

Equity, Responsibility and the Cultural Dimension

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Abstract

We present questionnaire studies concerning equity judgements based on an axiom that underlies Rawls's difference principle. Our investigation, spanning over a period of fifteen years, was run at a German, Austrian and Slovenian university. We also modified two of our basic scenarios to check for responsibility aspects. Additionally, we included information on socio-demographic characteristics of respondents in a probit model. Answers depend on cultural environments but results indicate some convergence over time. Responsibility considerations are important only if they are introduced in a quite obvious way. Although overall explanatory power of demographic attributes is low, we observe significant gender differences.

JEL classification: D71; D63

Keywords: Distributive justice; Rawlsianism; Equity principle; Individual characteristics; Responsibility

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1 Introduction

Equity and justice are difficult concepts. They are difficult since on the one hand, their character appears to be vague and not easy to grasp so that various scholars in the economics profession insist that economics should better not deal with them and, perhaps, leave them to philosophy or psychology. On the other hand, justice is on everybody's lips whenever a problem smells of distribution or redistribution. Individuals have made up their own idea of what is just and often, it appears that they are willing to fight for their idea, at least verbally. The question then arises how much conformity there is among the different concepts that exist.

Yaari and Bar-Hillel (1984) said at the end of their own investigation "On Dividing Justly" which may "justly" be classified as the first contribution to empirical social choice, that "the only general conclusion which we are prepared to draw ... is that a satisfactory theory of distributive justice would have to be endowed with considerable detail and finesse" (p. 22). In their own approach, the two authors distinguished between aspects of needs, considerations of tastes, and beliefs, and they were able to demonstrate, on the basis of their own empirical investigations at Hebrew University, that a given distribution problem will be resolved quite differently, depending on which of the three aspects stands out as the dominating one in the given problem.

This is an important result but on reflection, it is not surprising. Unfortunately, the two present authors do not know whether Yaari and Bar-Hillel had replicated their investigations over time in order to see whether the response pattern for the three variants remained stable over future periods. Except for a scanty footnote that provides no details, nothing is known either about whether the questionnaire-experiments were systematically replicated in other countries. The reason for saying this is the conviction of the present authors that a different ethnic environment with a somewhat different historical background may matter indeed. But time may play a role as well. It is our impression, and we state this here at the outset as cautiously as possible, that during the last fifteen years aspects of efficiency and individual effort have gained momentum

whereas egalitarian views have been on the decline. Under the supposition that this is a fairly correct rendition of a changing attitude, the question is whether this phenomenon can be traced out in investigations of the Yaari and Bar–Hillel kind. This will be one of our themes.

We have tried to check for a time–dimension. But not only this. We have also looked at demographic variables like gender, age or income expectation in future years to see whether these matter in the equity evaluations of our probands. Since we have run our investigation not only at one university in Germany but also, among others, at schools in Austria and Slovenia, we also try to check for the ethical or political–historical components that we have mentioned above.

There is still one other aspect we hope to shed light on. It is the aspect of responsibility. To our knowledge there is only one paper (Schokkaert and Devooght, 2003) in which this aspect has been tested empirically in combination with basic needs though in recent years an extensive theoretical discussion has been going on (see e.g. Fleurbaey and Maniquet, 2003). Should or will justice considerations take into account that, let’s say, the current misery or misfortune of a person is at least partly due to the carelessness or, perhaps, risk–seeking behaviour of this person? Or will equity evaluations be kept separate from such considerations?

The plan of the present paper is as follows. Section 2 briefly describes the theoretical basis of equity evaluations and presents the structure of our questionnaire–experiments. Section 3 looks at the intertemporal aspect. Section 4 considers the aspects of needs and responsibility. Section 5 examines the cultural component within our investigation. The paper ends with some concluding remarks in section 6.

2 An Equity Axiom and the Structure of Our Investigations

We have stated in the introduction that there exist various concepts of justice. Some of them are “self–made” and indeed very vague. Others are based on profound philosophical reasoning. Utilitarianism and the theory of John Rawls belong to the latter category. Utilitarianism is outcome–oriented and consequentialist in nature. It presupposes

that utility is cardinally measurable and interpersonally comparable. Utility quantities (“utils”) are summed across individuals. The alternative with the highest absolute or, in a different version, the highest average utility is eventually chosen. Gaertner (1994) has tried to find out whether students base their equity evaluations on the utilitarian principle. The results are not very supporting.

The perhaps strongest contestant of utilitarian ethics is the Rawlsian theory which culminates in two principles of justice. Economists are almost entirely interested in Rawls’s second principle, known as the difference principle or maximin rule, which requires to focus on the worst-off (group of) individual(s) in society when considering alternative options for society and it prescribes that option as the best one which maximises the welfare of the worst-off. Rawls’s single-focus rule demands comparability of levels of utilities in an ordinal framework. His justice approach is largely means-oriented.

Gaertner et al. (2001) have taken the maximin or difference principle as the basis for rather preliminary equity evaluations across cultures. How can this be done? We know from the various mathematical characterisations of the difference principle that an equity axiom plays a fundamental role. This equity axiom is in a rather precise but, admittedly, technical sense the point of bifurcation on the path to either utilitarianism or Rawls’s maximin postulate.

As the reader will remember, the equity axiom makes a particular demand for a society of only two individuals or, more generally, for a society where only two individuals are affected by a change from one policy to another. Just to refresh our memories, let there be two policies x and y . We postulate that person 1 prefers x to y , person 2 prefers y to x , and independently of whether x or y will eventually be the social outcome, person 2 is always better-off than person 1. We know that in such a situation, the equity axiom requires x to be socially preferred to y .

Is there a possibility to check whether individuals follow the Rawlsian difference principle in their equity judgements? The question we wish to discuss is twofold. First of all, we would like to know whether people’s evaluations satisfy the demands of the equity principle. In a second step, we will ask whether those who fulfil this axiom

will follow it unconditionally, i.e. focus always exclusively on the worst-off members of society. How can this possibly be verified?

In Gaertner (1992), we made the following suggestion. Let us consider the subsequent two-person profile of so-called extended orderings $\tilde{R}_i, i \in \{1, 2\}$, that we shall denote by E^1 .

$$\tilde{R}_1 : (y, 2)(x, 2)(x, 1)(y, 1) ;$$

$$\tilde{R}_2 : (y, 2)(x, 2)(x, 1)(y, 1) .$$

These lines should be read as follows. Both individuals agree that it is best to be person 2 under policy y . This is deemed better than being person 2 under policy x . This, again, is better than being person 1 under x which is better than being person 1 under y .

According to the equity axiom, x will be declared as preferable to y . We shall now enlarge this basic profile by adding the extended orderings of persons 3, 4, \dots , thereby preserving the structure of E^1 . E^2 , for example, is:

$$\tilde{R}_1 : (y, 3)(x, 3)(y, 2)(x, 2)(x, 1)(y, 1),$$

$$\tilde{R}_2 : (y, 3)(x, 3)(y, 2)(x, 2)(x, 1)(y, 1),$$

$$\tilde{R}_3 : (y, 3)(x, 3)(y, 2)(x, 2)(x, 1)(y, 1).$$

We then ask all members of society how they would wish to resolve the profiles E^1, E^2, \dots . All those individuals who accept the equity axiom will, of course, say that for E^1 alternative x should be the preferred state. For a moment, let us focus on just one member of the society. Will he or she find x also preferable in situation E^2 ? If “yes”, will the same verdict hold in E^3, E^4, \dots ? It is very well possible that at some point in this successive questioning the individual wishes to switch from “ x preferable to y ” to “now y should be preferred to x socially”. It could, however, also be the case that given the size of the society, the evaluating member of society would always want x to be socially preferred to y and thus follow the equity axiom completely.

The situations that we shall present and discuss in the sequel form the basis for our equity evaluations. They can be found on the internet¹ together with several other cases. The structure of all situations is similar to the one in our abstract E^1, E^2, \dots profiles above. There is always one (group of) person(s) who is worst-off under both alternatives x and y . That person is better-off under x than under y whereas all the other (groups of) individuals who are introduced successively are better-off under y than under x . To be more concrete, we shall investigate three situations. The first one requires a decision between helping a handicapped person or teaching intelligent children. The second situation deals with financial aid to starving people in Subsaharan Africa versus an environmental program in the home country of the proband. The final situation requires that the respondents decide between a set of measures for rapid economic reconstruction at the expense of some basic human rights and a slower economic recovery going hand in hand with a full restoration of these human rights. The situations were given to students who almost entirely were enrolled in economics or business administration. At the time of the investigation, the students had not yet had a course on welfare economics and theories of distributive justice, such as utilitarianism, Rawlsianism and game theoretical solutions.

Two of the three situations which the students were invited to consider reflect different aspects of needs. Situation 3 depicts a dilemma which might be described as “human rights vs. economic benefits”. It can probably be said that in situation 2 the identification with members in, what we have called, group 2, group 3, etc. (or put differently: with the beneficiaries of program y) was a direct one. At least in today’s Germany, environmental programs are a much discussed issue. People feel directly affected by these programs, and there is also an ongoing debate on whether the aid programs to developing countries should be extended or not.

In the two other cases, it can be assumed that the students played the role of an external judge. In other words, their identification with the position and the circumstances of a particular person was only of an indirect nature (the students were

¹The internet address is <http://nts4.oec.uni-osnabrueck.de/mikro/basic.pdf> for the basic questionnaire. All in all, we had given six different situations to the students. The responsibility questionnaires of section 4 can be found at the internet address <http://nts4.oec.uni-osnabrueck.de/mikro/responsibility.pdf>.

implicitly supposed to place themselves in some other person's shoes). On a second thought, however, this need not necessarily have been the case in situation 1. Imagine that a proband himself turned out to be a handicapped person or that one member of his family or a close friend was handicapped. We do not know this, of course, but had it been the case, it would certainly have mattered. One could perhaps argue similarly with respect to situation 3, though the situation described appears too unrealistic for students in Western countries. For Slovenia, however, this is again not so clear.

3 Intertemporal Aspects of Equity Evaluations

We wish to start our questionnaire-experimental studies by looking at evaluative behaviour over time. We present and analyse some of our results from Osnabrück University during the years 1989 to 2003. Covering a longer period of time enables us to incorporate an intertemporal dimension, and, by this, extends the scope of existing equity studies considerably. Moreover, available information on several individual characteristics of the respondents allows for further insights into underlying decision motives.

3.1 Investigations in Osnabrück from 1989 to 2003

Before we describe some of our findings, we have to explain some digits and numbers as they appear in the following tables and explanations. “0” always represents a choice of alternative x , whereas “1” stands for a decision in support of alternative y . The sequence 0000 represents those students who choose alternative x in all cases, i.e. in the base situation and in all its variants. They fulfil the equity axiom and, moreover, always stick to this decision in favour of the worst-off person or group. The sequences 0001, 0011, and 0111 correspond to verdicts of those students who initially decided in terms of the equity axiom, but revised their choice later on. Sequences such as 0101 or 1100, we tend to call them “unintelligible”, are difficult to interpret; fortunately they hardly occur. Regarding table 1 in this subsection, and also table 4 in section 4, the numbers in the columns of the three situations give the percentages of answers within each concerned cohort. Furthermore, relative frequencies of a revision of the original

decision in support of the worst-off (a “switch” from “0” to “1”) can be found in the lower part of the tables. All those sequences beginning with “0” represent respondents who satisfied the equity axiom initially. Their relative frequencies are also given at the end of the tables. Correspondingly, those sequences starting with “1” hint at a violation of the axiom.

Table 1 contains information on the three situations for all concerned years, which we now wish to comment on successively.² Starting with situation 1 in 1989, 92.3% of the interviewed students initially supported the handicapped person and, therefore, decided against the education of one intelligent child. Hence, they fulfilled the equity axiom. When, afterwards, the number of better-off persons was increased, just 19.8% of the probands revised this decision, while 72.3% wanted to give the money to the handicapped unconditionally, i.e. in all cases. Moreover, only 7.7% of the respondents wanted the money to go into education of the gifted child right away. Concerning the evolution of these results over time, we find remarkable differences. Although the great majority of the students fulfilled the equity axiom in the following years, their proportion continuously declined to 85.9% in 2003.³ Thereby, the relative frequency of the sequence 0000 goes down to 32.3% in 2003, which is considerably lower than the corresponding values of the period between 1989 and 1993. Only in part this finding is due to a movement towards the sequence 1111. Rather, in the year 2003 more than 51% of the respondents revised their initial decision in favour of alternative x . Furthermore, the continually increasing proportion of the sequence 0111, referring to an earlier switch from x to y , is remarkable.

²Only those questionnaires were included, which contained complete answers on all situations and also on all demographic questions. Consequently, incomplete survey forms have been left out. However, the results do not change significantly by this sample reduction. This is also the case for a further sample of the year 1994, where no demographic characteristics are available. The results of that year are quite similar to our findings from 1990.

³In 2003, the formulation of situation 1 differed in the way that the handicap exists since birth. In section 4, the motivation of this short additional remark is explained in more detail. If there would be any change due to this addition, we suspected the answers to be shifted towards a stronger support of the handicapped person. However, this is not confirmed by our findings. Therefore, we consider these results to be comparable to our earlier investigations.

Table 1: Investigations in Osnabrück - Basic Questionnaire

Relative Frequencies for All Possible Decision Patterns
 (n=65 for 1989, 93 for 1990, 81 for 1993, 80 for 2002 and 99 for 2003)
 (x coded as 0, y coded as 1)

Sequence	Situation 1				Situation 2				Situation 3					
	1989	1990	1993	2002	2003	1989	1990	1993	2002	2003	1989	1990	1993	2002
0 0 0 0	0.723	0.581	0.494	0.400	0.323	0.462	0.366	0.358	0.442	0.739	0.548	0.593	0.525	0.364
0 0 0 1	0.046	0.086	0.062	0.038	0.040	0.0	0.054	0.037	0.047	0.046	0.065	0.099	0.075	0.081
0 0 1 0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0 0 1 1	0.077	0.151	0.148	0.188	0.232	0.031	0.097	0.099	0.081	0.015	0.097	0.037	0.038	0.091
0 1 0 0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0 1 0 1	0.0	0.0	0.0	0.0	0.020	0.0	0.011	0.0	0.0	0.0	0.0	0.0	0.0	0.010
0 1 1 0	0.0	0.0	0.0	0.013	0.0	0.031	0.0	0.0	0.012	0.0	0.0	0.0	0.0	0.010
0 1 1 1	0.077	0.086	0.173	0.238	0.242	0.031	0.108	0.086	0.128	0.031	0.075	0.074	0.100	0.152
1 0 0 0	0.0	0.0	0.0	0.0	0.0	0.0	0.022	0.025	0.012	0.0	0.0	0.0	0.013	0.0
1 0 0 1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1 0 1 0	0.0	0.0	0.0	0.0	0.0	0.015	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.010
1 0 1 1	0.0	0.0	0.0	0.0	0.010	0.0	0.011	0.0	0.023	0.0	0.0	0.0	0.0	0.0
1 1 0 0	0.0	0.011	0.0	0.0	0.010	0.015	0.0	0.0	0.012	0.0	0.0	0.012	0.025	0.0
1 1 0 1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1 1 1 0	0.0	0.0	0.0	0.0	0.0	0.154	0.032	0.074	0.070	0.0	0.0	0.0	0.0	0.010
1 1 1 1	0.077	0.086	0.123	0.125	0.121	0.262	0.301	0.321	0.174	0.169	0.215	0.185	0.225	0.273
% Switch	19.8	32.1	38.3	46.3	51.5	6.1	25.7	22.2	25.6	9.2	23.7	21.0	21.3	32.3
% fulfilment of equity axiom	92.3	90.3	87.7	87.5	85.9	55.3	63.4	58.0	70.9	83.1	78.4	80.3	73.8	70.7

To summarise, we observe a tendency away from an unconditional fulfilment of the equity axiom. This shift either results in an immediate, but, more often, causes a later support for alternative y . In the next subsection these findings as well as the results of situations 2 and 3 will be analysed and discussed more extensively.

The results of situation 2 in table 1 cover the years from 1989 to 2002.⁴ Starting again with our first year of investigation, compared to situation 1 we now observe more frequent statements in favour of the better-off groups. The proportion of the sequence 1111 increased up to 26.2%, whereas just 46.2% of the students wanted the money to go into aid programs for Africa in every case. Remarkably, only 55.3% of the respondents fulfilled the equity axiom.

Regarding the intertemporal development of these findings, the frequency of the sequence 0000 declined between 1989 and 1993, while, afterwards, the unconditional support of starving Africans increased again up to 44.2% in 2002 (this is also the case in the modified questionnaire versions of the year 2003, which can be seen from table 4 in section 4). This observation does not hold for the frequencies with respect to the sequence 1111. Here, the percentage figure in 2002 is extremely low. Additionally, the fulfilment of the equity axiom was higher in 2002 (and also in 2003, no matter, whether the Africans are responsible for their fate or not) compared to the earlier surveys. It seems as if, at least in the initial case, where only one better-off group is concerned, the needs of starving people in Africa are considered more firmly in our recent investigations, or, in other words, environmental programs are no longer supported right from the beginning. Another phenomenon that occurs in all our investigations is that the frequencies of unintelligible sequences are somewhat higher in situation 2 than in the other cases. Does this mean that this situation is particularly hard to evaluate?

Presenting a decision problem between basic human rights on the one hand and a quick economic recovery on the other hand makes situation 3 even more complex. As the results in table 1 show, similar to situation 1 the equity axiom was fulfilled by the great majority of the students in the year 1989. Moreover, 73.9% of the respondents

⁴In contrast to situation 1 in 2003, where minor changes obviously had no influence on the results, situation 2 was modified more extensively in order to introduce additional responsibility considerations. Again, this is explained in section 4. Thus, one should be somewhat cautious in comparing these results, although we do not observe any differences between 2002 and 2003.

stated that basic human rights should obtain absolute priority no matter of what size the group benefitting from the loan might be. The proportion of those probands revising their original decision later on was considerably low in 1989. Analysing again the intertemporal development, we find a tendency towards a quick economic reconstruction at the expense of human rights since the year 2002. Most notably, the differences between the figures from 2003 and the results of our investigations in the years 1989 and 1993 are astonishing. For example, the frequency of the sequence 0000 was substantially lower than in all other years before. Thereby, analogous to situation 1, the decrease in the frequencies of an unconditional support of the worst-off in the years 2002 and 2003 was accompanied by a lower fulfilment of the equity axiom. This proportion declined from 83.1% in the year 1989 to 70.7% in 2003. In addition, both an increased frequency of a revision and a higher occurrence of the sequence 1111 in the year 2003 can be observed. Therefore, in 2002 and, particularly, in 2003 the absolute priority of basic human rights declined compared to the desire for a quick economic recovery. The influence of the intertemporal effect in this and the first two situations will be discussed in more detail in the following subsection.

To summarise, so far the results suggest a certain evolution in the response patterns over time. However, possibly these important findings might simply be due to heterogeneous sample compositions in different years. In order to examine the empirical and statistical robustness of the results, we use a standard probit regression model including several socio-demographic characteristics of the respondents.

3.2 Individual Characteristics and Response Patterns

Using the same questionnaires Gaertner et al. (2001) deduced a context-dependence of equity judgements from varying answering patterns among the three situations considered above. A prominent economic interpretation ascribes such observations to the existence of self-interest of the respondents, which serves as an antipode to the impartial spectator construct, introduced already by Adam Smith (1759). Many experimental studies are explicitly designed only to uncover the influence of personal stakes in the outcome of allocation alternatives. However, our intention is twofold: On the one hand, we try to examine whether the described changes over time are due to an evolution of

attitudes instead of different sample structures. Yet, on the other hand, by examining the influences of several individual attributes we get valuable insights into underlying decision motives. Thereby, factors, obviously leading to a stronger empathy with some of the parties described in the hypothetical situations of the questionnaires, are identified. Many studies still fail to incorporate these possible influences into their analyses, whereas some surveys, e.g. Schokkaert and Capeau (1991), Amiel and Cowell (2002), or Jungeilges and Theisen (2003), demonstrate the influence of demographic characteristics on equity judgements in different contexts. Nevertheless, overall the explanatory power of such variables is small, if ethical decisions are concerned, so that our main focus should be on the identification of single effects and the verification of the results described in subsection 3.1.

In addition to the previously presented questions, we collected socio-demographic attributes of each respondent. To some extent, the sample means of these attributes vary over time, thus revealing a lack of homogeneity among the groups to be compared. To allow for these differences we use a standard probit regression model of the overall sample. As already explained in the preceding subsection, three binary response patterns are of particular interest: Besides the fulfilment of the equity axiom, the revision of an initial decision in favour of the worst-off person on the one hand, and the unconditional support of these (groups of) person(s) on the other hand, serve as dependent variables. Explanatory factors are summarised and described in the “basic questionnaire” column in table 2.⁵

Here, the variable coded as *TIME* is measured in number of terms since the first study and, therefore, allows for intertemporal effects. Other variables are more or less self-explanatory: Age, gender and parental background are standard socio-demographic attributes. Moreover, we are able to distinguish between Business Administration and Economics (either as a major or subsidiary subject) students, and also have informa-

⁵The size n=418 refers to all samples including the year 2003, whereas the basic version of situation 2 was not presented to the latter students and, therefore, contains fewer questionnaires. Nonetheless, the sample means of the characteristics do not change significantly.

Table 2: Variable Descriptions: Samples of Osnabrück and International Sample

Variable Code	Description	Basic Questionnaire		Responsibility Questionnaires		International Sample	
		Osnabrück 1989-2003 (n=418) Mean S.D.	Situation 1 (n=365) Mean S.D.	Situation 2 (n=199) Mean S.D.	1989-2004 (n=746) Mean S.D.		
AGE	Age of proband (in years)	22.76 1.80	22.54 1.94	22.44 1.81	23.53 3.73		
BA	B.A. Student: 0=No, 1=Yes	0.86 0.35	0.85 0.36	0.82 0.38	0.80 0.40		
JOB	Proband has job experience: 0=No, 1=Yes	0.38 0.48	0.32 0.47	0.28 0.45	0.39 0.49		
MALE	Proband is male: 0=No, 1=Yes	0.62 0.48	0.57 0.50	0.53 0.50	0.54 0.50		
RES	Questionnaire Version: 0=No Responsibility, 1=Responsibility	— —	0.51 0.50	0.50 0.50	— —		
TIME	Number of terms since the first study in winter 1989	13.60 11.99	27.09 1.00	28.00 0.00	17.80 10.46		
Future Income:	Proportion of the citizens expected by the proband to earn less than the proband in 10 years time:						
FUTURE 1	less than 50%	0.12 0.33	0.18 0.38	0.24 0.43	0.19 0.39		
FUTURE 2	50%	0.40 0.49	0.27 0.45	0.17 0.38	0.38 0.49		
FUTURE 3	more than 50%	0.48 0.50	0.55 0.50	0.59 0.49	0.43 0.50		
Parental background:	Profession of the main earner of the family in which the proband grew up:						
PARENTS 1	Worker, Craftsman	0.16 0.37	0.16 0.37	0.16 0.36	0.18 0.39		
PARENTS 2	Employee or civil servant in the public sector	0.26 0.44	0.27 0.45	0.26 0.44	0.31 0.46		
PARENTS 3	Employee in the private sector	0.28 0.45	0.26 0.44	0.26 0.44	0.26 0.44		
PARENTS 4	Self-employed	0.30 0.46	0.29 0.45	0.29 0.45	0.25 0.43		
University:	University at which the investigation was carried out:						
PLACE 1	University of Osnabrück (Germany) 5 Samples between 1989 and 2003	— —	— —	— —	0.56 0.50		
PLACE 2	University of Klagenfurt (Austria) 9 Samples between 1999 and 2004	— —	— —	— —	0.29 0.45		
PLACE 3	University of Ljubljana (Slovenia) 3 Samples: 1998, 1999, 2003	— —	— —	— —	0.15 0.36		

tion about their job experience.⁶ Additional dummy variables allow future income expectations of the proband to have an influence on the equity evaluations.

The maximum likelihood estimates of all in all 9 probit models for the three situations are summarised in table 3. Similar to Schokkaert and Capeau (1991) we can confirm a lack of overall explanatory power of the independent variables for the observed variances in the answering patterns. However, this is not surprising if one expects ethical judgements to be randomly distributed over the population. Nevertheless, our estimates reveal some factors having a significant influence on the decisions. In situation 1, older students are somewhat more likely to support the handicapped person unconditionally instead of revising their initial statement later on, but there is no clear impact of the proband's age on the answers in situations 2 and 3. Furthermore, there is no effect from studying Business Administration instead of Economics. The results on the influence of gender and job experiences are more complex in our investigation. In order to allow for interaction effects we tested several factor products, one of them being remarkable: Especially in situation 1, job experiences of men considerably reduce the probability of switching so that there is a persistent support of the handicapped person, while there is a significant effect towards the revision of the initial decision for alternative x in situation 3. Hence, it is possible that experiences during compulsory military or, more likely, civilian service do have an influence. Particularly, the case of a handicapped person might have raised sympathy among these male students.

Due to the incorporation of this interaction effect, however, the coefficients of the binary variables MALE and JOB are conditioned on the respective variable in the product term being zero.⁷ For female students (MALE=0) there are strong effects from having any job experience. Especially in situation 1, being employed significantly reduces the probability of the sequence 0000 and, instead, increases the occurrence of switching behaviour in favour of the better-off children. Moreover, the coefficients for the fulfilment of the equity axiom by women are negative in all situations and significant in situation 3. Hence, first of all, the effect of being employed seems to be depending

⁶We are not able to state the character of the job experience which could have been compulsory military or civilian service, part- or full-time jobs, or vocational training.

⁷See, for example, Jaccard (2001) for a comprehensive discussion of interaction effects.

Table 3: ML Estimates of Probit Models - Basic Questionnaire

Independent Variables	Situation 1 (n=418)			Situation 2 (n=319)			Situation 3 (n=418)		
	Fulfilment of equity axiom	Switch	Sequence 0000	Fulfilment of equity axiom	Switch	Sequence 0000	Fulfilment of equity axiom	Switch	Sequence 0000
CONSTANT	2.2028 (1.3935)	1.4707 (1.0618)	-1.1256 (1.0493)	0.1514 (1.2002)	-3.3111** (1.3428)	1.2130 (1.1873)	0.1529 (1.1458)	-0.1340 (1.1664)	-0.8682 (1.0384)
AGE	0.0010 (0.0628)	-0.0882* (0.0483)	0.0817* (0.0477)	0.0095 (0.0542)	0.1000* (0.0599)	-0.0562 (0.0537)	0.0680 (0.0517)	-0.0215 (0.0526)	0.0705 (0.0470)
BA	-0.1129 (0.2514)	-0.0402 (0.1874)	-0.0401 (0.1857)	-0.1530 (0.2224)	0.0265 (0.2364)	-0.1644 (0.2164)	-0.2661 (0.2156)	-0.0287 (0.2085)	-0.1972 (0.1873)
JOB	-0.2382 (0.3469)	0.4932** (0.2402)	-0.5923** (0.2406)	-0.0385 (0.2750)	-0.1276 (0.2997)	0.0545 (0.2698)	-0.4806* (0.2652)	-0.1861 (0.2558)	-0.1905 (0.2371)
MALE	-0.5416** (0.2476)	0.1799 (0.1768)	-0.4230** (0.1773)	-0.1272 (0.2107)	0.0441 (0.2322)	-0.1434 (0.2072)	-0.5508*** (0.1963)	-0.5675*** (0.1910)	-0.0278 (0.1731)
MALE x JOB	0.3053 (0.3792)	-0.5505** (0.2740)	0.7084*** (0.2725)	0.2399 (0.3142)	-0.2555 (0.3448)	0.4089 (0.3088)	0.3673 (0.3006)	0.6679** (0.2952)	-0.2001 (0.2697)
TIME	-0.0093 (0.0072)	0.0222*** (0.0056)	-0.0283*** (0.0056)	0.0135* (0.0074)	0.0147* (0.0079)	0.0019 (0.0072)	-0.0146** (0.0061)	0.0115* (0.0062)	-0.0213*** (0.0055)
FUTURE 1	-0.1322 (0.2923)	-0.0322 (0.2099)	-0.0675 (0.2110)	-0.5455** (0.2667)	-0.4139 (0.3221)	-0.2240 (0.2719)	-0.1416 (0.2224)	0.2275 (0.2205)	-0.4083* (0.2088)
FUTURE 3	-0.3859** (0.1885)	-0.1887 (0.1402)	-0.0288 (0.1380)	-0.2827* (0.1550)	-0.2051 (0.1690)	-0.1215 (0.1526)	0.0675 (0.1523)	-0.1114 (0.1555)	0.1347 (0.1379)
PARENTS 2	-0.2113 (0.2860)	-0.0992 (0.2078)	0.0087 (0.2059)	0.1643 (0.2340)	0.4298 (0.2713)	-0.1970 (0.2347)	-0.0938 (0.2246)	-0.0181 (0.2257)	-0.0419 (0.2039)
PARENTS 3	-0.1283 (0.2866)	-0.1337 (0.2028)	0.0250 (0.2013)	0.1638 (0.2306)	0.3164 (0.2708)	-0.0633 (0.2294)	-0.1443 (0.2181)	-0.0201 (0.2201)	-0.0969 (0.1987)
PARENTS 4	-0.3017 (0.2775)	-0.1341 (0.2024)	-0.0418 (0.2014)	0.3487 (0.2339)	0.2303 (0.2709)	0.1626 (0.2286)	-0.0869 (0.2191)	-0.0001 (0.2194)	-0.0514 (0.2001)
LR Statistic	15.1856	28.7216***	37.6609***	13.4601	11.4770	9.8089	15.8439	19.7712**	27.1602***
McFadden R ²	0.0510	0.0515	0.0650	0.0320	0.0344	0.0228	0.0350	0.0444	0.0470
Mean dependent var.	0.8852	0.3876	0.4904	0.6301	0.2163	0.4013	0.7679	0.2249	0.5383

Note: Asymptotic standard errors are reported in parentheses. Level of significance: * 10%, ** 5%, *** 1%.

on the underlying situation. In addition, there are some remarkable gender differences concerning the influence of job experiences.

As in previous research, for example by Jungeilges and Theisen (2003), or by Amiel and Cowell (2002), the latter, however, in a different context, there is a clear gender effect in situations 1 and 3 for the group of students without any job experiences (JOB=0). Male students fulfil the axiom less frequently in both cases. Additionally, in situation 1 men are more supportive of furthering the education of the intelligent, whereas in situation 3 there is significantly less switching behaviour among male respondents from basic human rights towards a quick economic recovery. It is important to recognise that, in our model, this effect is separated from other factors like age, which naturally differs among sexes due to previous compulsory services of male students. Moreover, our approach avoids gender differences to be due to different sample compositions in various years.

Similar to the parental background variables, future income expectations of the respondents are normally of no importance for the answering patterns, whereby the negative and significant influences of pessimistic or optimistic prospects on fulfilling the axiom in situations 1 and 2 respectively are not easy to interpret.

Having controlled for several socio-demographic factors, we are now able to state more robust findings concerning the presumed time trends. As shown by the coefficients of the variable TIME in table 3, the aforementioned intertemporal developments can clearly be confirmed. In situation 1, we detect a highly significant movement from an unconditional support of the worst-off individual towards a reconsideration of this initial decision. In contrast, in situation 2 there is a slight development in favour of helping starving Africans. Here, the fulfilment of the equity axiom, but also the occurrence of switching behaviour, somewhat increased over time. However, stronger intertemporal changes can be observed for situation 3. In both equations, regarding either the sequence 0000 or the fulfilment of the equity axiom, the TIME coefficients indicate a considerable decline in the concern for basic human rights.

In addition to the presented binary answers, in the questionnaires the students were also asked to give some verbal comments on their decisions, which allow for further interpretation of the described results. In situation 1, although stated with different

frequencies, we observe that the pool of given answers remains the same over time. The comments of the probands suggest that a switch from alternative x to alternative y is mostly driven by the number of intelligent children rather than by their job opportunities. Furthermore, a decision in favour of alternative y is more often justified by future prospects and the wealth of the country than by a higher utility for an individual child. Thus, several reasons for a declined concern for the handicapped person over time are possible. For example, the respondents could have observed an improvement of living conditions of handicapped persons. Simultaneously, educational aspects might have become more important during the last couple of years. It is possible that several publicly discussed surveys on problems of the German educational system had an important influence. Additionally, the situation of chronically underfunded German universities could have played a certain role in the given context.

Besides emphasising the basic needs of the Africans in situation 2, respondents often stated environmental problems to be less important, when they decided in favour of alternative x . However, students supporting environmental programs in Germany regularly referred to uncertain benefits from money transfers to Africa, but also admitted self-interest to be decisive for their choice. Nevertheless, recently, environmental problems have obviously lost some of their urgency compared to the early years of our survey. Moreover, current students seem to be more sensitive to global political problems and their potential causes.

Within the verbal answers of situation 3, on the one hand, the general importance of human rights was acknowledged, whereas, on the other hand, the danger of a backslide into a dictatorship was mentioned. Students, who decided for a curtailment of human rights, argued that an economic revival brings about human rights “automatically”. In addition, many respondents argued that the curtailment would be limited in time and extent. Concerning the identified intertemporal changes, one has to recognise the phenomenon of the weak national economic growth, which plays an important role in public opinion in today’s Germany. Furthermore, as far as the freedom to strike mentioned in situation 3 goes, a modified perception of labour unions might have had an influence in recent questionnaires. Possibly, the efficiency arguments and aspects of productivity have been incorporated into the judgements of our students.

To summarise this section, we are able to corroborate trends over time, which are particularly apparent in situations 1 and 3. However, differences among the three situations underpin the supposed context-dependence of equity evaluations. Clearly, the stated decisions are influenced by various attributes of the probands, although the overall explanatory power is low. Yet, these effects change with the given setting of the decision problem. Thus, the biography and experience of the respondent, but also political developments in the years considered, seem to play an important role.

4 Basic Needs and Responsibility

In the situations presented so far, the aspect of basic needs competes with the principle of efficiency. In the following section we want to introduce an additional facet, viz. responsibility. In one version of the questionnaire, the worst-off person is described to be responsible for her own fate, whereas in a second variant this is not the case. Thus, our aim is to check whether our students value information on the origin of basic needs. Fleurbaey (1995) gives the example of a motorcyclist being in a life-threatening state after a serious accident. Although the cyclist was well aware of the danger he continued riding his motorbike without wearing a helmet. Nevertheless, Fleurbaey argues that no one would withhold the money for the costly but lifesaving operation: "It is obviously a matter of egalitarian distributive justice that the satisfaction of basic needs should be given priority in the distribution of resources" (p. 41). However, since our situations always offer an alternative, they are more complex. Indeed, as already shown in section 3, they often provoke a decision against the needy person. Therefore, a priori the effects of additionally introduced responsibility aspects are unclear.

Modifying our questionnaire setting in the way just indicated, we concentrated on situations 1 and 2; pre-tests revealed that in the more complex situation 3 it is difficult to separate the influences of several co-existing factors and motives. More concretely, in situation 1 we distinguished between two scenarios. In one version, we provided the information that the retarded person was severely handicapped from birth. In the second modification, we said that brain damage was due to an accident from participation in a dangerous sport (paragliding, let's say). Similarly, in situation 2 we either

Table 4: Investigation in Osnabrück - Responsibility Questionnaires

Relative Frequencies for All Possible Decision Patterns
 Sample sizes (2002+2003): No Responsibility n=(79+99), Responsibility n=(87+100)
 (x coded as 0, y coded as 1)

Sequence	No Responsibility		Responsibility	
	Situation 1 (n=178)	Situation 2 (n=99)	Situation 1 (n=187)	Situation 2 (n=100)
0 0 0 0	0.360	0.455	0.412	0.440
0 0 0 1	0.022	0.030	0.032	0.010
0 0 1 0	0.0	0.010	0.0	0.0
0 0 1 1	0.213	0.091	0.139	0.130
0 1 0 0	0.0	0.020	0.0	0.0
0 1 0 1	0.011	0.0	0.0	0.0
0 1 1 0	0.006	0.0	0.0	0.020
0 1 1 1	0.236	0.111	0.193	0.100
1 0 0 0	0.0	0.0	0.0	0.010
1 0 0 1	0.0	0.010	0.0	0.0
1 0 1 0	0.0	0.010	0.0	0.010
1 0 1 1	0.006	0.010	0.011	0.0
1 1 0 0	0.011	0.010	0.005	0.020
1 1 0 1	0.0	0.0	0.0	0.0
1 1 1 0	0.0	0.051	0.0	0.070
1 1 1 1	0.135	0.192	0.209	0.190

% of switch	47.2	23.2	36.4	24.0
% fulfilment of equity axiom	84.8	71.7	77.5	70.0

stated that starvation results from a long-lasting drought or explained that the African economies considered were widely damaged by failures in cultivating self-bred grain. Compared to the two variants of the first situation, the modifications in situation 2 aimed at incorporating responsibility concerns in a rather mild or cautious way.

We presented both versions of situation 1 to different samples of students during the years 2002 and 2003, while we used the two variants of the second situation only on two groups in the latter year. The corresponding results are summarised in table 4.

In situation 1, fulfilment of the equity axiom is weaker for the responsibility case. Furthermore, the relative frequency of revising the initial decision went down from 47.2% in the first version to 36.4% in the second variant concerning the dangerous sport, thus indicating a stronger polarisation between the two extreme positions 0000 and 1111. Here, surprisingly, the unconditional support of the paraglider was higher than the constant help for the person handicapped from birth.

In contrast, we do not detect any differences among the two variants in situation 2. Besides quite similar verdicts for the extreme sequences 0000 and 1111, the proportions of students revising their original choice of alternative x and also the relative frequencies of those respondents fulfilling the equity axiom are of striking resemblance. Yet, the two different reasons for starvation had obviously no influence on the decision of our students. Thus, while in situation 1 we detect a certain and partly astonishing shift in the answers, which might be due to the incorporation of responsibility considerations, the verdicts of situation 2 are consistent with Fleurbaey’s described prediction.

However, recalling the findings of section 3, the given setting of each case might have had a certain influence on the answers of some groups of students. Moreover, differences among the compared samples could have caused the described results. Hence, again, we allowed socio-demographic factors to have an impact on the stated decisions. These characteristics, already introduced in the preceding section, are also summarised in table 2 for the two concerned responsibility situations. Here, all questionnaires of one situation, either containing the “responsibility” or the “no responsibility” version, form a common sample. Thereby, the binary variable coded as RES indicates the corresponding variant; “0” denotes the “no responsibility” case, while “1” represents the corresponding “responsibility” variant. As before, the three most relevant decisions have been modelled as dependent binary variables. The regression results are presented in table 5.

For brevity’s sake, we only comment on the influence of responsibility aspects on the answering patterns. In situation 1, the different causes of the handicap matter if we

Table 5: ML Estimates of Probit Models - Responsibility Questionnaires

Independent Variables	Situation 1 (n=365)			Situation 2 (n=199)		
	Fulfilment of equity axiom	Switch	Sequence 0000	Fulfilment of equity axiom	Switch	Sequence 0000
CONSTANT	4.5564* (2.6366)	2.7078 (2.2910)	-0.3701 (2.2347)	-0.5123 (1.7341)	-0.2356 (1.8846)	-1.9604 (1.6513)
AGE	-0.0380 (0.0549)	-0.1787*** (0.0534)	0.1275** (0.0501)	0.0659 (0.0794)	-0.0261 (0.0861)	0.0924 (0.0756)
BA	0.2485 (0.2131)	0.2278 (0.1989)	-0.0325 (0.1925)	0.1978 (0.2582)	0.1486 (0.2784)	0.1757 (0.2503)
JOB	-0.3544 (0.3031)	0.1151 (0.2571)	-0.3144 (0.2562)	-0.3092 (0.3735)	0.2238 (0.3678)	-0.4871 (0.3454)
MALE	-0.8447*** (0.3088)	-0.0668 (0.2185)	-0.3770* (0.2221)	-0.3779 (0.2484)	-0.1562 (0.2522)	-0.1808 (0.2307)
MALE x JOB	0.2999 (0.3495)	0.4257 (0.3009)	-0.1842 (0.2988)	-0.1909 (0.4358)	-0.2697 (0.4510)	0.0524 (0.4147)
RES	-0.7719*** (0.2843)	-0.1492 (0.2062)	-0.2135 (0.2071)	-0.0469 (0.1946)	0.0305 (0.2016)	-0.0304 (0.1841)
TIME	-0.0635 (0.0842)	0.0394 (0.0720)	-0.0836 (0.0713)	—	—	—
FUTURE 1	0.1603 (0.2670)	0.2353 (0.2197)	-0.1950 (0.2204)	-0.0354 (0.3125)	-0.0217 (0.3144)	-0.1438 (0.2883)
FUTURE 3	-0.0798 (0.1974)	-0.0734 (0.1661)	-0.0133 (0.1649)	-0.0712 (0.2775)	0.0270 (0.2771)	-0.0887 (0.2567)
PARENTS 2	-0.5989** (0.2740)	-0.2620 (0.2097)	-0.0596 (0.2054)	-0.1555 (0.3055)	0.0331 (0.3019)	0.0032 (0.2772)
PARENTS 3	-0.4851* (0.2818)	-0.0248 (0.2131)	-0.3124 (0.2123)	-0.1265 (0.3051)	-0.0747 (0.3032)	0.0893 (0.2763)
PARENTS 4	-0.6746** (0.2714)	-0.0749 (0.2075)	-0.3198 (0.2061)	-0.3371 (0.2944)	0.0432 (0.2958)	-0.3105 (0.2733)
MALE x RES	0.7278** (0.3458)	-0.2147 (0.2748)	0.5952** (0.2755)	—	—	—
LR Statistik	24.9328**	26.4675**	17.8953	7.9851	2.9664	6.7551
McFadden R ²	0.0704	0.0534	0.0367	0.0332	0.0136	0.0247
Mean dependent var.	0.8110	0.4164	0.3863	0.7085	0.2362	0.4472

Note: Asymptotic standard errors are reported in parentheses. Level of significance: * 10%, ** 5%, *** 1%.

also incorporate the product of the responsibility indicator and the gender variable.⁸ This leads to a more sophisticated interpretation: Compared to female answers, the fact that the brain damage was due to an accident from paragliding had a positive and significant effect on male answers regarding both the fulfilment of the equity axiom and the unconditional support of the worst-off person. Thus, the disturbing differences in the relative frequencies of the sequence 0000 in table 4 are due to the evaluation by our male students. We get the impression that men to some degree “honoured” participation in some dangerous sport, whereas female respondents had their reservation about this. Having controlled for this interaction, responsibility considerations display a negative and significant influence on the fulfilment of the equity axiom by women. Consequently, in situation 1, basic needs are considerably less often supported if the suffering person is to blame for its own fate.

In contrast, no significant effects can be found in the second situation. There, the coefficients of the responsibility variable are not significant for any examined binary decision pattern. Furthermore, the same observation applies to all plausible interaction terms; consequently they are all omitted in the stated equations in table 5. Obviously, differentiating between causes of hunger of the Africans does not have any influence on the judgements of the respondents.

The two “responsibility” cases introduced a certain and known risk that both the sportsman and the Africans were willing to accept, whereas in the second versions the worst-off persons faced a disaster they could not avoid. However, situations 1 and 2 are different in the way that students are probably better able to put themselves into the position of a paraglider and evaluate his risk-taking than identifying with African farmers. Moreover, in the African situation, various factors show up simultaneously, and it is difficult to differentiate among them solely on the basis of relatively sparse information on the evaluative behaviour of our students. On the one hand, there could, of course, have been grave mistakes when experimenting with new types of grain. On the other hand, when droughts come about every other year, shouldn’t one clutch at every straw that promises a way out of everlasting scarcity? This raises the issue of

⁸We also tested for the influence of other products with the responsibility variable, but could not reveal any further plausible influence.

accountability and responsibility. Surely, the responsibility issue was stated much more clearly in situation 1. Should the responsibility issue then have been stated much more explicitly in situation 2 as well? But how much more explicit in order not to be called manipulative? It seems to us that these results have important implications for future questionnaire-experiments. One can always “structure” situations in such a way that one obtains the desired result. But this is, of course, not what we are after.

5 The Cultural Dimension of Equity Evaluations

As a final extension, we further broaden the scope of our investigation by considering cultural effects. Preliminary studies by Gaertner et al. (2001) detected cross-cultural differences concerning equity evaluations. Thus, it may well be the case that the discovered time trend in Osnabrück is also country-specific. To examine this question, we expanded our sample and included questionnaire results from the universities of Klagenfurt (Austria) and Ljubljana (Slovenia) which have been gathered between the years 1998 and 2004. Although a few samples are rather small - the number of students in the single surveys ranges from 19 to 60 - basic conclusions about both intertemporal effects and cultural differences can be drawn, we believe.

Due to diverse attributes of the probands, especially cross-cultural comparisons often suffer from considerable heterogeneity in the sample-structure. The last two columns of table 2 present summary statistics of the aforementioned socio-demographic characteristics of the overall sample. A closer examination would reveal that, for example, the average Slovenian student is 3.5 years older than his Austrian counterpart, has more job experience and is considerably more optimistic about his future income than the counterparts from Klagenfurt and Osnabrück. Therefore, in order to compare the samples, again, our probit model seems to be an appropriate approach to control for these differences.

As the estimated equations in table 6 show, we included place dummies for the Austrian and Slovenian students. By this, comparisons of average values for each country are possible, but, certainly, we are not able to cancel the effects resulting from different survey periods. Furthermore, products of place dummies and the time variable

should determine separate time trends for Klagenfurt and Ljubljana, whereas the single variable TIME covers the remaining intertemporal effects stemming from the German samples.⁹ The latter have already been discussed in section 3.

Our approach assumes that incorporated variables have similar effects on decision patterns in different countries. Since this need not necessarily be the case we tested various interaction terms of socio-demographic characteristics and place dummies. Only in situation 1, we found significant differences concerning the influence of AGE in Austria and optimistic income expectations (FUTURE 3) in Slovenia so that we included these two products in the regressions. The influence of the other variables in situation 1 remains all about the same and, furthermore, there are no significant interaction effects in the other two situations. As before, the overall explanatory power of the model is weak. Hence, we briefly comment only on intertemporal and cultural effects.

In situation 1, the time trend detected in our investigations for Osnabrück cannot be confirmed for the Austrian and Slovenian samples. In fact, over time probands from Klagenfurt revised their initial decision in favour of the handicapped person less frequently. This is partly due to a stronger unconditional support of the worst-off individual. However, in Ljubljana and also in Klagenfurt the alternative of helping the retarded person all cases is considerably less often chosen by the students. In Slovenia, this observation is accompanied by less fulfilment of the equity axiom, whereas in Klagenfurt, students more often switched towards supporting the intelligent children later on. Clearly, cultural differences may have had an influence.

In situation 2, similar to our findings from Osnabrück, there is no strong intertemporal development in any direction in the other two countries. Nevertheless, the fulfilment of the equity axiom in Austria and the frequency of the sequence 0000 in Slovenia are significantly lower compared to the German results. Hence, in Osnabrück we observe a stronger desire to help starving Africans instead of financing environmental programs. Actually, as table 3 reveals, this help is slightly increasing over time.

⁹To avoid multicollinearity due to these interaction terms we centered the TIME and AGE variables by subtracting the mean in each case before we interacted them with the dummies. See e.g. Aiken and West (1991) for a discussion of this procedure.

Table 6: ML estimates of probit models - International sample

Independent Variables	Situation 1 (n=746):			Situation 2 (n=647):			Situation 3 (n=746):		
	Fulfilment of axiom	Switch	Sequence 0000	Fulfilment of axiom	Switch	Sequence 0000	Fulfilment of axiom	Switch	Sequence 0000
CONSTANT	1.7433*** (0.2783)	-0.0315 (0.2076)	0.0463 (0.2108)	0.5269** (0.2263)	-0.7197*** (0.2419)	-0.0953 (0.2304)	0.9962*** (0.2226)	-0.4255** (0.2135)	-0.0114 (0.2020)
AGE _{centered}	0.0055 (0.0277)	-0.0670*** (0.0249)	0.0752*** (0.0240)	-0.0151 (0.0158)	-0.0058 (0.0173)	-0.0032 (0.0170)	-0.0107 (0.0160)	-0.0249 (0.0176)	0.0092 (0.0157)
BA	-0.0220 (0.1941)	-0.0158 (0.1517)	-0.0247 (0.1530)	-0.0502 (0.1657)	0.0991 (0.1788)	-0.1402 (0.1725)	-0.1646 (0.1661)	-0.0089 (0.1610)	-0.1363 (0.1510)
JOB	0.0979 (0.2226)	0.2340 (0.1623)	-0.2865* (0.1655)	-0.1983 (0.1721)	-0.0656 (0.1851)	-0.2100 (0.1837)	-0.3201* (0.1758)	-0.1516 (0.1701)	-0.1071 (0.1617)
MALE	-0.3300** (0.1603)	0.0692 (0.1248)	-0.3135** (0.1279)	-0.1910 (0.1368)	-0.1203 (0.1475)	-0.0714 (0.1390)	-0.3746*** (0.1365)	-0.4159*** (0.1325)	0.0239 (0.1236)
MALE x JOB	-0.0780 (0.2588)	-0.3483* (0.1981)	0.4315** (0.2012)	0.4109* (0.2111)	0.1085 (0.2280)	0.3892* (0.2210)	0.3365 (0.2110)	0.3369 (0.2112)	0.0206 (0.1963)
TIME _{centered}	-0.0072 (0.0070)	0.0219*** (0.0055)	-0.0274*** (0.0054)	0.0129* (0.0073)	0.0130* (0.0077)	0.0023 (0.0071)	-0.0142** (0.0059)	0.0107* (0.0059)	-0.0206*** (0.0054)
FUTURE 1	-0.2851 (0.1828)	-0.1335 (0.1394)	-0.0188 (0.1419)	-0.4816*** (0.1526)	-0.2095 (0.1708)	-0.3521** (0.1584)	-0.1501 (0.1444)	0.0157 (0.1467)	-0.1932 (0.1380)
FUTURE 3	-0.3450** (0.1588)	-0.2284* (0.1196)	0.0561 (0.1189)	-0.2676** (0.1196)	-0.1114 (0.1289)	-0.1817 (0.1212)	0.1605 (0.1222)	-0.0662 (0.1213)	0.1759 (0.1107)
PARENTS 2	0.1365 (0.1896)	-0.0484 (0.1418)	0.0690 (0.1460)	0.1696 (0.1491)	0.0795 (0.1621)	0.0703 (0.1578)	0.1304 (0.1512)	-0.0530 (0.1512)	0.1785 (0.1416)
PARENTS 3	-0.2257 (0.1854)	-0.2805* (0.1469)	0.1610 (0.1500)	0.2419 (0.1566)	0.1396 (0.1687)	0.1068 (0.1650)	0.0343 (0.1554)	-0.1299 (0.1574)	0.1631 (0.1460)
PARENTS 4	-0.2673 (0.1910)	-0.1549 (0.1497)	0.0086 (0.1528)	0.2798* (0.1621)	0.0324 (0.1774)	0.2340 (0.1669)	0.0159 (0.1583)	-0.0072 (0.1595)	0.0567 (0.1498)
PLACE 2	0.0220 (0.3045)	0.3841* (0.2231)	-0.4642** (0.2295)	-0.5713** (0.2709)	-0.4593 (0.3097)	-0.3251 (0.2823)	-0.3325 (0.2326)	0.2250 (0.2348)	-0.4740** (0.2280)
PLACE 3	-1.0356** (0.4137)	0.4780 (0.3592)	-1.1815*** (0.4009)	-0.1564 (0.2417)	0.2969 (0.2517)	-0.5382** (0.2698)	-0.5273** (0.2107)	0.2544 (0.2086)	-0.6403*** (0.2008)
PLACE 2 x TIME _{centered}	-0.0181 (0.0380)	-0.0615** (0.0280)	0.0544* (0.0286)	0.0321 (0.0287)	0.0376 (0.0327)	0.0169 (0.0301)	0.0455 (0.0294)	-0.0358 (0.0294)	0.0752*** (0.0285)
PLACE 3 x TIME _{centered}	-0.0243 (0.0458)	-0.0431 (0.0424)	-0.0075 (0.0493)	-0.0394 (0.0395)	-0.0065 (0.0405)	-0.0417 (0.0471)	0.1301*** (0.0497)	0.0173 (0.0405)	0.0800** (0.0391)
PLACE 2 x AGE _{centered}	0.0096 (0.0377)	0.0592** (0.0298)	-0.0540* (0.0291)	—	—	—	—	—	—
PLACE 3 x FUTURE 3	0.8105** (0.3709)	0.1669 (0.3254)	0.4491 (0.3697)	—	—	—	—	—	—
LR Statistik	34.37***	50.74***	75.12***	28.78**	13.98	33.62***	34.15***	27.24**	45.35***
McFadden R ²	0.0588	0.0497	0.0741	0.0328	0.0196	0.0409	0.0397	0.0323	0.0439
Mean dependent variable	0.8673	0.4330	0.4169	0.5873	0.2396	0.3323	0.7373	0.2534	0.4812

Note: Asymptotic standard errors are reported in parentheses. Level of significance: * 10%. ** 5%. *** 1%.

Indeed, the clearest intertemporal disparities can be found for situation 3. Contrary to our results from Osnabrück, we discover that the consideration of basic human rights in Klagenfurt and Ljubljana has grown remarkably. However, as the place dummies reveal, on average the support in both countries started from a considerably lower level. Therefore, faced with the alternative of a quick economic recovery, attitudes towards human rights seem to adjust in the three considered countries over time. Partly, this adjustment can also be observed from the findings of situation 1. We think that this aspect may be of political relevance in a uniting Europe.

Of course, we have only compared average values retrieved over different periods of time. However, by controlling for heterogeneity in the sample structure and separating local time trends we were able to disengage the suspected cultural differences, at least in part, from other effects. Indeed, the cultural, historical, and political background seems to matter. Thereby, the context-dependence of equity evaluations is enriched by an additional dimension.

6 Concluding Remarks

In this paper on empirical social choice, we made an attempt to see whether individuals think and argue in terms of Rawlsian justice. More concretely, we tried to find out to what degree students satisfy an equity axiom that underlies Rawls's difference principle. Building on earlier investigations, we wanted to know whether justice evaluations have changed over a period of 15 years and if "yes", in what way. We also looked at the demographics behind the respondents. Do diverse experiences and biographies have an influence on equity judgements? Moreover, we wanted to see whether there is a gender difference in the answers of the students.

Since the situations which we gave to our probands differed in terms of underlying problem and context, we also checked for context-dependence. Responsibility was another aspect we focussed on. Is the information on the reason why there is a situation of basic needs relevant for the considerations of our students?

Finally, we investigated whether there is a cultural dimension to justice evaluations. We compared judgements in three European countries and realised that there are indeed

significant differences among the responses of these probands. However, we detected some convergence of answers over time. This may be of relevance for the political and social climate within a uniting Europe.

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