Social orientations as a function of relationships with different degree of intimacy, gender and social desirability

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In the present study we examined how relationships with different degree of intimacy, social desirability and gender influence the frequency of the four types of social orientations (the classification being based on Rapoport's typology; 1966, 1967): martyr, hero, leader and exploiter. 489 Hungarians filled in the questionnaire, which contained 11 conflict situations presented in the form of 2x2 games. The conflicts appeared to be between the participant and four other individuals at relationships with different degree of intimacy (Closest, Close, Medium and Distant).

According to our results as the degree of intimacy of relationships increases the frequency of martyr and hero social orientations decreases, while the frequency of leader and exploiter social orientations increases. Social desirability has but gender does not have a significant effect on the frequency of the four social orientations.

In everyday life people come into interdependent conflict with their possible enemies as well as with individuals whom they really like. People differ in the manner in which they approach interdependent others. Such individual differences are related to social value orientation, which is an individual preference for certain outcomes for oneself and another person (McClintock, 1972, 1978 Messick & McClintock, 1968). People have several relationships with different degree of intimacy and it is well known that they prefer different outcomes of conflicts depending on how intimate the relationship is. People experience many times that the outcome of a conflict can help but can also endanger the maintenance of the relationships. It is also a common experience that the frequency of the outcomes of conflicts is also a very important factor in maintaining the relationships. For example if one of a couple ignores his partner's interest several times in conflicts and prefers an outcome which is 'good' for himself but 'bad' for his partner, the other person may become unsatisfied with the relationship, and the relationship may break up. However, the maintenance of relationships with different degree of intimacy is not equally important for people because relationships differ from each other not only in their intimacy but also in their commitment and responsibility. In our study

we focused on the frequency of social orientation and investigated whether it is possible to trace general tendencies in the frequency of social orientations towards people at relationships with different degree of intimacy. We adopted the exchange theories (Chadwick-Jones, 1976 Thibaut & Kelly, 1959) to explain the effect of relationships with different degree of intimacy on the frequency of social orientations.

Social value orientations can be apprehended at two dimensions: the dimension of those being involved in the conflict ('myself' and 'the other'), and the distribution of gains and losses. The different typologies cover different areas of the two dimensions. In the most frequently used three- (e.g. Deutsch, 1960; Van Lange and Kuhlman, 1994; Van Lange et al., 1997), six- (e.g. Iedema & Poppe, 1995; Messick & McClintock, 1968; Liebrand et al., 1986) and eight-category (McClintock & Van Avermaet, 1982) typologies the gains and losses are on interval scale (see summary: Horváth, 2000).

In case of gains and losses are on ordinal scale social orientations can be integrated in a uniform system based on Rapoport's results (Rapoport, 1966, 1967) concerning 2x2 games: the individual orientations are separated by considering the fact that in the dimensions of gains and losses they can be characterized to a relatively higher or lower degree. In our study social orientations are defined (gains and losses are on ordinal scale) as the person's preference for the outcomes for oneself and another person, which appear due to the psychological pressure characterizing the four games: martyr (to reward the other while punishing him-

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self), hero (to reward both of them but the other more than himself), leader (to reward both of them but himself more than the other), and exploiter (to reward himself and to punish the other).

Several studies have proved the relation between social value orientation and behaviour, the value, the aggressive nature of criminal acts, the judgement and expectations in case of co-operation or competition, the perception of one's own and other people's social value orientations, attachment style and age (see summary: Horváth, 2000). In the present study we focused on the effects of relationships with different degree of intimacy, social desirability and gender on the reported frequency of the four social orientations.

Relationships with different degree of intimacy

There is ample evidence from research to prove that people's attitude and behavior towards others in relationships with different degree of intimacy differ. The relationships with high degree of intimacy (called communal relationships by Clark & Mills, 1979) are often exemplified by relationships between family members, friends or romantic partners. In these relationships members take care of the other's welfare and needs more, help the other more and cooperate with them more in conflict. The relationships with low degree of intimacy (called exchange relationships by Clark & Mills, 1979) are exemplified by relationships between acquaintances or business associates (Clark & Mills, 1979). In these relationships the other's consideration of one's needs should not be particularly high and members compete with each other in conflict (Clark & Mills, 1979 Clark et al., 1986 Clark et al., 1987 Clark et al., 1989 Schoeninger & Wood, 1969 Swingle & Gillis, 1968; see also Grzelak, 1988).

The first purpose of our study was to explore how the frequency of martyr, hero, leader and exploiter social orientations is influenced by relationships with different degree of intimacy.

The effect of relationships with different degree of intimacy on social orientations

Exchange theories (Chadwick-Jones, 1976 Thibaut & Kelly, 1959) presume that people strive for maximum gains in a relationship, i.e. they try to maximize their 'rewards' (gains) and minimize their 'expenses' (Chadwick-Jones, 1976). The theory claims that a relationship will last as long as the participants enjoy 'rewards' (gains). However, in close relationships (e.g. between relatives, friends) people do not always strive to maximize their own

gains (Clark & Mills, 1979). Thus, a later version of the theory suggests that altruistic and emphatic attitudes towards the other person should also be considered as the other's gain is often as important as one's own (Kelly & Thibaut, 1978). We presume that in relationships with different degree of intimacy the essential factors are:

(i), how important is it for the individual to maintain the relationship and

(ii), maintaining a relationship is influenced by what kind of outcome (gain or loss) is experienced through resolving the conflict and at what frequency.

Maintaining the relationships with high degree of intimacy is very important for people because they involve a high degree of not only intimacy but also commitment and responsibility (Argyle, 1988). To maintain relationships with low degree of intimacy are less important for people because they involve low degree of commitment and responsibility (Campbell et al., 1976; see also Forgas, 1985).

If a person's preference in a two-person conflict can be characterized by:

• martyr social orientation, he gets 'punishment', but the other person gets 'reward', because he causes himself great losses and the other person great gains,

• hero social orientation, both of them get 'rewards', but the other's reward is greater, as they both win but the other's gain is greater,

• leader social orientation, both get 'rewards", but the person's reward is greater because the both win but his gain is greater than the other's,

• exploiter social orientation, he gets 'rewards' but the other gets 'punishment' because he wins a lot but the other loses a little.

If in a relationship a person's preference in two-person conflicts can often be characterized by martyr or hero social orientation, the other person often experiences that his interest is taken into consideration to a higher extent than the respective person's. In case of these social orientations the person often gets himself great losses (martyr social orientation) or minor gains (hero social orientation) and the other person wins a lot and never loses. The fact that one's preference in two-person conflicts towards another person can often be characterized by martyr or hero social orientation is important mostly in relationships with high degree of intimacy (e.g. partnership) because it helps maintaining these important relationships. If in a relationship one's preference in two-person conflicts can often be characterized by leader or exploiter social orientation, the other person often experiences that his interest is taken into consideration to a lesser extent than the respective person's own interest. In case of these social orientations the person often gets himself great gains while the other person often wins less (leader social orientation) or rather loses a little (ex-

ploiter social orientation), therefore on his behalf the maintenance of the relationship is insecure. The fact that one's preference in two-person conflicts towards an other person can often be characterized by leader or exploiter social orientation is more likely in relationships with low degree of intimacy (e.g. acquaintances). The reason for this is that although these social orientations endanger the relationship people seem to be willing to take this risk because maintaining the relationships with low degree of intimacy is less important for them.

We suppose that as the degree of intimacy of relationships becomes higher and higher people's preference in two-person conflicts can more and more frequently be characterized by martyr and hero social orientations and less and less frequently by leader and exploiter social orientations because these tendencies help maintaining the more and more important relationships. On the other hand, as the degree of intimacy of relationships becomes lower and lower people's preference in two-person conflicts is more and more frequently characterized by leader and exploiter social orientations and less and less frequently by martyr and hero social orientations. This is due to the fact that although these tendencies endanger the maintenance of the relationship, people take this risk since maintaining the relationships with low degree of intimacy becomes less important.

Social desirability

When using questionnaires based on self-reports one should always consider the fact that the responses may be distorted by social desirability (Paulhus, 1991). This means that in their responses people try to present themselves in the best, socially accepted light. A Hungarian research proves that the degree of social desirability is different in case of martyr, hero, leader and exploiter social orientations (Takács et al., 1998).

The second purpose of our study was to reveal how the frequency of the four social orientations is influenced by social desirability.

Gender differences in social value orientation

Gender stereotypes maintain that men are more aggressive, more independent, more competitive and more self-confident, while women are more emotionally expressive, more nurturent, more altruistic, more gentle and more sensitive to the needs of others (Bem, 1974, 1993 Bergen & Williams, 1991 Eagly, 1987 Leuptow, 1985 Piliavin & Unger, 1985 Rosenkrantz et al., 1968 Ruble, 1983 Spence & Helmreich, 1978 also see: Durkin, 1997a). These stereo-

types suggest a link between social value orientation and gender, and prior research has revealed an evidence of it (e.g., McClintock & Liebrand, 1988 Van Lange, 1992; Van Lange et al., 1997). However, the samples in these studies consisted of primarily college students.

By using a representative sample of the adult population, the third purpose of our study was to explore whether the frequency of the four social orientations is influenced by gender or not.

Social orientation and game theory

In conflicts of everyday life the participants cannot determine the outcomes of the conflict in an exact sum of money. People only perceive that one of them gains or loses more or less than the other. This means that gains and losses are on ordinal scale (largest, next largest etc.). Therefore, we applied a different kind of typology of social orientation, in which the gains and losses are on ordinal scale.

If the given two-person conflict can be simplified and both persons involved can independently choose only from two alternatives (X and Y), moreover, if the gains and losses are on ordinal scale, the conflict can be modeled with 2x2 games (Rapoport, 1966, 1967). There are 78 different 2x2 symmetric games altogether out of which four involve a psychological conflict, because they present the four types of the 'psychological pressure' exerted on the players (Rapoport, 1966, 1967).

According to Rapoport (1966, 1967) the four games are the following: 'martyr', 'hero', 'leader' and 'exploiter'. (Martyr is also known as 'Prisoner's dilemma', leader can be 'Battle of Sexes', hero is known as 'Apology' or 'Let George do it', and exploiter can be 'Game of Chicken'.) Figure 1. shows the payoff matrix of these four 2x2 games. The first player is the row player and the second player is the column player. The first sign in the matrix shows the gain or loss of the row player, the second one shows that of the column player. Ordinal gains and losses are marked in the following way: '++' = great (maximum) gain, '+' = small gain, '-' = small loss, '- -' = great (maximum) loss.

'Maximin' is the strategy that will minimize the player's loss if he should suffer a loss (Rapoport, 1966). The so-called 'natural outcome' is the outcome of the game when both players choose the 'maximin' strategy (see: upper left cell of each matrix). In this case both parties avoid the choice, which would cause them the greatest loss (this being the lesser evil). However, the 'psychological pressure' in the games motivates the players to switch from the natural outcome towards another one. In case of three games (hero, leader, exploiter) switching from the natural outcome is motivated by the fact that it produces a more fa-
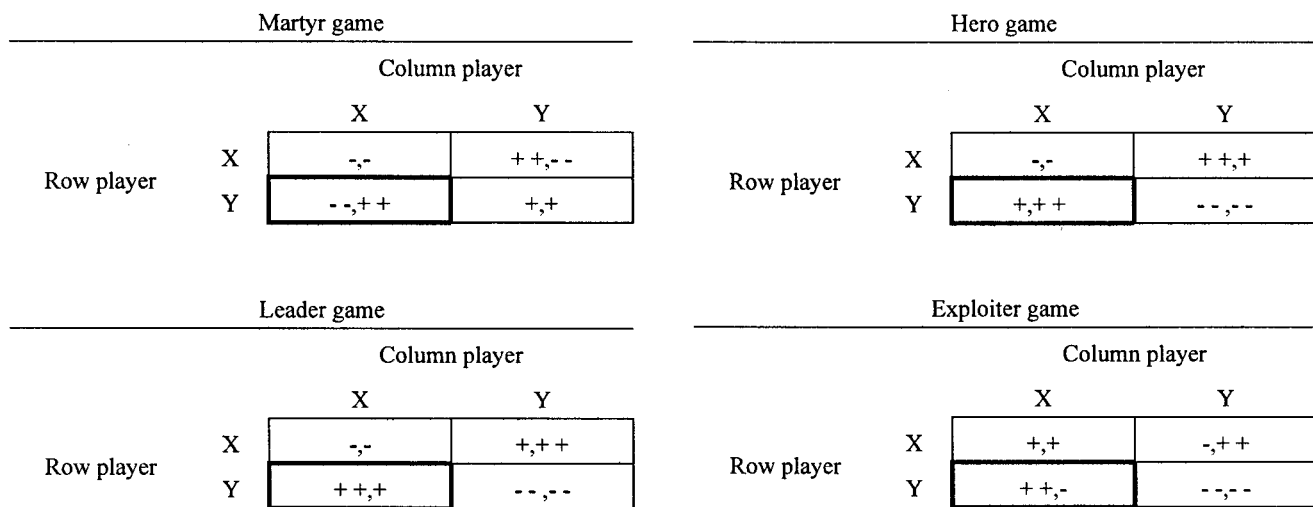
Martyr game

Column player

		X	Y
Row player	X	-,-	+ +,- -
	Y	- -,+ +	+,+

Hero game

Column player

		X	Y
Row player	X	-,-	+ +,+
	Y	+,+ +	- -,- -

Leader game

Column player

		X	Y
Row player	X	-,-	+,+ +
	Y	+ +,+	- -,- -

Exploiter game

Column player

		X	Y
Row player	X	+,+	-,+ +
	Y	+ +,-	- -,- -

Figure 1. Payoff matrix (2×2 games)

vourable outcome for the player who switches because he gets himself greater gain but only if the other insists on the natural outcome. However, if they both switch, they both lose the maximum ('YY' choice combination, see: lower right cell of each matrix). In the fourth game (martyr) neither of the players is motivated to switch from the natural outcome because if one of them unilaterally switches it results a more disadvantageous outcome for him as he loses but the other wins. However, in case they both switch, they both win. The names of the games refer to the consequences in case one player switches from the natural outcome while the other does not.

When the row player chooses 'Y', and the column player 'X', i.e. the row player switches from the natural outcome, while the column player does not (see: lower left cell of each matrix), the row player gives in to the 'psychological pressure' and he prefers the following outcome of the four games:

- in 'martyr' game: to reward the other while punishing himself, i.e. he gets himself great losses and the column player great gains ('- -,++' outcome),

- in 'hero' game: to reward both of them but the other more than himself, i.e. both of them gain but the column player gains more than himself ('+,++' outcome),

- in 'leader' game: to reward both of them but himself more than the other, i.e. both of them gain but he gains more than the column player ('++,+' outcome),

- in 'exploiter' game: to reward himself and to punish the other, i.e. he gets himself great gains and the column player small loss ('++, -' outcome).

In our research we define as 'martyr', 'hero', 'leader' and 'exploiter' social orientation (abbreviated as SO hence forward) when in the four games one of the players gives in to one type of the four psychological pressures (i.e. the player switches from the natural outcome) and prefers the above mentioned outcomes of the four games.

The calculation of the frequency of the four social orientations

The frequency of the four SOs was calculated as follows (see Figure 1, participant = row player, other person = column player):

- Step one: the identification of the four SOs in the four games:
  the four SOs appear when the participant chooses 'Y' and the other person chooses 'X'.

- Step two: calculating the frequency of the four SOs: the frequency of the 'YX' choice combinations equals the frequency of the four SOs in each game (Figure 2).

Frequency of	Martyr	Hero	Leader	Exploiter
choice's combination	"YX"	"YX"	"YX"	"YX"
outcome	(- -,++)	(+,++)	(++,+)	(++,-)

Figure 2. The frequency of the four social orientations

Aims and hypotheses

In our study the interpersonal relationship between the participant and the other person involved in the conflict was modelled with the order of different degree of intimacy. We distinguished four relationships with different degree of intimacy: Closest, Close, Medium and Distant. The first purpose of our study was to reveal how the frequency of the four SOs is affected by relationships with different degree of intimacy. It was measured by the effect of relationships with different degree of intimacy on the frequency of the four SOs. We presume that:

(a) with the increase of intimacy of the relationships it becomes more and more important for people to maintain a relationship, even to their own lesser gain or detriment. Consequently, the higher the degree of intimacy of relationships is, the more often the frequency of martyr and hero SOs and the less often the frequency of leader and exploiter SOs will be as foreseen by them.

(b) with the decrease of intimacy of the relationships maintaining a relationship becomes less and less important for people, thus the lower the degree of intimacy of relationships is, the more often the frequency of leader and exploiter SOs and the less often the frequency of martyr and hero SOs will be as foreseen by them.

Because of the fact that our questionnaire is based on self-reports in which the responses may be 'contamined' by social desirability, and the four SOs have different degrees of social desirability (Takács et al., 1998), the second purpose of our study was to explore how the frequency of the four SOs is influenced by social desirability. It was measured by the effect of social desirability on the frequency of the four SOs at relationships with different degree of intimacy. Because in case of martyr and hero SOs the other's interest is taken into consideration to a higher extent while in case of leader and exploiter SOs the other's interest is taken into consideration to a lesser extent, the martyr and hero SOs may be more socially desired than leader and exploiter SOs. Consequently, we presume that social desirability may:

(a) increase the frequency of martyr and hero SOs,

(b) decrease the frequency of leader and exploiter SOs.

Some prior research has revealed a link between social value orientation and gender, showing that the percentage of prosocials was higher among women than among men and the percentage of individualist was higher among man than among woman. Since the samples in these studies consisted primarily of college students, by using a representative sample of the adult population, the third purpose of our study was to reveal whether the frequency of the four SOs is influenced by gender or not. It was measured by the effect of gender on the frequency of the four SOs at rela-

tionships with different degree of intimacy. Starting from the existing -however weak- evidences we presume that:

(a) men estimate more often the frequency of leader and exploiter SOs than women,

(b) women estimate more often the frequency of martyr and hero SOs than men when facing people at different social distances.

METHODS

Participants

We asked the Population Record Office of the city of Nyíregyháza to make up a list for us containing 600 randomly chosen people over 19 years with their full names and addresses. Out of the 600 filled in questionnaires 486 (235 male, 254 female) were suitable for statistical processing (385 individuals employed, 7 unemployed, 28 retired and 36 students). Participants were 38.02 years old on average (age ranged from 19 years through 66). Professional interviewers, who visited the participants and explained how to fill in the questionnaires, gave the questionnaires.

Procedure

1. The two-person dilemmas

In the former studies the participant's social value orientation was usually assessed by using a series of decomposed games, which involve making choices among combinations of outcomes for oneself and for another person. However, decomposed games are less life-like because the participants see only some decomposed payoff matrices (e.g. Messick & McClintock, 1968; Van Lange & Kuhlman, 1994; Van Lange et al., 1997), the outcomes are presented in terms of an amount of money (e.g. Iedema & Poppe, 1995) or points (e.g. Van Lange & Kuhlman, 1994; Van Lange et al., 1997) and the participant does not have any information about who the other person can be.

We applied a different method. Two-person dilemmas were presented in 11 conflict situations as 2x2 games through real-life situations in a questionnaire based on self-reports. In the conflicts the 'other person' at the Closest relationship was the participant's romantic partner and the one at the Close relationship was a friend. Relationships with lower degree of intimacy can be modelled with several interpersonal relationships, thus at Medium relationship 'the other person' was a neighbour and a colleague

and at Distant relationship it was either an acquaintance the participant does not particularly like and a stranger. The questionnaire contains 3 conflicts with the participant's partner, 2 conflicts with a friend, 2 with a colleague, 2 with a stranger and 1 conflict with a neighbour and 1 with an acquaintance one does not particularly like. Using this method it is possible to involve a large number of participants over a relatively short period of time and we can get relevant information about people's social orientations towards individuals at relationships with different degree of intimacy.

In everyday life people usually have different conflicts of interests with others in relationships with different degree of intimacy. Therefore, the situations in the questionnaire demonstrated different real-life conflicts, which are typical in the relationships with different degree of intimacy. As we mentioned earlier, in close relationships (e.g. between relatives, friends) people do not always strive to maximize their own gains because in these relationships the other's gain is often as important as one's own (Clark and Mills, 1979; Kelly and Thibaut, 1978). Therefore, in the questionnaire the conflicts at relationships with higher degree of intimacy are 'stronger' (more serious) than at relationships with lower degree of intimacy. It means that the outcome of 'stronger' conflicts influences the parties' lives 'stronger' than the outcome of 'mild' conflicts. For example: the outcome of the conflict whether the participant or his/her friend will take the responsibility for a car crash influences the participant's as well as the other's life more than the outcome of the conflict whether the participant or a stranger will get the last object at the grocer's (see Appendix A).

Now we demonstrate the participant's task with the following example: 'Suppose that you and your partner are about to buy a car. You and your partner can choose from two cars (X and Y), one of which meets your requirements more, while the other meets your partner's requirements better. Since both of you can choose from two alternatives there are four possible outcomes representing your and your partner's choice-pairs. Depending on your and your partner's choice you and your partner get different 'gains' and 'losses', marked in the following way: '++' = great gain (to come off very well), '+'= small gain (to come off well a little), '-' = small loss (to come off badly a little), '- -' = great loss (to come off very badly).

Suppose that you and your partner get into 10 cases similar to that of the above mentioned. We ask you to estimate (and write in the table, see table 1) how frequently the four outcomes of the situation would occur in 10 similar cases.'

Most of the conflicts of everyday life may be represented by 'martyr', 'hero', 'leader' or 'exploiter' game because within the same situation the degree of gains and losses may be different (one can gain or lose much or little,

Table 1

Possible outcomes from two alternatives of partner's choice-pairs

Choice of		Consequence of		Frequency
you	your partner	you	your partner	
X	X	-	-	
X	Y	+ +	- -	
Y	X	- -	+ +	
Y	Y	+	+	
Total:				10

respectively). Consequently, depending on the game the person's preference can be characterized by the four SOs. Therefore, we presented each of the 11 situations in four variations (in accordance with the four games): 'martyr', 'hero', 'leader' and 'exploiter'. In the first part of the questionnaire, each of the 11 situations was presented as 'martyr' game (with the payoff matrix of 'martyr' game, Figure 1). In all the 11 situations the participant was asked to estimate the frequency of the four outcomes (XX, XY, YX, YY) in 10 similar cases. In the next part of the questionnaire, the 11 situations were the same but this time they were presented as 'hero' game (with the payoff matrix of 'hero' game, Figure 1). The participant's task was the same (to estimate the frequency of the four outcomes) but because of being 'hero' the gains and losses of the four outcomes were different from 'martyr' game. In the third and the fourth part of the questionnaire, the same 11 situations were presented as 'leader' and 'exploiter' game and the participant's task was the same. We were interested in what preferences the participant had regardless of the choices of the other thus the participant would only guess the other's choices (Appendix A contains the remaining conflicts included in the questionnaire).

2. The frequency of the four SOs at relationships with different degree of intimacy

The frequency of the four SOs at relationships with different degree of intimacy was calculated as follows:

- Step one: we added up separately the frequency of the four SOs in the situations in which the relationship is Closest, Close, Medium and Distant.
- Step two: the frequency of the four SOs at Closest, Close, Medium and Distant relationship was averaged (e.g. in two situations at close relationship the other person is a friend; in these two situations the frequency of the four SOs was added up separately and divided up by 2).

3. Measurement of social desirability

The degree of social desirability in case of the four SOs is different (Takács et al., 1998), fact which may alter their estimated frequency at relationships with different degree of intimacy. In order to find out to what extent the tendency for social desirability affects the frequency of the four SOs at relationships with different degree of intimacy we employed the Marlowe-Crowne Social Desirability Scale (MCSD; Crowne and Marlowe, 1960). The scale includes 33 items. The subjects were asked to mark the ones they agree with or think they apply to them.

In the present study, as in others (Ballard, 1992; Fischer & Fick, 1993; Robert & Karran, 2000), the internal consistency of the full scale (33 items) was judged to be unacceptable ($\alpha = .68$). In order to increase the reliability of Cronbach α to an acceptable level, we discarded 13 items. After discarding these items the resultant internal consistency was judged to be acceptable ($\alpha = .74$). (Appendix B contains the remaining items included in the questionnaire.)

RESULTS

In order to investigate the effects of relationships with different degree of intimacy, gender and social desirability on the frequency of the four SOs we applied a general linear model (GLM) procedure. The GLM repeated measures procedure provides analysis of variance when the same measurement is made several times on each participant or case. Moreover, if between subjects factors are specified, they divide the population into groups. We can test hypotheses about the effects of the between-subjects (in our case = gender) as well as the within-subjects (in our case = relationships with different degree of intimacy) factors. Because social desirability as a covariate was also included we can reveal the interactions between them (gender x relationships with different degree of intimacy, relationships with different degree of intimacy x social desirability).

The between-subjects effects show whether the social desirability, gender and their interaction have significant effect on the frequency of the four SOs or not. It reveals that social desirability has a significant effect on the frequency of the four SOs [martyr: $F(1,481)= 10.01, p<.05$; hero: $F(1,481)=29.47, p<.001$; leader: $F(1,481)=20.04, p<.001$; exploiter: $F(1,481)=30.28, p<.001$]. It also revealed that gender has no significant effect on the frequency of either of the four SOs. It means that there is no significant difference in the frequency of the four SOs between males and females. Moreover, the interaction between gender and social desirability has not significant effect on the frequency of the four SOs. That is, social desir-

ability has no different effect on the frequency of the four SOs with regard to gender.

The within-subject effects show whether the relationships with different degree of intimacy, gender, social desirability and their interactions have a significant effect on the frequency of four SOs or not. Because Mauchly's test of sphericity was significant, the within-subject effects were adjusted according to Huynh-Feldt criteria. It reveals that relationships with different degree of intimacy have a highly significant effect on the frequency of all the four SOs. That is, the frequencies of the four SOs at relationships with different degree of intimacy are significantly different. The interaction between relationships with different degree of intimacy and social desirability has also highly significant effect on the frequency of hero, leader and exploiter SOs. It means that social desirability has a different effect on the frequency of hero, leader and exploiter SOs at relationships with different degree of intimacy (Appendix C).

In order to reveal how the frequency of the four SOs is affected at relationships with different degree of intimacy by social desirability, gender and their interactions we estimated the model parameters. Appendix D shows that social desirability increases the frequency of martyr SO at Distant and it also increases the frequency of hero SO in an increasing way at Close, Medium and Distant relationships. This means that people significantly overestimate the frequency of martyr SO at Distant and they increasingly overestimate the frequency of hero SO at Close, Medium and Distant relationships. Moreover, social desirability decreases the frequency of leader SO at Closest, Medium and Distant and it also decreases in an increasing way the frequency of exploiter SO at Medium and Distant relationships. That is people significantly underestimate in an increasing way the frequency of leader SO at Closest, Medium and Distant as well as the frequency of exploiter SO at Medium and Distant relationships.

The tests of within-subjects effects have revealed that relationships with different degree of intimacy have a highly significant effect on the frequency of all the four SOs (Appendix C). In order to explore how the relationships affect the frequency of the four SOs, we estimated the marginal means. It can be seen that with the decrease of intimacy the frequency of martyr and hero SOs decreases while the frequency of leader and exploiter SOs increases in a strictly and monotonous way (Appendix E).

In order to reveal whether the decrease of the frequency of martyr and hero SOs and the increase of the frequency of leader and exploiter SOs from a relationship to the next one is significant or not we computed special 'repeated' tests of within-subjects contrast. Appendix F 4 shows that the frequency of martyr SO decreases significantly only from Medium to Distant, the frequency of hero SO also de-

Table 2

Gender differences in the frequencies of the four SOs without the effect of social desirability

SO	Social distances	Men		Women	
		M	SD	M	SD
Martyr	Closest **	2.051	0.106	2.349	0.102
Hero	Closest **	3.921	0.091	4.240	0.088
Leader	Closest **	4.616	0.101	4.294	0.097
	Close **	4.960	0.125	4.508	0.120
Exploiter	Closest **	2.691	0.112	2.303	0.108
	Distant **	5.539	0.193	4.970	0.186

** $p < 0.05$

creases significantly from each relationship to the next one. The frequency of leader SO increases significantly from Close to Medium, and from Medium to Distant, and the frequency of exploiter SO also increases from each relationship to the next one.

Moreover, it also reveals how the interaction between the relationships with different degree of intimacy and social desirability affect the change of frequency of the four SOs from a relationship to the next one. It is also seen that social desirability significantly increases the decrease of the frequency of martyr SO from Medium to Distant, and decreases the increase of the frequency of leader and exploiter SOs from Close to Medium. It means that people significantly overestimate the decrease of the frequency of martyr SO from Medium to Distant and they significantly underestimate the increase of the frequency of leader and exploiter SOs from Close to Medium.

Recomputing the model parameters and excluding the effect of social desirability reveals that gender has significant effect on the frequency of hero [$F(1,487)=6.44$, $p<.05$], leader [$F(1,487)=5.92, p<.05$], and exploiter [$F(1 487)=5.75, p<.05$] SOs. Excluding the effect of social desirability reveals that gender has significant effect on the frequency of martyr and hero SOs at Closest ($p<.05$), on the frequency of leader SO at Closest and Close ($p<.05$) and on the frequency of exploiter SO at Closest and Distant ($p<.05$). Without the effect of social desirability men's frequency of leader SO at Closest and Close and exploiter SO at Closest and Distant relationships becomes significantly higher than women's, and women's frequency of martyr and hero SOs becomes higher at Closest relationship than men's (Table 2).

GENERAL DISCUSSION

In the present study we investigated how the martyr, hero, leader and exploiter SOs are affected by relationships with different degree of intimacy, gender, social desirability and their interactions. We presented 11 two-person dilemmas as 2x2 games through real-life situations in a self-reported questionnaire. The conflicts appeared to be between the participant and another person at relationships with different degree of intimacy (Closest, Close, Medium and Distant). The participants were asked to estimate how frequent the four outcomes of the situations (presented as 2x2 games) would occur in 10 cases. Martyr, hero, leader and exploiter SOs are defined as the person's preference for the outcomes for oneself and for another person, which appears due to the psychological pressure characterizing the four games (Rapoport, 1966, 1967).

This research reveals first that with the increase of intimacy of the relationship people estimate more and more often the frequency of martyr and hero SOs and less and less often the frequency of leader and exploiter SOs. Although the conflicts are 'stronger' at relationships with higher degree of intimacy and they are 'milder' at relationships with lower degree of intimacy people estimate the most frequently the frequency of martyr and hero SOs at the most intimate relationship (towards their partner) and the frequency of leader and exploiter SOs at the less intimate relationships (towards a stranger or an acquaintance they do not particularly like). Our finding is congruent with research results according to which people involved in communal relationships with high degree of intimacy (e.g. partnership) take care of the other's welfare and needs more while in exchange relationships with low degree of intimacy (e.g. acquaintance) the interest in the other's needs

should not be particularly high (Clark & Mills, 1979 Clark et al., 1986 Clark et al., 1989).

Our results can be explained by adopting the exchange theory (Chadwick-Jones, 1976 Thibaut & Kelly, 1959) according to which in relationships with different degree of intimacy a significant role is played by the 'importance' of maintaining the relationship. Moreover, the maintenance of the relationship is influenced by the 'reward' or 'punishment' (gain or loss) the participants get as an outcome of the conflict and by how frequently it occurs. In relationships with high degree of intimacy people seem to care about the other's needs and welfare more and have higher degree of commitment, intimacy and responsibility than in relationships with low degree of intimacy (Argyle, 1988 Clark and Mills, 1979 Clark et al., 1986). Therefore, it is more important for people to maintain the relationships with high degree of intimacy than with low degree of intimacy (Campbell et al., 1976 see also Forgas, 1985).

Our results proved our theory right as the degree of intimacy of relationships becomes higher and higher, the frequency of martyr and hero SOs increases and the frequency of leader and exploiter SOs decreases. These tendencies show that - although the conflicts are 'stronger'- people more and more often consider the other person's interest more than their own interest and less and less often consider their own interest more than the other's. Consequently, these tendencies help maintaining the relationships with high degree of intimacy, which are very important for people. As the degree of intimacy of relationships becomes lower and lower the frequency of martyr and hero SOs decreases and the frequency of leader and exploiter SOs increases. These tendencies show that - although the conflicts are 'milder'- people more and more often consider the other person's interest more than their own interest and less and less often consider their own interest more than the other's. So, these tendencies endanger the maintenance of the relationships. However, to maintain relationships with low degree of intimacy is less important for people.

A second major finding of our research is that social desirability increases the frequency of martyr SO at Distant, and also increases the frequency of hero SO in an increasing way at Close, Medium and Distant. On the other hand, social desirability decreases the frequency of leader SO at Closest, Medium and Distant in an increasing way as well as the frequency of exploiter SO at Medium and Distant. In this attempt to 'look better' on the one hand people overestimate the frequency of martyr SO at Distant and they overestimate more and more the frequency of hero SO at Close, Medium and Distant. On the other hand, they underestimate more and more the frequency of leader SO at Closest, Medium and Distant as well as the frequency of exploiter SO at Medium and Distant. Our finding confirms the re-

sults of a former Hungarian research according to which the degree of social desirability is different in case of martyr, hero, leader and exploiter SOs (Takács et al., 1998).

A third finding of our research is that there were no significant gender differences in the frequency of any of the four SOs. The reason for this result can be that the effect of social desirability is 'stronger' than the effect of gender, because without the effect of social desirability significant gender differences appear. That is, without the effect of social desirability men's frequency of leader at Closest and Close and exploiter SO at Closest and Distant becomes significantly higher than women's, and women's frequency of martyr and hero SOs becomes higher than men's at Closest. Thus, an answer to the question why studies on gender differences have found some inconsistencies (Durkin, 1997b) may be that if we investigate the dimensions affected by social desirability, gender differences disappear. However, if we measure the dimensions, which are not affected by social desirability, the gender differences may appear.

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APPENDIX A

Situations:

Suppose that:

- You and your partner have saved a large sum, which you want to invest. You can choose from two alternatives (X and Y) one of which is more favourable for you but less favourable for your partner, while the other is more favourable for your partner but less favourable for you. Depending upon which alternative you choose (separately), different advantages and disadvantages may occur.

- You or your partner are offered a long (a couple of years) further training course abroad. You have two alternatives (X and Y) to decide whether to accept or turn down this offer.

- You and a friend would like to buy the same flat, which is a special offer. You have two alternatives (X and Y) to decide who buys the flat.

- You and a friend are travelling in either your or your friend's car when you have an accident. There are two alternatives (X and Y): either you or your friend will take the responsibility for the crash.

- You and a neighbour are supposed to share the cleaning of the corridor which you both use. You have two alternatives (X and Y) to decide whether you want to take your share or not.

- You and a colleague are assigned a new project and you are supposed to make a decision on how you want to split responsibilities. Depending on how you do the job one of you will be promoted and given a payrise. You have two alternatives (X and Y): how to split responsibilities.

- You and a colleague are assigned a new project and you are supposed to make a decision on how you want to split responsibilities. Depending on how you do the job, one of you will be dismissed. You have two alternatives (X and Y): how to split responsibilities.

- You and a stranger get to the ticket office at the railway station at the same time. You are both in a hurry because you are going to an important meeting and the train is due to depart any minute. You and the stranger have two alternatives (X and Y): get your ticket or put off the journey.

- You are doing some shopping at the grocer's, when you catch sight of something you would like to get very much. You realise that a stranger is interested in the same thing. The problem is that it is the last one. You and the stranger have two alternatives (X and Y): stick to the product or give up the idea of buying it.

- You and an acquaintance you do not particularly like would like to buy the same (home) appliance, because it has a good price. You have two alternatives (X and Y): stick to it or give up the idea of buying it.

APPENDIX B

1. I have never felt real antipathy for anybody.
2. If I could go into a movie without buying a ticket and being realized I would probably do it.
3. It happened that I rebelled against respected persons although I knew that they were right.
4. Whoever I talk I always listen to him/her very carefully.
5. I am willing to admit my faults.
6. It happened sometimes I have swindled others.
7. I always try to do what I preach.
8. Sometimes I would rather try to get square with somebody than forgive or forget.
9. I am always polite even with annoying people.
10. Sometimes I insist that things happen the way I like.
11. Sometimes I felt that I wanted to smash and crash everything around me.
12. It would not even come to my mind to let somebody suffer because of my fault.
13. I never bear somebody a grudge for asking me to return a kindness.
14. I have never been annoyed when people's opinion was totally different from mine.
15. I used to be really jealous of other's fortune.
16. I have almost never felt an argent desire to dress somebody down.
17. Sometimes people who asked me to do a favor bother me.
18. If others are in trouble sometimes I think they just got what the deserved.
19. I have never said anything on purpose that hurt others.
20. I never omit to pretend to be sick if it helps me avoid trouble.

APPENDIX C

The effect of relationships, gender, social desirability, and their interactions on the frequency of the four SOs

	Source	Type III Sum of Squares	df	MS	F
	Relationships	24.499	2.827	8.666	5.459 ***
	Relationships * Gender	3.292	2.827	1.165	.734
Martyr	Relationships *Social desirability	5.787	2.827	2.047	1.290
	Relationships *gender* social desirability	1.242	2.827	.439	.277
	Error (Relationships)	2158.677	1359.724	1.588	
	Relationships	234.982	2.639	89.052	56.710 ***
	Relationships * Gender	4.135	2.639	1.567	.998
Hero	Relationships *Social desirability	19.071	2.639	7.227	4.602 **
	Relationships *gender* social desirability	3.843	2.639	1.457	.928
	Error (Relationships)	1993.048	1269.212	1.570	
	Relationships	238.717	2.571	92.849	45.994 ***
	Relationships * Gender	3.654	2.571	1.421	.704
Leader	Relationships *Social desirability	22.745	2.571	8.847	4.382 **
	Relationships *gender* social desirability	2.706	2.571	1.053	.521
	Error (Relationships)	2496.498	1236.668	2.019	
	Relationships	583.341	2.506	232.755	65.109 ***
	Relationships * Gender	3.150	2.506	1.257	.352
Exploiter	Relationships *Social desirability	82.883	2.506	33.070	9.251 ***
	Relationships *gender* social desirability	5.743	2.506	2.292	.641
	Error (Relationships)	4309.515	1205.502	3.575	

*** $p < .001$,   ** $p < .05$

APPENDIX D

The effect of gender, social desirability, and their interactions on the frequency of the four SOs at relationships

SO	Dependent Variable (relationships)	Parameter	B	SE	t
Martyr	Closest	Intercept	2.071	.290	7.140 ***
		[Gender = male]	-.502	.419	-1.198
		Social desirability	.026	.025	1.050
		Gender*Social desirability	.020	.037	.558
	Close	Intercept	1.562	.295	5.298 ***
		[Gender = male]	.145	.426	.339
		Social desirability	.041	.025	1.628
		Gender*Social desirability	-.01116	.037	-.300
	Medium	Intercept	1.420	.239	5.941 ***
		[Gender = male]	-.086	.346	-.249
		Social desirability	.022	.021	1.066
		Gender*Social desirability	.001	.030	.033
	Distant	Intercept	.995	.256	3.883 ***
		[Gender = male]	-.060	.371	-.162
		Social desirability	.065	.022	2.948 **
		Gender*Social desirability	-.010	.032	-.298
Hero	Closest	Intercept	3.954	.250	15.794 ***
		[Gender = male]	-.389	.362	-1.075
		Social desirability	.026	.022	1.222
		Gender*Social desirability	.006	.032	.202
	Close	Intercept	3.034	.263	11.535 ***
		[Gender = male]	-.201	.380	-.528
		Social desirability	.051	.023	2.249 **
		Gender*Social desirability	-.001	.033	-.036
	Medium	Intercept	2.211	.244	9.050 ***
		[Gender = male]	-.104	.353	-.294
		Social desirability	.077	.021	3.688 ***
		Gender*Social desirability	-.006	.031	-.179
	Distant	Intercept	.903	.272	3.325 ***
		[Gender = male]	.329	.393	.838
		Social desirability	.120	.023	5.143 ***
		Gender*Social desirability	-.050	.034	-1.468
Leader	Closest	Intercept	5.009	.274	18.260 ***
		[Gender = male]	.394	.397	.993
		Social desirability	-.066	.024	-2.800 **
		Gender*Social desirability	-.009	.035	-.249
	Close	Intercept	4.962	.342	14.524 ***
		[Gender = male]	.713	.494	1.444
		Social desirability	-.042	.029	-1.439
		Gender*Social desirability	-.027	.043	-.627
	Medium	Intercept	6.539	.373	17.526 ***
		[Gender = male]	.017	.540	.031
		Social desirability	-.110	.032	-3.448 ***
		Gender*Social desirability	.025	.047	.524
	Distant	Intercept	7.442	.469	15.870 ***
		[Gender = male]	.428	.678	.631
		Social desirability	-.126	.040	-3.125 **
		Gender*Social desirability	-.000	.059	-.004
Exploiter	Closest	Intercept	2.646	.306	8.655 ***
		[Gender = male]	.817	.442	1.848
		Social desirability	-.031	.026	-1.190
		Gender*Social desirability	-.040	.039	-1.045
	Close	Intercept	3.522	.381	9.243 ***
		[Gender = male]	.382	.551	.694
		Social desirability	-.060	.033	-1.836
		Gender*Social desirability	-.008	.048	-.164
	Medium	Intercept	5.072	.414	12.266 ***
		[Gender = male]	.530	.598	.887
		Social desirability	-.135	.036	-3.812 ***
		Gender*Social desirability	-.024	.052	-.452
	Distant	Intercept	7.002	.517	13.551 ***
		[Gender = male]	.187	.747	.251
		Social desirability	-.187	.044	-4.210 ***
		Gender*Social desirability	.033	.065	.502

*** p < .001,　　 ** p < .05

Evaluated at covariates appeared in the model: social desirability = 10.75, α=.01, Gender female parameter is set to zero.

APPENDIX E

The frequencies of the four SOs

SO	Intercept (Grand Mean)		Between subjects Gender			Within subjects Relationships			Interaction Relationships × gender			
	M	SD		M	SD		M	SD			M	SD
Martyr	1.864	.049	M	1.802	.071	Closest	2.210	.074	M	Closest	2.069	.106
			F	1.927	.068	Close	2.018	.075		Close	2.031	.108
						Medium	1.618	.061		Medium	1.580	.088
						Distant	1.611	.065		Distant	1.529	.094
									F	Closest	2.352	.102
										Close	2.006	.104
										Medium	1.656	.084
										Distant	1.693	.090
Hero	3.149	.046	M	3.036	.067	Closest	4.077	.064	M	Closest	3.916	.092
			F	3.263	.064	Close	3.473	.067		Close	3.366	.096
						Medium	2.961	.062		Medium	2.880	.089
						Distant	2.087	.069		Distant	1.981	.099
									F	Closest	4.237	.088
										Close	3.580	.093
										Medium	3.043	.086
										Distant	2.193	.096
Leader	5.241	.079	M	5.420	.113	Closest	4.450	.070	M	Closest	4.601	.100
			F	5.062	.109	Close	4.720	.087		Close	4.931	.125
						Medium	5.492	.095		Medium	5.633	.137
						Distant	6.301	.119		Distant	6.514	.172
									F	Closest	4.299	.097
										Close	4.508	.120
										Medium	5.351	.131
										Distant	6.088	.165
Exploiter	3.636	.079	M	3.823	.114	Closest	2.502	.078	M	Closest	2.694	.112
			F	3.449	.110	Close	3.025	.097		Close	3.174	.139
						Medium	3.755	.105		Medium	3.893	.151
						Distant	5.263	.131		Distant	5.532	.189
									F	Closest	2.310	.108
										Close	2.876	.134
										Medium	3.616	.146
										Distant	4.993	.182

Evaluated at covariates appeared in the model: social desirability = 10.75, α= .01, M = male, F = female.

APPENDIX F

The effect of relationships, gender, social desirability, and their interactions on the change of frequencies of the four SOs

SO	Source	Social distance	Type III Sum of Squares	Df	MS	F
Martyr	Relationships	Closest vs. Close	2.035	1	2.035	.598
		Close vs. Medium	3.949	1	3.949	1.609
		Medium vs. Distant	10.127	1	10.127	4.837 **
	Relationships * Gender	Closest vs. Close	6.240	1	6.240	1.836
		Close vs. Medium	.792	1	.792	.323
		Medium vs. Distant	.010	1	.010	.005
	Relationships * Social desirability	Closest vs. Close	.004	1	.004	.001
		Close vs. Medium	1.385	1	1.385	.564
		Medium vs. Distant	11.145	1	11.145	5.324 **
	Relationships * Gender * Social desirability	Closest vs. Close	1.951	1	1.951	.574
		Close vs. Medium	.289	1	.289	.118
		Medium vs. Distant	.220	1	.220	.105
	Error (Relationships)	Closest vs. Close	1635.221	481	3.400	
		Close vs. Medium	1180.719	481	2.455	
		Medium vs. Distant	1006.918	481	2.093	
Hero	Relationships	Closest vs. Close	40.725	1	40.725	15.591 ***
		Close vs. Medium	35.755	1	35.755	16.827***
		Medium vs. Distant	71.003	1	71.003	38.055 ***
	Relationships * Gender	Closest vs. Close	.529	1	.529	.203
		Close vs. Medium	.139	1	.139	.066
		Medium vs. Distant	2.794	1	2.794	1.498
	Relationships * Social desirability	Closest vs. Close	3.368	1	3.368	1.289
		Close vs. Medium	4.680	1	4.680	2.202
		Medium vs. Distant	3.190	1	3.190	1.710
	Relationships * Gender * Social desirability	Closest vs. Close	.113	1	.113	.043
		Close vs. Medium	.036	1	.036	.017
		Medium vs. Distant	3.931	1	3.931	2.107
	Error (Relationships)	Closest vs. Close	1256.436	481	2.612	
		Close vs. Medium	1022.067	481	2.125	
		Medium vs. Distant	897.448	481	1.866	
Leader	Relationships	Closest vs. Close	.767	1	.767	.237
		Close vs. Medium	89.971	1	89.971	34.789 ***
		Medium vs. Distant	73.250	1	73.250	30.505 ***
	Relationships * Gender	Closest vs. Close	1.522	1	1.522	.470
		Close vs. Medium	7.229	1	7.229	2.795
		Medium vs. Distant	2.519	1	2.519	1.049
	Relationships * Social desirability	Closest vs. Close	1.656	1	1.656	.511
		Close vs. Medium	14.109	1	14.109	5.455 **
		Medium vs. Distant	6.075	1	6.075	2.530
	Relationships * Gender * Social desirability	Closest vs. Close	.663	1	.663	.205
		Close vs. Medium	5.234	1	5.234	2.024
		Medium vs. Distant	1.219	1	1.219	.508
	Error (Relationships)	Closest vs. Close	1557.876	481	3.239	
		Close vs. Medium	1243.965	481	2.586	
		Medium vs. Distant	1155.008	481	2.401	
Exploiter	Relationships	Closest vs. Close	25.831	1	25.831	5.738 **
		Close vs. Medium	157.261	1	157.261	35.451 ***
		Medium vs. Distant	184.303	1	184.303	37.519 ***
	Relationships * Gender	Closest vs. Close	2.816	1	2.816	.626
		Close vs. Medium	.326	1	.326	.073
		Medium vs. Distant	1.753	1	1.753	.357
	Relationships * Social desirability	Closest vs. Close	1.245	1	1.245	.276
		Close vs. Medium	54.198	1	54.198	12.218 ***
		Medium vs. Distant	4.259	1	4.259	.867
	Relationships * Gender * Social desirability	Closest vs. Close	2.062	1	2.062	.458
		Close vs. Medium	.483	1	.483	.109
		Medium vs. Distant	6.206	1	6.206	1.263
	Error (Relationships)	Closest vs. Close	2165.444	481	4.502	
		Close vs. Medium	2133.700	481	4.436	
		Medium vs. Distant	2362.772	481	4.912	

*** $p < .001$;   ** $p < .05$