

Subjects Studied and Students' Political Ideology

A thesis submitted in partial fulfilment of the requirements for the degree
of Master of Arts in International Economics at the Department of
Economics of the University of Konstanz

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Period of completion: 31st January 2011 – 31st March 2011

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Konstanz, 31st March 2011

Abstract

The aim of this analysis is to account for the differences in and changes of political attitudes among university students of different subjects. Employing theories of political economy and science studies an ordered probit analysis is performed on data provided by the student survey of the Konstanz Research Group on Higher Education. The findings suggest that the differences in political attitudes among different groups of students primarily stem from self-selection. However, part of the difference is found to be caused by the subjects themselves, as the support of certain political positions changes systematically in the course of studies. While economics is found to increase students' sympathy for liberal positions, the results indicate that the humanities strengthen students' support of social democratic positions.

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1. Introduction

Previous studies have shown that students' political attitudes vary systematically across subjects and found that these variations are already detectable in freshmen, suggesting that self-selection effects are responsible. I would like to examine whether political attitudes also undergo systematic change during university attendance. To my knowledge, so far no one has published results on a dataset representative of German students concerning this question. Several ways of reasoning lend themselves to explain the differences in the political ideology of university students. I will look at the following three: First, self-selection possibly causes subject groups to be different from the outset and such differences are likely also reflected in political attitudes. Second, economic self-interest may cause students of different subjects to support different political positions because some subjects are associated with a higher future income or better prospects of finding work than others. Anticipating the effects of redistributive policies on their income, students will support different parties for reasons of maximizing future utility. Third, students might undergo what has been described as "university socialization". The enquiry will be following these rationales.

However well founded on theoretical considerations in political economy and science studies, the idea to examine this question was originally informed by an intuition derived from experience. Transferring from a philosophical to an economics department, I literally underwent a culture shock that created an interest in how scientific arguments relate to political attitudes. There are some contents of studies the political relevance of which is obvious. When an economics student learns about the damaging effects of subsidizing declining industries and its inefficiency as a way of redistributing income, it becomes increasingly difficult for her to find reasons to vote for the left-wing party. Likewise, when a sociology student reads texts on cultural hegemony he is likely to view neoliberal ideas as a disguised justification for inequalities persisting in the status quo,

which likely alienates him from the liberal party. In many cases the influence of different subjects on students' political ideology is not so obvious. Learning to apply different theories changes the perception of facts by directing attention to some aspects of experience rather than others. Personal exchange with fellow students or professors likely also leaves a mark on students' attitudes. All the changes in beliefs and behaviour students undergo during their studies can be subsumed under the notion of "university socialization". In the following section I will discuss the implications of political economy and university socialization for student's political ideology. The two theories' basic assumptions will be instrumentalized by several variables so that an ordered probit model can be estimated. The empirical findings will be presented and discussed. A final section concludes.

2. Theoretical background

2.1. The political economy of voting

Redistribution of private consumption goods is, besides regulation, the main function of a welfare state. Many political decisions have an immediate impact on people's income. Depending on the level and source of income, people are affected by different redistributive measures in different ways. If one assumes a constant lump sum payment to everyone that is financed by a linearly progressing income tax, as Meltzer and Richard (1981) do, people with high incomes will be net contributors to the scheme, whereas people with low incomes will be net beneficiaries. High-income earners will want to see the size of the government, i.e. the amount of redistribution, reduced, whereas low-income earners will want to see it increased. Also in a country with progressive income taxes, such as Germany, voting along these lines can be expected.

In Germany, the social democratic and the liberal party traditionally take different positions in economic policy. Hibbs' (1977) model relates these stances to the self-interest of the respective parties' supporters by referring to the tradeoff between inflation

and growth as reflected by the Phillips curve. A social democratic party, having its popular base with the working class, accepts a higher level of inflation in return for higher growth and lower unemployment, which results in redistribution of income from the rich to the poor. A liberal party, representing the more prosperous part of the population, will pursue a contractionary monetary policy to achieve low inflation, thus impeding growth and raising unemployment. Hence, it is reasonable for a person who earns a small income to support the social democratic party, whereas a person with a high income should support the liberal party. It might seem inappropriate to want to apply this theory to university students, as they usually do not live on their own earnings, yet, but receive funding from their parents or the state. Furthermore, German higher education is heavily subsidized by the state so that in any case a university student is a net recipient from redistribution. The economic theory of voting can only be used to explain ideological differences between students of different subjects if the latter are assumed to be forward-looking rather than myopic when determining their economic self-interest.

2.2. University socialization

Studies in university socialization from past decades date back to the Popper-Adorno controversy about value judgments in science in the 1960s. Kuhn (1962) claims that the division of science into different epistemic communities follows necessarily from the underdetermination of theories by facts. The notion that scientific knowledge is governed by paradigms is widely accepted. Kuhn also claims that this division of science into different epistemic camps results in differences in disciplinary training. He identifies the fact that students who study different subjects learn by different examples as a major factor in the reproduction of disciplinary cultures. If scientific knowledge is inseparable from scientific cultures, students' education at university is necessarily accompanied by socialization. Ylijoki (2000) points out that besides a common epistemic basis (scientific knowledge), disciplines also have their own cultural characteristics (norms, values, heroes, taboos, rituals of rewards and punishment).

Early studies examining the effects of higher education on students were carried out by Feldman and Newcomb in the U.S. in the late 1960s and later developed into a field called “impact of college research”. The method employed by this strand of research is descriptive, so that changes are observed but not quantitatively accounted for. Quantitative analyses of differences in attitudes have been carried out by Windolf (1992) and Armingeon (2001). Windolf examines freshmen at three German universities. He detects that both motivation to study and political attitudes vary between subject groups and are systematically related. This indicates that the differences in political attitudes of students in higher semesters are partly due to self-selection. Armingeon confirms these findings for students at the University of Berne in Switzerland.

There is an extensive literature in political economy analyzing the link between the level of education and voting behaviour. However, only very few economists have to date looked at the relationship between the area in which one is trained and ones political ideology. There is some economic literature concerned with the effect of studying economics on students’ behaviour. Ghoshal (2005) criticizes the “radical individualism” of mainstream economics as self-fulfilling prophecy. In a recent study Allgood et al. (2010) show by multinomial logit analysis based on a dataset of U.S. students that the number of economics courses a student has taken is negatively related to joining the democratic party and positively related to joining the republican party. The basic implication of university socialization is that the contents of different subjects are tied to different disciplinary cultures and that for this reason the subject studied is expected to have an influence on a student’s political attitudes.

3. Research questions and testable hypotheses

The empirical analysis wants to answer the following questions:

- 1. Do students’ political attitudes vary systematically between subjects?*
- 2. Does studying a certain subject have an influence on a student’s political attitudes?*

Both questions are addressed by looking at the responses to the following question:

Characterizing your overall political attitude, to what extent do you agree with the positions of the following political orientations, and to what extent do you reject them?

The analysis is based on the responses for liberal, social democratic, Christian conservative, and green/alternative positions. I assume that students' political attitudes are determined by self-interest, family background, and the exposure to a certain subject. Self-interest and family background are assumed to be constant over time whereas exposure to the subject one studies increases with the number of semesters. The subject groups accounted for are the humanities, the social sciences, law, economics, medicine, engineering, the natural sciences, and a residual category for other subjects. Other categorizations and treatment of separate subjects were tried as well but either seemed more arbitrary or simply caused the number of observations in one group to become too small to draw any inference. The analysis, thus, uses the subject categorization that the dataset offers by default. In order to be able to apply the economic theory of voting, I will equate the four political positions to the economic policies attached to them, ignoring any other political dimension. This gives the following left to right scale: social democratic, green/alternative, Christian democratic, liberal. Social democratic and green/alternative positions will be assumed to be left of the centre, whereas Christian democratic and liberal positions will be assumed to be right of the centre.

As discussed above, the implications for economic policy of mainstream economic theory are fairly clear. I will assume that economics causes students to become more economically liberal and less social during their studies. But whereas economics is concerned with efficiency of systems of scarce resource allocation, the humanities and social sciences are concerned with the individual's needs and rights. Equality and justice are central notions in both fields. I will assume that the humanities and the social sciences cause students to become more social and less liberal in the course of their studies. These

effects should be clearly measurable for the two ends of the economic spectrum, i.e. social positions and liberal positions. To a smaller extent, this might also be found for green/alternative positions and Christian democratic positions (if the categorization is correct). In an attempt to keep the analysis concise, the focus will be on liberal and social democratic positions of economics, humanities and social sciences students. The inclusion of more parties would not contribute to the confrontation of opposing economic policies. I will assume subjects from groups other than economics, the humanities, and social sciences not to affect students' political positions because the political implications from their contents are not clear. The arguments about the effects of different subjects on students' ideology can be backed by giving detailed accounts of the curricula and the commonplaces in the different fields. However, such a discussion would go beyond the scope of this thesis and distract from the empirical analysis. Based on the discussion the following hypotheses are formulated.

Hypotheses derived from the first question (differences in attitudes):

(Hypothesis 1a) Students in the humanities exhibit stronger support of social democratic positions and weaker support of liberal positions than students in the natural sciences.

(Hypothesis 1b) Students in the social sciences exhibit stronger support of social democratic positions and weaker support of liberal positions than students in the natural sciences.

(Hypothesis 1c) Students in economics exhibit weaker support of social democratic positions and stronger support of liberal positions than students in the natural sciences.

(Hypothesis 1d) The political positions of students of the remaining subjects are not significantly different from the political positions of students of the natural sciences.

Hypotheses derived from the second question (change of attitudes):

(Hypothesis 2a) The more a student in the humanities advances in his studies, the stronger is his support of social democratic positions and the weaker is his support of liberal positions.

(Hypothesis 2b) The more a student in the social sciences advances in his studies, the stronger is his support of social democratic positions and the weaker is his support of liberal positions.

(Hypothesis 2c) The more a student in economics advances in his studies, the weaker is his support of social democratic positions and the stronger is his support of liberal positions.

(Hypothesis 2d) The political support of students of the remaining subjects does not change in the course of their studies.

In the following analysis, the socio-economic variables that, according to the economic theory of voting, affect political support will be treated as control variables about which no hypotheses will be tested explicitly. However, I will give a short rationale for the inclusion of certain variables. Self-interest should be expected to affect both self-selection into a certain subject group and political attitudes. Someone who cares about a high future income will choose a subject that is related to promising job perspectives. This person, anticipating his economic position after graduation, should also be expected to tend towards economically liberal positions, independently of the contents of his studies. Self-interest refers to one's present as well as to one's future situation, so that both should be accounted for. Present self-interest is assumed to be affected by the present financial situation, future self-interest is affected by career plans and the perspective to find well paid work. A good proxy for family background is the father's profession. Because both the German party landscape and students' attitudes towards politics changed during the enquiry period (see e.g. Bargel 2008), the model should control for cohort effects.

4. Empirical Model

Both questions require a rather complicated empirical method because the dependent variables are Likert scaled and the independent variable of interest even only has a nominal scale of measurement. Thus, simple OLS regressions do not yield reliable estimators. When dealing with categorical dependent variables the scale of which has a natural order, the ordered probit model is commonly used (see e.g. Marvasti 2007). It is assumed that the categorical variable y is derived from an underlying continuous variable y^* defined as

$$y_i^* = x_i'\beta + \varepsilon_i$$

Where i is the observation and ε is a random error.

In all our models the dependent variable has 7 categories, so instead of y^* we observe

$y = 1$ (strongly disagree)	if	$y^* \leq \delta_1$
$y = 2$ (disagree)	if	$\delta_1 < y^* \leq \delta_2$
$y = 3$ (disagree somewhat)	if	$\delta_2 < y^* \leq \delta_3$
$y = 4$ (undecided)	if	$\delta_3 < y^* \leq \delta_4$
$y = 5$ (agree somewhat)	if	$\delta_4 < y^* \leq \delta_5$
$y = 6$ (agree)	if	$\delta_5 < y^* \leq \delta_6$
$y = 7$ (strongly agree)	if	$\delta_6 < y^*$.

The δ 's are unknown threshold parameters that will be estimated together with the β 's.

The method of estimation is maximum likelihood, which in the case of the ordered probit model requires that ε is assumed to be standard normally distributed.

For example, the probability of obtaining an observation with $y=2$ is equal to

$$\begin{aligned}
 & Pr \{ \delta_1 < y^* = x_i' \beta + \varepsilon_i \leq \delta_2 \} \\
 & = Pr \{ \delta_1 - x_i' \beta < \varepsilon_i \leq \delta_2 - x_i' \beta \} \\
 & = F(\delta_2 - x_i' \beta) - F(\delta_1 - x_i' \beta)
 \end{aligned}$$

where F is the cumulative distribution function of ε_i . Similar expressions can be found for the probabilities of obtaining other values of y . The likelihood function is the product of such expressions for each of the observations. Because the estimators of an ordered probit model are non-linear, only the signs of the coefficients can be interpreted but not their values. Only the marginal effects may be interpreted. They are given by

$$ME_j = \frac{\partial Pr[y_i = 2]}{\partial x_i} = \{F'(\delta_2 - x_i' \beta) - F'(\delta_1 - x_i' \beta)\} \beta$$

and have to be computed separately after regression.

In order to analyze the first question a dummy variable for each subject group, except for the natural sciences is included in the model. I decided to use the natural sciences as base category because descriptive statistics helped identify this group as least homogeneous and politicized of all. In order to answer the second question the dataset has to be split by subject groups. Then separate regressions are run for each group.

5. Data

The present analysis uses data from a student survey by the Research Group on Higher Education at the University of Konstanz. Beginning in the winter semester of 1982/83, data on more than 8000 university students has been collected every two or three years. Students were asked to answer questions about their socio-economic background, motivation for, expectations of, satisfaction from and strategies of coping with their

Table 1. Overview of employed variables

Variable	Description	Coding	Remarks
CONSERVATIVE	Support of Christian conservative positions		Question: Characterizing your overall political attitude, to what extent do you agree with the positions of the following political orientations, and to what extent do you reject them?
GREEN	Support of green/ alternative positions	1 (strongly disagree) to 7 (strongly agree)	
LIBERAL	Support of liberal positions		
SOCIAL	Support of social democratic positions		
SEMESTERS	Number of semesters in major		1-99
HUMANITIES	Studies humanities	1/0	Dummies generated from dataset
SOCIAL SCIENCES	Studies social sciences	1/0	
LAW	Studies law	1/0	
ECONOMICS	Studies economics	1/0	
MEDICINE	Studies medicine	1/0	
NATURAL SCIENCES	Studies natural sciences	1/0	
ENGINEERING	Studies engineering	1/0	
OTHER SUBJECTS	Studies other subjects	1/0	
WAVE	Wave of data collection	1-10	
BAD JOB PERSPECTIVES	Believes he/she will have difficulty finding a job	1 (hardly any difficulties to find a job) to 4 (considerable difficulties to find a job)	
NO FUTURE ENTREPRENEUR	Thinks it is unlikely he/she will work as entrepreneur	1 (yes for sure) to 4 (for sure not)	Question: In which area would you like to work in the long run? – as entrepreneur
FEMALE	Sex	1/0	Question: To what extent do you feel personally burdened by your current financial situation?
BAD FINANCIAL SITUATION	Suffers stress from financial situation	0 (not at all burdened) to 6 (strongly burdened)	
FATHER WORKER	Father is manual worker	1/0	
FATHER ENTREPRENEUR	Father is entrepreneur	1/0	Dummies generated from dataset

studies, organisation, life styles, and political attitudes. Questions inquiring about political attitudes were included beginning in the second wave. The dataset contains 87 946 observations spread over 10 waves and comprises more than 900 variables, most of which were included in several waves. Mutrus (2004) notes that accordance of the dataset with

the German student population with respect to the distribution of basic attributes such as sex, subject, and age indicates that the student survey is representative for German students pursuing education at universities or polytechnics (FH's). Hence, also findings should be treated as valid for the German student population. The present analysis only employs a short list of variables (see Table 1) because most variables of the dataset focussed on information not related to political ideology or are endogenous to it.

The hypotheses are tested by checking whether the coefficients of the explanatory variables have the expected sign and are significantly different from zero. Then marginal effects are computed for the different categories of the endogenous variables in order to gain insight into the magnitude of the explanatory variables' effects on the former.

6. Results

The differences in and change of attitudes for eight subject groups on 4 political positions were analyzed. This gives four regression tables and four tables of marginal effects for the first question and 32 regression tables and as many tables with marginal effects for the second question. In order to economize on space, for the first question I will only present the regression table and the marginal effects for the differences in support of liberal positions. For the second question I will only present the regression table for the change in support of liberal positions of economics students. However, I will summarize the marginal effects for the variable of interest for all regressions on liberal as well as all regressions on social democratic positions because these are at this analysis' focus of interest. More tables with regressions and marginal effects can be found in Appendix A.

6.1. Results for the first question (differences in attitudes)

Table 2 presents the results for an ordered probit regression of the support of liberal positions on the subject group dummies, controlling for several other factors. The dummy for the natural sciences has not been included in the model as this would cause collinearity. Hence, the natural sciences students are the base category and the signs of the

Table 2. Ordered probit regressions: differences in support of liberal positions

	Dependent variable: LIBERAL						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
HUMANITIES	-0.1090904***	-0.1141083***	-0.0737056***	-0.0851133***	-0.0682314***	-0.0566947***	-0.060858***
	-8.52	-8.9	-5.44	-3.98	-3.15	-2.61	-2.8
SOCIAL SCIENCES	-0.2121142***	-0.22245***	-0.1882412***	-0.1472946***	-0.1270579***	-0.1120795***	-0.1120616***
	-15.14	-15.88	-12.88	-6.5	-5.53	-4.86	-4.85
LAW	0.3168214***	0.3213817***	0.3302096***	0.3014024***	0.310312***	0.3074973***	0.3035507***
	17.95	18.19	17.85	9.88	10.17	10.06	9.94
ECONOMICS	0.3934278***	0.3927435***	0.3718903***	0.3157837***	0.3185684***	0.325187***	0.3210066***
	29.29	29.23	26.61	13.93	14.05	14.33	14.15
MEDICINE	0.2039656***	0.2061135***	0.2133319***	0.2055004***	0.2211432***	0.2223988***	0.2161148***
	12.92	13.05	13.05	7.53	8.06	8.1	7.85
ENGINEERING	0.0271211**	0.0349765***	0.0161726	-0.0279676	-0.0345586	-0.0227483	-0.0226115
	2.26	2.91	1.29	-1.3	-1.6	-1.05	-1.04
OTHER SUBJECTS	-0.077544***	-0.08412***	-0.0706964***	-0.140004***	-0.1301388***	-0.1161596***	-0.1144366***
	-3.98	-4.31	-3.49	-4.59	-4.25	-3.78	-3.72
WAVE		0.0169327***	0.0134301***	0.0475086***	0.0494618***	0.0562859***	0.0569055***
		11.98		8.14	8.45	9.52	9.63
BAD JOB PERSPECTIVES			-0.1070891***	-0.0907763***	-0.0862708***	-0.077442***	-0.0760712***
			-26.31	-13.59	-12.82	-11.4	-11.19
NO FUTURE ENTREPRENEUR				-0.1082742***	-0.1050075***	-0.1083447***	-0.1033175***
				-15.92	-15.34	-15.77	-14.97
FEMALE					-0.065362***	-0.059169***	-0.0617132***
					-4.9	-4.42	-4.61
BAD FINANCIAL SITUATION						-0.0303472***	-0.0284023***
						-9.37	-8.71
FATHER WORKER							-0.0496557***
							-2.91
FATHER ENTREPRENEUR							0.2159666***
							7.29
Number of observations	78073	78073	72196	27415	27369	27277	27277
Wald χ^2	2644.04	2785.58	3367.55	1463.65	1483.84	1549.48	1607.58
Prob > χ^2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Pseudo R ²	0.0096	0.0102	0.0134	0.0159	0.0161	0.0170	0.0177

z-statistics reported below coefficients

***indicates a 1% significance level; ** indicates a 5% significance level; * indicates a 10% significance level

coefficients of the other subject group dummies have to be interpreted relative to this group. In the benchmark model (1) all of the coefficients of the subject group dummies are significantly different from the base group at the 1 percent level. Once job perspectives are controlled for the ENGINEERING variable does not turn out significant anymore. The coefficients may not be interpreted because the estimators are not linear, only their sign may be interpreted. We can see that whereas humanities and social sciences students' support for liberal positions is lower than natural sciences students' support, law, economics and medicine students' support for liberal positions is higher than natural sciences students' support. The results for the OTHER SUBJECTS variable are rather uninteresting as it has only been included in the model for technical reasons.

In the following paragraph I will shortly discuss the estimates of the control variables because they nicely conform to the economic theory of voting and evidence on the political behaviour of students in Germany. I will then leave it at that and dedicate the remaining discussion to the political variables. The coefficient of the WAVE variable tells us that the student population over all exhibited increasing support of liberal positions between 1983 and 2007. This is in agreement with the observations of Bargel (2008). From the BAD JOB PERSPECTIVES variable we can conclude that the more pessimistic a student is to find a good job after graduation the more unlikely he is to support liberal positions. The BAD FINANCIAL SITUATION variable indicates that the more a student suffers from his material endowment, or rather lack thereof, the lower is his support of liberal positions. The NO FUTURE ENTREPRENEUR variable indicates that the more unlikely it is someone wants to start his own business after graduation the lower is his support of liberal positions. The FEMALE variable indicates that women show weaker support of liberal positions than men. All four observations can be attributed to economic self-interest. Whereas someone who is afraid of unemployment or suffers from material hardship will appreciate the securities of a welfare system, someone who expects to be a net contributor to the system opposes it. The fact that women are more politically left than men is a widely accounted for fact that is usually explained by the greater economic vulnerability of

women relative to men. The variables FATHER WORKER and FATHER ENTREPRENEUR indicate that whether a student comes from the working class or the capital owning class affects her political opinions. Both groups of students show a tendency towards the political attitudes that are traditionally associated with their milieu. This might be the case for at least two reasons. First, their material well-being likely is still dependent on their father's income, which is oppositely affected by redistributive politics for the two groups. Second, the father's ideology likely has an immediate socializing effect on his offspring's ideology.

Until now the discussion of the political variables has remained rather vague because nothing has been said about the size of the observed effects. In order to assess their size, one has to look at the marginal effects of the subject group dummies on the different categories of the political variables. Table 3 presents the marginal effects for model (7) in Table 2. The marginal effects of all explanatory variables except for the ENGINEERING dummy are significant at the 1 percent level and may be interpreted. The probability of a humanities student to support liberal positions in category 6 (agree) is 1.07 percentage points lower than for a natural sciences student, whereas the effect is almost twice as strong for a social sciences student whose probability to support liberal positions in category 6 is 1.96 percentage points lower than for a natural sciences student. The probability of a law student to support liberal positions in category 6 is 5.73 percentage points higher than for a natural sciences student. The probability for an economics student to support liberal positions in category 6 is 6.01 percentage points higher than for a natural sciences student. The probability of a medicine student to support liberal positions in category 6 is 4.03 percentage points higher than for a natural sciences student. This means that the effects for law, economics, and medicine students are between two and six times stronger than the effects for humanities and social science students. It indicates that natural science students resemble humanities and social science students more than they resemble either law, economics, or medicine students. Engineering and natural science students seem to be very much alike in their attitudes towards liberal positions as none of

Table 3. Marginal effects for model (7) in Table 2

	Categories of the dependent variable LIBERAL						
	1	2	3	4	5	6	7
HUMANITIES	0.0069809*** 2.71	0.0082991*** 2.77	0.0063847*** 2.84	0.0015136*** 3.48	-0.007631*** -2.74	-0.0107896*** -2.83	-0.0047576*** -2.89
SOCIAL SCIENCES	0.0132903*** 4.55	0.0154105*** 4.76	0.0115714*** 5.01	0.0021131*** 7.64	-0.0143244*** -4.68	-0.01962*** -4.97	-0.0084409*** -5.19
LAW	-0.0272479*** -12.37	-0.0378563*** -10.86	-0.0339878*** -9.58	-0.0201768*** -6.44	0.030867*** 12.73	0.0573119*** 9.53	0.0310898*** 7.99
ECONOMICS	-0.0299489*** -16.4	-0.0405927*** -14.98	-0.0356501*** -13.49	-0.0194314*** -9.14	0.0337835*** 16.69	0.0601149*** 13.5	0.0317247*** 11.56
MEDICINE	-0.0207456*** -9.11	-0.0277321*** -8.29	-0.0239554*** -7.57	-0.012033*** -5.35	0.0235666*** 9.04	0.040314*** 7.57	0.0205855*** 6.72
ENGINEERING	0.0025448 1.03	0.0030675 1.04	0.0023919 1.05	0.0006393 1.12	-0.002802 -1.04	-0.004036 -1.05	-0.0018053 -1.06
OTHER SUBJECTS	0.0138003*** 3.44	0.0158044*** 3.65	0.0117195*** 3.88	0.0018054*** 7.83	-0.0147707*** -3.57	-0.0199064*** -3.84	-0.0084525*** -4.08
WAVE	-0.0063294*** -9.51	-0.0076934*** -9.5	-0.0060482*** -9.52	-0.0017281*** -8.15	0.0069975*** 9.5	0.0101982*** 9.56	0.0046035*** 9.42
BAD JOB PERSPECTIVES	0.0084611*** 11.02	0.0102846*** 11	0.0080853*** 10.96	0.0023102*** 9.07	-0.0093542*** -10.98	-0.0136329*** -11.08	-0.006154*** -10.91
NO FUTURE ENTREPRENEUR	0.0114916*** 14.59	0.0139682*** 14.56	0.0109812*** 14.43	0.0031376*** 10.6	-0.0127046*** -14.52	-0.0185158*** -14.71	-0.0083581*** -14.21
FEMALE	0.0068641*** 4.61	0.0083434*** 4.6	0.0065592*** 4.59	0.0018741*** 4.3	-0.0075887*** -4.6	-0.0110598*** -4.59	-0.0049924*** -4.56
BAD FINANCIAL SITUATION	0.0031591*** 8.62	0.0038399*** 8.64	0.0030188*** 8.62	0.0008625*** 7.51	-0.0034925*** -8.61	-0.00509*** -8.66	-0.0022977*** -8.57
FATHER WORKER	0.0056736*** 2.83	0.0067646*** 2.88	0.0052187*** 2.94	0.0012695*** 3.44	-0.006212*** -2.85	-0.0088161*** -2.93	-0.0038984*** -2.99
FATHER ENTREPRENEUR	-0.0205255*** -8.56	-0.0276127*** -7.72	-0.0239937*** -7.04	-0.0123711*** -4.94	0.0233468*** 8.51	0.0403789*** 7.02	0.0207774*** 6.19

z-statistics reported below coefficients

***indicates a 1% significance level; ** indicates a 5% significance level; * indicates a 10% significance level

the marginal effects of the ENGINEERING variable turns out to be significant. For the marginal effects of the other political variables please see Appendix A1. The combined evidence from the marginal effects for the different political positions and subject groups supports hypotheses 1a and 1b. Humanities and social science students indeed exhibit a stronger support of social democratic and a weaker support of liberal positions than students in the natural sciences after controlling for their economic self-interest and their family background. The results also back hypothesis 1c. Economics students support social democratic positions less and liberal positions more strongly than natural sciences students. Hypothesis 1d is not confirmed. Whereas it is true that engineering students do not have political attitudes significantly different from natural science students, law and medicine students' political attitudes resemble the responses of economics and law students.

6.2. Results for the second question (change of attitudes)

Table 4 shows that economics students' support for liberal positions increases significantly in the course of their studies. The effect survives the successive inclusion of all the employed control variables, though only at the 5 percent significance level. This indicates that the observed change in attitudes during studies is due to the effect of studying economics itself. The marginal effects for the SEMESTERS variable in model (7) are reported as bold numbers in Table 5. In addition, Table 5 also displays the marginal effects of the SEMESTERS variable when the regression in Table 4 is run for the other subject groups.

Table 5 shows that the probability for an economics student to support liberal positions in category 6 (agree) increases by 0.22 percentage points every semester that the student studies economics. Likewise, the probability to support liberal positions in category 6 decreases for humanities students and social sciences students by 0.17 and 0.16 percentage points, respectively, for every semester they pursue their studies. The marginal effects of the SEMESTERS variable for the other subject groups do not turn out to

Table 4. Odered probit regressions: change in support of liberal positions for economics students

Dependent variable: LIBERAL for economics							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
SEMESTERS	0.0182441*** 7.27	0.0183799*** 7.32	0.0182758*** 7.18	0.0132135*** 2.94	0.0104143** 2.34	0.0109564** 2.49	0.0105796** 2.4
WAVE		0.0107659*** 2.87	0.0125345*** 3.2	0.0402016** 2.58	0.050297*** 3.2	0.0580829*** 3.68	0.0586192*** 3.71
BAD JOB PERSPECTIVES			-0.1825798*** -14.42	-0.1352734*** -6.9	-0.1140318*** -5.73	-0.0981717*** -4.85	-0.0946829*** -4.65
NO FUTURE ENTREPRENEUR				-0.1009945*** -5.42	-0.0751256*** -3.98	-0.0766238*** -4.05	-0.0682188*** -3.57
FEMALE					-0.320064*** -9.66	-0.3104604*** -9.28	-0.3104756*** -9.28
BAD FINANCIAL SITUATION						-0.0455871*** -5.25	-0.0415295*** -4.74
FATHER WORKER							-0.0922292** -2.01
FATHER ENTREPRENEUR							0.1746467*** 2.65
Number of observation	10967	10967	10234	4055	4048	4037	4037
Wald χ^2	52.78	60.88	266.42	93.97	184.35	221.37	235.61
Prob > χ^2	0	0	0	0	0	0	0
Pseudo R ²	0.0015	0.0017	0.0075	0.0069	0.0131	0.0153	0.0163

z-statistics reported below coefficients

***indicates a 1% significance level; ** indicates a 5% significance level; * indicates a 10% significance level

be significant. This means that, after controlling for economic and family effects, no change in their attitudes towards liberal positions is detectable. Assuming that a student studies for ten semesters, the probability to support liberal positions in category 6 will be 1.7 percentage points lower after studying, as compared to before, for someone who studied humanities and 2.2 percentage points higher for someone who studied economics.

Next, I would like to look at changes in attitudes towards social democratic positions. Table 6 shows that only studying humanities significantly changes students' support of social democratic positions. After studying for ten semesters, a humanities student will have a 1.5 percentage point higher probability of supporting social democratic positions in category 6 than in the beginning of his studies. Studying economics neither has an effect on the support of liberal nor the support of Christian conservative positions. Table 8 in Appendix A2 shows that a significant effect on the CONSERVATIVE variable only persists for humanities, social sciences, and medicine students. Whereas humanities and social science students become less likely to support Christian conservative positions, medicine students exhibit an increasing support of Christian conservative positions. The case of green/alternative positions is a peculiar one. Whereas for the three other political positions different subject groups underwent change of different directions, Table 9 in Appendix A2 shows that everybody seems to like green positions more the longer they study, though these effects are not significant for engineering students and those who fall into the residual category. I will try to advance an explanation for this observation later.

Based on the findings, I will now test the hypotheses about the second question. The results back hypothesis 2a. A humanities student's support of social positions increases and his support of liberal positions decreases with the number of semesters. As concerns hypothesis 2b, the results only provide partial support. Whereas social science students' support of liberal positions indeed decreases with semesters, the results do not account for any significant changes in their attitudes towards social democratic positions. There also is only partial evidence in favour of hypothesis 2c. Economics students do increasingly support liberal positions in the course of their studies, however their

Table 5. Marginal effects for the SEMESTERS variable in the regressions for the different subject groups with LIBERAL as dependent

	Regressions for subject groups	Categories of the dependent variable LIBERAL						
		1	2	3	4	5	6	7
Marginal effects of the explanatory variable SEMESTERS	Humanities students	0.0015571*** 3.55	0.0016137*** 3.52	0.0009808*** 3.52	-0.0002718*** -2.95	-0.0014895*** -3.54	-0.001702*** -3.54	-0.0006883*** -3.47
	Social sciences students	0.0016284*** 2.93	0.0017435*** 2.91	0.0008922*** 2.9	-0.0004091*** -2.72	-0.0016436*** -2.92	-0.0015956*** -2.92	-0.0006157*** -2.83
	Law students	-0.0001139 -0.19	-0.0001518 -0.19	-0.0001294 -0.19	-0.0001069 -0.19	0.0000955 0.19	0.0002593 0.19	0.0001472 0.19
	Economics students	-0.0007183** -2.37	-0.00105** -2.39	-0.0011396** -2.38	-0.0012817** -2.39	0.0005316** 2.35	0.0021972** 2.39	0.0014607** 2.39
	Medicine students	-0.0000749 -0.15	-0.0000998 -0.15	-0.0000924 -0.15	-0.0000674 -0.15	0.0000811 0.15	0.0001771 0.15	0.0000763 0.15
	Natural sciences studentes	0.0001964 0.55	0.000266 0.55	0.0002247 0.55	0.0000334 0.55	-0.0002509 -0.55	-0.0003135 -0.55	-0.0001561 -0.55
	Engineering students	0.0000353 0.09	0.0000379 0.09	0.0000331 0.09	8.13E-06 0.09	-0.0000378 -0.09	-0.000054 -0.09	-0.0000227 -0.09
	Other subjects students	0.001138 1.52	0.0011349 1.53	0.0007303 1.51	-0.0000798 -0.88	-0.0012132 -1.52	-0.0011726 -1.53	-0.0005376 -1.5

z-statistics reported below coefficients

***indicates a 1% significance level; ** indicates a 5% significance level; * indicates a 10% significance level

Table 6. Marginal effects for the SEMESTERS variable in the regressions for the different subject groups with SOCIAL as dependent

	Regressions for subject groups	Categories of the dependent variable SOCIAL						
		1	2	3	4	5	6	7
Marginal effects of the explanatory variable SEMESTERS	Humanities studentes	-0.000307** -2.02	-0.0004191** -2.04	-0.0005376** -2.03	-0.0009504** -2.04	-0.0001534* -1.92	0.0015336** 2.04	0.0008338** 2.05
	Social sciences students	7.06E-06 0.04	0.0000106 0.04	0.000016 0.04	0.000031 0.04	7.34E-06 0.04	-0.0000466 -0.04	-0.0000254 -0.04
	Law students	0.0003327 0.98	0.0005857 0.97	0.0007253 0.98	0.000605 0.97	-0.0002313 -0.97	-0.0012416 -0.98	-0.0007758 -0.97
	Economics students	0.0002809 1.06	0.0004751 1.06	0.0005704 1.06	0.0005271 1.06	-0.0003046 -1.06	-0.0011076 -1.06	-0.0004413 -1.06
	Medicine students	0.0003643 1.25	0.0005342 1.26	0.0007428 1.27	0.0009534 1.27	-0.000137 -1.15	-0.0017696 -1.27	-0.0006881 -1.27
	Natural sciences studentes	-0.0000781 -0.39	-0.000088 -0.39	-0.0001439 -0.39	-0.0001792 -0.39	0.0000459 0.39	0.0002971 0.39	0.0001463 0.39
	Engineering students	-0.0000101 -0.07	-0.000017 -0.07	-0.0000258 -0.07	-0.0000357 -0.07	7.94E-06 0.07	0.0000595 0.07	0.0000211 0.07
	Other subjects students	-0.0000466 -0.14	-0.0000483 -0.14	-0.0000761 -0.14	-0.0001088 -0.14	0.0000354 0.14	0.0001627 0.14	0.0000818 0.14

z-statistics reported below coefficients

attitudes towards social democratic positions does not seem to alter. Hypothesis 2d cannot be rejected. The analysis indicates that all the other subjects do not affect attitudes towards social or liberal positions.

7. Discussion of results

The empirical analysis indicates that students of different subject groups are different in terms of their political ideology when they start studying due to self-selection effects. Self-selection likely is at least partially due to different motivations to study. The motivation to study derives from the more general aims in life, which are connected to the values endorsed by a person. These values in turn can also be thought of as determining ones political ideology. The results of this part of the analysis are not surprising and just confirm what other studies have found. Much more interesting is the result that studying certain subjects seems to have an immediate effect on ones political attitudes. The analysis quantifies the effects of university socialization on students' political ideology. These effects add up to about the same size as the self-selection effects in the course of studies. Since subject groups were found to be different at the beginning of university attendance, university socialization besides the exposition to certain contents in textbooks and lectures likely also entails peer-group effects. Because humanities and social sciences students are more social and economics students are more liberal from the outset, these initial differences likely self-enhance when peer pressure causes ideologies within subjects to become more uniform.

One weakness of this analysis is that the application of an economic theory of voting necessitates the assumption that students, when responding to the question about their support of different political positions, only have in mind the positions' economic dimension. The empirical analysis, thus, controls for economic variables and the effect that remains with the variable that measures the number of semesters is equated to the effect of studying itself. This might be a pitfall as we cannot know what students actually

responded to when they indicated their positions. There is reason to assume that they also took things other than differences in the parties' economic policies into account. The standard assumption in political science is that it takes at least two dimensions, an economic and a cultural one, to adequately describe the German party landscape. The cultural dimension has not been controlled for in the empirical model. Part of the effect that is attributed to university socialization might, in fact, be due to the neglected cultural viewpoints associated with the different parties. Looking at the change in support for green/alternative positions substantiates the suspicion that students also had in mind something other than maximization of future income and the contents of their studies when they answered the questions. Students from all subjects except for engineering and the residual category exhibit increasing support of green/alternative positions the longer they study. At the same time, the overall student body's support for the green party decreased between 1983 and 2007. This finding cannot be explained within the framework of this analysis. However, we could think of it as an age effect that increases awareness for environmental issues and concern about the living conditions of future generations.

8. Conclusion

The analysis shows that during their studies students from different subject groups undergo different change in political attitudes that cannot be explained by different anticipated levels of income or self-selection effects. We can conclude from this that, besides professional skills, university education also comprises normative contents that affect students the stronger the longer they are exposed to them. This draws the attention to the controversy about the status of value judgements in science and the is-ought problem first identified by David Hume. The connection between scientific knowledge and political ideology is intricate. The merit of this analysis is that it substantiates the claim

that such a connection indeed exists. An interesting follow-up question is how exactly the ideological change goes about and whether this change yields itself to formal modelling. Whereas analyses in political economy often include the amount of education as explanatory variable, the inclusion of the type of education is not standard. An implication from this analysis is that the inclusion of the kind of training could possibly raise the explanatory power of some of the standard models.

9. Appendix

A. Marginal effects

A1. Marginal effects referring to the first question (differences in attitudes)

Table 7. Marginal effects for the regression with SOCIAL as dependent variable

	Categories of the dependent variable SOCIAL						
	1	2	3	4	5	6	7
HUMANITIES	-0.0056839*** -5.82	-0.0085176*** -5.68	-0.0124281*** -5.55	-0.017637*** -5.3	0.0010662*** 4.55	0.0288939*** 5.49	0.0143065*** 5.13
SOCIAL SCIENCES	-0.0074085*** -7.7	-0.0112746*** -7.47	-0.0166672*** -7.24	-0.0242312*** -6.78	0.0005305 1.22	0.039027*** 7.13	0.0200241*** 6.43
LAW	0.0022953 1.31	0.0032836 1.33	0.0046103 1.35	0.0060902 1.38	-0.0010641 -1.11	-0.0104909 -1.36	-0.0047245 -1.4
ECONOMICS	0.0064582*** 4.72	0.0090584*** 4.89	0.012521*** 5.06	0.0160682*** 5.36	-0.0035438*** -3.66	-0.0282495*** -5.16	-0.0123125*** -5.49
MEDICINE	0.0006297 0.44	0.0009117 0.44	0.0012925 0.44	0.0017385 0.44	-0.0002538 -0.41	-0.002957 -0.44	-0.0013615 -0.44
ENGINEERING	-0.0008269 -0.76	-0.0012079 -0.75	-0.0017249 -0.75	-0.0023516 -0.74	0.000293 0.81	0.0039624 0.75	0.0018559 0.74
OTHER SUBJECTS	0.0020915 1.23	0.0029957 1.25	0.0042103 1.26	0.0055721 1.29	-0.000957 -1.06	-0.0095859 -1.27	-0.0043266 -1.31
WAVE	-0.0020729*** -6.75	-0.0030142*** -6.79	-0.0042888*** -6.84	-0.0058074*** -6.86	0.0007864*** 5.67	0.0098319*** 6.87	0.0045651*** 6.85
BAD JOB PERSPECTIVES	0.0006155* 1.74	0.000895* 1.74	0.0012734* 1.74	0.0017243* 1.74	-0.0002335* -1.72	-0.0029192* -1.74	-0.0013554* -1.74
NO FUTURE ENTREPRENEUR	-0.0013649*** -3.79	-0.0019848*** -3.79	-0.0028241*** -3.8	-0.003824*** -3.8	0.0005178*** 3.56	0.006474*** 3.8	0.003006*** 3.8
FEMALE	-0.007425*** -10.08	-0.0107971*** -10.21	-0.0153627*** -10.33	-0.0208022*** -10.52	0.0028169*** 7.19	0.0352179*** 10.51	0.0163521*** 10.51
BAD FINANCIAL SITUATION	-0.0008052*** -4.74	-0.0011709*** -4.71	-0.0016661*** -4.71	-0.002256*** -4.72	0.0003055*** 4.33	0.0038194*** 4.74	0.0017734*** 4.72
FATHER WORKER	-0.0044763*** -5.49	-0.0066774*** -5.38	-0.0097045*** -5.27	-0.0136688*** -5.09	0.0009927*** 5.45	0.022512*** 5.23	0.0110224*** 4.95
FATHER ENTREPRENEUR	0.0157813*** 6.59	0.0206863*** 7.27	0.0271003*** 7.91	0.0313755*** 9.49	-0.0121864*** -5.07	-0.059439*** -8.34	-0.023318*** -9.8

z-statistics reported below coefficients

*** indicates a 1% significance level; ** indicates a 5% significance level; * indicates a 10% significance level

Table 8. Marginal effects for the regression with CONSERVATIVE as dependent variable

	Categories of the dependent variable CONSERVATIVE						
	1	2	3	4	5	6	7
HUMANITIES	0.0099018** 2.04	0.0068889** 2.09	0.0014573** 2.22	-0.0019848* -1.96	-0.0058923** -2.06	-0.0076077** -2.1	-0.0027631** -2.14
SOCIAL SCIENCES	0.0374922*** 6.72	0.0240686*** 7.45	0.0041556*** 9.87	-0.0084015*** -5.92	-0.0216705*** -6.97	-0.0264877*** -7.48	-0.0091566*** -7.86
LAW	-0.0684621*** -15.86	-0.0627822*** -12.42	-0.0221417*** -9.21	0.0034458*** 3.74	0.0427952*** 15.79	0.0729703*** 11.71	0.0341746*** 9.26
ECONOMICS	-0.073624*** -21.39	-0.0643385*** -17.58	-0.0212255*** -13.24	0.0059849*** 9.96	0.0457098*** 20.55	0.0741229*** 16.78	0.0333703*** 13.58
MEDICINE	-0.0590735*** -13.99	-0.0517688*** -11.47	-0.017013*** -8.77	0.004986*** 9.41	0.0369404*** 13.66	0.0594667*** 10.98	0.0264622*** 9.05
ENGINEERING	-0.0265414*** -6.27	-0.0202605*** -5.85	-0.0052224*** -5.14	0.004337*** 7.41	0.0162322*** 6.14	0.0226288*** 5.79	0.0088262*** 5.45
OTHER SUBJECTS	0.0046469 0.68	0.0032603 0.69	0.000703 0.71	-0.0009183 -0.66	-0.0027732 -0.68	-0.0036028 -0.69	-0.0013159 -0.7
WAVE	-0.012947*** -10.48	-0.0092324*** -10.4	-0.0020645*** -9.89	0.0024834*** 9.85	0.0077675*** 10.36	0.0102178*** 10.43	0.0037751*** 10.18
BAD JOB PERSPECTIVES	0.0107017*** 7.34	0.0076314*** 7.29	0.0017064*** 7.09	-0.0020528*** -7.13	-0.0064205*** -7.3	-0.0084459*** -7.29	-0.0031204*** -7.22
NO FUTURE ENTREPRENEUR	0.0091696*** 6.24	0.0065388*** 6.22	0.0014621*** 6.1	-0.0017589*** -6.09	-0.0055013*** -6.21	-0.0072367*** -6.23	-0.0026737*** -6.17
FEMALE	0.027244*** 9.48	0.0194277*** 9.42	0.0043442*** 8.92	-0.0052259*** -9.16	-0.0163451*** -9.4	-0.0215012*** -9.41	-0.0079438*** -9.12
BAD FINANCIAL SITUATION	0.0118528*** 16.81	0.0084522*** 16.49	0.00189*** 14.55	-0.0022736*** -14.64	-0.0071111*** -16.36	-0.0093543*** -16.49	-0.003456*** -15.66
FATHER WORKER	0.0124087*** 3.28	0.0085609*** 3.39	0.0017759*** 3.65	-0.002522*** -3.1	-0.0073631*** -3.31	-0.0094482*** -3.39	-0.0034122*** -3.46
FATHER ENTREPRENEUR	-0.0380037*** -7.25	-0.0311626*** -6.29	-0.0091468*** -5.12	0.0048497*** 13.53	0.0236275*** 7.01	0.0352301*** 6.14	0.0146058*** 5.47

z-statistics reported below coefficients

***indicates a 1% significance level; ** indicates a 5% significance level; * indicates a 10% significance level

Table 9. Marginal effects for the regression with GREEN as dependent variable

	Categories of the dependent variable GREEN						
	1	2	3	4	5	6	7
HUMANITIES	-0.0069729*** -3.45	-0.0086577*** -3.37	-0.006789*** -3.3	-0.0062566*** -3.2	0.0025151*** 3.94	0.0184132*** 3.32	0.0077479*** 3.19
SOCIAL SCIENCES	-0.0120951*** -6.14	-0.0153761*** -5.88	-0.0122918*** -5.67	-0.0117258*** -5.32	0.0036984*** 8.53	0.0332156*** 5.72	0.0145746*** 5.27
LAW	0.0695982*** 11.86	0.0644615*** 15.02	0.0400861*** 18.85	0.0220785*** 29.99	-0.0444094*** -10.69	-0.1167459*** -17.69	-0.0350691*** -22.01
ECONOMICS	0.0663184*** 17.3	0.064538*** 20.48	0.0419438*** 23.54	0.0262223*** 29.82	-0.0403173*** -15.08	-0.1201616*** -24.04	-0.0385435*** -25.68
MEDICINE	0.0206241*** 5.79	0.0229221*** 6.3	0.016458*** 6.76	0.0128101*** 7.93	-0.0109368*** -4.94	-0.0455188*** -6.67	-0.0163587*** -7.46
ENGINEERING	0.0214754*** 7.81	0.0242263*** 8.4	0.0176136*** 8.86	0.0140758*** 9.95	-0.0109585*** -6.69	-0.0485707*** -8.82	-0.0178619*** -9.58
OTHER SUBJECTS	0.0008966 0.27	0.0010827 0.28	0.0008302 0.28	0.0007342 0.28	-0.0003725 -0.27	-0.0022616 -0.28	-0.0009096 -0.28
WAVE	0.0037999*** 6.64	0.0046082*** 6.61	0.0035453*** 6.6	0.0031553*** 6.6	-0.0015498*** -6.34	-0.0096517*** -6.65	-0.0039072*** -6.64
BAD JOB PERSPECTIVES	-0.0061861*** -9.13	-0.007502*** -9.12	-0.0057717*** -9.09	-0.0051368*** -9.08	0.002523*** 8.49	0.0157127*** 9.19	0.0063609*** 9.14
NO FUTURE ENTREPRENEUR	-0.0024349*** -3.59	-0.0029528*** -3.59	-0.0022718*** -3.59	-0.0020219*** -3.58	0.0009931*** 3.56	0.0061846*** 3.6	0.0025037*** 3.59
FEMALE	-0.0165599*** -12.07	-0.0200826*** -12.16	-0.0154508*** -12.2	-0.0137509*** -12.32	0.006754*** 10.6	0.0420623*** 12.43	0.0170279*** 12.27
BAD FINANCIAL SITUATION	-0.001533*** -4.76	-0.0018592*** -4.74	-0.0014304*** -4.73	-0.001273*** -4.73	0.0006253*** 4.65	0.0038939*** 4.76	0.0015764*** 4.74
FATHER WORKER	0.0110126*** 5.81	0.0128446*** 6.04	0.009582*** 6.22	0.0080484*** 6.59	-0.0051758*** -5.16	-0.0262577*** -6.2	-0.0100542*** -6.54
FATHER ENTREPRENEUR	0.0241574*** 6.19	0.0263305*** 6.86	0.0186122*** 7.48	0.014019*** 9.22	-0.0133022*** -5.26	-0.0516911*** -7.35	-0.0181257*** -8.41

z-statistics reported below coefficients

*** indicates a 1% significance level; ** indicates a 5% significance level; * indicates a 10% significance level

A2. Marginal effects referring to the second question (change of attitudes)

Table 10. Marginal effects for the SEMESTERS variable in the regressions for the different subject groups with CONSERVATIVE as dependent

Regressions for subject groups		Categories of the dependent variable CONSERVATIVE						
		1	2	3	4	5	6	7
Marginal effects of the explanatory variable SEMESTERS	Humanities students	0.0016465** 2.14	0.0008742** 2.13	-0.0000146 -0.8	-0.0004584** -2.12	-0.0008739** -2.13	-0.0008443** -2.13	-0.0003296** -2.11
	Social sciences students	0.0029353*** 2.69	0.0029353*** 2.69	-0.0002278** -2.52	-0.001034** -2.68	-0.0014491*** -2.68	-0.0011581*** -2.66	-0.0003419** -2.57
	Law students	0.0004144 0.39	0.000376 0.39	0.0001416 0.39	0.0000246 0.38	-0.0002008 -0.39	-0.0004762 -0.39	-0.0002796 -0.39
	Economics students	-0.0006215 -1.1	-0.0006371 -1.11	-0.0003673 -1.1	-0.0001658 -1.1	0.0003806 1.1	0.0009689 1.11	0.0004421 1.11
	Medicine students	-0.0016147** -1.99	-0.0017417** -2.01	-0.0006729** -2	-0.0000169 -0.31	0.0010589** 1.99	0.0019725** 2	0.0010147** 1.99
	Natural sciences studentes	0.0003044 0.45	0.0002189 0.45	0.0000684 0.45	-0.0000415 -0.45	-0.000178 -0.45	-0.0002725 -0.45	-0.0000998 -0.45
	Engineering students	-0.0000191 -0.02	-0.0000124 -0.02	-2.12E-06 -0.02	4.41E-06 0.02	0.0000109 0.02	0.0000142 0.02	4.08E-06 0.02
	Other subjects students	0.0004611 0.34	0.0002429 0.34	0.0000296 0.34	-0.0001235 -0.34	-0.0002583 -0.34	-0.0002276 -0.34	-0.0001242 -0.34

z-statistics reported below coefficients

*** indicates a 1% significance level; ** indicates a 5% significance level; * indicates a 10% significance level

Table 11. Marginal effects for the SEMESTERS variable in the regressions for the different subject groups with GREEN as dependent

	Regressions for subject groups	Categories of the dependent variable GREEN						
		1	2	3	4	5	6	7
Marginal effects of the explanatory variable SEMESTERS	Humanities studentes	-0.0013196*** -6.14	-0.0018854*** -6.22	-0.001746*** -6.26	-0.0022383*** -6.34	-0.0006506*** -4.96	0.0049106*** 6.46	0.0029293*** 6.47
	Social sciences students	-0.0008959*** -4.16	-0.0013584*** -4.23	-0.0015994*** -4.3	-0.0020703*** -4.33	-0.0008007*** -4.03	0.0041516*** 4.38	0.0025731*** 4.39
	Law students	-0.0030641*** -2.93	-0.0025716*** -2.95	-0.0013083*** -2.89	-0.0002563** -1.96	0.0020946*** 2.92	0.0037602*** 2.95	0.0013455*** 2.81
	Economics students	-0.0035787*** -5.44	-0.0038358*** -5.41	-0.0018827*** -5.3	-0.000079 -0.82	0.0038305*** 5.39	0.004594*** 5.46	0.0009517*** 4.83
	Medicine students	-0.0019479*** -4.68	-0.0020481*** -4.66	-0.0013799*** -4.62	-0.0010111*** -4.54	0.0010376*** 4.5	0.0039698*** 4.7	0.0013795*** 4.64
	Natural sciences studentes	-0.0016257*** -4.94	-0.0020464*** -5	-0.0015313*** -4.97	-0.0015449*** -5.01	0.0001828** 1.97	0.0044513*** 5.08	0.0021143*** 5.07
	Engineering students	-0.0005196 -0.82	-0.0005544 -0.82	-0.0004052 -0.82	-0.0003506 -0.82	0.0002253 0.81	0.0012014 0.82	0.0004031 0.82
	Other subjects students	-0.0004892 -0.64	-0.0003863 -0.64	-0.0003515 -0.64	-0.0004282 -0.64	0.0000333 0.55	0.0009795 0.64	0.0006425 0.64

z-statistics reported below coefficients

*** indicates a 1% significance level; ** indicates a 5% significance level; * indicates a 10% significance level

B. Data description

Table 12. Descriptive statistics of the employed data

Variable	Observations	Mean	Standard Deviation	Minimum	Maximum
CONSERVATIVE	78389	3.387516	1.780677	1	7
GREEN	78381	4.548194	1.602679	1	7
LIBERAL	78073	3.98846	1.55177	1	7
SOCIAL	78167	4.707524	1.371174	1	7
SEMESTERS	85728	6.270892	4.707535	1	98
HUMANITIES	87946	0.1724922	0.3778098	0	1
SOCIAL SCIENCES	87946	0.1145589	0.3184907	0	1
LAW	87946	0.0678143	0.2514285	0	1
ECONOMICS	87946	0.1435995	0.3506851	0	1
MEDICINE	87946	0.0840175	0.2774156	0	1
NATURAL SCIENCES	87946	0.1538103	0.3607689	0	1
ENGINEERING	87946	0.2087645	0.406428	0	1
OTHER SUBJECTS	87946	0.0457553	0.2089552	0	1
WAVE	87946	5.445103	2.871745	1	10
BAD JOB PERSPECTIVES	81190	2.30133	1.003848	1	4
NO FUTURE ENTREPRENEUR	30780	2.613353	0.9942737	1	4
FEMALE	87501	0.429652	0.4950293	0	1
BAD FINANCIAL SITUATION	87381	2.457537	2.058327	0	6
FATHER WORKER	87946	0.1598708	0.3664883	0	1
FATHER ENTREPRENEUR	87946	0.0543174	0.2266443	0	1

Table 13. Correlations

Variable	CONSERVATIVE	GREEN	LIBERAL	SOCIAL	SEMESTERS	HUMANITIES	SOCIAL SCIENCES	LAW	ECONOMICS	MEDICINE	NATURAL SCIENCES	ENGINEERING	OTHER SUBJECTS	WAVE	BAD JOB PERSPECTIVES	NO FUTURE ENTREPRENEUR	FEMALE	BAD FINAN. SITUATION	FATHER WORKER	FATHER ENTREPRENEUR
CONSERVATIVE	1																			
GREEN	-0.3643	1																		
LIBERAL	0.3163	-0.1795	1																	
SOCIAL	-0.2455	0.3994	-0.0408	1																
SEMESTERS	-0.0321	0.0882	-0.0376	0.0029	1															
HUMANITIES	-0.0956	0.1155	-0.0828	0.058	0.0461	1														
SOCIAL SCIENCES	-0.1295	0.1194	-0.09	0.0724	-0.0094	-0.1935	1													
LAW	0.0651	-0.088	0.0551	-0.0273	0.0194	-0.1215	-0.1035	1												
ECONOMICS	0.1522	-0.1724	0.1458	-0.0721	-0.0669	-0.2016	-0.1717	-0.1078	1											
MEDICINE	0.063	-0.0115	0.0447	-0.0026	0.0226	-0.1366	-0.1163	-0.073	-0.1212	1										
NATURAL SCIENCES	-0.0274	0.0369	-0.0101	-0.0082	0.0167	-0.2032	-0.1731	-0.1087	-0.1803	-0.1222	1									
ENGINEERING	0.0306	-0.051	-0.0068	-0.0217	0.0086	-0.2182	-0.1859	-0.1167	-0.1936	-0.1312	-0.1952	1								
OTHER SUBJECTS	-0.0288	0.0244	-0.0338	-0.0143	-0.0423	-0.1142	-0.0973	-0.0611	-0.1013	-0.0687	-0.1021	-0.1097	1							
WAVE	0.0387	-0.0269	0.0491	0.055	-0.0444	0.0273	0.0153	-0.068	0.0092	0.0028	0.0375	-0.0446	-0.0036	1						
BAD JOB PERSPECTIVES	-0.1145	0.1123	-0.1223	0.0235	0.117	0.1643	0.087	0.0583	-0.137	-0.0865	-0.0648	-0.041	0.0115	-0.1097	1					
NO FUTURE ENTREPRENEUR	-0.088	0.0899	-0.1283	0.068	0.0209	0.1625	0.1216	-0.0033	-0.1859	0.1061	0.0234	-0.155	-0.071	0.0623	0.0751	1				
FEMALE	-0.1091	0.1385	-0.0711	0.1002	-0.0373	0.1747	0.1716	0.0026	-0.0841	0.0514	-0.0857	-0.2231	0.0153	0.058	0.1621	0.1886	1			
BAD FINANCIAL SITUATION	-0.1278	0.0512	-0.0741	0.0479	0.0701	0.0517	0.0723	-0.0347	-0.0289	-0.039	-0.065	0.003	0.0252	0.1039	0.1451	-0.0174	0.0866	1		
FATHER WORKER	-0.0446	-0.0174	-0.0377	0.0398	-0.0081	-0.0205	0.0387	-0.0146	0.0011	-0.0568	-0.0009	0.0204	0.0215	0.0114	0.0369	0.0239	0.0119	0.1331	1	
FATHER ENTREPRENEUR	0.0606	-0.0527	0.0645	-0.0623	-0.009	-0.0101	-0.023	0.0098	0.049	-0.0004	-0.0175	-0.0015	-0.005	-0.0183	-0.0336	-0.0953	0.0024	-0.0367	-0.0975	1

Figure 1. Distribution of the variable LIBERAL

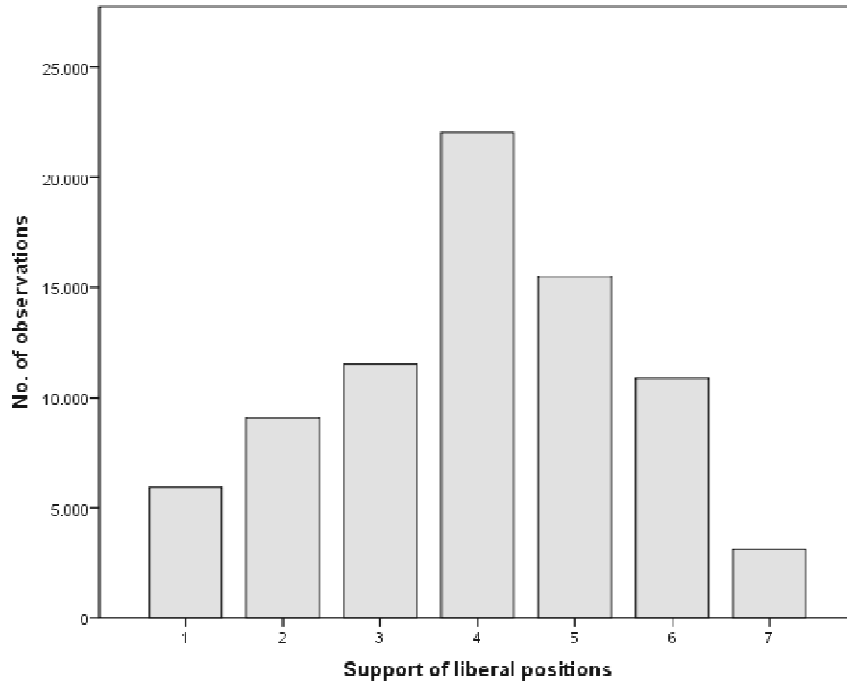


Figure 2. Distribution of the variable CONSERVATIVE

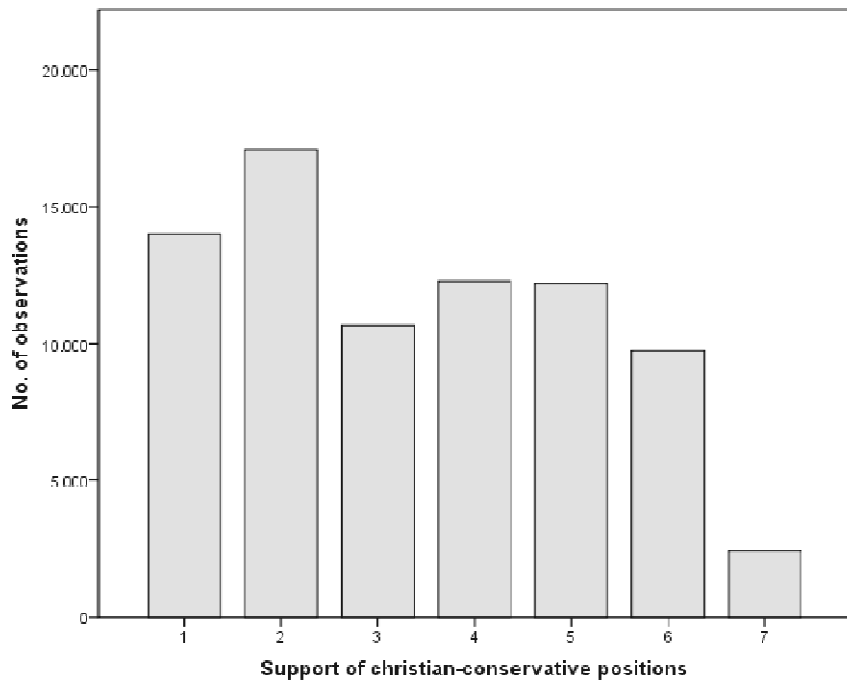


Figure 3. Distribution of the variable SOCIAL

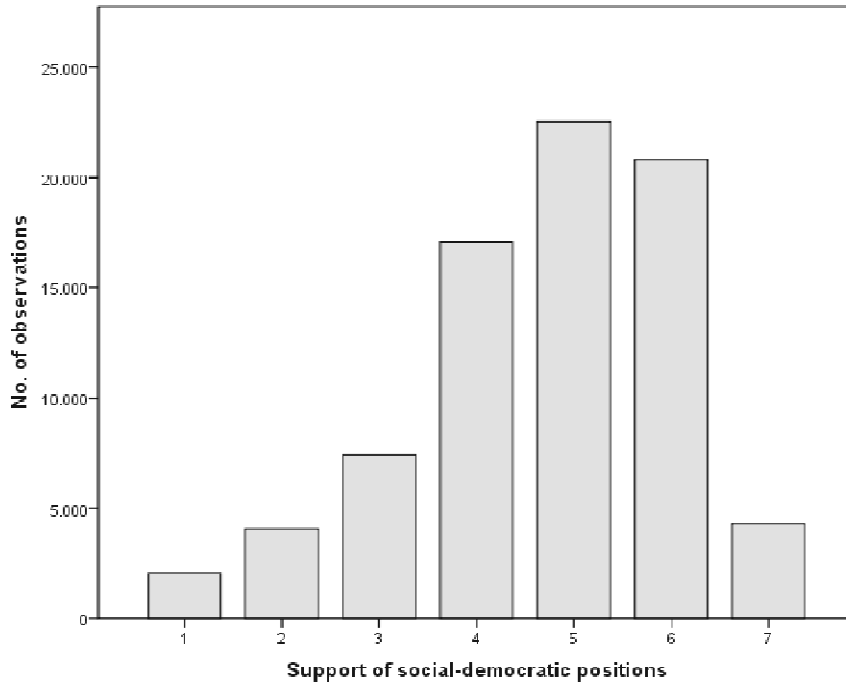
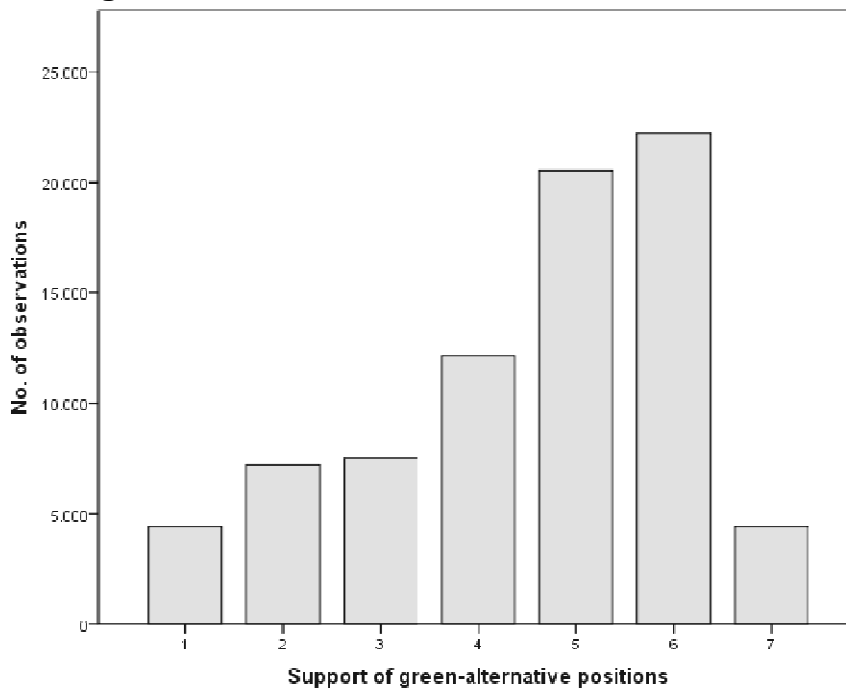


Figure 4. Distribution of the variable GREEN



C. Data source

The analysis is based on the dataset “Studierendensurvey von 1983 – 2007 (10 Wellen)” of the Research Group on Higher Education at the University of Konstanz. Results of 10th wave were published as: Multrus, F., Bargel T. and Ramm M. (2008) Studiensituation und studentische Orientierungen: 10. Studierendensurvey an Universitäten und Fachhochschulen. Langfassung, Bonn: Bundesministerium für Bildung und Forschung.

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1. I hereby declare that this thesis entitled:

“Subjects Studied and Students’ Political Ideology”

is a result of my own work and that no other than the indicated aids have been used for its completion. Material borrowed directly or indirectly from the works of others is indicated in each individual case by acknowledgement of the source and also the secondary literature used.

This work has not previously been submitted to any other examining authority and has not yet been published.

2. After completion of the examining process, this work will be given to the library of the University of Konstanz, where it will be accessible to the public for viewing and borrowing. As author of this work, I agree to this procedure.

Konstanz, 31st March 2011

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