To Work or Not to Work? 
A Social Dilemma Analysis of Health Insurance

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Eek, D. To work or not to work? A social dilemma analysis of health insurance. Göteborg Psychological Reports, 1998, 28, No. 3. In an experiment simulating the health insurance system, the Greed-Efficiency-Fairness-hypothesis (GEF hypothesis) (H. A. M. Wilke, 1991) concerning factors affecting cooperation in social dilemmas was investigated. Forty-eight undergraduate students served as subjects. After the first of two phases of the experiment, subjects were informed that their participation in the second phase was not necessary and were asked to decide whether or not they would participate. Subjects’ payment would not be affected by their decisions. One group of subjects was informed that the consequences of their decisions were not only personal, but also collective. This group of subjects showed a significantly higher willingness to participate in the second phase compared to subjects who did not receive this information. Furthermore, subjects who decided to participate thought less about the payment and more about the collective consequences of their decisions. Perceived fairness of distribution also enhanced subjects’ willingness to participate.

Keywords: Social dilemmas, cooperation, fairness, justice, health insurance.

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Imagine a person who after waking up in the morning is about to get ready to go to work. Imagine also that the person is very tired this morning and feels that he or she does not want to go to work. Instead, he or she considers what other alternatives there are. One obvious alternative is to take this day off. However, often one has to apply for vacation at least a few days in advance. Hence, if the person feels a strong reluctance to work this day, the only remaining alternative is to falsely report sick.

Ignore the moral concerns the person might have had and instead focus on the consequences of either going to work or falsely report sick. What should the person choose to do? How does he or she consider the decision to make and the consequences in terms of costs and benefits? The person’s individual cost of reporting sick is likely to be quite low. Provided that there is no day of qualifying period for benefit, the only individual cost of reporting sick one day may be the few percentages of the wage that the sickness benefit does not cover. Thus, suppose the person regards the cost to be negligible. The individual benefit of reporting sick is quite obvious. If the person only focuses on the individual consequences of either decision, which alternative to choose seems clear: Since the benefit is greater than the cost, the rational thing to do is to report sick. However, would the situation be different if the person was aware of the collective consequences of the decision as well?

This article focuses on the decisions people make within the health insurance system. More specifically, it is argued that decisions people make within the health insurance system have the same characteristics and outcome structure as decisions made in a social dilemma (e.g., Dawes, 1980; Hardin, 1968). A social dilemma is a situation where people have to choose one of two options. These two options are in conflict with one another with regard to the individual and the collective consequences of each choice. Whereas one of the alternatives promotes a person’s self-interest, the other alternative advances the collective interest. Two conditions define a social dilemma (Dawes, 1980): (i) No matter what other people choose to do, a person is always better off by choosing the alternative that promotes the self-interest (i.e. to defect) compared to choosing the alternative that promotes the collective interest (i.e. to cooperate). Therefore, the defective choice is the rational one from the economic incentives’ point of view. However, (ii) if everyone behaves rationally and chooses in line with self-interest, all are worse off than if all had chosen in line with the collective interest. That is the dilemma.

Social dilemmas are often divided into two different kinds of dilemmas. In a public-goods dilemma, people choose between contributing or not contributing to a common resource to which everyone, contributors
as well as non-contributors, has free access. The dilemma is that it is possible to free ride since nobody can be excluded from utilizing the public good. In a resource dilemma, the choice is how much to take from a common resource. The dilemma is that it is desirable to take as much as possible and undesirable to refrain from taking. Since both contributing as well as taking are possible individual behaviors within the health insurance system, the system can be regarded and studied both as a public-goods and a resource dilemma. Knowledge of what factors that affect people's willingness to pay taxes and fees to the health insurance system as well as refrain from over-utilizing the system is important and desirable. In the present study the health insurance system is framed as a resource dilemma.

Many common resources in our society are scarce. This is also true of the common financial resource that compensates individuals who are unable to work because of illness. To prevent the resource from deteriorating, at least the same amount of money paid for compensation to those in need due to illness must be regained from taxes and fees. If there is a negative balance between input and output, the resource will in the end vanish. Thus, the situation in which an individual is entrapped while deciding between the two alternatives of going to work or falsely report sick is a conflict between individuals' own interests and the interest of the collective. With the terms used in social dilemmas research, to go to work is to cooperate, to falsely report sick is to defect. The two conditions necessary to define a situation as a social dilemma are true in the context of the health insurance system. That is, when it is in an employee's interest to have a day off, he or she is always better off by reporting sick and not having to work irrespective what other employees do. However, if everyone reports sick, there will not be any money to cover the sickness benefits.

In previous research on social dilemmas, several factors have been found to be of importance for people's decisions whether or not to cooperate (for overviews, see, e.g., Komorita & Parks, 1994; Liebrand, Messick, & Wilke, 1992). Most of these factors can be related to three main motives which all have been found to be decisive for people's behavior. These motives are incorporated in the GEF hypothesis presented by Wilke (1991), based on his and others' previous research (Samuelson & Messick, 1986; Samuelson, Messick, Rutte, & Wilke, 1984; Samuelson, Messick, Wilke, & Rutte, 1986). According to this hypothesis, the three motives of importance for people's behavior in social dilemmas are greed (G), efficiency (E), and fairness (F). Greed refers to that individuals try to maximize their own benefits. However, if this leads to depletion of the resource, individuals will constrain their greed in order to
preserve the resource efficiently. Furthermore, individuals generally attempt to ensure that the distribution of benefits to themselves and to others is fair. The GEF hypothesis was developed to explain cooperation in resource dilemmas (Wilke, 1991). Later, it was generalized to explain cooperation also in public-goods dilemmas (Biel, Eek, & Gärling, 1997; Eek, Biel, & Gärling, 1998a; Eek, Biel, & Gärling, 1998b).

In a previous survey (Eek & Rikner, 1998), Swedish employees were asked to answer questions which aimed at identifying factors that affect people’s propensity to report sick. The strongest effects were observed for structural factors within the health insurance system related to the economic loss of reporting sick. Thus, number of days of qualifying period for benefit and level of sickness benefit were the two most important factors for people’s decisions. In contrast, the present experiment aimed at identifying important psychological factors.

People might not be aware of, or ignore, that they are threatening the health insurance system and the efficiency of the system when they stay at home from work although they able to work. It is possible that they perceive the decision to be entirely personal. Therefore, in the present study we simulated the health insurance system experimentally and the negative collective consequences of sick-reporting behavior were emphasized with the aim of investigating whether or not this would affect subjects’ decisions. It was hypothesized that when subjects were informed that the consequences of their behavior were collective and not solely personal, they would be more reluctant to report sick compared to when they were not informed about collective consequences. The experiment also aimed at trying to generalize the applicability of the GEF hypothesis to this domain. More specifically, we attempted to measure to what extent the three motives greed, efficiency, and fairness interplay to influence individual choices. When the collective consequences of subjects’ decisions were not emphasized, we expected subjects to be more influenced by greed when making their decisions. However, in a situation where the collective consequences of subjects’ decisions are highlighted, and the nature of the dilemma thereby explained, efficiency might be a more important motive for subjects’ decisions. Thus, in the present experiment the importance of the single motives greed and efficiency was hypothesized to vary with the experimental manipulation. The third motive in the GEF hypothesis, fairness, was not expected to be influenced by the experimental manipulation. However, because individuals have different perceptions of fairness a variation in this variable was still assumed.

To sum up, it was hypothesized that subjects would be more inclined to cooperate if the nature of the social dilemma, in terms of the personal and collective consequences of each decision, was highlighted and
explained to them. In accordance with the GEF hypothesis, it was expected that subjects who were not informed about the nature of the social dilemma would be more motivated by greed and therefore less willing to cooperate. In contrast, subjects who were informed were expected to be more concerned with an efficient utilization of the resource and therefore more willing to cooperate. In addition, subjects who perceived the distribution of the resource as fairer were hypothesized to be more willing to cooperate than subjects who perceived the distribution as less fair.

Method

Subjects

Forty-eight undergraduate students at Göteborg University served as subjects. They consisted of 24 women (mean age = 27.1 years) and 24 men (mean age = 24.8 years). Subjects were randomly assigned to two groups with an equal number of men and women.

Procedure

Subjects were recruited through telephone calls. They were asked to participate in a study about decision making. Anonymity was guaranteed to all subjects. They were informed that they would be paid SEK 50 (approximately US$ 6.50) for their participation.

Upon arrival to the laboratory, subjects were seated in private booths and handed a booklet. All instructions in the experiment were given in written form. The first page of the booklet informed subjects that they were one of 30 persons to participate on different occasions in the study and that this was the first phase of two in the study. The second phase would take place a day the following week and at that time several of the group members would participate simultaneously. At this first occasion, subjects were asked to complete a booklet about decision making. The booklet consisted of different decision making tasks and took about 30 minutes to complete. Subjects were told that they would be informed about the second phase when they had completed the booklet.

Subjects’ responses in the booklet were irrelevant for this experiment. The function of the booklet was to give subjects a sense that
they had done some work by completing the booklet and that this work would continue and be completed a day the following week.

When subjects had completed the booklet, they gave it to the experimenter and were paid SEK 50 and asked to write their name and address as a receipt of the payment. Thereafter, subjects were reminded that the second phase of the study would take place a day the following week, that they would be paid another SEK 50 after that phase, and that many of them were to participate simultaneously at that time. However, subjects were informed that it was difficult to recruit many subjects to participate simultaneously. To protect against drop-outs, more subjects than were needed had therefore deliberately been recruited. Thus, everyone did not have to participate. Furthermore, subjects were told that there was a fund from which all subjects who participate were paid. Therefore, in the second phase, everyone would be paid the additional SEK 50, irrespective of who participated and who did not.

The experimental variable concerned the future status of the fund. One group of subjects was informed that the fund was scarce. If too many chose not to participate in the second phase, in the future it would be difficult to conduct this sort of studies. For the other group of subjects, this information was left out.

Subjects were then asked to indicate on a form whether or not they would participate in the second phase. They could choose one of four alternatives: “No, I will not participate in the second phase”, “Yes, I will participate in the second phase on Monday, Tuesday, or Wednesday”.

Irrespective of who participated in the second phase and who did not, everyone would be mailed the additional SEK 50 to the address they had written down when they received the payment for the first phase. The person who would send the money did not know who had participated and who had not. Thus, subjects’ decisions were anonymous both to the experimenter and the other group members. When subjects had made their decisions, they were asked to put the form in an envelope, seal it, and hand it to the experimenter.

Subjects’ decision whether or not to participate constitutes the dependent variable. Thereafter, subjects were asked to answer five questions about the decision they just had made. The first question asked subjects to indicate on a graphical scale how easy or difficult it had been to make the decision whether or not to participate in the second phase. This scale varied from 0 (very easy) to 100 (very difficult). They were also asked to indicate how many of the 30 group members they thought would participate in the second phase. Finally, three questions asked subjects to rate on what they based their decisions. These questions were guided by the GEF hypothesis (Wilke, 1991) and measured to what extent subjects
based their decisions on greed, efficiency, and fairness, respectively. The question measuring greed read: “When you made your decision to come or not to the second phase of the study, to what extent did you think of the additional SEK 50 you will receive after the second phase of the study?” The question measuring efficiency read: “When you made your decision to come or not to the second phase of the study, to what extent did you think of that the fund from which subjects are paid might deteriorate if too many choose not to participate in the second phase of the study?” The endpoints of these scales were defined as 0 (to a very small extent) and 100 (to a very large extent), respectively. Finally, the question measuring fairness read: “When you made your decision to come or not to the second phase of the study, how fair or unfair did you think it was that all group members will receive the additional SEK 50 irrespective of whether or not they participate in the second phase of the study?” The endpoints were defined as 0 (very unfair) and 100 (very fair), respectively. When subjects had answered these questions, they were informed that there would not be a second phase of the study and they were told of the main purposes of the experiment.

Subjects answered the booklets individually in private booths and participated in groups from two to eight persons. They were monitored by a male experimenter. The experiment lasted for about 45 minutes in all. All subjects were guaranteed that their answers during the experiment were anonymous.

Results

Subjects in each experimental condition behaved differently when they decided whether or not to participate in the second phase of the study. As expected, the experimental manipulation, which emphasized the negative collective consequences, influenced subjects’ choices. Whereas 21 of the 24 subjects who received the additional instructions chose to participate in the second phase of the study, 7 of the 24 subjects who did not receive the additional instruction chose to participate. In a chi-square test, this difference was highly significant, $\chi^2(1, N = 48) = 14.48, p < .001$.

Means and SDs of subjects’ ratings of what they based their decisions on are given in Table 1. Three separate analyses of variance (ANOVAs) were performed on these ratings with the experimental manipulation (emphasizing the negative collective consequences vs. not emphasizing the negative collective consequences) as the independent
variable. Subjects who received the additional instructions based their decisions less on the additional payment compared to subjects who did not receive the additional instructions, $F_{(1, 46)} = 11.50, p < .001$. Furthermore, the additional instructions made subjects base their decisions more on that the fund might deteriorate, $F_{(1, 46)} = 16.96, p < .001$. There was no difference between the two groups with regard to how fair they perceived the equal distribution of payments.

Table 1
Means and SDs of Subjects' Ratings of Criteria for Deciding to Participate in the Second Phase of the Study as Related to the Experimental Manipulation Emphasizing the Negative Collective Consequences

<table>
<thead>
<tr>
<th>Emphasizing the collective consequences</th>
<th>Not emphasizing the collective consequences</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>The additional payment (greed)</td>
<td>20.8 21.4</td>
</tr>
<tr>
<td>Fund might deteriorate (efficiency)</td>
<td>60.2 33.3</td>
</tr>
<tr>
<td>Perceived fairness (fairness)</td>
<td>34.0 26.4</td>
</tr>
</tbody>
</table>

In Table 2, means and SDs are displayed of what subjects based their decisions on related to what decision they actually made. Corresponding analyses of variance (ANOVAs) on these mean differences yielded significant differences between those subjects who chose to participate in the second phase of the study and those who chose not to participate concerning to what extent subjects based their decisions on the additional payment, $F_{(1, 46)} = 12.69, p < .001$, and that the fund might deteriorate, $F_{(1, 46)} = 4.24, p < .05$. As expected, subjects who chose to participate in the second phase based their decisions less on the additional money and more on that the fund might deteriorate. Again, no difference was found between these two groups with regard to how fair they perceived the equal distribution of payments.
Table 2
*Means and SDs of Subjects’ Ratings of Criteria for Deciding to Participate in the Second Phase of the Study as Related to the Decisions They Made*

<table>
<thead>
<tr>
<th></th>
<th>Choosing to participate (n = 28)</th>
<th>Choosing not to participate (n = 20)</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>The additional payment (greed)</td>
<td>22.5</td>
<td>26.0</td>
</tr>
<tr>
<td>Fund might deteriorate (efficiency)</td>
<td>50.8</td>
<td>37.1</td>
</tr>
<tr>
<td>Perceived fairness (fairness)</td>
<td>38.8</td>
<td>25.7</td>
</tr>
</tbody>
</table>

Subjects also rated on a 100-point scale how easy or difficult they thought it was to make their decisions. For subjects who chose not to participate in the second phase of the study, these ratings were subtracted by 100. For subjects who chose to participate, 100 were subtracted by subjects’ ratings. The transformation resulted in a scale from -100, which corresponds to an easily made choice of not coming, to 100 for an easily made choice of coming. This scale was used as the dependent variable in a linear regression analysis. The independent variables were the experimental manipulation (emphasizing the negative collective consequences vs. not emphasizing the negative collective consequences), subjects’ ratings of how many of the 30 group members they thought would participate in the second phase, ratings of to what extent subjects based their decisions on the additional payment, ratings of to what extent subjects based their decisions on that the fund might deteriorate, and their ratings of perceived fairness of the equal distribution. The results of the regression analysis are presented in Table 3. In total, 34.7% of the variance in subjects’ willingness to participate in the second phase of the study was explained. The additional instructions emphasizing the negative collective consequences were significant and accounted for 19.4% of the variance in subjects’ willingness to participate in the second phase. Furthermore, 7.1% of the variance was accounted for by subjects’ perceived fairness of equality. There were no effects of the other two motivational factors. Thus, the effects of greed and efficiency were accounted for by the experimental manipulation.
Table 3
*Linear Regression Analysis on Subjects’ Willingness to Participate in the Second Phase of the Study*

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>beta</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental manipulation (not emphasizing the collective consequences vs. emphasizing the collective consequences)</td>
<td>.44</td>
<td>2.87</td>
<td>0.006</td>
</tr>
<tr>
<td>Subjects’ ratings of how many group members they thought would participate</td>
<td>.14</td>
<td>1.13</td>
<td>0.264</td>
</tr>
<tr>
<td>The additional payment (greed) as criteria for deciding to participate</td>
<td>-.18</td>
<td>-1.27</td>
<td>0.212</td>
</tr>
<tr>
<td>Fund might deteriorate (efficiency) as criteria for deciding to participate</td>
<td>-.01</td>
<td>-0.05</td>
<td>0.960</td>
</tr>
<tr>
<td>Perceived fairness of equality (fairness) as criteria for deciding to participate</td>
<td>.27</td>
<td>2.21</td>
<td>0.033</td>
</tr>
</tbody>
</table>

$R^2_{\text{adj}} = .347$, $F(5, 42) = 5.99$, $p < .001$

Discussion

In the present research the health insurance system was simulated experimentally and regarded as a situation where individuals have to make a decision with the same characteristics as decisions made in a social dilemma. Thus, individuals had to make a decision between cooperation and defection, respectively. Contrary to most experimental research on social dilemmas, subjects’ monetary outcomes would be the same for a defective choice as for a cooperative choice. Furthermore, the collective monetary outcome, in terms of subjects’ overall payment, would be the same irrespective of subjects’ decisions. Normally, in experiments on social dilemmas subjects gain more money if they defect than if they cooperate irrespective of what other subjects do. But if too many subjects defect, everyone loses more money compared to if everyone chose to cooperate. However, in real life social dilemmas, it is not always a question about money. Instead, benefits and costs can be based on, for example, more or less spare time. Since subjects in the present experiment were asked to contribute with working hours, the individual
cost of cooperation was less spare time. The collective cost of frequent defection was a threat to continue the experiments in the future. In fact, these characteristics are similar to those in the health insurance system. If someone reports sick without necessarily being too ill to work, what the person really gains is spare time. Thus, irrespective of what everyone else does, this choice yields a better outcome than the cooperative choice of working. However, if too many people report sick, the system will in the end break down and sickness benefits cannot be paid as compensations to those reporting sick. We argue that perhaps people are not aware of this when they decide between going to work or reporting sick. The present experiment aimed at bringing to awareness that the consequences of own behavior are not solely personal but also collective, and to investigate whether or not such awareness would increase cooperation in a resource dilemma.

In line with what was expected, more subjects chose to participate when the instructions emphasized that the negative consequences of choosing not to participate were collective as well as personal. Our manipulation was one additional sentence in the written instructions to one group of subjects. Twenty-one of the 24 subjects who received the additional instructions emphasizing the negative collective consequences chose to participate in the second phase of the study. This is to be compared to 7 of the 24 subjects that chose to participate in the other condition. Subjects that chose to participate would not earn anything financially by making that decision. In that point of view, they behaved economically irrational. Since everything else was identical for the two groups, this large difference in degree of cooperation between the two conditions suggests that to promote cooperation in a social dilemma, it may be emphasized that the consequences of people’s choices are not solely personal but collective as well. Thus, the nature of the social dilemma has to be understood and highlighted. Note that since everyone would be paid the additional payment no matter how they chose, the monetary costs of the experiment would be the same irrespective of what decisions group members made. Thus, subjects did not behave differently in the two experimental conditions because their concerns for the costs of the experiment differed, but because their concern for the collective future consequences differed.

As mentioned, the additional instructions aimed at making subjects aware that consequences of their own behavior are collective as well as personal. In line with what was hypothesized, subjects who received these instructions based their decisions whether or not to participate in the second phase of the study more on that the fund might deteriorate if too many would choose not to participate. Furthermore, subjects in this
condition based their decisions less on the additional payment that they would receive after the second phase. In line with the GEF hypothesis (Wilke, 1991), efficiency was an important motive for these subjects, and their concern for the efficient use of the fund reduced their greed when they made their decision.

One could also suspect that those subjects who chose to participate in the second phase did so because they, as compared to non-participants, expected more other group members to participate. This would support earlier research on social dilemmas indicating a positive relationship between own behavior and expectations about others’ behavior (Dawes, McTavish, & Shaklee, 1977; Eek et al., 1998a; Messick, Wilke, Brewer, Kramer, Zemke, & Lui, 1983). However, there was no difference between the two groups with regard to how many group members they expected to participate in the second phase ($M = 19.1$ for subjects who received the additional instructions emphasizing the negative collective consequences and $M = 16.8$ for subjects who did not receive the additional instructions, $F(1, 46) = 1.66$, n.s.). Nevertheless, there was a marginally significant difference in subjects’ expectations about other group members’ behavior when comparisons are based on subjects’ own actual behavior ($M = 16.0$ for subjects who chose not to participate in the second phase and $M = 19.4$ for subjects who chose to participate in the second phase, $F(1, 46) = 3.76$, $p < .10$). This supports earlier research (Dawes et al., 1977; Eek et al., 1998a; Messick et al., 1983) and suggests that the additional instructions influenced their decisions and made them participate in the second phase, and after they had made their decision to participate, they expected more others to participate as well.

Another important finding was an effect of perceived fairness of distribution on subjects’ choices. Subjects who perceived the equal distribution as fair were more willing to participate in the second phase compared to subjects who perceived the distribution as less fair. In earlier research on the relationship between distributive justice and cooperation, it has been found that people are more willing to cooperate in social dilemmas when they perceive the distribution as fair (e.g., Biel et al., 1997; Eek et al., 1998a; Eek et al., 1998b). It is promising that such a fairness effect was replicated in the present experiment. It indicates that fairness is an important determinant for people’s behavior in various domains. At the same time, it is important to disentangle what people consider to be fair contributions and compensations within the health insurance system. In the present experiment, only equality was included as a distributive principle. Even though previous research on social dilemmas has shown that equality is the distributive principle that most people prefer (e.g., Allison & Messick, 1990; Harris & Joyce, 1980;
Messick & Schell, 1992), equality was perceived as a rather unfair principle in the present experiment ($M = 35.2$ on a 100-point scale). Furthermore, there were no differences in perceived fairness between subjects who received the additional instructions where the negative collective consequences were emphasized and subjects who did not receive the additional instructions. Besides, no differences in perceived fairness were found between subjects who chose to participate in the second phase of the study and subjects who chose not to participate. Still, in the regression analysis on subjects’ willingness to participate, perceived fairness explained a significant proportion of the variance. Since there are many possible combinations of contribution and compensation within a social system such as the health insurance system, future research should address people’s perceptions of distributive justice in this domain.

References


