« Risky Behaviours and Responsibility-Sensitive Fairness in a Non Life-Threatening Health Case: A European Study »

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Risky Behaviours and Responsibility-Sensitive Fairness in A Non Life-Threatening Health Case: A European Study

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Abstract:

Risky behaviours are found to substantially increase medical and social costs and mortality. In this paper, we document the extent to which a sample of European students (from Denmark, France, Italy and Sweden) consider that individuals should assume the financial burden of paying the costs of risky behaviour. Using an empirical social choice methodology, we test in a positive manner the acceptability of different ways of financing costs due to ill-health more or less associated with risky behaviour in accordance with a normative framework relating to responsibility-sensitive fairness. We particularly check the sensitivity of our sample to responsibility in a health context with questions that make it possible to clearly distinguish between risky behaviour under an individual’s control and circumstances beyond the individual’s control. The health conditions chosen in this study are not life-threatening, but the specific disease varies in different parts of the survey. We find that the majority of students approve of responsibility-sensitive fairness but that the specific health context, the type of risky behaviours involved, and the framing all matter as determinants of the choices made by the individuals of our sample in the financing of health care. We also find that students’ nationality has a small influence.

JEL codes: D71; D63
Keywords: risky behaviour, distributive justice, responsibility-sensitive fairness, health context.

1. Introduction

A growing body of evidence has shown that the lifetime social and medical costs for smokers, overweight individuals and persons who consume excessive amounts of alcohol are higher than the costs for non-smokers, people who are not overweight or occasional alcohol drinkers (see, for example, Leigh, Fries (1992); Viscusi (2007)). Given this evidence, the notion of requiring people who engage in risky behaviour to be responsible for the financial consequences of their behaviour seems to make sense. Should people who are injured or who

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φThe questionnaire was constructed with the help of R. Boarini (OECD) and G. Demuijnck (EDHEC, Lom ; University of Louvain, Chaire Hoover). We thank them for their contribution at the beginning of the study (see also Boarini et al. (2006)). The authors also wish to thank the following people without whose help this study would not have been possible: Dominique Anxo and Ali Ahmed, Economics, University of Vaxjo (Sweden), Enrica Chiappero-Martinetti, Economics, University of Pavia (Italy), Asger Sorensen, Philosophy, Copenhagen Business School (Denmark). M. Kristoffersen kindly explained some specific aspects of the Danish social and tax systems. This information was useful when we wrote the Danish version of the questionnaire. For their helpful comments on previous versions of this text, we also thank Mireille Elbaum, Lars Schweterman, Sandy Tuberif, Florence Jusot, Daniel Verger and the participants of various seminars or conferences (notably Association Française de Sciences économiques Conference (AFSE), Lyon, June 2007; Seminar “Social Inequalities”, INSEE, January 2009; Journées de Microéconomie Appliquée (JMA), Sousse (Tunisia), May 2011; International Health Economic Association (IHEA), Toronto, July 2011).
become ill due to risky behaviour be financially responsible for the consequences of their behaviour?

From an ethical perspective, it is important to recognise that imposing individual responsibility (and, thus, an obligation for individual financing or co-financing of any costs) for the consequences of lifestyle may be too heavy and, therefore, unfair. The cost of treatment for lung cancer that is associated with tobacco, for example, is too expensive to be assumed by a single person. Such a principle implies that only a very small minority of patients would be able to assume individual responsibility for financing the cost of their treatment. The application of responsibility principles to questions of health care, as suggested in a pragmatic way by Roemer (1998) or more recently by Segall (2010), also settles questions regarding other issues, including various informational and technological problems that are extensively discussed in the literature (e.g., Buchanan et al. (2000), Cappelen and Norheim (2006), Cappelen and Tunggoden (2006), Cappelen et al. (2008)).

Questions regarding the availability of information that would have to be considered would make public policy relating to the financing of health care either difficult or unfeasible. The social planner would need to be able to estimate exactly the extent to which a particular disease is connected to risky health behaviour, but in fact that kind of behaviour is often not directly observable\(^1\). The imputation of responsibility implies an ability to clearly distinguish between variables that are not under the control of the individual and variables for which the individual can be held responsible. In reality, there may be interactions among various variables. There are two kinds of issues that would need to be considered: one relates to the path dependency that exists concerning the intergenerational transmission of risky behaviours: children are not responsible for what they inherited from their parents, whatever they inherited, whereas parents are partially responsible for what they transmit to their offspring and so on from one generation to another one\(^2\); so that some individuals benefit from favourable path of intergenerational transmission concerning risky behaviours related to health whereas others do not. The other relates to the imperfect information about the determinants of risky behaviour and about causality between risky behaviour and disease. Making a precise distinction would require an expensive information system for the public financing system, and it would probably be too sophisticated to be implemented. Despite

\(^1\) Schokkaert and Van de Voorde (2004) show, in particular, how difficult it is to propose a risk adjustment functional form that takes illegitimate and legitimate risk-adjustments into account because it is impossible to remove incentives for risk selection while still respecting horizontal equity.

\(^2\) For a theoretical and general perspective, see Swift (2005). For a discussion regarding measurement of inequality of opportunity in health, see also Jusot et al. (2010).
these major criticisms, proposals have been made to reconcile individual responsibility and egalitarian health policies in an appropriate way. For example, within the framework of a structural model that explains the interdependences among the causes of the differences in health outcomes, Fleurbaey and Schokkaert (2009) propose two criteria for the evaluation of illegitimate disparities of health or health care that could serve as a guide for public policies to reduce health or health care inequality. Cappelen and Norheim (2006) suggest that the application of the principle of individual responsibility should be restricted to diseases that do not threaten the lives of the patients and to cases where the cost of the treatment is relatively low in relation to the patients’ income. They thus propose a model for determining the optimal co-payment by patients to finance the care connected to relatively benign diseases even when the individual choices or behaviour cannot be directly observed.

In this paper, we focus particularly on the recent literature analysing responsibility-sensitive fairness in the delivery and financing of health care in accordance with the work relating to fair-compensation criteria proposed by Bossert (1995) and Bossert Fleurbaey (1996). This framework has been reformulated by Schokkaert and Devoogt (2003) in the context of health care expenditures. According to this framework, “two agents with identical responsibility characteristics (but possibly different circumstances characteristics) should get an identical welfare level (full compensation axiom)” and “two agents with identical circumstances characteristics (but possibly different responsibility characteristics) should pay the same tax or contributions or get the same transfer” (strict compensation axiom).

In this paper, we focus primarily on documenting the extent to which financing the costs of risky behaviours is seen by a sample of European students as an obligation that should be assumed by individuals. In doing so, we test in a positive manner the acceptability of such financing in relation to normative framework of responsibility-sensitive fairness. In particular, we use an empirical social choice survey methodology administered to a sample of 381 students in Denmark, France, Italy and Sweden in an environment where cultural differences are relatively minor. The research design is very similar to the research design described in a portion of the Schokkaert and Devooght (2003) study. However, our study differs from theirs in several points, notably in the relatively mild character of health problems considered in our study and in the smaller cultural differences in our sample. We were particularly interested in studying the respondents’ willingness to finance the costs of treating health problems that do not involve life-threatening health conditions when the type of diseases differ in their relationship to risky behaviours such as eating habits, smoking, and compliance with treatment recommendations. We also considered three contextual effects; the first relating to
different kinds of risky behaviour which could either be common (e.g., smoking) or less common (e.g., food habits such as the intergenerational transmission of tastes, or compliance with treatment recommendations), the second relating to the kind of questions that were used in the survey (either questions based on scenarios or direct questions about concrete situations), and the third relating to the national context. In relation to the effect of the national context, our goal was to determine whether people in rather similar developed economies may adopt different ways of thinking about risky behaviour and the financial consequences of such behaviour. In the course of this study, we focused particularly on the sensitivity of the respondents’ ethical judgments as they relate to different contexts.

The paper is organised as follows: Section 2 first describes the research design and the data used. It also explains why the empirical social choice methodology was appropriate to test the responsibility-sensitive fairness approach that people take in relation to risky behaviour in the context of financing health care. In section 3, we first present our findings, then we discuss the results as they relate to the existing literature, and, finally, we conclude. We found that the majority of students approve of a responsibility-sensitive fairness approach and that the health context, the type of risky behaviour involved, and the framing of the issues all matter to explain the observed results. We also found that each student’s nationality had a small influence on the judgments expressed.

2. Normative background and questionnaire

In this section, we first summarise the Bossert Fleurbaey axiomatic, or responsibility-sensitive, fairness approach as reinterpreted by Schokkaert and Devooght in the context of health care in accordance with an empirical social choice methodology. We then describe the questionnaire and data used in our study.

Axiomatic Framework and Empirical Social Choice Methodology

Let us start with the axiomatic framework of responsibility-sensitive fairness proposed by Bossert and Fleurbaey (1996) and reinterpreted by Schokkaert and Devooght (2003) in the context of health care expenditures.

In the health care expenditure context, the model is formulated as follows:
f(a_R, a_C) is the function of medical expenditures of individual “i” that depends on variables for which she is held responsible (i.e., a_R), and variables for which she must be compensated (i.e., a_C). The a_R variables may refer, for example, to effort/laziness in a productive context or to a low/high degree of risky behaviour in a health insurance context.\(^3\)

The budget is balanced so that medical expenditures are all covered by public subsidies and by individual contributions:  
\[
\sum_{i=1}^{n} f(a_R, a_C) = w + \sum_{i=1}^{n} c_i(\bar{a})
\]

where \(w(\bar{a})\) is the individual public allowance received by the individual, \(w\) represents the total compensation subsidies distributed in the economy \((w=\sum_{i=1}^{n} w_i(\bar{a}))\) and \(c_i(\bar{a})=f(a_R, a_C)-w_i(\bar{a})\) is individual i’s financial contribution.

The axiom of full compensation is then expressed as follows:  
\[a_R^i = a_R^j \Rightarrow c_i(\bar{a}) = c_j(\bar{a}).\]  
This axiom indicates that two persons with the same value of health-responsibility characteristics should financially contribute in the same way.

The axiom of strict compensation is written as follows:  
\[a_C^i = a_C^j \Rightarrow w_i(\bar{a}) = w_j(\bar{a}).\]  
This axiom indicates that two persons with the same value for compensation characteristics should receive the same subsidies.

Following the general results obtained by Bossert and Fleurbaey (1996), the two axioms are compatible only in a situation where the medical expenditures function is additively separable in \(a_C\) and in \(a_R\). This type of situation is clearly not the typical case because interactions between the variables for \(a_C\) and in \(a_R\) are possible and difficult to disentangle (see, for example, Cappelen et al. (2008)). In our study, we focused on this framework in a situation where the Medical Expenditure Function involving \(a_C\) and \(a_R\) is not additively separable. In particular, we used an empirical social choice methodology that involves a description of three different scenarios that each tell the story of four people who suffer from different non-life-threatening diseases but with variation in the type of the risky behaviour and in degrees of severity. As argued first by Yaari and Bar-Hillel (1984), then by Amiel and Cowell (1992), and again more recently in a series of works by Gaertner and Schokkaert (2012), the empirical social choice methodology is an appropriate method to evaluate respondents’ acceptance of

\[^3\] In this study, we consider the \(a^R\) variables as reflecting the degree of risky behavior relating to health adopted by the individuals whom we describe in scenarios as well as their health status and the cost of the treatments for the disease that results.
axioms such as those we wanted to investigate. (For a survey of this methodology, see Gaertner, Schokkaert (2012))\(^4\).

The characteristics of each individual and the costs of treatment reflect different degrees of responsibility and of circumstances that are beyond the individual’s control. In fact, responsibility variables and compensation variables are combined two-by-two in order to represent four cost-of-treatment cases that vary in accordance with the relative importance of individual responsibility and unavoidable circumstances\(^5\). Corresponding to these four cases of characteristics held by people (high degree of risky behaviour/unfavourable circumstances; high degree of risky behaviour/favourable circumstances; low degree of risky behaviour/unfavourable circumstances; low degree of risky behaviour/favourable circumstances), several solutions involving a mixture of individual and public contributions are proposed.

In this way, the solutions for financing the costs of treatment (whether private or public or mixed) are formulated in a way that reflects the full, or strict axioms, as well as intermediate solutions between the two, and that also reflects equality of public contributions or equality of individual contributions. In this study, we focused particularly on risky behaviours and on relatively benign chronic diseases that varied in accordance with the design we adopted. In addition, we included a direct question to elicit responses regarding the way the respondents think about individuals being required to take responsibility for financing the cost of treating poor health regardless of whether it is related to risky behaviour. This direct question may indicate something different than what is revealed through the scenarios about what Cohen

\(^4\) The empirical social choice method is designed to elicit the respondents’ reflective preferences rather than impulsive opinions (which can be collected through representative surveys) or actual behaviour (which can be obtained through economic experiments). The goal is to encourage the respondents’ impartiality when they answer the questions. This means that preferences or behaviours that are based on a self-interested perspective should be excluded. In order to obtain impartiality, it is desirable to work with people who have never been taught social justice theory. In addition, it is easier to maintain control over the procedure of eliciting answers with a reduced sample size. For this reason, samples of students are often used. As a separate point, the principles underlying an axiomatic approach are often difficult to understand because of their mathematical expression. A story that is able to express the essence of the underlying principles is a better way to enable people to understand the ethical implications of the axioms, particularly when trade-offs between principles are involved. In this regard, see especially the arguments presented in Gaertner and Schokkaert (2012). In contrast, representative surveys are not the best way to elicit approval or disapproval of justice principles because they are less capable of addressing these kinds of trade-offs. Because our objective was to test whether individuals approve the responsibility-compensation principles proposed through an axiomatic approach and to take the possibilities of trade-offs into account, we decided that the empirical social choice methodology was appropriate for our study. We also proposed using a direct question that made it possible to collect more direct opinions about responsibility. Using this type of question was a way for us to know more about the extent to which people consider it necessary for individuals to take financial responsibility for their poor behaviour as well.

\(^5\) We only mention costs without any specific reference to the monetary unit because people tend to consider their own position (or their parents’ position) in the income distribution and to be influenced by it when they select their answers. This point is consistent with the format of the questionnaire, which mentions that the stories presented in the scenarios, including the people or countries that are involved, are all fictitious except in the case of a few questions where it was necessary for the issues to be presented in a specific context.
(1989) referred to as the “responsibility cut,” and it is especially useful to test the robustness of the other results obtained in the study.6

Sample and questionnaire
The questions that we use in this paper are a subset of the questions included in a larger survey7. Our questionnaire consisted of two main parts that we administered to 400 Danish, French, Italian and Swedish students in the third or fourth years of their university study either in Economics, Business or Political Sciences8. The study was conducted in October 2005 (see table 1). The first part of the questionnaire was composed of three scenarios that were designed to evaluate the respondents’ acceptance of Bossert-Fleurbaey axioms and other principles in relation to health conditions that differed in a relatively benign way (see supra).

The second part was composed of one direct question relating to the location of the “responsibility cut.” This question was very concrete and framed according to the characteristics of the social security systems of the countries in which we are interested. It also provided a way to test the robustness of answers concerning the responsibility cut.

Lastly, we added a series of questions concerning the occupations of the respondents’ parents, family size, political opinions and religious membership (see Appendix). These additional questions were particularly useful in enabling us to explore interpersonal variations (see section 3)9.

Table 1: sample information

<table>
<thead>
<tr>
<th>Denmark</th>
<th>Italy</th>
<th>France</th>
<th>Sweden</th>
</tr>
</thead>
<tbody>
<tr>
<td>Copenhagen Business School Students in business (4th year) October 2005</td>
<td>University of Pavia Students in Political Sciences (3rd year) October 2005</td>
<td>University of Paris-Dauphine Students in Economics (3rd year) October 2005</td>
<td>University of Vaxjo Students in Economics (3rd year) October 2005</td>
</tr>
<tr>
<td>N= 98</td>
<td>N= 93</td>
<td>N= 100</td>
<td>N= 90</td>
</tr>
</tbody>
</table>

Dworkin (1981) argues that we should distinguish between resources and preferences because people are held responsible for the latter but not for the former. The so-called responsibility cut was initially called “Dworkin’s cut” following the formula introduced by Cohen (1989), who mentions the seminal discussion held by Dworkin (1981) concerning the location of the cut between the variables for which people can be held personally responsible and the variables for which they have to be compensated. In opposition to Dworkin’s argument, Cohen said that “the right cut is between responsibility and bad luck, not between preferences and resources” (Cohen, 1989, p.921).

These questions were inserted in a survey questionnaire with a wider focus that included questions about attitudes towards inheritance, education and discrimination. The order of the questions was randomly re-arranged in every copy of the survey questionnaire that was distributed so that the order of the questions would not influence the way the respondents answered the questions. These questions were inserted in a survey questionnaire with a wider focus that included questions about attitudes towards inheritance, education and discrimination. The order of the questions was randomly re-arranged in every copy of the survey questionnaire that was distributed so that the order of the questions would not influence the way the respondents answered the questions. These questions were inserted in a survey questionnaire with a wider focus that included questions about attitudes towards inheritance, education and discrimination. The order of the questions was randomly re-arranged in every copy of the survey questionnaire that was distributed so that the order of the questions would not influence the way the respondents answered the questions.

We administered the questionnaire to approximately 100 students in each country who had never taken a class in welfare economics or social justice theory. The questionnaire was written in the mother tongue of the students in each country. Each student was paid 10 euros for completing the questionnaire under our supervision.

In this regard, it is necessary to acknowledge that we used a non-representative sample that does not allow us to make generalisations in our interpretation of the acceptance or rejection of fair compensation schemes. In any case, individual characteristics are often not a good predictor of ethical judgements (see especially Schokkaert and Capeau, 1991). However, independently of nationality, the introduction of other possible sources of interpersonal variation may allow us to obtain more reliable results for cultural differences (see e.g., Gaertner and Schwettermann (2007)).
In the first part of the questionnaire, three questions relate to stories of four people who suffer from different non-life-threatening diseases with varying degrees of severity (see box: “the questions-scenarios”). Each scenario combines degrees of risky behaviour and circumstances (either low/good or high/bad) in different health contexts.

**The « questions-scenarios »**

**Question 1 (called “food habit-anaemia”):**

Claire and Caroline suffer from mild anaemia while Fanny and Frances suffer from a more serious form of the same problem. Claire and Fanny eat red meat because they like it, while Caroline and Frances do not like red meat at all because they did not eat it during childhood and, thus, they do not eat it nearly as much as the two others. Their food budget is the same, but their medical costs differ. Fanny and Frances have higher medical costs because of their more serious condition, but because Claire and Fanny eat a lot of red meat, they do not need as much medicine and their costs are lower. Taking all this into consideration, the four women’s medical costs at the present time are:

Frances: 450; Fanny: 300; Caroline: 250; Claire: 200.

These four women all have the same income and pay the same amount of social insurance contributions and income tax combined. The national health service (funded with public money) has 800 per year to pay for the four women’s treatment, which means that they will have to pay for some of it themselves. How do you think the National Health Service should calculate each woman’s individual contribution? (Choose just one solution: A, B, C, D, E or F; see table 2 below).

**Question 2 (called “observance-asthma”):**

Adrian, Anthony, Paul and Patrick all suffer from asthma and have had to take drugs to control their condition for some years now. The cost of their treatment depends on two factors: 1) their physical reaction to the drugs, 2) diligently following the instructions. Adrian and Anthony cannot use the standard cheaper treatment because it does not work for them, while Paul and Patrick can use it. However, Adrian and Paul sometimes forget to take their medicine, while Anthony and Patrick never forget. If a patient does not take his medicine regularly, it takes longer to bring the condition under control, and so a larger dose is needed. Taking all this into consideration, the four men’s medical costs at the present time are:

Adrian: 450; Anthony: 300; Paul: 250; Patrick: 200.

These four men all have the same income and pay the same amount of social insurance contributions and income tax combined. The national health service (funded with public money) has 800 per year to pay for the four men’s treatment, which means that they will have to pay for some of it themselves. How do you think National Health Service should calculate each man’s individual contribution? (Choose just one solution: A, B, C, D, E or F; see table 2 below).

**Question 3 (called “smoking-respiratory problems”):**

Lisa, Laura, Isabelle and Irene all have respiratory problems. Lisa and Laura have been smokers for the last 20 years, while Isabelle and Irene have never smoked. Lisa and Irene work in a textile factory where most of their colleagues smoke during the breaks, while Laura and Isabelle are primary school teachers and work in a healthy environment. The cost of the treatment varies according to the severity of the patient’s condition and her exposure to tobacco smoke, either active or passive:

Lisa: 450; Irene: 300; Laura: 250; Isabelle: 200.

These four women all have the same income and pay the same amount of social insurance contributions and income tax combined. The national health service (funded with public money) has 800 per year to pay for the four women’s treatment. This means that they will have to pay for some of it themselves. How do you think the National Health Service should calculate each woman’s individual contribution? (Choose just one solution: A, B, C, D, E or F; see table 2 below)

We propose to the respondents six different ways (see table 2 below) to share an annual public budget of 800:
-1/Response A implies an egalitarian share of the budget called the “egalitarian subsidies solution”, which means that no higher compensation is offered depending on circumstances\textsuperscript{10}.

-2/Response B reflects an egalitarian principle called the “egalitarian contribution solution” that requires the “same individual contribution” from everyone and that involves compensation for individual circumstances without taking responsibility into account\textsuperscript{11}.

-3/ Response C corresponds to the strict compensation principle that provides the “same public contribution for the same circumstances”.

-4/ Response D is consistent with the full compensation principle that would require the “same individual contribution for the same effort or same degree of risky behaviour”.

-5/ Lastly, responses E and F are a mix of responses C and D, with E being closer to C, and F being closer to D.

We call responses C to F “responsibility-sensitive egalitarian answers” because they simultaneously compensate for unfavourable circumstances (with a higher public contribution) and for low risky behaviour (with lower individual contributions).

Table 2: Six proposals for sharing the public budget

<table>
<thead>
<tr>
<th></th>
<th>Frances/Adrian/Lisa</th>
<th>Fanny/Anthony/Irene</th>
<th>Caroline/Paul/Laura</th>
<th>Claire/Patrick/Isabelle</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paid by the State</td>
<td>Paid by the individual</td>
<td>Paid by the State</td>
<td>Paid by the individual</td>
<td>Paid by the State</td>
</tr>
<tr>
<td>A</td>
<td>200</td>
<td>250</td>
<td>200</td>
<td>100</td>
</tr>
<tr>
<td>B</td>
<td>350</td>
<td>100</td>
<td>200</td>
<td>100</td>
</tr>
<tr>
<td>C</td>
<td>250</td>
<td>200</td>
<td>250</td>
<td>50</td>
</tr>
<tr>
<td>D</td>
<td>300</td>
<td>150</td>
<td>250</td>
<td>50</td>
</tr>
<tr>
<td>E</td>
<td>300</td>
<td>150</td>
<td>200</td>
<td>100</td>
</tr>
<tr>
<td>F</td>
<td>360</td>
<td>90</td>
<td>240</td>
<td>60</td>
</tr>
</tbody>
</table>

The second question we consider here deals directly with the location of the responsibility cut in relation to the health insurance premium (see box: “direct questions”).

\textsuperscript{10} This solution also corresponds to the « strict compensation axiom » because people with same characteristics receive the same compensation. However, there is no distinction between « good » or « bad » characteristics.

\textsuperscript{11} Even though this solution also corresponds to the « full compensation axiom » we consider it to be more egalitarian because the payment does not depend on the behaviour chosen by the individual.
« direct questions »: health insurance premium and responsibility cut location

“Do you think it is desirable to make someone pay a higher health insurance premium (or to pay higher taxes if the health service is funded with tax money) if the likelihood of that person becoming ill is greater for one of the following reasons?

(tick the relevant box)

<table>
<thead>
<tr>
<th>Family medical background (a)</th>
<th>This should not influence the premium at all</th>
<th>A 10% increase is justifiable</th>
<th>An increase of up to 30% is justifiable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal medical history (b)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Irregular medical care (c)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Poor nutrition (d)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chain smoking (e)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Regular participation in dangerous sporting activities (f)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

This question proposes the possibility of imposing supplementary insurance costs for people who incur a higher risk of a specific kind:

1/ due to unfavourable circumstances. The respondents are required to indicate whether they consider the higher costs associated with unfavourable circumstances should (or should not) be paid by the people who are affected. In this regard, note items “a” and “b”. Item “a” represents true circumstances, but item “b” is more ambiguous.

2/ due to risky behaviour. The respondents are required to indicate the extent to which they consider people who incur risks should (or should not) be held responsible for the financial consequences of their behaviour. The three first items corresponding to risky behaviour (items “c”, “d”, “e”) correspond to conditions mentioned in the scenario-questions (see supra), and the last one (item “f”) can be considered a benchmark because it represents a “more truly” chosen behaviour.

3. Results

We first describe the way the students responded to the scenario questions. We then explain the important role of context. Finally, we analyse the influence of individual characteristics and nationality.

A large majority of students chose responsibility-sensitive egalitarian distributions

The frequencies of each answer for each scenario are displayed in table 3. It is noteworthy that answer B represents less than one-third of the total responses for any scenario because answer B corresponds to an egalitarian distribution of individual contributions. Answer B is also the only response that does not imply a modulation of individual payments in accordance
with risky behaviours. In contrast, answer A, which reflects no compensation based on circumstances, represents no more than 20% of the responses for any scenario.
The responsibility-sensitive egalitarian answers represent a majority of the responses for every scenario. Answers C through F, which all involve some compensation for circumstances (i.e., public contributions depending on circumstances) and some kind of “reward for effort” (individual contributions linked to a lower degree of risky behaviours), represent from 50% to 73% of the total responses. This means that a majority of students selected one of the answers that simultaneously involve compensation linked to circumstances and “effort”.
We observe more precisely that answer C (uniform public contribution for given circumstances) was chosen more often than answer D (same individual payments for same behaviours). This was particularly evident in relation to the scenarios concerning food habits and treatment adherence, whereas in the case of the smoking behaviour scenario, the frequency with which students selected answers C and D was very similar. In this regard, it is important to note that answer C represents a less advantageous approach than answer D for individuals characterised by unfavourable circumstances and risky behaviour because it involves higher individual payments (the converse is true for individuals with good circumstances and risky behaviour). The students who chose answer C would evidently not consider it fair to provide compensation for circumstances to individuals with a high degree of risky behaviour because the individuals could choose not to adopt those costly behaviours. In contrast, the approach represented by answer D would penalise the high degree of risky behaviour in the same way (by a higher individual payment) regardless of the individual circumstances. In other words, the consequences of every person’s behaviour would be the same, and risky behaviour would not involve a smaller penalty for individuals with good circumstances (as it would in answer C).
Lastly, we note that “mixed approach” answers E and F were chosen quite infrequently by the students. This evidently indicates that the students prefer responses that are based on clear distributive principles.

Table 3: Answers distribution for each scenario (all countries)

<table>
<thead>
<tr>
<th>Question “food habit - anaemia”</th>
<th>Question “observance-asthma”</th>
<th>Question “smoking-respiratory problems”</th>
</tr>
</thead>
<tbody>
<tr>
<td>Answer</td>
<td>Freq. %</td>
<td>Freq. %</td>
</tr>
</tbody>
</table>
Context matters:

Referring to the results obtained from direct questions (table 4), we first note that the family background is clearly considered to be a circumstance that should be compensated through public financing rather than through higher individual financing obligations. Second, “personal medical history”, “irregular medical care” and “poor nutrition” are also widely considered to be circumstances for which any additional costs should be compensated primarily through public financing.

Finally, notable exceptions to the notion that circumstances should not result in higher individual premiums apply to smoking and participation in dangerous sports. In both cases at least 50% of the respondents favour a higher premium. In the case of smoking, nearly 75% of the respondents suggest that a higher premium would be justifiable, and more than 40% consider a supplement of 30% could be justified\(^\text{12}\). The attitudes towards smoking can be explained rather easily because preventive information campaigns have been conducted in many countries about the adverse health consequences of daily smoking. Dangerous sports represent a kind of benchmark because they are both promoted as positive values (i.e., risk taking is associated with enhanced economic performance) and discouraged as a socially costly behaviour that could lead to adverse consequences. The survey results in relation to this item probably reflect the mix of attitudes surrounding such ambiguity. They may also be attributable to the “sample effect” that results from the young age of the individuals in the sample.

Table 4: Distribution of answers to the direct question (all countries)

\begin{table}[h]
\centering
\begin{tabular}{|c|c|c|c|c|c|}
\hline
 & A & & & B & & \\
 & 66 & 18% & 73 & 20% & 64 & 17% \\
 & 116 & 32% & 62 & 17% & 38 & 10% \\
 & 82 & 22% & 113 & 31% & 115 & 31% \\
 & 41 & 11% & 62 & 17% & 117 & 32% \\
 & 46 & 13% & 48 & 13% & 25 & 7% \\
 & 17 & 5% & 9 & 2% & 7 & 2% \\
\hline
\textbf{Total} & \textbf{368} & \textbf{100%} & \textbf{367} & \textbf{100%} & \textbf{366} & \textbf{100%} \\
\hline
\end{tabular}
\end{table}

\(^\text{12}\) In their study examining the extent to which people favour compensation that is linked to behaviour, Schokkaert and Devooght (2003) found that less than 40% of the students in their sample were in favour of such an approach (see the so-called Health cases 1, 2, 3, 4, in Appendix, pages 224-227). This finding is rather comparable with what we obtain here in relation to the case of smoking.
We also observe that context matters in relation to the scenario questions. Along with the variation of responses associated with the contents of the scenarios, we note that an increase in the frequencies of responses C and D occurs together with a decrease in frequencies of response B. (The frequencies of response A are roughly the same for each scenario). Indeed, in the context of the anaemia scenario where the four people were suffering from more or less severe forms of the disease, a large fraction of the respondents indicated a preference for equalising the personal financial contribution that is required to pay for the treatment (i.e., the most egalitarian option in accordance with the principle of equal treatment for equals). This case is a special one because it involves the intergenerational transmission of tastes. In accordance with the luck egalitarian principle described by Swift (2005), it seems that people consider holding people personally responsible for the consequences that follow from the intergenerational transmission of food tastes to be illegitimate. Instead, people evidently consider that individuals should not be held responsible for inherited behaviours relating to food habits. It thus seems that in situations where intergenerational transmission is clearly mentioned, more equal solutions are preferred. The symmetric case is represented by the smoking scenario, where a large majority (63%) of a sample would choose to compensate for circumstances in a way that rewards a low degree of risk taking. An intermediate case can be seen in the treatment observance scenario, where approximately half of the sample would choose answers C or D.

It is also interesting to consider how consistent respondents were in their responses to the direct questions and their responses to the scenario questions. In principle, we would expect to find the “absence of extra premiums” answer and the “equality of individual contributions” answer (i.e., response B) to be compatible solutions. In fact, the frequency of “B” answers was sharply lower than “absence of extra premiums” answers. This probably results from a
framing effect. We can imagine that the more concrete context of direct questions inhibits responsibility-sensitive egalitarian responses.

Another way to evaluate the role of context is to look at the “profiles” of each respondent’s answers to the scenario questions. A “B-C-B profile” would indicate that the respondent chose answer B for the first and third scenarios and chose answer C for the second scenario. A uniform profile (i.e., the selection of the same answer for all three scenarios) was observed in the choices of only 30% of the respondents. This indicates that a substantial majority of the profiles were not homogenous. This result is obviously consistent with the observation that the frequencies with which each of the answers was chosen differed from one scenario to another. Nevertheless, the proportion of non-homogenous profiles exceeded what was necessary to reflect the different frequencies of specific responses across scenarios. This result provides a further indication that the respondents did pay attention to the type of risky behaviour that was involved when they thought about the fair choices, and they evidently adopted a sensitive and reasoned approach when they answered the scenario questions.

Effects of nationality and individual characteristics

The questionnaire used in this study allowed us to collect information on the individual characteristics of the respondents (see Appendix, descriptive statistics). In this section, we consider whether it is possible to find statistical associations between the respondents’ individual characteristics and the opinions that they expressed (which are analysed in the previous section). In relation to the answers the respondents provided, both to the direct questions about insurance premiums and to the scenario questions, we assess these statistical associations by simply comparing the distributions of responses conditionally on individual characteristics. Using multivariate analysis (such as multinomial logit) would not change the main conclusions that we can derive from these simple comparisons (see Le Clainche and Wittwer, 2012).

We would like first to focus on the effect of nationality. Conditional distributions of responses are displayed in table 5 for each scenario question. The independence hypothesis can be rejected only for the “treatment observance” scenario (p=0.015), where students from Sweden

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13 Even if we have to keep in mind that extra insurance premiums lead to an ex ante cost sharing while ex post cost distributions are at stake in the questions-scenarios.
and Denmark were less likely than students from other countries to choose the responsibility-sensitive “fair” answers (i.e., the C through F responses).

Table 5: Distribution of responses by country for each scenario

<table>
<thead>
<tr>
<th>Responses</th>
<th>observance-asthma</th>
<th>Food habits - anaemia</th>
<th>Smoking – respiratory problems</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Italy 18% Fran 18% Dk. 20% Swed 23%</td>
<td>Italy 15% Fran 15% Dk. 18% Swed 22%</td>
<td>Italy 14% Fran 16% Dk. 22% Swed 19%</td>
</tr>
<tr>
<td>B</td>
<td>16% 7% 26% 19%</td>
<td>8% 10% 18% 5%</td>
<td>29% 28% 35% 35%</td>
</tr>
<tr>
<td>C+E</td>
<td>45% 56% 40% 34%</td>
<td>43% 39% 34% 38%</td>
<td>41% 41% 32% 27%</td>
</tr>
<tr>
<td>D+F</td>
<td>21% 19% 14% 24%</td>
<td>34% 36% 29% 35%</td>
<td>16% 15% 11% 19%</td>
</tr>
<tr>
<td>p*</td>
<td>0.015</td>
<td>0.167</td>
<td>0.378</td>
</tr>
</tbody>
</table>

* chi-squared probability

In relation to the direct questions about insurance premiums (table 6), we again observe a weak but significant influence of nationality. We note in particular that Danish and Swedish students are less inclined to penalise bad observance, but they are more inclined to penalise bad food habits. This result could underline the importance of national differences as they relate to individual responsibility.

Table 6: Distribution of responses by country for direct questions

<table>
<thead>
<tr>
<th>Maj.</th>
<th>Observance</th>
<th>food habits</th>
<th>Smoking</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Italy 59% France 63% Dk. 82% Swed 82%</td>
<td>Italy 70% France 63% Dk. 57% Swed 58%</td>
<td>Italy 28% France 16% Dk. 34% Swed 26%</td>
</tr>
<tr>
<td>10%</td>
<td>29% 27% 13% 15%</td>
<td>22% 35% 29% 33%</td>
<td>30% 36% 34% 33%</td>
</tr>
<tr>
<td>30%</td>
<td>12% 10% 5% 3%</td>
<td>9% 2% 14% 9%</td>
<td>42% 47% 33% 42%</td>
</tr>
<tr>
<td>p*</td>
<td>0.001</td>
<td>0.022</td>
<td>0.131</td>
</tr>
</tbody>
</table>

* chi-squared probability

By way of conclusion, nationality does appear to have a real impact on the way that students respond to the questions in this survey, but the impact is actually rather weak. It appears that the distribution of responses was roughly comparable in the four European universities that we studied. We proceed to consider whether other individual characteristics about which we collected information in the survey have a strong influence on the students’ opinions. The main result is that very few of the individual characteristics about which we collected information have a clear and significant influence on opinions. We note in particular that the information on characteristics of the respondents’ parents does not appear to be associated with any significant influence on the students’ responses. This is likely to be attributable in part to the fact that we studied a homogenous population of undergraduate students in economics or management studies. It is also probably due to the fact that idiosyncratic traits that were not captured by the variables observed in this study have a greater impact on the respondents’ opinions about ethical issues. We were able to discern a relationship between
self-described political views tending toward the right side and a propensity to penalise smoking and bad food habits (but not bad observance of treatment recommendations) by charging higher premiums (table 7). This result could be interpreted simply as an indication that individual responsibility is an important value for people with right-wing political views. However, in relation to the insurance premiums charged to people who participate in “dangerous sport practice”, we did not find any differences in the opinions of respondents with political views on the right or on the left. As noted above, this may be because even though dangerous sport practice is socially costly, it is also valued by the society due to its association with enhanced economic performance.

Table 7: Distribution of responses by political opinion** for direct questions

<table>
<thead>
<tr>
<th></th>
<th>observance</th>
<th>Food habits</th>
<th>smoking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maj.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 - Maj.</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>10%</td>
<td>73%</td>
<td>69%</td>
<td>34%</td>
</tr>
<tr>
<td>30%</td>
<td>21%</td>
<td>28%</td>
<td>36%</td>
</tr>
<tr>
<td>50%</td>
<td>6%</td>
<td>3%</td>
<td>30%</td>
</tr>
<tr>
<td>P</td>
<td>0.798</td>
<td>0.002</td>
<td>0.002</td>
</tr>
</tbody>
</table>

* chi-squared probability
** “1” regroups items 1, 2 and 3 of question 9. (see appendix): left-wing opinion
“2” corresponds to item 4 of question 9 (see appendix): centrist opinion
“3” regroups items 5, 6 and 7 of question 9. (see appendix): right-wing opinion

4. Discussion and Conclusion

Responsibility-sensitive fairness is approved by a majority of students. Nevertheless, the strict egalitarian principle that corresponds to response B (same individual contribution whatever risk taken) and the strict equality of public contribution principle that corresponds to response A (no compensation of circumstances) both represent a significant portion of the answers.

Interestingly, the health context plays an important role. First, the frequency of responses C through F (i.e., the responsibility-sensitive fairness responses) differs according to the context. Questions relating to smoking habits result in more responsibility-sensitive responses than questions relating to food habits. Furthermore, we observe that the full compensation principle (response D) is chosen slightly more often than the strict compensation principle (response C) in the context of the “smoking” scenario, but in the context of the “food habits-anaemia” scenario, the strict compensation principle (response C) is chosen much more frequently. Perhaps we can interpret this as an indication that smoking habits are more likely to be considered completely a matter of individual responsibility. This view of smoking evidently leads respondents to favour the full compensation principle: “same individual

14We do not display the result here (see Boarini et al. (2006))
contribution for same behaviour”. This means that people consider it appropriate for the consequences of risky behaviour such as smoking to be assumed by the individuals.

When we consider the impact of the health context at the individual level, it is interesting to note that there are not many uniform response profiles (i.e., respondents who chose the same response for each scenario). This indicates that most students share a sensitivity to the context. The individual judgments about the extent to which individuals should be held responsible for different kinds of circumstances or behaviours appear to vary to a considerable degree depending on the context. In this regard, we perceive a substantial idiosyncratic foundation for these judgments.

Individual characteristics, except political opinions, had no major impact on the opinions of the students in this study. Considering the homogeneity of the survey sample, this is not a surprise. This finding is also consistent with the conclusion presented in Schokkaert and Overlaet (1988), who suggest that we should not expect socio-economic variables to have significant explanatory power in regard to scenario questions that reflect ethical judgments. It does reinforce the impression that individual judgments about individual responsibility in the area of health care or health status are deeply idiosyncratic. Nationality also has a slight influence. It was apparent that the Scandinavian students who were surveyed seem to be slightly more likely to adopt an egalitarian view. This result is consistent with the egalitarianism that particularly characterises Swedish society in comparison with other European countries, especially in relation to the distribution of incomes or the financing of the welfare state.

It is interesting to compare our results with the results obtained in the pioneering work of Schokkaert, Devooght (2003). The case that is directly comparable to ours is the Health Case B (Appendix, pp. 229-231). The main difference between the findings of that study and this one relates to the percentage of respondents who chose the “egalitarian subsidies solution” or the “egalitarian contribution solution” (responses A or B in our scenarios and F or A in theirs). The percent of Belgian students in the Schokkaert and Devooght study who chose those responses was very low (less than 5%) whereas in our scenarios, the proportion of respondents who chose such responses varied from 27% to 50%.

This difference in results might be explained by the fact that the set of possible responses was larger in the earlier study. In particular, the students in our study were not presented with the choice of counter compensation solutions that were directly in line with efficiency issues. We chose to focus on responsibility as distinguished from issues relating to incentives, which may
explain why the respondents in our study were more inclined to choose egalitarian solutions. However, we believe that the “effort” or “choice” variables that were at stake in the scenarios presented in the earlier study (i.e., the choice of a private room at hospital) may also explain the significant results obtained in that study. In our scenarios, the “effort or choice” variables that were presented were less obviously recognised as matters of individual responsibility although our objective in designing the scenarios had been to clearly distinguish between unavoidable circumstances and individual responsibility. Therefore, we can imagine, as also noted by Schokkaert and Devooght (2003) and by Cappelen, Norheim, Tunggoden (2008), that people are still likely to assume that circumstances and choices are partially correlated. Another possibility is that the respondents in our study were not willing to take some information into account even though they knew, for example, that the person that they were considering was responsible for his or her own fate.

Finally, what emerges from this study is the observation that the respondents were highly sensitive to the context and, perhaps, to the “story that was told”. The respondents do approve of the responsibility-sensitive fairness principle, but there also appears to be a kind of resistance in adopting a responsibility-sensitive judgment even in very explicit contexts where circumstances and effort are clearly distinguished.
Bibliography


Appendix

Additional socio-demographic questions (percentage in the whole database, countries-pooled, in brackets)

Here there are some additional questions about you. We are interested in this information only for statistical purposes, and your privacy will be fully guaranteed. Please note that you do not have to sign or write your name on this copy.

1. You are : Male (48%) Female (52%)

2. Your mother is (or was, if she is now retired)
   - Employer/manager (16%)
   - Professional Worker (lawyer, accountant, teacher, etc.) (21%)
   - Employee (office worker, etc.) (44%)
   - Manual worker (8%)
   - Farmer or Agricultural Worker (1%)
   - Unemployed (or at least during a long period of time) (2%)
   - Never had job (5%)
   - No response (3%)

3. Your father is (or was, if he is retired)
   - Employer/manager (34%)
   - Professional Worker (lawyer, accountant, teacher, etc.) (23%)
   - Employee (office worker, etc.) (25%)
   - Manual worker (12%)
   - Farmer or Agricultural Worker (2%)
   - Unemployed (or at least during a long period of time) (less than 1%)
   - Never had job (less than 1%)
   - No response (4%)

4. The highest level of education your mother reached is
   - Lower than secondary education (20%)
   - Secondary education (30%)
   - Higher than secondary education (50%)

5. The highest level of education your father reached is
   - Lower than secondary education (19%)
   - Secondary education (28%)
   - Higher than secondary education (53%)

6. How many children were in the household where you grew up (including you) :
   - 1 (9%)
   - 2 (40%)
   - 3 (27%)
   - 3+ (17%)
   - No response (6%)

7. Here is a scale of income. We would like to know the group that corresponds to the household where you grew up, counting all wages, salaries, pensions and other incomes that come in. Circle the number that corresponds to your household (with 1= lowest level of income in your society and 7= highest level of income in your society).
8. Now project yourself 10 ten years into the future. Here is a scale of income. We would like to know the group of income in which you expect to be situated 10 years from now. Circle the number that corresponds to your household (with 1= lowest level of income in your society and 7= highest level of income in your society)

1 (1%) 2 (1%) 3 (6%) 4 (24%) 5 (41%) 6 (21%) 7 (4%) nr (2%)

9. In political matters, people talk of “the left” and of “the right”. How would you place your views on this scale, generally speaking? (with 1= the most leftist view and 7= the most rightist view)

1 (3%) 2 (15%) 3 (20%) 4 (25%) 5 (19%) 6 (14%) 7 (3%) nr (1%)

10. Did the environment where you grew up convey any religious education or practice?

Y (39%) N (59%) No response (2%)
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