either during lectures or exams. Before handing out the questionnaires, a standardised introduction was given emphasising that the survey was designed by scientists for scientific purposes only; that answers were completely

71. The original answer categories belonging to the questions on guiding principles were: 7 (fundamentally important), 6 (very important), 5 & 4, 3 (important), 2 & 1, 0 (not important), -1 (against my values). We rescaled this as follows: -1 is recoded as a 1, 0 as a 2, 1 & 2 as a 3, 3 as a 4, 4 & 5 as a 5, and 6 and 7 remain 6 and 7 in the variables used for analysis. As such, scales belonging to these questions range from 1 (it is against my values) to 7 (it is fundamentally important to me).

anonymous; that the survey was not an exam; and that there were no 'good' or 'bad' answers, so as to make sure the students would not answer what they thought was socially (or academically) desirable.

We conducted two waves of the survey. The first took place amongst first year students during the first two weeks of the academic year to ensure they had as little socialisation as possible. The first wave, therefore, allows identifying initial differences between business students and students from other faculties, specifically differences that are the result of self-selection. The second wave of the survey was administered in the same cohort but then at the end of the students' first academic year. Due to university regulations, we were not allowed to identify who filled in the questionnaires. Therefore, we do not follow individual students over the course of the first year, but we examine if and how the typical business student differs from the typical student of other disciplines at the begin and at the end of their first year. As such, we compare beliefs and values of the typical student making use of the pseudo-panel structure of our dataset. By virtue of the structure of our data, any identified changes in beliefs and values of a typical student of a certain discipline, which we refer to as socialisation, can be the result of a combination of social interaction, learning and/or differential attrition.

We administered the questionnaire in five different bachelor degrees: economics, psychology, social sciences, law, and the business school.[72] Overall, we have about 2300 usable questionnaires.

5.3.3 Empirical specification

Firstly, to identify how beliefs and values differ at the start of the year, i.e. to identify selection effects, we look at differences across disciplines at the start of the year. We also estimate if these beliefs and values still differ at the end of the first year, i.e. whether differences across academic disciplines are persistent or not.[73] To do so, we adopt the following specification:

72. Getting colleagues' approval to administer the survey during their lectures or exams was challenging. One of them simply replied that he 'despised economists'.

73. We also specify a model with interactions between disciplines and an end-of-the-year dummy and estimate a Linear Probability Model (LPM). However, we do not consider this our main specification, due to the issues surrounding the use of LPMs for binary and categorical variables, e.g. predicted

$$Belief/Value_{ij} = \sum_{k} \alpha_{jk} Discipline_{ik} + \beta_1 Female_i + \beta_2 Age_i + \varepsilon_{ij},$$
$$where\ i = 1, \dots, 1626;\ j = 1, \dots, 8;\ and\ k = 1, \dots, 4 \tag{5.1}$$

In this specification, $Belief/Value_{ij}$ is the score of individual i on the belief or value j. Our independent variables of interest, $Discipline_{ik}$, are discipline dummies indicating at which faculty k individual i is enrolled. Our reference category consists of business students. As controls we include a gender dummy ($Female_i$) that is 1 for female students and 0 otherwise, and a continuous variable indicating the age of individual i (Age_i) (Haski-Leventhal, et al. (2017); Rokeach (1973)).

Secondly, when considering changes in beliefs and values over time, we aim our attention at changes within disciplines. In other words, we investigate if and how beliefs and values change over the course of the first year, comparing students within disciplines. For this purpose, we specify the following model:

$$Belief/Value_{ij} = \alpha_1 End\ of\ the\ year_i + \beta_1 Female_i +$$
$$v_{ij},\ where\ i = 1, \dots, 699;\ and\ j = 1, \dots, 8 \tag{5.2}$$

We capture changes over time with the dummy variable $End\ of\ the\ year_i$, which is equal to 1 if individual i filled in the survey at the end of his/her first year and 0 otherwise. As such, our reference category consists of students that completed the survey at the start of their studies. As in equation 5.1, we control for gender with the dummy $Female_i$. We estimate the above model for each faculty separately.

The majority of our dependent variables is categorical, ranging from 1 to 5 (or 7), and one is binary (i.e. inequality aversion). Consequently, we estimate ordered probit models for the former and a probit model for the latter.

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probabilities lying outside the [0:1] bound (Verbeek (2012)). Moreover, the interpretation of coefficients becomes increasingly difficult, seeing that reference category would be business students at the start of their studies. However, the LPM does allow us to test whether differences between students increased or decreased over time, as indicated by the sign and significance of the interaction terms. As such, we discuss the outcome of the LPM estimation in footnotes, as supplement to our main results. We report the results in the appendix to this chapter.

5.4 RESULTS

We continue with a discussion of the results of estimating the models specified in the previous section. However, before doing so, we take a first look at the data and examine the characteristics of our students as well as some descriptive statistics.

5.4.1 A first look at the data

There are about 2300 observations in our dataset: approximately 1600 at the start of the first year of study and 700 at the end of the first year. If we pool the observations over the first year, 26 percent study business, 15 percent economics, 16 percent psychology, 23 percent law, and 21 percent social sciences. Table 5.1 shows the average age of our respondents as well as the share of female students and the number of observations split according to discipline.[74]

Table 5.1 Characteristics of respondents – split according to disciplines

	Business	Economics	Psychology	Law	Social Sciences	Total
Age	18.5 (1.35)	19.6 (1.64)	19.8 (3.48)	19.1 (1.81)	20.1 (3.71)	19.3 (2.58)
Female	32%	38%	80%	63%	60%	53%
Observations	600	346	364	537	478	2325
Begin-of-year	*441*	*202*	*240*	*379*	*364*	*1626*
End-of-year	*159*	*144*	*124*	*158*	*114*	*699*

Note: For the age of the respondents the mean and standard deviation (in parentheses) is given. For gender, the percentage of females in the sample is given. The number of observations is also split according to the survey administered at the beginning of the first year and the end of the first year.

Figure 5.1 shows histograms of the beliefs and values at the begin of the first year and the end of the first year for business students. Figures for the other four disciplines can be found in the appendix to this chapter (appendix A5, figures A5.1 – A5.4). Figure 5.1 allows us to examine how opinions have changed over the course of the first year.

74. Table A5.1 in the appendix to this chapter shows the means and standard deviations of the beliefs and values under consideration. Samples are restricted to disciplines, i.e. the faculties in our data. We also show statistics for the total sample.

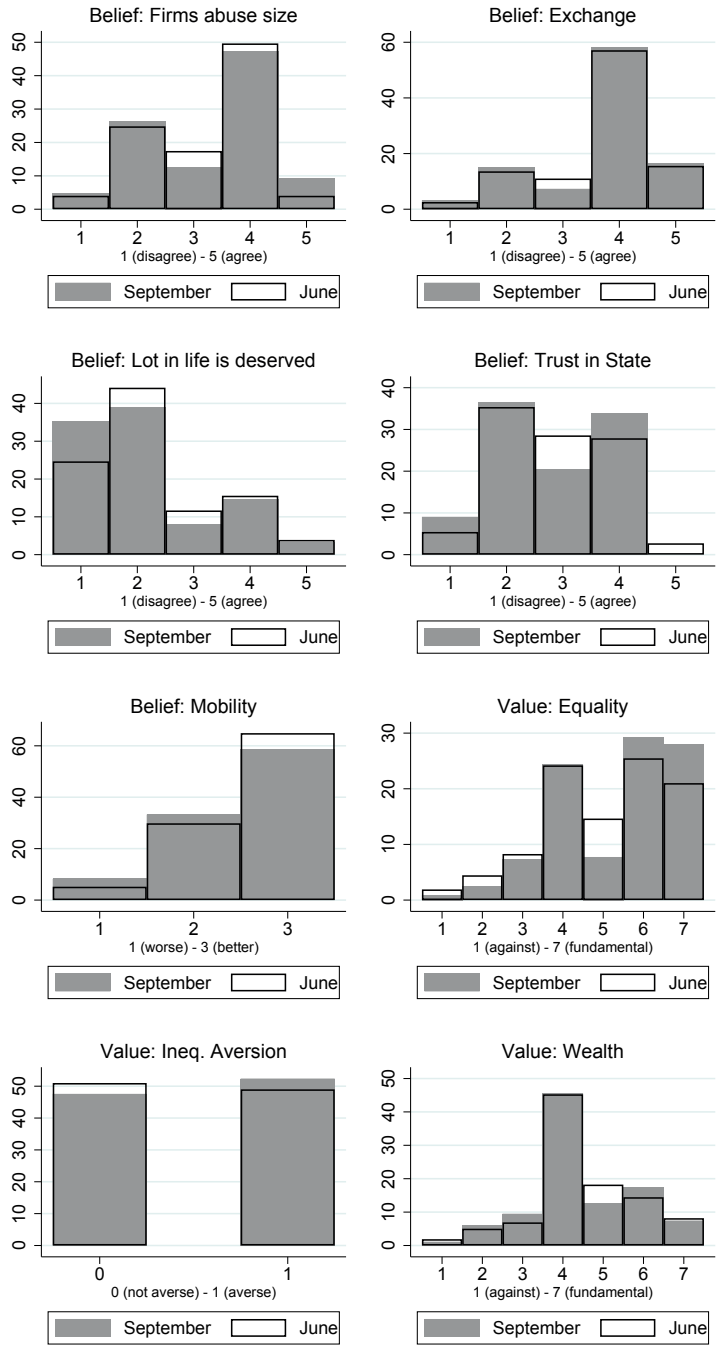

Figure 5.1 Histograms of values and beliefs at beginning of the first year (September, light-grey) overlaid with histograms at end of the first year (June, black outline) – business students

Regarding business students specifically, a few things stand out. Firstly, figure 5.1 shows that opinions on some beliefs and values do not seem to change much between the beginning and the end of the first year. For example, this is the case for the belief that exchange is mutually beneficial and valuing wealth in one's life. On the other hand, business students seem to agree more that someone's lot in life is deserved and seem to value equality less at the end than at the start of the first year. The same can be said for the belief that firms abuse their size. Moreover, at the end of the first year, a larger part of these students expects to fare better than their parents in the future.

Moreover, we tested for equality of variances within disciplines over time. As such, we are able to identify whether opinions have become more or less dispersed over time. Results of these variance tests can be found in appendix table A5.2. Considering all disciplines, we find that in some cases beliefs and values become less dispersed over time, where in other cases they become more dispersed, depending on the discipline under consideration. Most changes in variance over the course of the first year occur in beliefs about the origin of one's lot in life, in beliefs about mobility expectations and in valuing wealth. Considering only business students, the variance of their beliefs about mobility expectations at the end of the year is significantly lower than at the start of the year. These students' beliefs about whether they will do better than their parents have, thus, become less polarised over time. For values, we do not find any significant changes in variance for business students.

5.4.2 Differences across disciplines: selection and persistence

Estimating equations (5.1) and (5.2) allows us to refine our previous results by teasing out the role of demographics. The top panel of table 5.2 shows the results of estimating equation (5.1) for a sample restricted to the beginning of the first year. The bottom panel shows the results of estimating the same equation for a sample restricted to the end of the first year. The table reveals many differences in beliefs and values between business students and other students, both at the start and at the end of the year.

The first column of table 5.2 reports the results for beliefs about the existence of deadweight losses created by market power of firms. It reports no significant differences between business and economics students either at the beginning or at the end of the year. At the beginning of the year, students from the other three disciplines are

more likely to believe that firms abuse their power than business students. However, only the difference between business and social sciences students persists and is also found at the end of the year. Differences between business students and other students disappear over time.

Column 2 of table 5.2 reports the results for the belief that exchange is beneficial for everyone involved. We find that only social sciences students are significantly less likely to believe this than business students at the beginning of the year. At the end of the year this difference is, however, no longer present. Conversely, at the end of the first year psychology students are less likely to believe in the benefits of exchange than business students.

Column 3 of table 5.2 reveals that psychology and social sciences students have significantly different beliefs at the start of the year than business school students regarding the origin of one's lot in life. Both groups of students are less likely than business students to believe that someone's lot in life is deserved. Moreover, these differences are persistent over time. Specifically, at the end of the year psychology and social sciences students are still less likely to have this belief than business students.

Column 4 of table 5.2 shows that, compared to business students, psychology students are less likely and law students are more likely to believe the state can be trusted at the start of the year. Whereas the difference between business and law students does not persist, the difference between business and psychology students does. Additionally, at the end of the first year, economics students are less likely than business students to believe they can trust the state.

Column 5 of table 5.2 considers expectations of intergenerational income mobility. It shows that the beliefs of students from the other four disciplines significantly differ from those of business students. All believe it less likely than business students that they will earn more than their parents in the future. Furthermore, this difference persists for students of all other disciplines except economics.

Table 5.2 Effect of disciplines on beliefs/values at the beginning and end of the 1st year

Dependent variable:	(1) Belief: Firms abuse size	(2) Belief: Exchange	(3) Belief: Lot in life	(4) Belief: Trust in state	(5) Belief: Mobility	(6) Value: Equality	(7) Value: Ineq. Aversion	(8) Value: Wealth
Begin of 1st year								
Economics	0.171 (0.104)	0.070 (0.102)	-0.029 (0.093)	-0.007 (0.101)	-0.193* (0.105)	0.144 (0.095)	0.117 (0.113)	-0.093 (0.093)
Psychology	0.256** (0.100)	-0.066 (0.095)	-0.242** (0.102)	-0.276*** (0.096)	-0.627*** (0.102)	0.292*** (0.095)	0.471*** (0.121)	-0.378*** (0.091)
Law	0.254*** (0.085)	-0.043 (0.081)	-0.001 (0.082)	0.149* (0.081)	-0.313*** (0.084)	0.323*** (0.082)	0.284*** (0.098)	-0.143* (0.076)
Social sciences	0.519*** (0.089)	-0.242*** (0.086)	-0.226*** (0.086)	0.030 (0.085)	-0.547*** (0.090)	0.570*** (0.084)	0.427*** (0.102)	-0.505*** (0.083)
Observations	1,386	1,472	1,487	1,441	1,516	1,534	1,529	1,544
Reference	*Business*	*Business*	*Business*	*Business*	*Business*	*Business*	*Business*	*Business*
Pseudo R^2	0.0120	0.00517	0.00630	0.00688	0.0221	0.0201	0.0884	0.0168
Log likelihood	-1743	-1784	-1921	-1885	-1514	-2146	-889.9	-2356
End of 1st year								
Economics	0.179 (0.142)	-0.006 (0.146)	0.037 (0.134)	-0.231* (0.140)	-0.244 (0.152)	0.178 (0.137)	0.172 (0.159)	-0.036 (0.132)
Psychology	0.160 (0.135)	-0.273* (0.144)	-0.406*** (0.142)	-0.255* (0.138)	-0.877*** (0.149)	0.097 (0.132)	0.525*** (0.184)	-0.410*** (0.123)
Law	0.059 (0.131)	0.035 (0.128)	-0.090 (0.132)	0.123 (0.131)	-0.540*** (0.140)	0.091 (0.128)	0.404** (0.158)	-0.128 (0.126)
Social sciences	0.411** (0.164)	-0.111 (0.146)	-0.415*** (0.157)	0.208 (0.157)	-0.533*** (0.166)	0.731*** (0.149)	0.517*** (0.184)	-0.400*** (0.147)
Observations	576	609	613	603	624	635	626	651
Reference	*Business*	*Business*	*Business*	*Business*	*Business*	*Business*	*Business*	*Business*
Pseudo R^2	0.00687	0.00527	0.0205	0.0182	0.0376	0.0213	0.102	0.0118
Log likelihood	-758.2	-758.4	-782.9	-794.6	-609.5	-979.7	-363.1	-1011

Note: Columns 1-5 show estimation output with beliefs as dependent variable and columns 6-8 for values as dependent variable. Main independent variables are discipline dummies equal to 1 if respondent is a student of that discipline and 0 otherwise. The reference group consists of business students. Robust standard errors are in parentheses. Significance is indicated as follows: *** p<0.01, ** p<0.05, * p<0.1. For the models in column 1-6 and 8, the coefficients are estimated using an ordered probit model. For those in column 7, coefficients are estimated with a probit model. In all models, we control for age and gender. Models are estimated for two samples: one sample obtained at the begin of the first year of study and one obtained at the end of that year.

We, thus, find ample evidence in favour of Hypothesis H1a. Our results show that, from the outset, the beliefs of business students are different from students of other disciplines. This indicates that business students self-select into the field on the basis of these beliefs. We also find that for all beliefs but one (i.e. *exchange is beneficial*) some differences across disciplines are persistent (i.e. *Firms abuse size*: social sciences; *Lot in life*: psychology, social sciences; *Trust*: psychology; *Mobility*: psychology, law, social sciences), while others are not (i.e. *Firms abuse size*: law, psychology; *Trust*: law; *Mobility*: economics). As such, we find some evidence in favour of hypothesis H2a, indicating the existence of socialisation.[75]

We also find significant selection effects for the values we consider. Column 6 of table 5.2 shows that psychology, law and social sciences students are more likely to value equality than business students. Moreover, the differences between social sciences and business students persist. Conversely, we do not find any significant difference with economics students.

From column 7, table 5.2, we uncover similar differences between business students and students from other disciplines at the start of the first year regarding inequality aversion. As with valuing equality, the psychology, law and social sciences students are more likely to be inequality averse than business students. Here, differences are persistent for all three disciplines over the course of the year.

In column 8 of table 5.2, we again find significant differences in how business students on the one hand, and psychology, social sciences, and law students on the other, value wealth and material possessions. At the beginning of their first year, the latter groups of students are less likely to value wealth than business students. The difference with law students is not persistent over time, while the others are.

75. To check whether differences increased over time, we estimated a model pooling all observations together and including an interaction term between disciplines and end-of-year dummies. For ease of interpretation, the model was estimated as linear probability model. Table A5.19 shows the estimated coefficients of the LPM with interactions and table A5.20 shows marginal effects. We find three cases in which beliefs at the end of the year are significantly different from the begin of the year, i.e. where the interaction term is significant (compared to the reference group of business students at the begin of the first year). This is evidence in favour of socialisation. However, we also find that, for some beliefs and disciplines, differences between business and other students are persistent over time, i.e., the marginal effects at the beginning of the year are not significantly different from those at the end of the year.

As such, we find considerable evidence of self-selection for values. The values of business students differ from those of students in other disciplines, and thus, we fail to reject Hypothesis H1b. Moreover, for two of the three values under consideration we find that some differences that exist at the start of the year are not persistent over time. For one value (i.e., inequality aversion), however, we find that all differences between business students and other students are persistent. As such, we find some evidence in favour of Hypothesis H2b, which is indicative of socialisation.[76]

To give an indication of how large the discipline effect is on students' answers, we calculate marginal effects from the estimated model in table 5.2. We exemplify by using the marginal effects calculated for the belief regarding the existence of welfare losses created by market power of firms, i.e. the belief that firms abuse their size as they grow.[77] We find that at the start of their first year, male psychology students are about 8 percentage points less likely to disagree, i.e. choose answer option 1 or 2, than the reference group of male business students. They are also about 9.5 percentage points more likely to agree, i.e. choose answer option 4 or 5, with the belief that firms abuse their size. Considering law students, marginal effects have similar signs and sizes. While the differences between psychology and law students versus business students are not persistent, the differences between social sciences versus business students are. At the start of the year, male social sciences students are 14 percentage points less likely to disagree with this belief than male business school students, and 18 percentage points more likely to believe that firms abuse their power. At the end of the year, they are about 12 percentage points less likely and 16 percentage points more likely to believe that market power creates deadweight losses for society than their business studying counterparts. As we are not able to identify individual students, we cannot judge whether these marginal effects at the end of the year are significantly different from those at the begin of the year. We do, however, find that differences between business school students and social science students are persistent.

76. Regarding values, the estimation results of the LPM in Table A5.19 and its marginal effects in Table A5.20 show no significant interaction terms, i.e., no evidence for the effect of discipline on values being different at the end of the year compared to the begin of the year.

77. The marginal effects for the belief that firms abuse their size can be found in the appendix to this chapter, A5, table A5.3. The marginal effects indicate the marginal probability that a student of a given discipline chooses a specific answer category (given it is a male student and relative to the reference category of male business school students). The marginal effects for other beliefs can be found in appendix A5 of this chapter, tables A5.4-A5.7.

For the values we consider, we also calculate marginal effects in order to quantify the selection effects we identify. To exemplify, we rely on the value equality.[78] We find that male psychology students are 10 percentage points more likely to view equality as fundamentally important than male business students. They are also between 1 and 6 percentage points less likely to choose any of the other 6 answer categories. At the end of the year, this difference between business and psychology students has disappeared. Male law students show a similar pattern. Furthermore, we find that male social sciences students are 21 percentage points more likely to view equality as fundamentally important, while it is between 1.5 and 12 percentage points less likely that they will choose one of the other answer options.

5.4.3 Differences within disciplines: socialisation

In this section, we present the results of estimating the model specified in equation (5.2). We restrict our sample in turn to students of each discipline and examine whether and how beliefs and values change within a discipline over the course of the year. The reference category consists of students of the relevant discipline that filled in the survey at the start of the first year. As we are not following individual students over time, the significant changes that we observe can be due to a combination of social interaction, learning and differential attrition. As such, we observe changes in beliefs and values of the typical student of a given discipline. Results can be found in table 5.3.[79]

We find that business students are the group where the largest number of changes in beliefs and values occur. At the end of the first year, business students are more likely to believe that someone's lot in life is deserved than at the beginning of the year (column 3, table 5.3). Estimated marginal effects show that male business students are 7 percentage points less likely at the end of the year to disagree that someone's lot in life is deserved (i.e. to choose option 1) relative to the reference group (i.e. male business students at the start of their first year at university). They are also about 5.5 percentage points more likely to believe that someone's lot in life is deserved (i.e. choose option 4 or 5) at the end of the year.

78. Marginal effects for other values can be found in appendix A5 of this chapter, tables A5.8-A5.10.
79. Corresponding marginal effects (calculated for male students of a certain discipline) can be found in the appendix to this chapter, tables A5.11-A5.18. The reference category consists of male students at the start of their first academic year (for each discipline separately).

Table 5.3 Changes in beliefs/values within disciplines over course of 1st year

Dependent variable:	(1) Belief: Firms abuse size	(2) Belief: Exchange	(3) Belief: Lot in life	(4) Belief: Trust in state	(5) Belief: Mobility	(6) Value: Equality	(7) Value: Ineq. Aversion	(8) Value: Wealth
Business								
End-of-year	-0.085 (0.097)	-0.010 (0.101)	0.195** (0.098)	0.114 (0.101)	0.203* (0.114)	-0.204** (0.098)	-0.079 (0.121)	0.026 (0.097)
Observations	551	573	577	564	587	593	585	597
Economics								
End-of-year	-0.056 (0.124)	-0.063 (0.122)	0.168 (0.122)	-0.118 (0.122)	0.097 (0.135)	-0.164 (0.119)	-0.029 (0.144)	0.087 (0.116)
Observations	309	332	326	314	327	335	333	346
Psychology								
End-of-year	-0.143 (0.121)	-0.254** (0.123)	-0.015 (0.117)	0.074 (0.122)	-0.070 (0.124)	-0.515*** (0.114)	-0.021 (0.167)	0.075 (0.107)
Observations	320	346	351	332	354	360	355	362
Law								
End-of-year	-0.247** (0.108)	0.068 (0.108)	0.086 (0.102)	0.060 (0.106)	-0.088 (0.113)	-0.466*** (0.100)	0.052 (0.131)	0.058 (0.105)
Observations	468	497	510	499	529	531	530	536
Social sciences								
End-of-year	-0.114 (0.132)	0.033 (0.116)	-0.048 (0.120)	0.217* (0.123)	0.170 (0.127)	-0.089 (0.121)	-0.091 (0.148)	0.115 (0.113)
Observations	424	448	451	445	463	471	469	476

Note: Columns 1-5 show estimation output with beliefs as dependent variable and columns 6-8 for values as dependent variable. The main independent variable is a time dummy equal to 1 if survey is administered at the end of the first year and 0 otherwise. The reference group consists of the students that responded to the survey at the beginning of the first year (September 2006). Robust standard errors are in parentheses. Significance is indicated as follows: *** p<0.01, ** p<0.05, * p<0.1. For the models in column 1-6 and 8, the coefficients are estimated using an ordered probit model. For those in column 7, coefficients are estimated with a probit model. In all models, we control for gender. Models are estimated for the pooled sample of the surveys administered in September 2006 and June 2007.

It, thus, seems that business students believe (even) more firmly in the role of effort in determining success after a year of socialisation. Moreover, business students are the only students for which these beliefs significantly change over time.

Additionally, business students at the end of the year are significantly more likely to believe that they will, in the future, earn more than their parents (column 5, table 5.3). Looking at the estimated marginal effects for male business students, we find that at the end of the year they are about 2.5 percentage points less likely to believe they will do worse than their parents. They are about 5 percentage points less likely to believe they will have about the same income relative to what they believed at the start of the year. Moreover, they are about 8 percentage points more likely to believe they will do better than their parents. As with beliefs about lot in life, business students are the only students for which these beliefs significantly change over the course of their first academic year.

We also find significant changes over time in valuing equality (column 6, table 5.3). Business students are less likely to value equality at the end of their first year than when they started. Marginal effects show that male business school students are 6 percentage points less likely to view equality as fundamentally important in their life at the end of the year than their male counterparts at the start of the year. We also find that these students are 3 percentage points more likely to find equality 'important' (i.e., answer option 4; the middle of the scale) and 4 percentage points more likely to find it either not or not at all important. We also find changes over time in valuing equality for students of other disciplines. Both psychology and law students are less likely to value equality at the end of their first year relative to the start of the year.[80]

For beliefs and values where we find no significant changes for business students, we do find some changes for students of other disciplines. Table 5.3 shows that law students are less likely at the end of the year to believe that firms abuse their size (column 1), whereas psychology students are less likely to believe that exchange is mutually beneficial (column 2). This latter finding is in line with Goossens and Méon

80. Marginal effects in appendix A5 of this chapter, table A5.16 show that this is mostly due to relatively large marginal decreases (of about 16-17 percentage points) in law and psychology students answering that equality is fundamentally important for them and a relatively large increase (of about 10-11 percentage points) in them viewing equality as 'important' (i.e. answer option 4, the middle of the scale). Marginal changes for the other answer categories are smaller, relatively speaking.

(2015).[81] Furthermore, at the end of the year, social sciences students are likely to have more trust in the State than they had when starting their academic education (column 4). For economics students, however, there are no significant changes in beliefs or values over the course of the first year.

As such, we find evidence in favour of socialisation for both beliefs and values of business students. We thus fail to reject hypotheses H3a and H3b; some beliefs and values of business students change over time during their studies. For some other disciplines and for some of the beliefs and values under consideration, we also fail to reject H3a and H3b. These changes are likely to contribute to the difference between business students on the one hand and students of other disciplines on the other.

5.5 CONCLUSION

In this chapter, we empirically study how beliefs and values of students vary across disciplines, and how these beliefs and values are affected over time by studying. While most related studies focus on a single belief, value or attitude (e.g. Beekun, et al. (2017); Frey & Meier (2005)), we look at a set of beliefs and values. Additionally, most studies distinguish between economics students versus students of one other discipline, or group economics and business students together and compare these to other students (e.g. McCabe, et al. (1994); Racko (2017)). In contrast, we compare business students with students from four other disciplines, among which economics. Moreover, the set-up of our study allows us to separate selection effects from socialisation effects. We are, thus, able to examine if business students self-select into the field, and consequently, how they differ in terms of beliefs and values from students of other fields. We also examine whether business students' beliefs and values change over time. In other words, we test whether socialisation with regard to beliefs and values occurs as a result of studying business.

Considering selection effects, we find that business studies attract students that are less concerned about the market power of firms and more confident in the benefits of exchange than students of other disciplines. Business students are also more inclined

81. In Goossens and Méon (2015), the authors perform a similar analysis looking at differences in these beliefs over time. The focus of their paper is, however, different from ours. We specifically target business school students. In addition, we show changes in beliefs and values for students of other disciplines, both for completeness and comparison.

to believe that an individual's lot in life is deserved. This suggests that business students have more trust in market mechanisms than other students. Additionally, they are more optimistic about their future prospects, i.e. they expect to fare better than their parents. Our results also show that business students tend to value equality less, and material possessions and wealth more. This suggests that these students are to a lesser extent motivated by the protection of welfare of individuals and to a greater extent motivated by power, status and prestige (Schwartz (1992)). Taking these findings together, they suggest that business students tend to be more self-interested than students from other disciplines. What we conclude, based on our findings, is that business students have different beliefs and values relative to students of other disciplines from the outset of their academic education. This indicates that business students self-select into the field on the basis of these beliefs and values.

Differences between business students and students from other disciplines are in all but one case persistent over time. Yet, given a belief or value, it holds that relative to some disciplines differences with business students are persistent, while relative to others they are not. What can we conclude from this? Firstly, consider the persistent differences we find for some beliefs and values of business students relative to students of some other disciplines. From these findings, we conclude that the initial difference we find is either unchanged or strengthened after one year of studying. Since we are not able to identify individual students in our sample, we cannot distinguish between the two possibilities. Nonetheless, our findings suggest that disciplines matter; that it is not just higher education in general that affects students' beliefs and values. The latter would imply convergence, whereas the former implies (at least some) persistent differences in beliefs and values. Secondly, consider the non-persistent differences we find for some beliefs and values of business students relative to other disciplines. From these findings, we conclude that, over the course of the year, changes in beliefs or values occurred for either the typical business student, the typical student of the other discipline or both. Even though we are not able to distinguish between these three scenarios, this finding is indicative of socialisation effects for either students of one or of both disciplines.

In order to examine whether business students alter their beliefs and values, we additionally examine changes within disciplines. That is, we compare beliefs and values of the typical business student at the end of their first year to his/her beliefs and values when he/she started. This allows us to attribute our findings to changes

in beliefs and values of this typical business student. We find that business students increasingly expect to do better than their parents, and thus, become more optimistic about their future over the course of their first year. We also find that they become more likely to believe in the role of effort in determining someone's outcome in life over time. Furthermore, our results show that values of business students change over the course of the first year. More specifically, they value equality less, suggesting that, over time, business students become somewhat more self-interested. We can conclude from these findings that there are significant socialisation effects of studying business that materialise after one year of studying. A limitation to these results, however, is that we cannot deduce whether this socialisation effect is the result of the teaching of business, of peer effects, of attrition effects, or of a combination of the three.

We find that the largest differences in beliefs and values are to be found between business students on the one hand and social sciences and psychology students on the other. Business students are the closest, but not exactly similar, to economics students. The suggested harmful effects of business schools (e.g. Goshal (2005); Racko (2017)) might, therefore, be only partly the result of exposure to economics. The differences we find between economics and business students suggest that there are additional effects of studying business that prompt different students to select it, and prompt these students to become (even more) different over time.

Even though it is standard in the literature to focus on one country and one educational institution (see e.g. Racko (2017); Beekun, et al. (2017); McCabe, et al. (1994)), our results might be sample-specific. Accordingly, their generalizability may be debated. Performing a study as ours in several countries and institutions at the same time would allow drawing more general conclusions. Additionally, our findings show changes in beliefs and values due to selection and socialisation of the average business student. Future research could improve upon this by following individual students throughout their academic education. Research avenues might even open up by following individuals not only during their studies but also during their careers as to evaluate the longitudinal impact of studying business or other disciplines.

Moreover, the differences and changes in beliefs and values that we observe draw a consistent picture of business students being and becoming more confident in market mechanisms as well as more inclined to be self-interested. This could have political consequences, for instance by prompting students of business to support redistribution less, or to move toward the political right. These potential consequences deserve a

closer look in future research. Additionally, our finding that not only the beliefs but also the values of students are affected by studying over time might imply that values are less stable than previously assumed (Rokeach (1973); Schwarz (1992)). However, to be able to make hard claims about this, we need to identify and follow individuals students over the course of their education. This would allow us to disentangle the variation in individual values of students from the variation in values of the group of students. Our findings also show that it takes just one year for learning, selection, and socialisation to affect the values of students. A natural question to pose here is: should we, as teachers, be concerned about how we affect the values of students, or maybe even concerned about changing them at all? We leave this open for further academic and ethical debate.

Table A5.1 Descriptive statistics beliefs and values at begin and end of the first year - mean (standard deviation)

	(1) Belief: Firms abuse size	(2) Belief: Exchange	(3) Belief: Lot in life	(4) Belief: Trust in state	(5) Belief: Mobility	(6) Value: Equality	(7) Value: Ineq. Aversion	(8) Value: Wealth
Business								
Begin-of-year	3.30 (1.10)	3.69 (1.02)	2.11 (1.14)	2.79 (1.01)	2.50 (0.65)	5.35 (1.48)	0.52 (0.50)	4.45 (1.32)
End-of-year	3.25 (1.01)	3.69 (0.98)	2.30 (1.12)	2.87 (0.97)	2.60 (0.59)	5.06 (1.54)	0.49 (0.50)	4.49 (1.31)
Economics								
Begin-of-year	3.42 (1.10)	3.77 (1.04)	2.08 (1.14)	2.80 (1.08)	2.39 (0.73)	5.54 (1.43)	0.59 (0.49)	4.28 (1.36)
End-of-year	3.37 (1.14)	3.65 (1.13)	2.25 (1.18)	2.69 (1.11)	2.44 (0.76)	5.35 (1.47)	0.57 (0.50)	4.39 (1.51)
Psychology								
Begin-of-year	3.49 (1.02)	3.62 (0.99)	1.88 (1.13)	2.44 (1.01)	2.08 (0.79)	5.87 (1.29)	0.81 (0.40)	3.85 (1.26)
End-of-year	3.36 (0.92)	3.39 (1.00)	1.79 (0.85)	2.50 (0.94)	2.02 (0.77)	5.33 (2.21)	0.80 (0.40)	3.93 (0.94)
Law								
Begin-of-year	3.50 (1.01)	3.63 (1.00)	2.08 (1.18)	2.89 (1.02)	2.31 (0.71)	5.82 (1.38)	0.71 (0.46)	4.21 (1.27)
End-of-year	3.29 (1.00)	3.71 (0.92)	2.14 (1.12)	2.94 (1.01)	2.25 (0.79)	5.22 (1.42)	0.72 (0.45)	4.27 (1.42)
Social Sciences								
Begin-of-year	3.72 (0.95)	3.49 (1.10)	1.88 (1.13)	2.75 (1.06)	2.13 (0.80)	6.14 (1.13)	0.75 (0.43)	3.76 (1.42)
End-of-year	3.59 (1.06)	3.53 (1.03)	1.77 (0.96)	2.94 (1.12)	2.26 (0.80)	6.05 (1.15)	0.73 (0.44)	3.90 (1.41)
Total								
Begin-of-year	3.48 (1.04)	3.63 (1.03)	2.02 (1.15)	2.76 (1.04)	2.30 (0.75)	5.74 (1.38)	0.67 (0.47)	4.13 (1.35)
End-of-year	3.36 (1.03)	3.61 (1.02)	2.08 (1.09)	2.80 (1.04)	2.33 (0.76)	5.36 (1.42)	0.66 (0.48)	4.22 (1.36)

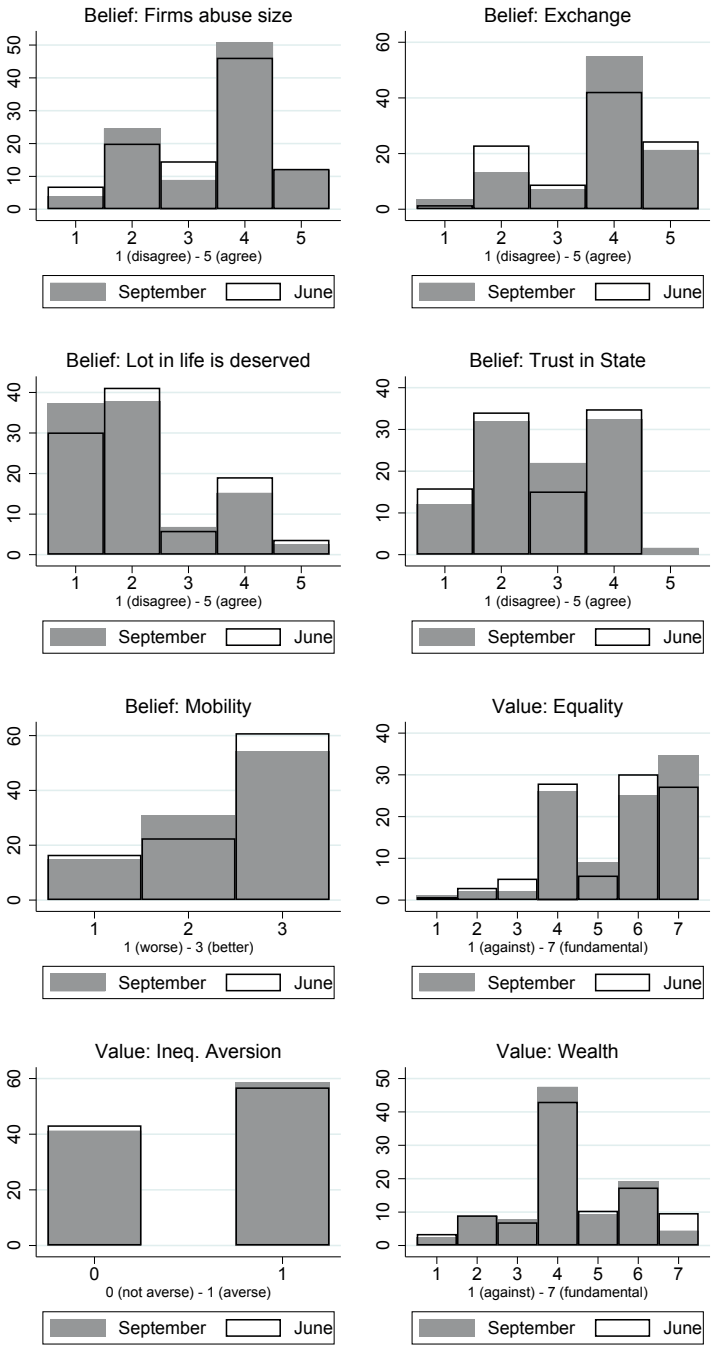

Figure A5.1 Histograms of values and beliefs at beginning of the year (light-grey) overlaid with histograms at end of the year (black outline) – Economics students

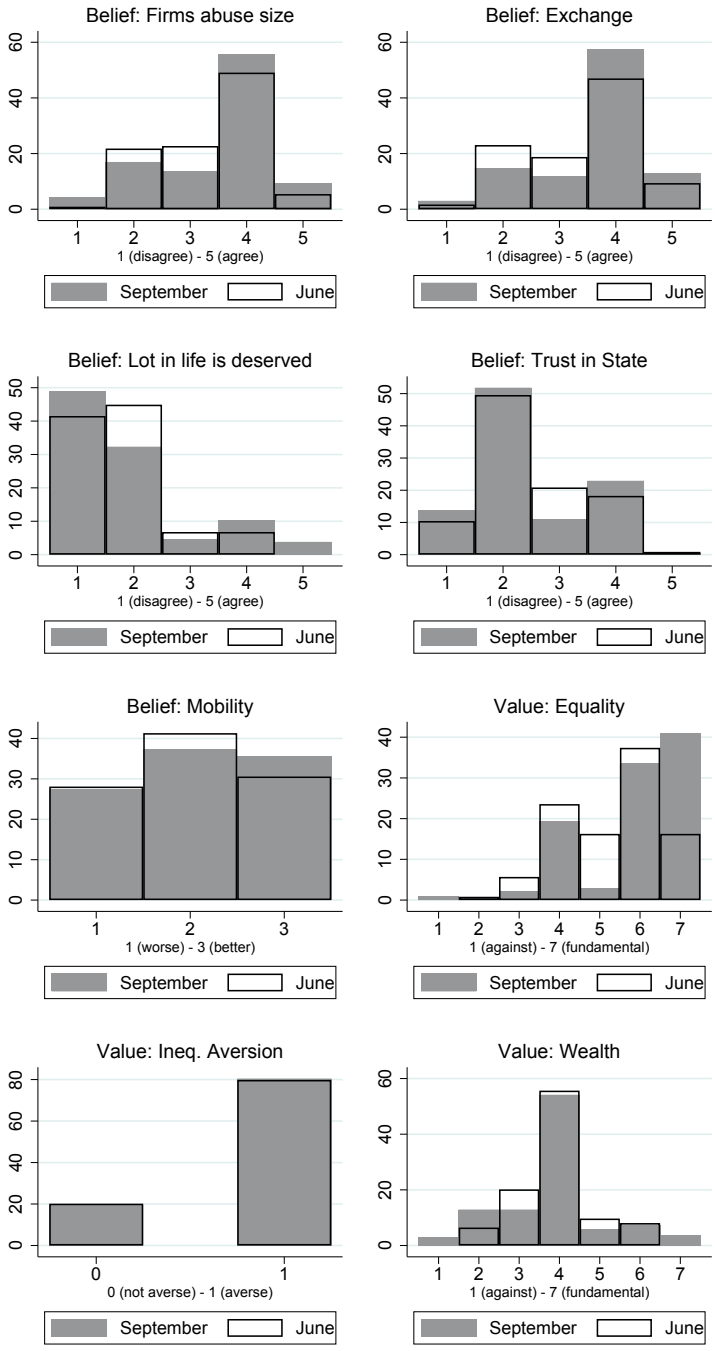

Figure A5.2 Histograms of values and beliefs at beginning of the year (light-grey) overlaid with histograms at end of the year (black outline) – Psychology students

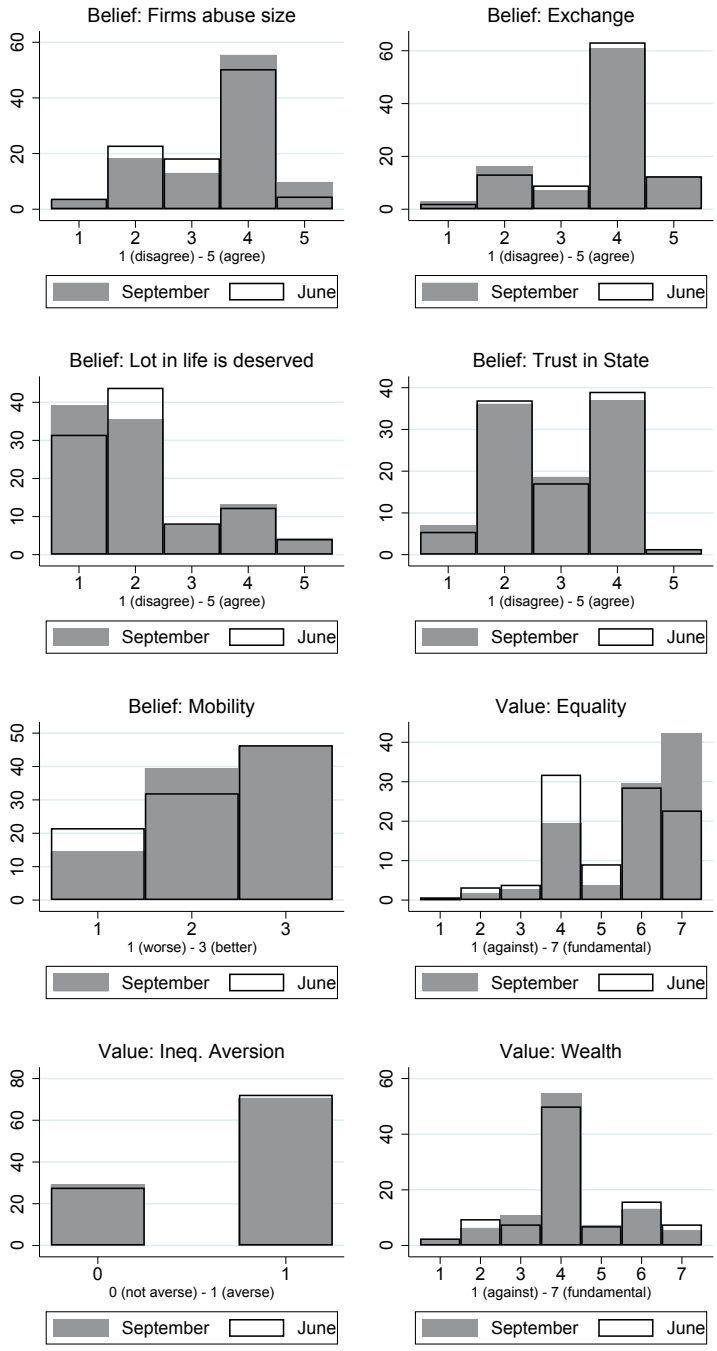

Figure A5.3 Histograms of values and beliefs at beginning of the year (light-grey) overlaid with histograms at end of the year (black outline) – Law students

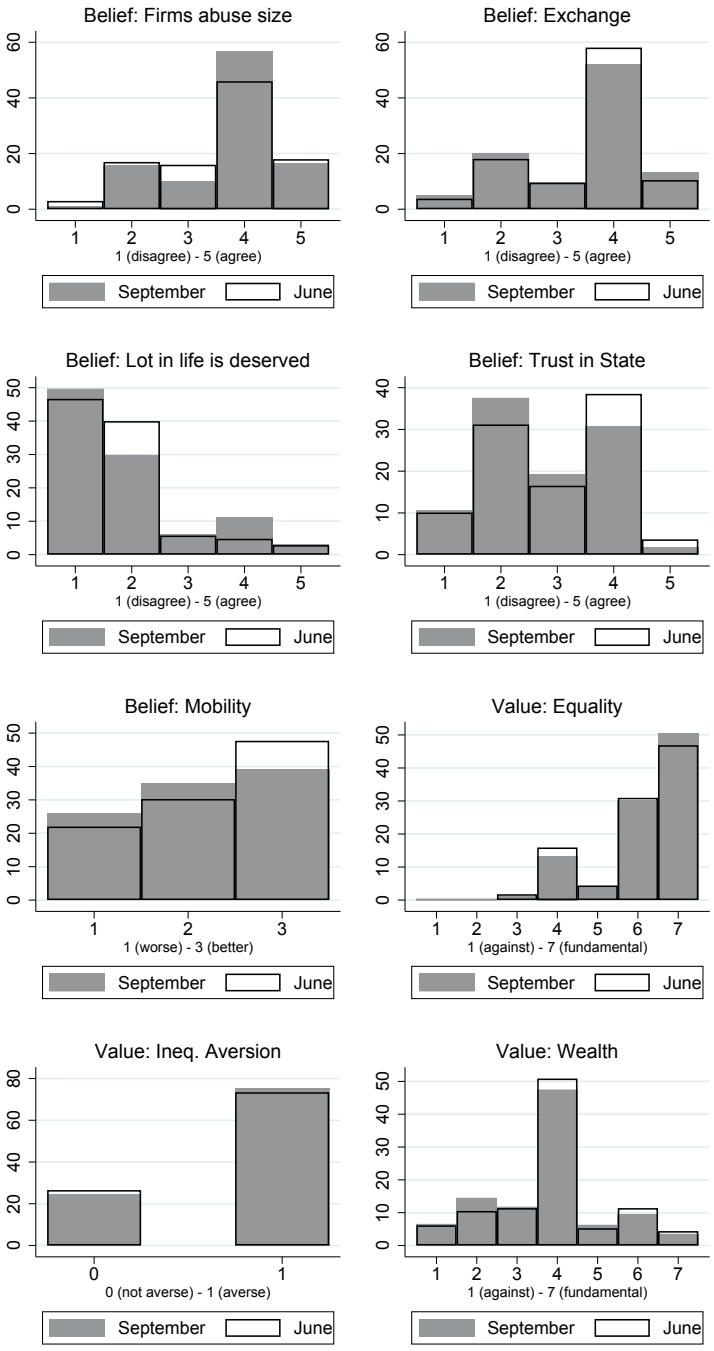

Figure A5.4 Histograms of values and beliefs at beginning of the year (light-grey) overlaid with histograms at end of the year (black outline) – Social Sciences students

Table A5.2 Test of change in variance end of first year compared to beginning of first year

Variable	(1) Belief: Firms abuse size	(2) Belief: Exchange	(3) Belief: Lot in life	(4) Belief: Trust in state	(5) Belief: Mobility	(6) Value: Equality	(7) Value: Ineq. Aversion	(8) Value: Wealth
Business								
Variance begin-of-year	1.203	1.214	1.299	1.026	0.416	2.201	0.250	1.743
Variance end-of-year	1.012	0.959	1.257	0.949	0.347	2.379	0.252	1.707
F-statistic	1.188	1.085	1.034	1.081	1.200	0.922	0.994	1.021
H_1: var(begin) > var(end)	0.109	0.278	0.410	0.291	0.092	0.740	0.527	0.445
H_1: var(begin) < var(end)	0.891	0.722	0.590	0.709	0.908	0.260	0.473	0.555
Economics								
Variance begin-of-year	1.211	1.085	1.844	1.157	0.540	2.037	0.244	1.855
Variance end-of-year	1.304	1.273	1.404	1.239	0.582	2.154	0.247	2.281
F-statistic	0.928	0.852	0.919	0.934	0.928	0.946	0.986	0.813
H_1: var(begin) > var(end)	0.678	0.846	0.705	0.665	0.684	0.641	0.541	0.911
H_1: var(begin) < var(end)	0.322	0.154	0.295	0.335	0.316	0.359	0.459	0.089
Psychology								
Variance begin-of-year	1.038	0.974	1.280	1.013	0.624	1.665	0.158	1.587
Variance end-of-year	0.839	0.999	0.715	0.884	0.591	1.467	0.162	0.881
F-statistic	1.237	0.975	1.789	1.146	1.053	1.135	0.971	1.802
H_1: var(begin) > var(end)	0.108	0.571	0.000	0.209	0.372	0.218	0.581	0.000
H_1: var(begin) < var(end)	0.892	0.430	0.999	0.791	0.628	0.782	0.419	0.999
Law								
Variance begin-of-year	1.013	0.998	1.387	1.050	0.506	1.895	0.208	1.614
Variance end-of-year	0.992	0.851	1.250	1.038	0.622	2.029	0.202	2.001
F-statistic	1.020	1.172	1.109	1.012	0.817	0.934	1.029	0.804
H_1: var(begin) > var(end)	0.453	0.136	0.236	0.473	0.937	0.701	0.425	0.953
H_1: var(begin) < var(end)	0.547	0.864	0.764	0.527	0.063	0.299	0.575	0.048
Social sciences								
Variance begin-of-year	0.905	1.216	1.280	1.124	0.635	1.279	0.197	2.001
Variance end-of-year	1.133	1.060	0.928	1.256	0.637	1.319	0.197	1.999
F-statistic	0.798	1.148	1.379	0.894	0.997	0.970	0.945	1.005
H_1: var(begin) > var(end)	0.925	0.203	0.026	0.772	0.520	0.590	0.655	0.498
H_1: var(begin) < var(end)	0.075	0.797	0.974	0.228	0.480	0.410	0.345	0.502

Note: For all disciplines and beliefs/values under consideration, this table shows the variance in responses at the beginning and at the end of the year. It also shows the F-statistic calculated as the ratio between the two variances on which equality of variance tests are based. In the row 'H1: var(begin) > var(end)', it is tested whether the variance at the end of the year is smaller than that at the beginning of the year, i.e. whether beliefs/values are becoming less dispersed over time. P-values are shown. In the row 'H1: var(begin) < var(end)' the opposite is tested.

Table A5.3 Marginal effects of discipline on belief Firms Abuse their Size at begin and end of 1st year – calculated for a male student (based on (ordered) probit models in table 5.2)

Firms abuse size	1 - Disagree	2	3	4	5 - Agree
Economics					
Begin of the year	-0.012*	-0.042*	-0.011	0.034*	0.030
	(0.007)	(0.025)	(0.007)	(0.020)	(0.019)
End of the year	-0.015	-0.043	-0.012	0.044	0.026
	(0.012)	(0.034)	(0.010)	(0.034)	(0.022)
Psychology					
Begin of the year	-0.017***	-0.061***	-0.017**	0.047***	0.048**
	(0.006)	(0.024)	(0.007)	(0.017)	(0.020)
End of the year	-0.014	-0.039	-0.011	0.040	0.023
	(0.012)	(0.032)	(0.010)	(0.033)	(0.021)
Law					
Begin of the year	-0.017***	-0.061***	-0.017***	0.047***	0.047***
	(0.006)	(0.020)	(0.006)	(0.016)	(0.017)
End of the year	-0.006	-0.014	-0.004	0.016	0.008
	(0.012)	(0.032)	(0.008)	(0.034)	(0.018)
Social Sciences					
Begin of the year	-0.027***	-0.116***	-0.039***	0.068***	0.113***
	(0.006)	(0.019)	(0.007)	(0.015)	(0.021)
End of the year	-0.029**	-0.094***	-0.034**	0.086***	0.071**
	(0.011)	(0.036)	(0.016)	(0.030)	(0.034)

Note: Table shows marginal effects of disciplines for a male student per answer category (in columns) for the belief: Firms abuse their size. The scale for this question ranges from 1 (disagree) to 5 (agree). Columns show the (marginal) likelihood that a male student of a certain discipline chooses a certain answer. The reference group consists of male business students. Marginal effects are calculated for the September 2006 sample (begin of the year) and the June 2007 sample (end of the year), separately.

Table A5.4 Marginal effects of discipline on belief Exchange is Mutually Beneficial at begin and end of 1st year – calculated for a male student (based on (ordered) probit models in table 5.2)

Exchange	1 - Disagree	2	3	4	5 - Agree
Economics					
Begin of the year	-0.004	-0.013	-0.004	0.002	0.019
	(0.005)	(0.019)	(0.007)	(0.003)	(0.028)
End of the year	0.000	0.001	0.000	-0.001	-0.002
	(0.006)	(0.031)	(0.011)	(0.012)	(0.037)
Psychology					
Begin of the year	0.004	0.013	0.004	-0.004	-0.017
	(0.006)	(0.018)	(0.006)	(0.007)	(0.023)
End of the year	0.016*	0.063*	0.019*	-0.038	-0.060*
	(0.009)	(0.034)	(0.010)	(0.024)	(0.031)
Law					
Begin of the year	0.003	0.008	0.003	-0.003	-0.011
	(0.005)	(0.016)	(0.005)	(0.005)	(0.021)
End of the year	-0.001	-0.007	-0.003	0.003	0.009
	(0.005)	(0.027)	(0.010)	(0.010)	(0.033)
Social Sciences					
Begin of the year	0.018**	0.049***	0.014***	-0.025**	-0.056***
	(0.007)	(0.018)	(0.005)	(0.011)	(0.019)
End of the year	0.005	0.025	0.008	-0.012	-0.027
	(0.008)	(0.033)	(0.011)	(0.017)	(0.035)

Note: Table shows marginal effects of disciplines for a male student per answer category (in columns) for the belief: Exchange is mutually beneficial. The scale for this question ranges from 1 (disagree) to 5 (agree). Columns show the (marginal) likelihood that a male student of a certain discipline chooses a certain answer. The reference group consists of male business students. Marginal effects are calculated for the September 2006 sample (begin of the year) and the June 2007 sample (end of the year), separately.

Table A5.5 Marginal effects of discipline on belief Lot in Life is Deserved at begin and end of 1st year – calculated for a male student (based on (ordered) probit models in table 5.2)

Lot in Life	1 - Disagree	2	3	4	5 - Agree
Economics					
Begin of the year	0.011	-0.001	-0.002	-0.005	-0.003
	(0.035)	(0.003)	(0.005)	(0.017)	(0.009)
End of the year	-0.012	-0.001	0.002	0.007	0.003
	(0.043)	(0.004)	(0.008)	(0.026)	(0.013)
Psychology					
Begin of the year	0.093**	-0.017*	-0.013**	-0.042**	-0.020***
	(0.040)	(0.010)	(0.006)	(0.017)	(0.008)
End of the year	0.145***	-0.022	-0.029***	-0.068***	-0.026***
	(0.052)	(0.017)	(0.011)	(0.023)	(0.010)
Law					
Begin of the year	0.000	-0.000	-0.000	-0.000	-0.000
	(0.030)	(0.002)	(0.004)	(0.015)	(0.008)
End of the year	0.030	0.000	-0.006	-0.017	-0.008
	(0.044)	(0.003)	(0.009)	(0.024)	(0.011)
Social Sciences					
Begin of the year	0.087***	-0.015*	-0.012**	-0.040***	-0.019***
	(0.033)	(0.008)	(0.005)	(0.015)	(0.007)
End of the year	0.148**	-0.023	-0.029**	-0.069***	-0.027***
	(0.058)	(0.018)	(0.012)	(0.025)	(0.010)

Note: Table shows marginal effects of disciplines for a male student per answer category (in columns) for the belief: Lot in life is deserved. The scale for this question ranges from 1 (disagree) to 5 (agree). Columns show the (marginal) likelihood that a male student of a certain discipline chooses a certain answer. The reference group consists of male business students. Marginal effects are calculated for the September 2006 sample (begin of the year) and the June 2007 sample (end of the year), separately.

Table A5.6 Marginal effects of discipline on belief the State can be Trusted at begin and end of 1st year – calculated for a male student (based on (ordered) probit models in table 5.2)

Trust in state	1 - Disagree	2	3	4	5 - Agree
Economics					
Begin of the year	0.001	0.002	-0.000	-0.002	-0.000
	(0.016)	(0.024)	(0.003)	(0.035)	(0.003)
End of the year	0.032	0.058*	-0.003	-0.077*	-0.010
	(0.021)	(0.035)	(0.005)	(0.046)	(0.007)
Psychology					
Begin of the year	0.052***	0.057***	-0.014**	-0.091***	-0.005***
	(0.020)	(0.019)	(0.006)	(0.031)	(0.002)
End of the year	0.036*	0.064*	-0.004	-0.085*	-0.010
	(0.021)	(0.034)	(0.005)	(0.045)	(0.007)
Law					
Begin of the year	-0.021*	-0.037*	0.002	0.052*	0.005
	(0.011)	(0.021)	(0.002)	(0.028)	(0.003)
End of the year	-0.013	-0.033	-0.003	0.041	0.007
	(0.014)	(0.035)	(0.004)	(0.044)	(0.008)
Social Sciences					
Begin of the year	-0.005	-0.007	0.001	0.011	0.001
	(0.013)	(0.021)	(0.002)	(0.030)	(0.002)
End of the year	-0.020	-0.055	-0.006	0.069	0.014
	(0.015)	(0.042)	(0.007)	(0.052)	(0.011)

Note: Table shows marginal effects of disciplines for a male student per answer category (in columns) for the belief: the State can be trusted. The scale for this question ranges from 1 (disagree) to 5 (agree). Columns show the (marginal) likelihood that a male student of a certain discipline chooses a certain answer. The reference group consists of male business students. Marginal effects are calculated for the September 2006 sample (begin of the year) and the June 2007 sample (end of the year), separately.

Table A5.7 Marginal effects of discipline on the belief Mobility at begin and end of 1st year – calculated for a male student (based on (ordered) probit models in table 5.2)

Mobility	1 - Worse	2 - Same	3 - Better
Economics			
Begin of the year	0.037*	0.039*	-0.076*
	(0.021)	(0.020)	(0.041)
End of the year	0.040	0.050	-0.090
	(0.027)	(0.031)	(0.057)
Psychology			
Begin of the year	0.152***	0.094***	-0.246***
	(0.030)	(0.014)	(0.038)
End of the year	0.209***	0.129***	-0.338***
	(0.043)	(0.023)	(0.054)
Law			
Begin of the year	0.064***	0.059***	-0.124***
	(0.018)	(0.016)	(0.033)
End of the year	0.108***	0.100***	-0.207***
	(0.032)	(0.025)	(0.053)
Social Sciences			
Begin of the year	0.128***	0.088***	-0.216***
	(0.024)	(0.014)	(0.035)
End of the year	0.106***	0.099***	-0.204***
	(0.039)	(0.028)	(0.064)

Note: Table shows marginal effects of disciplines for a male student per answer category (in columns) for the belief of a students that they will fare worse (1), similar (2) or better (3) in life than their parents. Columns show the (marginal) likelihood that a male student of a certain discipline chooses a certain answer. The reference group consists of male business students. Marginal effects are calculated for the September 2006 sample (begin of the year) and the June 2007 sample (end of the year), separately.

Table A5.8 Marginal effects of discipline on value Equality at begin and end of 1st year – calculated for a male student (based on (ordered) probit models in table 5.2)

Equality	1 - Against	2	3	4	5	6	7 - Fundamental
Economics							
Begin of the year	-0.005	-0.006	-0.012	-0.030	-0.003	0.008	0.049
	(0.003)	(0.004)	(0.008)	(0.020)	(0.002)	(0.005)	(0.033)
End of the year	-0.004	-0.012	-0.017	-0.036	-0.002	0.022	0.048
	(0.004)	(0.010)	(0.013)	(0.028)	(0.002)	(0.017)	(0.037)
Psychology							
Begin of the year	-0.009***	-0.012***	-0.022***	-0.062***	-0.006**	0.009**	0.102***
	(0.003)	(0.004)	(0.007)	(0.021)	(0.003)	(0.004)	(0.034)
End of the year	-0.002	-0.007	-0.009	-0.019	-0.001	0.013	0.025
	(0.003)	(0.010)	(0.013)	(0.026)	(0.001)	(0.018)	(0.035)
Law							
Begin of the year	-0.009***	-0.013***	-0.024***	-0.069***	-0.007***	0.009*	0.114***
	(0.003)	(0.004)	(0.007)	(0.018)	(0.002)	(0.005)	(0.030)
End of the year	-0.002	-0.007	-0.009	-0.018	-0.001	0.012	0.024
	(0.003)	(0.009)	(0.013)	(0.025)	(0.001)	(0.017)	(0.034)
Social Sciences							
Begin of the year	-0.013***	-0.018***	-0.038***	-0.121***	-0.016***	-0.004	0.210***
	(0.004)	(0.004)	(0.007)	(0.018)	(0.003)	(0.008)	(0.031)
End of the year	-0.009*	-0.033***	-0.053***	-0.157***	-0.026***	0.037**	0.240***
	(0.005)	(0.010)	(0.013)	(0.031)	(0.009)	(0.017)	(0.051)

Note: Table shows marginal effects of disciplines for a male student per answer category (in columns) for the value: Equality. The scale for this question ranges from 1 (This is against my values) to 7 (This is a fundamental value to me). Columns show the (marginal) likelihood that a male student of a certain discipline chooses a certain answer. The reference group consists of male business students. Marginal effects are calculated for the September 2006 sample (begin of the year) and the June 2007 sample (end of the year), separately.

Table A5.9 Marginal effects of discipline on value Inequality Aversion at begin and end of 1st year – calculated for a male student (based on (ordered) probit models in table 5.2)

Inequality Aversion	**(1)**
Economics	
Begin of the year	0.046
	(0.045)
End of the year	0.067
	(0.062)
Psychology	
Begin of the year	0.186***
	(0.046)
End of the year	0.207***
	(0.071)
Law	
Begin of the year	0.113***
	(0.039)
End of the year	0.160***
	(0.062)
Social Sciences	
Begin of the year	0.169***
	(0.040)
End of the year	0.204***
	(0.071)

Note: Table shows marginal effects of disciplines for a male student per answer category (in column 1) for the value: Inequality Aversion. This variable is a dummy that is 1 for people that are inequality averse. The column shows the (marginal) likelihood that a male student of a certain discipline is inequality averse. The reference group consists of male business students. Marginal effects are calculated for the September 2006 sample (begin of the year) and the June 2007 sample (end of the year), separately.

Table A5.10 Marginal effects of discipline on value Wealth at begin and end of 1st year – calculated for a male student (based on (ordered) probit models in table 5.2)

Wealth	1 - Against	2	3	4	5	6	7 - Fundamental
Economics							
Begin of the year	0.003	0.010	0.009	0.012	-0.005	-0.016	-0.013
	(0.004)	(0.010)	(0.009)	(0.012)	(0.005)	(0.016)	(0.013)
End of the year	0.001	0.003	0.004	0.005	-0.002	-0.006	-0.006
	(0.005)	(0.013)	(0.013)	(0.020)	(0.008)	(0.022)	(0.021)
Psychology							
Begin of the year	0.019***	0.046***	0.039***	0.029***	-0.023***	-0.065***	-0.044***
	(0.006)	(0.013)	(0.010)	(0.009)	(0.006)	(0.016)	(0.010)
End of the year	0.024***	0.047***	0.041***	0.032**	-0.030***	-0.065***	-0.049***
	(0.009)	(0.016)	(0.014)	(0.015)	(0.010)	(0.019)	(0.016)
Law							
Begin of the year	0.005*	0.015*	0.014*	0.018*	-0.008*	-0.025*	-0.020*
	(0.003)	(0.008)	(0.008)	(0.009)	(0.004)	(0.013)	(0.010)
End of the year	0.006	0.013	0.013	0.017	-0.008	-0.021	-0.019
	(0.006)	(0.013)	(0.013)	(0.017)	(0.008)	(0.021)	(0.018)
Social Sciences							
Begin of the year	0.029***	0.065***	0.051***	0.025**	-0.032***	-0.084***	-0.054***
	(0.007)	(0.012)	(0.009)	(0.010)	(0.006)	(0.014)	(0.010)
End of the year	0.023**	0.046**	0.041***	0.032**	-0.029**	-0.064***	-0.049***
	(0.011)	(0.019)	(0.015)	(0.015)	(0.012)	(0.023)	(0.017)

Note: Table shows marginal effects of disciplines for a male student per answer category (in columns) for the value: Wealth. The scale for this question ranges from 1 (This is against my values) to 7 (This is a fundamental value to me). Columns shows the (marginal) likelihood that a male student of a certain discipline chooses a certain answer. The reference group consists of male business students. Marginal effects are calculated for the September 2006 sample (begin of the year) and the June 2007 sample (end of the year), separately.

Table A5.11 Marginal effect of end-of-year dummy on belief Firms Abuse their Size at begin and end of 1st year – calculated for a male student (based on (ordered) probit models in table 5.3)

Firms abuse size	1 - Disagree	2	3	4	5 - Agree
Business	0.008	0.022	0.004	-0.022	-0.012
	(0.010)	(0.025)	(0.004)	(0.025)	(0.014)
Economics	0.006	0.013	0.003	-0.010	-0.012
	(0.013)	(0.028)	(0.006)	(0.022)	(0.025)
Psychology	0.006	0.028	0.016	-0.021	-0.029
	(0.006)	(0.024)	(0.014)	(0.020)	(0.024)
Law	0.019*	0.057**	0.018**	-0.058**	-0.036**
	(0.010)	(0.025)	(0.008)	(0.028)	(0.016)
Social Sciences	0.002	0.019	0.011	0.003	-0.035
	(0.003)	(0.023)	(0.013)	(0.005)	(0.039)

Note: Table shows marginal effects of the end-of-year dummy for a male student per answer category (in columns) for the belief: Firms abuse their size. The scale for this question ranges from 1 (disagree) to 5 (agree). Columns shows the marginal likelihood that a male student at the end of the first year chooses a certain answer. The reference group consists of male business students. Separate models are calculated for each discipline.

Table A5.12 Marginal effect of end-of-year dummy on belief Exchange is Mutually Beneficial at begin and end of 1st year – calculated for a male student (based on (ordered) probit models in table 5.3)

Exchange	1 - Disagree	2	3	4	5 - Agree
Business	0.001	0.002	0.001	-0.001	-0.002
	(0.007)	(0.019)	(0.007)	(0.009)	(0.024)
Economics	0.004	0.014	0.003	-0.003	-0.018
	(0.008)	(0.027)	(0.007)	(0.007)	(0.035)
Psychology	0.009*	0.046*	0.026*	-0.016	-0.064**
	(0.005)	(0.024)	(0.013)	(0.017)	(0.031)
Law	-0.003	-0.011	-0.004	0.001	0.017
	(0.004)	(0.018)	(0.007)	(0.003)	(0.028)
Social Sciences	-0.003	-0.007	-0.002	0.005	0.007
	(0.010)	(0.025)	(0.006)	(0.016)	(0.025)

Note: Table shows marginal effects of the end-of-year dummy for a male student per answer category (in columns) for the belief: Exchange is mutually beneficial. The scale for this question ranges from 1 (disagree) to 5 (agree). Columns shows the marginal likelihood that a male student at the end of the first year chooses a certain answer. The reference group consists of male business students. Separate models are calculated for each discipline.

Table A5.13 Marginal effect of end-of-year dummy on belief Lot in Life is Deserved– calculated for a male student (based on (ordered) probit models in table 5.3)

Lot in Life	1 - Disagree	2	3	4	5 - Agree
Business	-0.067**	-0.000	0.013**	0.038*	0.017*
	(0.033)	(0.004)	(0.006)	(0.019)	(0.010)
Economics	-0.059	0.000	0.007	0.037	0.014
	(0.042)	(0.005)	(0.005)	(0.027)	(0.011)
Psychology	0.006	-0.002	-0.001	-0.002	-0.001
	(0.046)	(0.015)	(0.007)	(0.017)	(0.008)
Law	-0.031	0.002	0.005	0.015	0.009
	(0.037)	(0.004)	(0.006)	(0.018)	(0.011)
Social Sciences	0.019	-0.006	-0.003	-0.007	-0.004
	(0.048)	(0.015)	(0.007)	(0.017)	(0.009)

Note: Table shows marginal effects of the end-of-year dummy for a male student per answer category (in columns) for the belief: Lot in life is deserved. The scale for this question ranges from 1 (disagree) to 5 (agree). Columns shows the marginal likelihood that a male student at the end of the first year chooses a certain answer. The reference group consists of male business students. Separate models are calculated for each discipline.

Table A5.14 Marginal effect of end-of-year dummy on belief the State can be Trusted at begin and end of 1st year – calculated for a male student (based on (ordered) probit models in table 5.3)

Trust in state	1 - Disagree	2	3	4	5 - Agree
Business	-0.016	-0.029	0.002	0.040	0.003
	(0.013)	(0.026)	(0.002)	(0.035)	(0.003)
Economics	0.024	0.022	-0.002	-0.041	-0.003
	(0.025)	(0.023)	(0.003)	(0.042)	(0.004)
Psychology	-0.012	-0.017	0.005	0.023	0.002
	(0.020)	(0.028)	(0.008)	(0.037)	(0.003)
Law	-0.007	-0.017	-0.000	0.021	0.002
	(0.012)	(0.029)	(0.001)	(0.038)	(0.004)
Social Sciences	-0.031*	-0.053*	-0.001	0.069*	0.015
	(0.016)	(0.031)	(0.004)	(0.039)	(0.011)

Note: Table shows marginal effects of the end-of-year dummy for a male student per answer category (in columns) for the belief: the State can be trusted. The scale for this question ranges from 1 (disagree) to 5 (agree). Columns shows the marginal likelihood that a male student at the end of the first year chooses a certain answer. The reference group consists of male business students. Separate models are calculated for each discipline.

Table A5.15 Marginal effect of end-of-year dummy on the belief Mobility at begin and end of 1st year – calculated for a male student (based on (ordered) probit models in table 5.3)

Mobility	1 - Worse	2 - Same	3 - Better
Business	-0.024*	-0.052*	0.076*
	(0.013)	(0.029)	(0.042)
Economics	-0.023	-0.015	0.038
	(0.032)	(0.021)	(0.053)
Psychology	0.022	0.004	-0.026
	(0.040)	(0.008)	(0.046)
Law	0.020	0.015	-0.035
	(0.027)	(0.019)	(0.045)
Social Sciences	-0.055	-0.011	0.066
	(0.040)	(0.011)	(0.050)

Note: Table shows marginal effects of the end-of-year dummy for a male student per answer category (in columns) for the belief of a students that they will fare worse (1), similar (2) or better (3) in life than their parents. Columns shows the marginal likelihood that a male student at the end of the first year chooses a certain answer. The reference group consists of male business students. Separate models are calculated for each discipline.

Table A5.16 Marginal effect of end-of-year dummy on value Equality at begin and end of 1st year – calculated for a male student (based on (ordered) probit models in table 5.3)

Equality	1 - Against	2	3	4	5	6	7 - Fundamental
Business	0.008	0.014*	0.024**	0.033**	0.002	-0.021*	-0.061**
	(0.005)	(0.008)	(0.012)	(0.015)	(0.001)	(0.011)	(0.028)
Economics	0.004	0.009	0.010	0.038	0.003	-0.008	-0.056
	(0.004)	(0.007)	(0.008)	(0.028)	(0.003)	(0.007)	(0.041)
Psychology	0.011	0.008	0.038***	0.117***	0.018**	-0.021	-0.171***
	(0.007)	(0.006)	(0.014)	(0.027)	(0.007)	(0.023)	(0.040)
Law	0.014**	0.027***	0.029***	0.102***	0.008***	-0.022*	-0.158***
	(0.007)	(0.010)	(0.009)	(0.023)	(0.003)	(0.012)	(0.033)
Social Sciences	0.001	0.001	0.003	0.019	0.003	0.009	-0.036
	(0.001)	(0.001)	(0.004)	(0.026)	(0.005)	(0.012)	(0.048)

Note: Table shows marginal effects of the end-of-year dummy for a male student per answer category (in columns) for the value: Equality. The scale for this question ranges from 1 (This is against my values) to 7 (This is a fundamental value to me). Columns shows the marginal likelihood that a male student at the end of the first year chooses a certain answer. The reference group consists of male business students. Separate models are calculated for each discipline.

Table A5.17 Marginal effect of end-of-year dummy value Inequality Aversion at begin and end of 1st year – calculated for a male student (based on (ordered) probit models in table 5.3)

Inequality Aversion	**(1)**
Business	-0.031
	(0.047)
Economics	-0.012
	(0.058)
Psychology	-0.008
	(0.066)
Law	0.021
	(0.051)
Social Sciences	-0.034
	(0.056)

Note: Table shows marginal effects of the end-of-year dummy for a male student per answer category (in columns) for the value: Inequality Aversion. This variable is a dummy that is 1 for people that are inequality averse. Columns shows the marginal likelihood that a male student at the end of the first year chooses a certain answer. The reference group consists of male business students. Separate models are calculated for each discipline.

Table A5.18 Marginal effect of end-of-year dummy value Wealth at begin and end of 1st year – calculated for a male student (based on (ordered) probit models in table 5.3)

Wealth	**1 - Against**	**2**	**3**	**4**	**5**	**6**	**7 - Fundamental**
Business	-0.001	-0.002	-0.003	-0.004	0.002	0.004	0.004
	(0.003)	(0.009)	(0.010)	(0.016)	(0.006)	(0.017)	(0.015)
Economics	-0.005	-0.011	-0.007	-0.011	0.004	0.017	0.013
	(0.006)	(0.014)	(0.009)	(0.016)	(0.005)	(0.022)	(0.017)
Psychology	-0.002	-0.010	-0.010	0.001	0.006	0.010	0.006
	(0.004)	(0.015)	(0.014)	(0.005)	(0.009)	(0.015)	(0.008)
Law	-0.002	-0.005	-0.006	-0.008	0.003	0.010	0.009
	(0.003)	(0.009)	(0.010)	(0.016)	(0.005)	(0.018)	(0.017)
Social Sciences	-0.014	-0.018	-0.009	0.008	0.007	0.016	0.010
	(0.013)	(0.017)	(0.009)	(0.008)	(0.007)	(0.016)	(0.010)

Note: Table shows marginal effects of the end-of-year dummy for a male student per answer category (in columns) for the value: Wealth. The scale for this question ranges from 1 (This is against my values) to 7 (This is a fundamental value to me). Columns shows the marginal likelihood that a male student at the end of the first year chooses a certain answer. The reference group consists of male business students. Separate models are calculated for each discipline.

Table A5.19 Effect of disciplines on beliefs/values over time (OLS)

Dependent variable:	(1) Belief: Firms abuse size	(2) Belief: Exchange	(3) Belief: Lot in life	(4) Belief: Trust in state	(5) Belief: Mobility	(6) Value: Equality	(7) Value: Ineq. Aversion	(8) Value: Wealth
End of the year	-0.058	0.001	0.172	0.079	0.107*	-0.289**	-0.031	0.018
	(0.100)	(0.094)	(0.106)	(0.094)	(0.056)	(0.142)	(0.045)	(0.121)
Economics	0.125	0.085	-0.027	0.011	-0.107*	0.187	0.050	-0.157
	(0.099)	(0.090)	(0.099)	(0.094)	(0.061)	(0.123)	(0.041)	(0.114)
Economics x End of the year	0.005	-0.122	-0.005	-0.187	-0.056	0.098	0.019	0.085
	(0.164)	(0.154)	(0.168)	(0.156)	(0.101)	(0.215)	(0.070)	(0.198)
Psychology	0.256***	-0.018	-0.164*	-0.263***	-0.405***	0.420***	0.165***	-0.500***
	(0.092)	(0.084)	(0.096)	(0.088)	(0.063)	(0.114)	(0.036)	(0.106)
Psychology x End of the year	-0.061	-0.240	-0.265*	-0.032	-0.155	-0.260	0.025	0.055
	(0.150)	(0.147)	(0.151)	(0.145)	(0.103)	(0.198)	(0.062)	(0.169)
Law	0.246***	-0.035	0.015	0.145*	-0.180***	0.410***	0.107***	-0.190**
	(0.080)	(0.074)	(0.085)	(0.076)	(0.050)	(0.102)	(0.033)	(0.092)
Law x End of the year	-0.157	0.075	-0.121	-0.028	-0.170*	-0.311	0.050	0.055
	(0.143)	(0.132)	(0.153)	(0.137)	(0.092)	(0.196)	(0.062)	(0.177)
Social Sciences	0.466***	-0.186**	-0.200**	0.002	-0.357***	0.737***	0.165***	-0.644***
	(0.076)	(0.078)	(0.083)	(0.077)	(0.054)	(0.094)	(0.033)	(0.099)
Social Sciences x End of the year	-0.074	0.057	-0.280*	0.137	0.015	0.196	-0.001	0.156
	(0.154)	(0.150)	(0.154)	(0.153)	(0.104)	(0.189)	(0.065)	(0.195)
Constant	3.343***	3.716***	2.162***	2.844***	2.510***	5.274***	0.442***	4.519***
	(0.057)	(0.053)	(0.058)	(0.052)	(0.032)	(0.074)	(0.024)	(0.066)
Observations	2,072	2,196	2,215	2,154	2,260	2,290	2,272	2,317
Adj. R-squared	0.0210	0.00596	0.0172	0.0207	0.0481	0.0630	0.110	0.0389
F-statistic	5.970	2.246	5.411	5.772	13.68	17.51	29.37	10.57
(p-value)	0.000	0.013	0.000	0.000	0.000	0.000	0.000	0.000

Note: Columns 1-5 show estimation output with beliefs as dependent variable and columns 6-8 for values as dependent variable. Main independent variables are discipline dummies equal to 1 if respondent is a student of that discipline and 0 otherwise, an end-of-year dummy that is 1 at the end of the year and the interaction between these variables. The reference group consists of business students. Robust standard errors are in parentheses. Significance is indicated as follows: *** p<0.01, ** p<0.05, * p<0.1. The models are estimated using OLS and we control for gender.

Table A5.20 Marginal effects per discipline at begin and end of 1st year (based on OLS models with time-dummy interaction in appendix table A5.19)

Dependent variable:	(5) Belief: Firms abuse size	(2) Belief: Exchange	(1) Belief: Lot in life	(4) Belief: Trust in state	(3) Belief: Mobility	(6) Value: Equality	(7) Value: Ineq. Aversion	(8) Value: Wealth
Economics								
Begin	0.125	0.085	-0.027	0.011	-0.107*	0.187	0.050	-0.157
	(0.099)	(0.090)	(0.099)	(0.094)	(0.061)	(0.123)	(0.041)	(0.114)
End	0.131	-0.037	-0.032	-0.175	-0.163**	0.284	0.069	-0.073
	(0.131)	(0.126)	(0.136)	(0.125)	(0.081)	(0.176)	(0.057)	(0.162)
Sign. different?	NO	NO	NO	NO	NO	NO	NO	NO
Psychology								
Begin	0.256***	-0.018	-0.164*	-0.263***	-0.405***	0.420***	0.165***	-0.500***
	(0.092)	(0.084)	(0.096)	(0.088)	(0.063)	(0.114)	(0.036)	(0.106)
End	0.195	-0.259**	-0.429***	-0.296**	-0.560***	0.160	0.190***	-0.445***
	(0.123)	(0.124)	(0.123)	(0.121)	(0.085)	(0.166)	(0.053)	(0.137)
Sign. different?	NO	NO	YES	NO	NO	NO	NO	NO
Law								
Begin	0.246***	-0.035	0.015	0.145*	-0.180***	0.410***	0.107***	-0.190**
	(0.080)	(0.074)	(0.085)	(0.076)	(0.050)	(0.102)	(0.033)	(0.092)
End	0.088	0.040	-0.106	0.117	-0.350***	0.099	0.157***	-0.135
	(0.122)	(0.111)	(0.130)	(0.117)	(0.080)	(0.168)	(0.053)	(0.153)
Sign. different?	NO	NO	NO	NO	YES	NO	NO	NO
Social Sciences								
Begin	0.466***	-0.186**	-0.200**	0.002	-0.357***	0.737***	0.165***	-0.644***
	(0.076)	(0.078)	(0.083)	(0.077)	(0.054)	(0.094)	(0.033)	(0.099)
End	0.392***	-0.129	-0.479***	0.139	-0.342***	0.933***	0.164***	-0.487***
	(0.136)	(0.129)	(0.132)	(0.134)	(0.090)	(0.165)	(0.057)	(0.171)
Sign. different?	NO	NO	YES	NO	NO	NO	NO	NO

Note: Table shows the marginal effect of studying a certain disciplines on having a certain belief/value. The reference group consists of business students. Marginal effects are calculated for the begin of the year and the end of the year sample. The rows 'Sign. different?' shows whether the marginal effects at the start of the year are statistically different from the ones at the end of the year at the 10% level, i.e. whether beliefs/values changed significantly over time. This is based on the significance of the interaction terms is Table A5.19.