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Altruism and Patience in Choices between Financial Losses – Experimental Findings*

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Abstract: In this empirical study (n = 102), the authors set out to investigate the relation between altruism (measured with the use of individual social discounting rates) and patience (measured with the use of delays) under the conditions of financial losses. Thanks to the titration algorithm by Holt et al. (2003), and the Area Under the Curve indicator by Myerson et al. (2001), the study could apply discounting procedures to assess the altruism and patience of individuals. It was found that altruism and patience can be but do not have to be positively correlated in the domain of economic losses. It turns out that the occurrence of a positive correlation between altruism and patience (as often reported in the behavioural economics literature devoted to economic gains) depends on the temporal structure of the discounting task (temporal context of choice). When both the loss for the decision maker and another person from the social distance scale is delayed (shifted in time), positive correlations between altruism and patience are not observed. The latter finding is novel and nuances the behavioural economics knowledge on the relation between altruism and patience in economic choices.

Keywords: altruism, patience, delay discounting, social discounting, behavioural economics.

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1. Introduction

Altruism and patience are components of the formal description of economic behaviour. According to Hendrikse (2003), human economic behaviour can be formally described using three dimensions – degree of rationality, behavioural motivation, and degree of self-control.

Briefly, rationality is the degree of correspondence between human cognitive capacities and the complexity of a decision maker's economic problem (cf. Hendrikse, 2003). As a result, if the complexity of a decision problem is significantly larger than the decision maker's cognitive capacities, one can talk about a decision maker's limited (or bounded) rationality (see: Hendrikse, 2003; Simon, 1957; 1982). Further, suppose the discrepancy between human cognitive abilities and the complexity of the problem is particularly large (the ratio of human cognitive abilities to decision problem complexity is close to zero). In that case, one faces the procedural rationality of an economic agent (Hendrikse, 2003). If the ratio of human cognitive capacities to the complexity of the decision problem is equal to one, we have a case of full or unlimited rationality (Hendrikse, 2003). The latter type of rationality is an assumption in standard, textbook microeconomics models of behaviour, even though this type of rationality is often unrealistic (e.g. Tomer, 2007).

Behavioural motivation (or orientation, according to Hendrikse, 2003) is the underlying objective function of human behaviour. As a result, a decision maker can be oriented at (1) maximising her/his benefits and minimising her/his costs (selfish or egoistic motivation) or (2) maximising someone else's benefits and minimising someone else's costs (altruistic motivation). Egoism and altruism constitute basic types of human behavioural motivation. One can nuance them and distinguish other behavioural motivations of decision makers., such as cooperation or rivalry, but the full presentation of all possible behavioural motivation types is outside the scope of this paper. Readers interested in the discussion of all behavioural motivations of decision-making are referred to social value orientation theory (cf. Griesinger & Livingston, 1973; Liebrand, 1984).

The degree of self-control (willpower) is, broadly speaking, the human ability to execute plans. If the decision maker's actions are perfectly consistent with prior plans (short-sighted temptations do not play a role), one can talk about unbounded willpower or full self-control (cf. Hendrikse, 2003). On the other hand, if the decision maker's actions deviate from the earlier plans (due to impulses or short--term gratifications), limited self-control is exercised.

The degree of self-control can be conveniently measured using experimental discounting procedures (e.g. Laibson, 1997; O'Donoghue & Rabin, 2000). The subjects were asked to choose between monetary amounts available in different periods in delay discounting tasks. Holt et al. (2003) proposed an algorithm that allows finding the so-called indifference (or equilibrium) points that indicate the values of monetary amounts less distant in time are psychologically equivalent to the

fixed value of a monetary amount more distant in time. For those equilibrium points (found experimentally), the decision makers are indifferent between the value of an earlier monetary amount (e.g. 2000 euros in a month) and the value of a monetary amount more distant in time (e.g. 2400 euros in 50 days). Furthermore, for different time comparisons, one can plot a curve that matches different equilibrium points (cf. Myerson, Green, & Warusawitharana, 2001). The area under the curve can be larger or smaller, depending on the subjects' individual choices. Larger areas under the curve correspond with more self-controlled choices (persons less vulnerable to immediate gratifications or impulses), and smaller areas under the curve translate into more impulsive, short-sighted choices (less patient people).

The interest of behavioural economics is to explore relationships between the dimensions of human behaviuor mentioned above. This article investigates the relationship between behavioural motivation and the degree of self-control, with a particular focus on the link between altruism and patience in human economic choices.

As mentioned, the decision maker's patience can be empirically measured using discounting procedures (and the 'Area Under the Curve' indicator). Surprisingly, the decision maker's altruism can also be measured using discounting procedures, though some modifications compared with delay discounting tasks need to be introduced.

Note that in the delay discounting tasks mentioned above, the subjects choose between monetary amounts available in different time periods. All the amounts refer to the given decision maker. However, the procedure can be redesigned, asking the subjects to choose between monetary amounts available to different persons distributed on the so-called social distance axis; the temporal dimension is replaced with the social distance dimension. For example, the discounting task can be as follows: "choose between 2000 euros for a person socially closest to you, and 2400 euros for a person fifth on your social distance axis".

The social distance axis represents persons known to the decision maker and ordered according to the social closeness rule. Thus, person no. 1 on the social distance axis is the person socially closest to the decision maker (e.g. wife), and, e.g., person no. 5 is the person 5-th closest to the decision maker (e.g. an aunt). The above discounting procedures using the social distance axis instead of the time axis are called social discounting procedures and were introduced by Jones and Rachlin (2006). Today, research on social discounting is a growing literature in behavioural economics and psychology (cf. Hill, Yi, Spreng, & Diana, 2017; Jones, 2021; Rachlin & Jones, 2007; Safin, Locey, & Rachlin, 2013, among many others).

To briefly sum up the above discussion, one can say that altruism and patience can be measured using experimental discounting procedures. Altruism can be measured by social discounting, while patience by delay-discounting procedures. The subjects characterised by the relatively large Area Under the Curve (AUC) indicator are perceived as relatively patient (as in the case of the delay-discounting task) or altruistic (as the social discounting procedure is applied). It is important to

observe that patient people are characterised by relatively low delay-discounting rates, while the relatively low social discounting rates are typical of altruistic people.

Interestingly, the great majority of research works concentrate on altruism or patience in the domain of monetary gains (cf. Zhao et al., 2018). The area of financial losses is as yet relatively unexplored. Thus, in this research the authors decided to address the above gap and investigate the links between altruism and patience in the context of financial losses. Behavioural economics teaches that subjects can behave differently regarding gains and losses. Perhaps the most famous example comes from the prospect theory (Kahneman & Tversky, 1979). Within this theory, subjects are risk-averse in the context of gains, but they are risk lovers in the context of losses. Furthermore, many researchers talk about gain-loss asymmetry in the context of behavioural economics' experiments (e.g. Appelt, Hardisty, & Weber, 2011; Estle, Green, Myerson, & Holt, 2006; Mizak, Ostaszewski, Marcowski, & Białaszek, 2021; Myerson, Baumann, & Green, 2017). Therefore, the accumulated knowledge on the relations between altruism and patience in the context of financial gains does not need to be valid in the context of economic losses.

According to (Rachlin & Jones, 2009) and (Osiński, Karbowski, & Rusek, 2017), both delay discounting and social discounting have a common ground in the 'extended self' mechanism. Using terms from cognitive psychology, one can draw an analogy between delay and social discounting. In the former, decision makers cognitively 'extend' themselves in the temporal dimension (exchange of monetary amounts between my present self and my future self). In the latter, decision-makers – using perspective-taking – extend themselves in the social dimension (exchange of monetary amounts between myself and others belonging to my extended self). If the theory of 'extended self' is true, one should observe a positive correlation between the delay and social discounting rates – i.e. relatively patient persons should also be relatively altruistic, and relatively impulsive persons should be relatively egoistic.

Some researchers confirm the similarities between delay and social discounting in terms of analogous cognitive processes (cf. Charlton et al., 2013; Locey, Jones, & Rachlin, 2011; Osiński & Karbowski, 2017; Yi, Carter, & Landes, 2012; Yi, Charlton, Porter, Carter, & Bickel, 2011). Similarly, other studies (Curry, Price, & Price, 2008; Harris & Madden, 2002; Yi, Johnson, & Bickel, 2005; Yi, Buchhalter, Gatchalian, & Bickel, 2007) show that persons who reasonably take care of their future also exhibit a stronger tendency to take care of other people. Based on the above studies, The authors expected an established relation between (1) reflectiveness and responsibility and (2) empathy. As a result, the behavioural link between patience and altruism should exist and be observed in experimental results.

Considering the above, construct the following scenarios (see Karbowski, 2018): (a) a choice is made between an immediate monetary loss for oneself and another person, (b) a choice is made between a delayed loss for oneself and another person, (c) a choice is made between an immediate monetary loss for oneself, and a delayed

loss for another person, and (d) a choice is made between a delayed loss for oneself and an immediate loss for another person.

In the above experimental setup, the authors expect to obtain a positive correlation (a similar behavioural pattern) between social discounting rates in conditions (a) and (c) and a negative correlation between social discounting rates in conditions (b) and (d). The reason for such expectations is that under immediate monetary losses for oneself, an individual's patience should not play a significant role, hence altruistic behaviour should not be affected by individual delay discounting characteristics, but rather by 'pure' personality traits responsible for regulating pro-social behaviour. As a result, the increase in altruism in scenario (a) should be associated with the increase of altruism in scenario (c).

Patience should, in turn, play a significant role under delayed monetary losses for oneself. In this case, more patient individuals should be 'additionally' (a premise in the reasoning – patience upregulates pro-social traits) more altruistic. This altruism should be more visible in a situation where it is needed, i.e. when another person is under threat of immediate financial losses (condition d). One expects higher altruism in condition (d) will be psychologically compensated by lower altruism in scenario (b). Thus, a negative correlation between social discounting rates between (b) and (d) is proposed. The above expectations are tested experimentally in this study.

Furthermore, based on the literature review (see paragraphs above), the authors decided to formulate the following research hypothesis – in general, there is a positive relation between altruism and patience in the context of economic losses. This hypothesis is exploratory in nature, i.e. the authors were open to obtaining experimental results contradicting the formulated hypothesis, since the subjects' behaviour in the context of losses was often significantly different compared with that observed in the context of gains. Thus, a positive link between altruism and patience under financial gains (reported in the literature, see the discussion above) does not need to be the case under financial losses.

The paper is structured as follows. In the next section, the materials and methods are presented. Next, the obtained results are described. The subsequent section discusses the obtained results in light of relevant behavioural economics literature. The references conclude the main body of the article. Finally, instructions regarding the experiment constitute Appendix to the presented research report.

2. Materials and methods

In an online experiment, 102 respondents were asked to evaluate the amount of financial loss for themselves they would feel indifferent about in comparison to the financial loss for different people occupying positions on the social distance scale. The monetary loss was also due in varied time periods. Specifically, the experiment employed a titration algorithm by Holt et al. (2003) to find the amount of monetary loss a person is willing to bear so that he/she is indifferent to bearing that loss or

granting a loss of 2,900 PLN (about 620 EUR) to another person. Another person was defined by a social scale ranking (before each comparison, the respondents were asked to imagine who that person would be). The comparisons were made with the others (loss recipients) to be 1st, 5th, 20th, 50th, or 100th closest on the decision maker's social scale.

In addition, the time the loss is due also varies. For example, the loss can be expected to be covered immediately or within a horizon of six years (without interest). Therefore, the authors allowed cross-time comparisons, comparing the respondent's financial loss being due now versus the loss due in six years for another person and vice versa. Such a setting enabled to analyse delay and social discounting patterns in a controlled environment. Hence, the respondent needed to make 20 comparisons between the loss being granted to different people on their social scale or in different time frames. The precise instructions used in the experiment are given in Appendix.

The experiment was run between November 2021 and March 2022 – the original experimental program (written by an expert in JavaScript, the details and the program itself are available upon request) was uploaded on the university server and the links to the webpage with experiment were distributed electronically to the potential participants (university students – both at undergraduate and graduate levels). The authors recruited only those university students who expressed their informed consent to take part in the research. The experimental procedure measured the viewing times of screens (screens enable to take decisions concerning monetary losses) in order to screen out choices made without understanding the task. The authors also randomised the order of experimental series (delay of six months first, or delay of six years first) in order to control for the impact of the sequence of delays on choices made in the procedure. Finally, the study also controlled for the producers of web browsers of the participants in order to be able to detect possible technical errors.

3. Results

Figure 1 presents the average indifference points (in relative terms) for different persons on the social scale and regarding the time framework of the losses.

The high values of the indifference points are associated with altruistic behaviour. With higher indifference points, the participant is willing to bear a higher financial loss compared with granting a loss for somebody else. As shown in Figure 1, intuitively one can see that the indifference values decrease with social distance. This is consistent with intuition, as people often tend to care less about persons located further on their social distance scale (altruism is usually higher towards those who are socially closer to us). This pattern is similar within all time frames of the loss delay.

The analysis's key element was comparing the indifference values between different scenarios regarding the time the losses are due. Specifically, the following comparison pairs were made: first, between the immediate losses for both persons

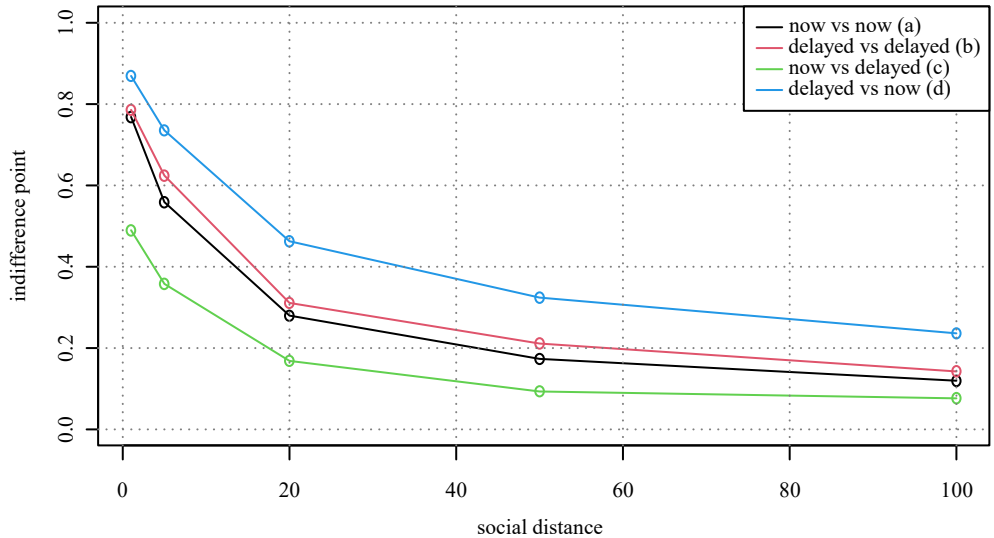

Fig. 1. Average indifference curves for different loss delay scenarios (detailed in the legend)

Source: authors' own work.

and the case where the loss for another person is delayed (a – c comparison). The second comparison was between the case where losses are delayed for both persons, and the scenario in which the loss is delayed only for the decision maker (b – d comparison).

The authors studied the comparisons through a *t*-test of the difference between averages for a given level of social distance. Table 1 presents the values of the *t*-test with respective *p*-values.

Table 1. *T*-test statistics of difference in means

Social distance:	1	5	20	50	100
now – now (a)	0.768	0.558	0.279	0.173	0.119
now – delayed (c)	0.489	0.358	0.168	0.093	0.077
t-statistic	5.84	4.15	2.81	2.55	1.54
p-value	(<0.001)	(<0.001)	(0.005)	(0.011)	(0.125)
delayed – delayed (b)	0.786	0.624	0.311	0.211	0.142
delayed – now (d)	0.869	0.735	0.432	0.324	0.236
t-statistic	–2.10	–2.256	–3.13	–2.60	–2.26
p-value	(0.0368)	(0.025)	(0.002)	(0.010)	(0.025)

Source: authors' own work.

It can be seen that delaying the loss payment for the decision maker's friend or relative has different effects depending on whether the loss for the decision-maker is delayed. For example, if the decision maker's loss is due now, he/she is more altruistic if the other person's loss also needs to be paid immediately rather than in six years. On the other hand, if the decision maker's loss payment is delayed, he/she is more altruistic if the other person's loss is due now. The differences are significant for the significance level $\alpha = 0.05$ apart from the first comparison pair for the social distance of 100.

Hence, a form of dynamic inconsistency is observed: delaying the loss has a different impact compared to one's loss of time of payment. This can be explained by stating that decision makers compare their situation with others on their social distance scale. If their payment is more immediate, they are more reluctant to be altruistic and vice versa.

Moreover, to obtain a synthetic measure of altruism, the authors employed the Area Under the Curve (AUC) method, cf. Myerson et al. (2001) to observe whether an altruistic person was also patient. Altruism was measured through AUC for the scenario in which there was no difference in the time the loss was due between parties. Patience was measured by the difference in AUC when one altering the loss of the decision maker to be due now.

To analyse the relation between altruism and patience, the study runs several OLS models. The altruism indication were regressed against the patience one and demographic variables (gender and age) as control variables. Specifically, the following dependent variables were employed:

- *AUC (now-now)*: the AUC value of scenario (a),
- *AUC (delayed-delayed)*: the AUC value of scenario (b),

and the following regressors:

- *diff-now*: difference in AUC value between the scenarios

The results of the regression analysis are presented in Table 2.

Table 2. OLS estimates

	Dependent variable:				
	AUC(now – now)			AUC(delayed – delayed)	
	(1)	(2)	(3)	(4)	(5)
diff-now	–0.270***	–0.368***	–0.233*		
	(0.096)	(0.107)	(0.126)		
diff-now^2		0.305*	0.120		
		(0.157)	(0.181)		
Sex			–0.010		–0.009
			(0.046)		(0.035)
Age			0.015**		0.008*

			(0.007)		(0.005)
diff-del				0.903***	0.874***
				(0.085)	(0.087)
Constant	0.281***	0.271***	–0.044	0.153***	–0.002
	(0.028)	(0.028)	(0.158)	(0.021)	(0.097)
Observations	102	102	102	102	102
R^2	0.074	0.108	0.146	0.528	0.541
Adjusted R^2	0.065	0.090	0.110	0.523	0.527
Residual Std. Error	0.235 (df = 100)	0.232 (df = 99)	0.229 (df = 97)	0.177 (df = 100)	0.176 (df = 98)
F Statistic	7.991*** (df = 1; 100)	5.997*** (df = 2; 99)	4.135*** (df = 4; 97)	111.770*** (df = 1; 100)	38.503*** (df = 3; 98)
Note:	$^{*}p < 0.1$; $^{**}p < 0.05$; $^{***}p < 0.01$				

Source: authors' own work.

The results of the econometric models enhance the suggestion of time inconsistency in individuals' behaviour. Look at the relation between individuals' altruism when both losses are due now and how they react to making the loss immediate for themselves, one can see that patient individuals are more altruistic; The negative coefficients near the difference variable indicate this. On the other hand, if the loss for the other party is delayed, a greater impatience is also related to greater altruism.

The study also examined the impact of gender and age as control coefficients, and no impact of gender on the relation mentioned above. In the case of age, one can see a slightly positive impact of age on altruism, given the level of patience.

4. Conclusion

The results presented above (see Table 1) provide empirical grounds for rejecting prior expectations concerning the comparison of scenarios (b) and (d). However, there is no empirical reason to reject expectations concerning comparing scenarios (a) and (c).

The empirical results show that in comparison of variants (a) and (c) – the comparison of the indifference point values – an increase in altruism (along the social distance axis) in scenario (a) is associated with the increase in altruism in variant (c). Furthermore, in the case of comparisons (b) and (d) – an increase in altruism under case (b) corresponds with an increase in altruism under case (d).

As a result, it can be said that, in the experiment, a positive correlation was observed between social discounting rates (and altruism) in the compared scenarios. Such a finding is partially consistent with prior expectations – i.e. expectations concerning comparisons of variants (b) and (d) should be rejected.

In the conducted experiment, it was also observed that the decision makers behave most altruistically in variant (d), and least altruistic in variant (c). As regards the remaining variants, variant (b) dominates over variant (a) on the altruism scale. The above differences in altruism patterns are statistically significant (see the results of *t*-tests in Table 1).

The regression models presented in the previous section show that greater patience (measured by the delay discounting rate) may or may not co-exist with greater altruism (measured by the social discounting rate). A positive correlation between altruism and patience depends on the temporal structure of the discounting task (temporal context of choice). When both the loss for the decision maker and for another person from the social distance scale is delayed (shifted in time), positive correlations between altruism and patience are not observed. Consequently, the study identified circumstances that allow to reject the research hypothesis in the form stated in the previous sections.

Moreover, it should be noted that altruistic behaviour (as measured by the value of equilibrium points) depends on (1) the temporal context of the decision problem and (2) social distance to another person. For example, the subjects turned out to be more altruistic if the monetary losses intended for them were delayed. On the other hand, when these losses were immediate, the individuals behaved significantly more selfishly. Therefore, it seems that in the context of financial losses, altruistic behaviour becomes active in a situation where the wellbeing of the decision maker (material or emotional) is not directly threatened.

Naturally, altruistic behaviour was less intense/visible in relation to people more distant on the social distance dimension. This seems rational as a person can show a greater empathy which is the foundation of altruistic behaviour towards people closer to oneself – those who are closer to oneself are usually socially bonded with stronger emotional ties.

An interesting result is that altruism increases as another person's loss is shifted along the time axis to earlier dates. Individual decisions seem to compensate other people for the burden of immediate losses. According to this mechanism, altruism diminishes when the loss of money to another person is delayed. The burden of loss seems less severe for other people – loss is indirect, distant in time. In such a situation, it is rational and understandable to limit the scale of altruism towards other people.

The obtained results also testify to the inconsistency of the observed preferences of the decision makers – hence, the specific preference reversal effect occurred. In a situation of immediate losses for the decision maker and another person, altruistic decisions are associated with lower discounting rates over time. However, when losses are postponed, preferences reverse, and altruistic decisions become associated with higher discounting rates over time. This means that in the event of immediate losses, the chances of getting help are greater from those who are patient, non-impulsive, or reflective. Yet, when the losses are distant in

time, one can rather expect the declared help from impulsive or impatient people. Another question remains whether the declaration of impulsive people will, in due time, be followed by a desire to uphold the declaration or rather an attempt to withdraw from a promise.

Interestingly, the above findings are independent of the gender of the participants. What is more, the age of the participants is of minor significance, as older people tend to be more altruistic. The latter result seems natural – experience and understanding life's complications and the need for mutual help grow with age. Yet, the independence of the results from gender shows that the discussed psychological mechanisms are quite deeply rooted in the human brain and are not subject to social modeling characteristics for a given gender.

In this study, it is also worth indicating the study's limitations and future research directions.

As for the limitations, the lack of strong incentives should be mentioned here, namely the financial losses in the experiments were only hypothetical and not real. For ethical and budgetary reasons, it was decided not to apply real losses in order not to expose the participants to financial losses. Another limitation of the study was the difficult epidemic conditions that forced the implementation of the experiments in a remote, online environment.

As regards future research directions, it is worth stressing (1) the need for replication of the experiment on other research samples, preferably involving representatives of the entire society, not necessarily Polish, and (2) the need to enrich the research with neuro-psychological analyses (identification of brain centres responsible for the discussed cognitive mechanisms), (3) the need of attempts to make the applied incentives real (perhaps small, compensated losses would be acceptable in the context of ethical assessments), (4) the need to test other delay periods (for example, six months were selected in the study, the course of altruistic behaviour with other time shifts is also interesting, i.e. very short and very long time shifts), (5) the need to test other amounts of monetary losses (this is of particular importance now, in the era of rapidly increasing inflation in the economy).

An interesting idea would also be to use incentives other than monetary, such as material incentives (item rewards or loss of some opportunities).

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Altruizm i cierpliwość w wyborach w kontekście strat finansowych – wnioski z eksperymentu

Streszczenie: Przy użyciu badania eksperymentalnego (n = 102) przeanalizowano związek między altruizmem (mierzonym za pomocą indywidualnych stop dyskontowania społecznego) a cierpliwością (mierzoną za pomocą dyskontowania w czasie) w warunkach strat finansowych. Dzięki algorytmowi miareczkowania (Holt, Green i Myerson, 2003) oraz wskaźnikowi powierzchni pod krzywą (Myerson, Green i Warusawitharana, 2001) możliwe było zastosowanie procedury dyskontowania do oceny altruizmu i cierpliwości jednostek. Odkryto, że altruizm i cierpliwość mogą, ale nie muszą być pozytywnie skorelowane w dziedzinie strat ekonomicznych. Okazuje się, że występowanie pozytywnej korelacji między altruizmem a cierpliwością (jak jest to przedstawiane w literaturze ekonomii behawioralnej w przypadku materialnych korzyści) zależy od struktury czasowej zadania dyskontowania (czasowego kontekstu wyboru). Gdy zarówno strata decydenta, jak i drugiej osoby ze skali społecznej jest opóźniona, nie obserwuje się dodatnich korelacji pomiędzy altruizmem a cierpliwością. To ostatnie odkrycie jest nowatorskie i poszerza wiedzę ekonomii behawioralnej na temat związku między altruizmem a cierpliwością w wyborach ekonomicznych.

Słowa kluczowe: altruizm, cierpliwość, dyskontowanie w czasie, dyskontowanie społeczne, ekonomia behawioralna.

Appendix – experimental instructions

'Please read the following instructions carefully. The study concerns the assessment of the value of financial losses. You will be asked to make a series of choices between the various monetary losses. Losses are hypothetical, i.e. you will not really lose these amounts. However, we ask you to indicate your preferences as if you were to really lose the sums presented. We are interested in your preferences. There are no right or wrong choices here. We have no expectations of you, except for you to choose according to your beliefs.

-- next screen --

Imagine that you have compiled a list of 100 people you know, sorted by social proximity. The first position on this list is the person you consider socially closest to you. In the last position there is a person whom, for example, you only know by sight (you recognize her/him, but you know little about her/him). You do not need to create this list physically, just imagine it. In the following task, we will ask you to make selections between Option A and Option B. Option A will correspond to a monetary loss for you, and Option B to a loss for someone else occupying a specific position on the list you have created.

We come to the right series of problems. START

EXERCISE
[two versions of the delay of the loss – half a year / six years – below is a description of the six-month delay]

The first series of problems.
Make a choice between a loss to you and a loss to another person, incurred immediately.

Option A: PLN 1,450 for you immediately
Option B: PLN 2,900 for person no. 1 immediately (in the next choices – no. 5, no. 20, no. 50, no. 100)

The second series of problems.
Make a choice between a loss for you and a loss for another person, losses in six months.

Option A: PLN 1,450 for you in six months
Option B: PLN 2,900 for person no. 1 in six months (no. 5, no. 20, no. 50, no. 100)

The third series of problems.
Make a choice between a loss to you in six months and an immediate loss to another person.

Option A: PLN 1,450 for you in six months
Option B: PLN 2,900 for person no. 1 immediately (no. 5, no. 20, no. 50, no. 100)

The fourth series of problems.
Choose between a loss to you incurred immediately and a loss to another person incurred in six months.

Option A: PLN 1,450 for you immediately
Option B: PLN 2,900 for person no. 1 in six months (no. 5, no. 20, no. 50, no. 100).