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Active Decisions and Pro-social Behavior: A Field Experiment on Blood Donation

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Abstract: In this paper, we propose a decision framework where people are individually asked to either actively consent or dissent to some pro-social behavior. We hypothesize that confronting individuals with the choice of engaging in a specific pro-social behavior contributes to the formation of issue-specific altruistic preferences while simultaneously involving a commitment. The hypothesis is tested in a large-scale field experiment on blood donation. We find that this "active-decision" intervention substantially increases the actual donation behavior of people who have not fully formed preferences beforehand.

JEL classification: C93, D64, I18

Keywords: active decision, pro-social behavior, field experiment, blood donation

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One of the biggest challenges to institutional choice is the design and implementation of decision-making mechanisms that promote pro-social behavior. Alfred Marshall noted in 1890 that "[n]o doubt men, even now, are capable of much more unselfish service than they generally render: And the supreme aim of the economist is to discover how this latent social asset can be developed most quickly, and turned to account most wisely."

In this paper, we propose and empirically study a decision framework where people are individually asked to either actively consent or dissent to some pro-social behavior. This is in stark contrast to some noncommittal appeal to behave pro-socially that often addresses everybody alike. Consider, for example, the issue of blood donation. With an active decision, people are confronted with a request to donate blood to which they are expected to respond with either a "yes" or a "no". It is argued that an active decision induces people to deal with some specific pro-social behavior and makes them aware of the social value of some particular behavior. In doing so, active decisions contribute to the formation of issue specific altruistic preferences while simultaneously involving a commitment. We thus understand active decisions as an elicitation mechanism, as mentioned by Marshall, being capable of transforming a latent willingness to donate, contribute or share in actual pro-social behavior.[1] This is our basic hypothesis.

The functioning of active decisions builds on four behavioral regularities analyzed in research on economics and psychology.

First, preferences are partly formed in the process of decision-making in unfamiliar choice situations. A pertinent example is the creation of non-use values in contingent valuation studies (Kahneman et al. 1999). In active decisions, peopleare made aware of some particular issue and are induced to engage in cognitive evaluations and reasoning (e.g. Cioffi and Garner 1996). In blood and post-mortem organ donation, the deliberation involves dealing with one's own health, and people are motivated to get over the denial and repression of their own mortality.

Second, people do not always act strictly and narrowly in a self-interested manner, but engage in pro-social behavior like donating blood, volunteering, giving money to charities, participating in democratic politics, or even putting their own health or life at risk to rescue someone in peril.

[1] Active decision-making might also be relevant in overcoming self-control problems. Choi et al. (2004) study the effect of active decisions on the likelihood of joining a pension savings plan.

Third, the way situations of choice are presented influences people's decisions (framing effects). In particular, there is a strong tendency to stick with the option that reflects the status quo (Samuelson and Zeckhauser 1988) or that which becomes effective if an individual does not explicitly choose some alternative (so-called defaults; Thaler and Sunstein 2003). Active decisions are a special form of framing/defaults: the options for deferring or repressing a decision are removed from the individually perceived opportunity set.

Fourth, people aim to act consistently with regard to decisions made or positions chosen in the past, i.e. commitments (Cialdini 2001). Commitments change people's self-image and past behavior provides information about one's own preferences. This is partly due to processes of self-signaling that support and reinforce people's self-image (Bodner and Prelec 2003). Commitments that active decisions bring about can thus entail consistent behavior in the future, even though some initial "cheap" consent will involve high pecuniary or non-pecuniary costs at a later point in time.

The behavioral consequences of confronting people with the decision to act pro-socially are not uniform, but depend on the degree of stability of their altruistic preferences with regard to some specific issue. The effect of active decisions on behavior, by its very nature, relies on the endogenous formation of preferences through the process of decision-making. We thus expect active decisions to be more effective when people are unaware of the importance of some specific pro-social engagement, and when their latent motivation to donate or contribute would otherwise remain dormant. We refer to this qualification as refined hypothesis. In contrast, if people are well aware of some public good and have already made up their mind about their contribution to it, preferences can be expected to be rather stable and little affected by active decisions. If these same people are confronted with an active-decision mechanism, they might actually perceive the intervention as intrusive and even reduce their contribution (see Frey 1997 for a general account of the crowding-out effect in contributions to public goods).

We study the potential of active decisions for voluntary blood donation. The steady tightening of access criteria for blood donors increases the risk of excess demand for blood. It is still technically impossible to artificially reproduce blood compounds. If new donors are not successfully recruited on a regular basis, blood shortages can become a central health care

problem.[2] Moreover, there is evidence that many latent donors never contemplated becoming an active donor (Riedel et al. 2000). We thus hypothesize that an active decision framework can successfully elicit blood donations.

Our study was incorporated in a Red Cross blood drive at the University of Zurich. In total, more than 1,800 students participated. They neither knew that an experiment was taking place nor that researchers from the economics department were involved. Professors granted us permission to distribute a brief survey during the last ten minutes before the break in the middle of their lectures, and to make a brief announcement regarding the blood drive. There were three experimental conditions implemented: In the active decision treatment, the survey contained a page at the end asking the subjects whether they were willing to donate blood at one of the times mentioned on the information sheet. They had two possible choices: yes or no. If they answered yes, they had to say when they would show up for the blood donation. In the first control condition, the last page of the survey was nearly identical; we merely added a third possible option – stating that they were undecided. In the second control condition, there was no such page at the end of the survey. However, along with the survey, all students also received an information sheet, listing dates and times in the week to come when they could donate blood. To obtain a measure of the latency of pro-social preferences, we asked the students in the survey whether they felt they were sufficiently informed about the importance of donating blood.

Our results lend support to the hypothesis that active decisions play an important role in uncovering latent pro-social preferences. We find that among students who indicated that they were not sufficiently aware about the importance of donating blood, the active decision treatment increased blood donations significantly relative to the two other conditions. The difference is larger with regard to the second control group. Confronting this group of subjects with explicit choice options thus increases participation. This also holds when we condition on previous blood donations. Hence, the result is not due to mere experimentation to find out what donating blood is like. In contrast, we even find a slightly negative effect (albeit not statistically significant) for the active decision treatment on blood donation for the group of students who stated that they are sufficiently aware about the importance of donating

[2] We emphasize voluntary blood donation because no accepted alternative social arrangement for activating people to donate blood seems to exist. In particular, a majority rejects the installation of a market, and markets of this type did not perform well in the past (for a discussion, see Titmuss 1972).

blood. Overall, we interpret the results as evidence that active decisions can help develop Marshall's latent social asset.

The remainder of the paper is structured as follows: Section I describes the experimental design in detail. Section II provides descriptive statistics, and section III presents the results of the experiment. Section IV offers concluding remarks.

I. Experimental Setup

We conducted our study in the context of a regular blood drive that the Swiss Red Cross (SRC) arranges at the University of Zurich. In a normal year, the SRC simply posts information material in classrooms with information on the hours and location of the blood drive. In the winter semester 2004/2005, the Swiss Red Cross, in collaboration with us, obtained permission to conduct a study in seven large undergraduate lectures at the University of Zurich.

The study consisted of a brief survey, which contained demographics, questions aimed at measuring pro-social preferences, and personality scales. The survey also contained several questions regarding donating blood. Our key question capturing the awareness of the importance of donating blood read "Do you feel sufficiently informed about the importance of donating blood?" and had to be answered with a “yes” or a “no”. We consider answers to this question to be proxy of whether an individual has made up her mind about donating blood, one way or the other. The question avoids asking specifically about topic-related knowledge. However, individuals answering "no" have arguably given less thought to the matter, without implying a preference in either direction.

A. Treatments

There were three experimental conditions:

Treatment Group (TG): For the subjects in the treatment group, the last page of the survey contained a sheet inviting them to donate blood. It listed the times and places of the blood drive. Most importantly, the individuals were asked to either consent or dissent to participating in the blood drive by ticking a "yes" or "no" box. If a subject chose to participate, he or she was asked to commit to an actual date and time for the blood donation. All subjects also received a separate information sheet, looking identical to the last page of

the survey, except that it did not contain the question asking them to decide whether or not to donate blood. In bold letters, it said "for you to take home" on that sheet.

Control Group 1 (CG1): The last sheet for this group was almost identical to that of the TG. The only difference was that it contained an additional box, saying "I do not want to make a decision" [about donating blood], i.e. no decision was required. Subjects in CG1 also received the information sheet to take home.

Control Group 2 (CG2): The survey did not contain a page asking this group to make a choice. Like everybody else, however, the subjects in CG2 received a sheet containing identical pieces of information about the blood drive.

B. Procedures

In order to implement the treatments in a large population, we selected seven large lectures and asked the professors to concede 10 minutes of their lectures before the break. A representative of the SRC gave a brief informative presentation, while the assistants distributed the survey. It can safely be assumed that the students were not aware that an experiment was being conducted.

We decided how to distribute the different treatments in the lecture rooms based on their layout plans. To ensure that students would not notice that an experiment was being conducted, we used natural "barriers", such as aisles, to separate the sections in which different treatments were distributed. The assignment of the treatments to the different treatment sections was random. Depending on the layout of the lecture room, it was sometimes not possible to conduct all three treatments. Therefore, treatments are randomized within lectures, but not between them.

Special care was taken to ensure identical information conditions for all subjects. After the students had worked on the survey for about 5 minutes, the assistants distributed the additional information sheet that contained the same information (and the same invitation, word by word) as the last page of the survey for the TG and CG1. This was to make sure that all students not only had the same information regarding the times and places of the blood drive, but also regarding the normative value of the campaign. We printed the extra sheet on colored paper to ensure that the students would notice it. Furthermore, the times and places of the blood drive were also mentioned during the SRC representative's presentation. After 10 to

15 minutes, the subjects left the lecture room to take a break and handed in the questionnaires to the support staff at the exit doors.

II. Descriptive Statistics

Participation in the study was very high; the response rate was well above 95%.[3] In total, 1,852 questionnaires were handed in. Four people were younger than 18 and thus not allowed to donate blood. Another 10 people did not answer the question regarding awareness of the importance of donating blood. It was possible to match all the blood donations to one of remaining 1,838 subjects.

Table 1 provides a first impression of the data. It shows the stated willingness to donate blood, the fraction of individuals actually donating blood in the blood drive, and the answers to the question regarding awareness of the importance of donating blood. 14% of the respondents indicate a willingness to donate blood in the survey. This fraction is calculated based on the stated preferences of the subjects in the TG and CG1. 7.6% of the sample population actually donates blood. The table shows that donations differ considerably between the different courses covered. First and second-year medical students express by far the highest propensity to donate blood, followed by biology students. It is very difficult to interpret any difference in donation behavior across courses as they might reflect differences in preferences, work load, study schedule etc.

There are also differences in answers to the awareness question between courses. While almost 90% of the second-year medical students answer that they feel sufficiently informed about the importance of donating blood, only slightly more than half of the students in the journalism course say so.

As there are clear differences in the propensity to donate blood across subjects of study (as documented in Table 1), and as we only randomized treatments within lectures, we purge the data in Table 2 of any course specific effects. Specifically, we normalize the data by subtracting the corresponding course average from each observation.

Table 2 presents this normalized data cut by treatment and by awareness. We first report descriptive statistics for *actual blood donation behavior*. Adjusted mean effects are shown in the upper half of Table 2. The effect of the active decision treatment on blood donations depends strongly on whether the subjects feel aware of the importance of donating blood or

[3] Only a few people were observed leaving the lecture halls without handing in a questionnaire.

not. Subjects answering "no" to the awareness question show a clear increase in the tendency to donate blood in the TG relative to CG1 and CG2. The last column of Table 2 calculates the difference between the TG and CG2, and the associated standard error of the estimate. The difference is large relative to the baseline propensity to donate blood: The fraction of donors increases by 7.2 percentage points. The standard error for this difference is small, indicating a statistically significant treatment effect. On the other hand, subjects who respond with a “yes” to the awareness question are not more likely to donate blood if assigned to the TG. If “aware” people are explicitly asked to make a decision on whether or not to donate blood, they are *less* likely to donate blood than in the other treatments. As the last column shows, the fraction of donors is reduced by 2.9 percentage points in the TG relative to CG2.

The lower half of Table 2 shows the *survey responses* to the invitation to donate blood in the TG and CG1. Irrespective of whether individuals feel aware of the importance of blood donations, the additional option ("I do not want to make a decision.") in CG1 seems to reduce the fraction of individuals saying they will donate blood. This finding reflects that for actual donation behavior. The last column in Table 2 calculates the difference between the TG and CG1 and the corresponding standard error. For both groups, regarding the stated willingness to donate, the standard error is large relative to the size of the effect.

III. Results

A. Blood Donations

The data allows us to examine the effects of active decisions on actual blood donations, and further on the stated willingness to donate blood expressed in the absence of costly consequences, i.e. in a cheap talk situation. We estimate the impact of the experiment on blood donations (and stated preferences) using a linear probability model with robust standard errors (for a discussion see Moffitt 1999). Where possible, we also adjust the standard errors for possible clustering on the course level. As this reduces the effective degrees of freedom to the number of courses, we can only apply this procedure in specifications with fewer than seven variables included.

In Table 3, the dependent variable is equal to one if an individual donates blood and zero otherwise. Thus, the coefficients of any variable in this regression can be directly interpreted as the change in the fraction of individuals donating blood resulting from a one-unit increase

in the independent variable, holding the value of the other variables constant. We also present the probit-model estimates in the appendix; qualitatively, they yield the same results.

The effect of the treatments on blood donations is reported in Table 3. We choose CG2, in which subjects were not required to fill out a decision sheet, as the reference category. As before, the treatment effect is reported separately for people who are not aware of the issue and for those who are aware of the issue.

We find that people without well-formed preferences (first column of Table 3) are substantially more likely to donate blood if they are exposed to the active decision. We estimate that the treatment leads to an 8.7 percentage-points increase in the probability of donating blood relative to CG2. Even after adjusting the covariance matrix for clustering at the course level, our treatment effect is still highly significant.[4] The effect is almost unchanged and still highly statistically significant if a large set of additional control variables is taken into account (third column of Table 3). Importantly, one of the control variables includes whether the individual has donated blood before. Since the point estimate is virtually unaffected when past behavior is included as a control, our effect does not seem to be due to mere subject experimentation to find out what donating blood is like. The additional control variables are jointly statistically significant predictors of blood donation behavior.

Individuals in CG1 are also slightly more likely to donate blood than individuals in CG2. Contrary to our prediction, there is some evidence that already the exposure to choice can mobilize pro-social behavior, independent of whether only a "yes" and a "no" option is available, or whether an option for "no decision" is also offered, but our sample size does not allow us to estimate this effect accurately. Ex post, this might also be explained by the factual possibility of leaving the decision sheet blank, which was available to all the individuals in the TG and CG1. However, the standard error of the estimated coefficient for CG1 prevents us from drawing definite conclusions regarding CG1.

The experimental intervention matters much less for people who are aware of the issue and who have supposedly already made up their mind about donating blood. For people in the TG, we actually find a slightly lower probability (-2.4 percentage points) of donating blood –

[4] In order to calculate these standard errors, we de-mean the data on the course-level. This is algebraically equivalent to including dummy variables in the regression, but does not reduce the degrees of freedom (as we are not calculating the covariance matrix for the course effects).

although not statistically significant – than in CG2 (second column of Table 3). The finding is very similar when we add more controls in the fourth column of Table 3.

We examine two alternative interpretations to our results: The first one states that the findings reflect experimentation and that our measure for awareness is picking up a preference for finding out about the process of donating blood (How much does it hurt? Do I feel dizzy afterwards?). Remember, we argue that our treatments uncover latent social preferences, not the process of donating itself. It is, thus, important to distinguish between the two explanations. At the outset, one has to keep in mind that we already control for past blood donations in Table 3. Hence any higher propensity to donate blood in order to "experiment" by former non-donors is absorbed in the equation and is uncorrelated with our treatments. However, as we argued before, the active decision treatment may have offered a form of mental commitment and thus a better technology to learn about blood donations. This raises the possibility that people who never donated blood before may have been encouraged to "experiment" more in the TG than in CG1 and CG2.

We examine this alternative explanation by exploiting that there are still subjects who donated blood but answer that they are not sufficiently aware of the importance of blood donations. Still, 16% of the subjects who donated blood before state that they are not sufficiently aware of the importance of blood donations. Though this group is relatively small (70 individuals), we can examine this group still responds to our treatments as we hypothesized earlier. The results are displayed in Table 4, where we estimate the treatment effects for this group as the main effect, and interaction terms for the group of subjects who never donated blood before. We find little evidence that our treatment only impacts the behavior of subjects who never donated blood before. Individuals who donated blood before, but still do not feel sufficiently aware of the importance of blood donations, are more likely to donate blood in the treatment group: The point estimate is virtually unchanged relative to the baseline results in Table 3, but estimated less precisely because of the small number of observations in this cell. Still, the effect is significant at the 10% level, and their response to the treatment is undistinguishable from the group of individuals who never donated blood before ($p = 0.78$). The second column in Table 4 shows that for people who state that they are aware of the importance of blood donation, there is also no response to the treatment when they have never donated blood before. This, again, lends little support to the hypothesis that the active decision treatment encouraged subjects to try and learn about blood donations in general. Our findings indicate

that they respond to the treatment when they feel they are not aware of the importance of blood donations, not the act of donating blood per se.

The second alternative explanation is that our treatment may have facilitated blood donations of individuals with a self-control problem due to present-biased preferences (see, e.g., O'Donoghue and Rabin, 1999). Present-biased preferences have been shown to have strong effects on behavior in similar realms (Della Vigna and Malmendier, 2005). The aspect that our treatment group was offered a form of mental commitment may have facilitated blood donations of individuals with present-biased preferences. Because of this present-bias, they may also be less aware of the importance of blood donations. In our survey, we asked the respondents a simple question to measure impatience: Would they prefer CHF 50 right now or CHF 60 two months from now? We use the responses to this question as a proxy for impatience. The individuals split roughly 50:50 on the two options. In columns (3) and (4) of Table 4, we interact the treatment effects with impatience. If our treatments act through mitigating self-control problems, we would expect to see a larger treatment effect on individuals who act impatiently in the survey. However, we find no difference between the two groups. Column (3) shows a strong effect of TG on donations of individuals who are not aware of blood donations *and* choose the patient response in our question. There is no difference in the treatment effect to the group who chooses the impatient response ($p = 0.31$). Further, commitment opportunities are to individuals with self-control problems are the same for individuals who feel sufficiently informed about blood donations. Yet, we find no evidence in column (4) that impatient individuals are more likely to donate blood in TG. Overall, these results lend little support to the alternative explanation.

In sum, the active-decision intervention does not generally increase the probability of donating blood. Rather, and in line with the refined hypothesis, the treatment effect depends on whether people already formed preferences about donating blood. If people who do not feel sufficiently aware of the issue are approached, active decisions affect pro-social behavior even when high immediate costs are involved.

B. Stated Preferences

Table 5 summarizes the results for people's stated willingness to donate blood. The active decision treatment effect is calculated relative to CG1, i.e. people who have a third choice

option indicating "no decision". CG2 is not included at this stage because no explicit decision has to be made in the questionnaire by people in this group.

We find that the active decision treatment has a positive effect on the expressed willingness to donate in accordance with the basic hypothesis. There is a difference in the treatment effect between people who are not aware of the issue and those who are aware of the issue of 4.4 percentage points, however imprecisely estimated (first and second column of Table 5). The probability of stating a willingness to donate blood increases by 7.1 percentage points for people who are not aware of the issue, but is only borderline significant. In contrast, there is only an increase of 2.7 percentage points (not statistically significant) for people who are aware of the issue. This difference in the treatment effects between the two groups becomes somewhat more pronounced when a large set of additional control variables from the survey is included (third and fourth column of Table 5).

In sum, we find that the implemented active decision framework has a significant effect on stated preferences for individuals indicating relative unawareness of the topic and their own contribution. In contrast, no significant effect is measured for those who are aware of the issue. Thus, we do not observe the predicted general positive effect. However, the results show the asymmetry in the treatment effect, depending on the formation of preferences as formulated in the refined hypothesis.

IV. Concluding Remarks

We examine whether an active-decision framework affects perception and cognition processes to the extent that pro-social behavior is evoked. People are asked in an active decision to either consent or dissent to a request in an otherwise unrestrained choice situation, i.e. subjects are *de facto* confronted with the same behavioral options as in a situation where no active decision is involved. Behavioral consequences of active decisions arise if by asking for an explicit statement, (i) cognitive processes are stimulated in which a more in-depth examination of the request's content takes place than in the case of not requesting an explicit answer, and (ii) the expressed choice is understood as commitment.

The effect of active decision on pro-social behavior is studied in a large-scale field experiment in blood donation. Almost 2,000 people were invited in a non-binding manner to donate blood at a blood drive, which was taking place the week after the survey intervention. In a newly designed questionnaire, people answered various topic and attitude-related

questions. Individuals assigned to the treatment group are explicitly asked at the end of the questionnaire whether they are willing to donate blood in the upcoming blood drive or not. In the first control group, individuals have the additional option of ticking a box, which states that they do not want to make a decision. In the second control group, no explicit request is formulated in the questionnaire.

We find that, for people without well formed preferences on blood donation, an active decision intervention increases their likelihood of *donating* blood despite the high immediate opportunity costs. This supports the basic behavioral hypothesis. Rather than a smaller positive effect, we find a small, although not statistically significant, negative effect for people who report being aware of the blood donation issue.

The active decision also affects people's *stated* willingness to donate blood in case they have no fully formed preferences about the issue. In the field of blood donation, the effect on the preference *statement* is, of course, of less relevance. However, it indicates that an active decision might be effective in other social areas, like post-mortem organ donation or individual saving behavior where a statement with low immediate costs puts people on a donor list or in a savings plan. This might be seen as an ethically attractive alternative to presumed consent.

Our results differ from those in research on mere measurement effects (Morwitz et al. 1993) where, for example, asking people whether they intend to buy "a car" is shown to increase their probability of actually buying one. An active-decision intervention elicits pro-social behavior oriented towards a *specific* activity. The results further indicate that whether or not people act pro-socially is not given, but is rather context- and issue-specific.

Active decisions are potentially a procedural innovation to develop the "latent social asset" in society. It is, however, important to learn when active decisions are perceived as supportive (rather than controlling) and work to build up pro-social preferences. One question might be, for example, how often an active decision framework can be applied when its effect varies with subject awareness. However, one intervention might be enough to overcome the stickiness of a low-contribution status quo for some issues like post-mortem organ donation.

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TABLE 1 – DESCRIPTIVE STATISTICS

	Percent stating a willingness to donate blood[a]	Percent actually donating blood[b]	Percent aware of importance of donating blood[b]	Number of observations[b]
Medical school (first year)	29.7%	24.0%	72.4%	246
Medical school (second year)	16.8%	11.0%	88.9%	171
Biology(first year)	20.2%	8.9%	70.1%	157
Economics (first year)	8.6%	5.2%	64.4%	399
Economics (second year)	4.8%	2.0%	74.6%	354
Journalism (first year)	7.9%	3.9%	57.9%	178
Law (first year)	8.9%	3.9%	64.3%	333
Total	14.0%	7.6%	69.5%	1,838

Notes: [a] Calculations are based on subjects in the treatment group and control group 1 (N = 1302).
[b] Calculations are based on the full sample.
Source: Own calculations.

TABLE 2 – THE OUTCOMES OF THE EXPERIMENT

	Fraction donating blood, course mean subtracted			
Importance of donating blood	*Treatment group*	*Control group 1*	*Control group 2*	Difference treatment group - control group 2
Not aware	0.040	0.010	-0.032	0.072
N	249	134	177	(0.021)
Aware	-0.015	0.001	0.013	-0.029
N	654	265	359	(0.015)

	Fraction indicating willingness to donate, course mean subtracted			
Importance of donating blood	*Treatment group*	*Control group 1*	*Control group 2*	Difference treatment group - control group 1
Not aware	0.055	-0.004	n/a	0.059
N	249	134		(0.036)
Aware	-0.007	-0.030	n/a	0.023
N	654	265		(0.024)

Notes: Standard error of estimates in parentheses.
Source: Own calculations.

TABLE 3 – THE EFFECT OF ACTIVE DECISIONS ON ACTUAL BLOOD DONATION BY AWARENESS OF THE IMPORTANCE OF DONATING BLOOD

Dependent variable: donated blood (=1)

	OLS regressions		OLS regressions	
	Not aware	Aware	Not aware	Aware
Treatment group	0.087***	-0.024	0.085***	-0.025
	(3.50)	(-1.54)	(3.38)	(-1.54)
	[2.67]	[1.12]		
Control group 1	0.045	-0.006	0.035	-0.005
	(1.48)	(-0.26)		
	[1.32]	[0.24]	(1.15)	(-0.20)
Control group 2	reference category		reference category	
Age, sex	included.		included	
Course	included.		included	
Pro-social motivation[b]	not included		included	
Life goals[c]	not included		included	
Personality[d]	not included		included	
Past Behavior[e]	not included		included	
Behavior of relatives and friends[f]	not included		included	
R^2	0.117	0.067	0.184	0.088
N	496	1192	496	1192

Notes: Robust z-values are in parentheses. Z-values adjusted for clustering on courses (7) are in brackets. The control variables are defined as follows: [a] six dummy variables for courses; [b] pro-social motivations along 4 dimensions reported on 7-point scales; [c] intrinsic and extrinsic life-goals along 6 dimensions on 7-point scales; [d] ten personality characteristics each representing an opposite pole of the Big-Five personality dimensions (7-point-scales); [e] indicates if and when an individual made a blood donation in the past; [f] past blood donation behavior of relatives and friends.

Significance levels: *.05<p<.1, **.01<p<.05, ***p<.01, two-tailed test, z-values in parentheses used.

Source: Own calculations.

TABLE 4 – TESTING ALTERNATIVE EXPLANATIONS OF THE TREATMENT EFFECT

DEPENDENT VARIABLE: DONATED BLOOD (=1)

	Interaction of treatments with "no previous blood donations"		Interaction of treatments with impatience	
	Not aware	Aware	Not aware	Aware
Treatment group	0.113*	-0.019	0.087**	-0.03
	(1.62)	(0.55)	(2.5)	(1.55)
Control group 1	-0.015	0.059	-0.001	0.097
	(0.14)	(1.03)	(0.02)	(0.28)
Treatment group × interaction	-0.034	-0.067	-0.01	0.01
	(0.46)	(0.18)	(0.22)	(0.021)
Control group 1 × interaction	0.054	-0.085	0.069	-0.027
	(0.48)	(1.39)	(1.24)	(0.64)
Control group 2	reference category		reference category	
Age, sex	included		included	
Course	included		included	
Pro-social motivation[b]	included		included	
Life goals[c]	included		included	
Personality[d]	included		included	
Past Behavior[e]	included		included	
Behavior of Relatives and Friends[f]	included		included	
F-test for joint significance of interaction effects	$p = 0.78$		$p = 0.79$	
F-test for impact on behavior of group with interaction effect		$p = 0.31$		$p = 0.55$
R^2	0.186	0.091	0.184	0.089
N	496	1192	496	1192

Notes: Robust z-values are in parentheses. The control variables are defined as follows: [a] six dummy variables for courses; [b] pro-social motivations along 4 dimensions reported on 7-point scales; [c] intrinsic and extrinsic life-goals along 6 dimensions on 7-point scales; [d] ten personality characteristics each representing an opposite pole of the Big-Five personality dimensions (7-point-scales); [e] indicates whether and when individual made blood donation in the past; [f] past blood-donation behavior of relatives and friends.
Significance levels: *.05<p<.1, **.01<p<.05, ***p<.01, two-tailed test.
Source: Own calculations.

TABLE 5 – THE EFFECT OF ACTIVE DECISIONS ON THE STATED WILLINGNESS TO DONATE BLOOD BY AWARENESS OF THE IMPORTANCE OF DONATING BLOOD

Dependent variable: willingness to donate blood (=1)

	OLS regressions		OLS regressions	
	Not aware	Aware	Not aware	Aware
Treatment group	0.071*	0.027	0.092**	0.031
	(1.63)	(0.99)	(1.99)	(1.37)
Control group 1	reference category		reference category	
Control group 2	n/a	n/a	n/a	n/a
Age, sex	included		included	
Course	included		included	
Pro-social motivation[b]	not included		included	
Life goals[c]	not included		included	
Personality[d]	not included		included	
Past behavior[e]	not included		included	
Behavior of relatives and friends[f]	not included		included	
R^2	0.084	0.079	0.194	0.133
N	339	855	339	855

Notes: Robust z-values are in parentheses. The control variables are defined as follows: [a] six dummy variables for courses; [b] pro-social motivations along 4 dimensions reported on 7-point scales; [c] intrinsic and extrinsic life-goals along 6 dimensions on 7-point scales; [d] ten personality characteristics each representing an opposite pole of the Big-Five personality dimensions (7-point-scales); [e] indicates if and when an individual made a blood donation in the past; [f] past blood donation behavior of relatives and friends.
Significance levels: *.05<p<.1, **.01<p<.05, ***p<.01, two-tailed test.
Source: Own calculations.

Appendix

TABLE A.1 – THE EFFECT OF ACTIVE DECISIONS ON ACTUAL BLOOD DONATION, BY AWARENESS OF THE IMPORTANCE OF DONATING BLOOD

Dependent variable: donated blood (=1)

	ML probit		ML probit	
	Not aware	Aware	Not aware	Aware
Treatment group	11.56%***	-2.65%	7.72%***	-2.51%
	(3.01)	(-1.33)	(2.92)	(-1.34)
Control group 1	11.03%**	-1.25%	6.94%**	-1.21%
	(2.14)	(-0.56)	(1.99)	(-0.59)
Control group 2	reference category		reference category	
Age, sex	included.		included	
Course	included.		included	
Pro-social motivation[b]	not included		included	
Life goals[c]	not included		included	
Personality[d]	not included		included	
Past behavior[e]	not included		included	
Behavior of relatives and friends[f]	not included		Included	
Mean predicted frequency	5.01%	5.70%	1.90%	4.98%
N	496	1192	496	1192
Log Likelihood	-118.15	-285.23	-96.35	-273.18

Notes: Main table entries are marginal effects for probit regressions, the corresponding z-values are in parentheses. The control variables are defined as follows: [a] six dummy variables for courses; [b] pro-social motivations along 4 dimensions reported on 7-point scales; [c] intrinsic and extrinsic life-goals along 6 dimensions on 7-point scales; [d] ten personality characteristics each representing an opposite pole of the Big-Five personality dimensions (7-point-scales); [e] indicates if and when an individual made a blood donation in the past; [f] past blood donation behavior of relatives and friends.
Significance levels: *.05<p<.1, **.01<p<.05, ***p<.01
Source: Own calculations.

TABLE A.2 – THE EFFECT OF ACTIVE DECISIONS ON THE STATED WILLINGNESS TO DONATE BLOOD, BY AWARENESS OF THE IMPORTANCE OF DONATING BLOOD

Dependent variable: willingness to donate blood (=1)

	ML probit		ML probit	
	Not aware	Aware	Not aware	Aware
Treatment group	6.88%*	2.86%	8.06%**	3.20%
	(1.66)	(1.16)	(2.10)	(1.37)
Control group 1	reference category		reference category	
Control group 2	n/a	n/a	n/a	n/a
Age, sex	included		included	
Course	included		included	
Pro-social motivation[b]	not included		included	
Life goals[c]	not included		included	
Personality[d]	not included		included	
Past behavior[e]	not included		included	
Behavior of relatives and friends[f]	not included		included	
Mean predicted frequency	14.70%	11.23%	11.88%	9.22%
N	339	855	339	855
Log Likelihood	-140.07	-304.85	-124.43	-278.70

Notes: Main table entries are marginal effects for probit regressions, the corresponding z-values are in parentheses. The control variables are defined as follows: [a] six dummy variables for courses; [b] pro-social motivations along 4 dimensions reported on 7-point scales; [c] intrinsic and extrinsic life-goals along 6 dimensions on 7-point scales; [d] ten personality characteristics each representing an opposite pole of the Big-Five personality dimensions (7-point-scales); [e] indicates if and when an individual made a blood donation in the past; [f] past blood donation behavior of relatives and friends.
Significance levels: *.05<p<.1, **.01<p<.05, ***p<.01
Source: Own calculations.