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Agata Gąsiorowska*
 Anna M. Helka*

Psychological consequences of money and money attitudes in dictator game

According to the research conducted by Vohs, Mead, and Goode (2006, 2008), reminders of money cause people to behave self-sufficiently, and especially to reveal a reduced tendency to charitable behaviour. In this study, we wanted to establish if this tendency would be present in the dictator game, and if so, whether money activation would just change behaviour, or whether it would also change people's evaluation of their own decisions. We assumed that people who revealed symbolic and instrumental money attitudes would react differently to money activation. As expected, money priming caused smaller money transfers compared to the control condition, and this effect was significant among those with symbolic attitudes toward money. Moreover, participants who transferred at least half of the sum after money activation declared stronger negative emotions and lower satisfaction with the decision than those who made similar transfers in the control condition.

Keywords: money, priming, money attitudes, pro-social preferences, dictator game

Introduction

Psychological consequences of money priming

Money is one of the most ubiquitous and, at the same time, exceptional things. From the economic point of view, it is a universal, instrumental, market-driven force, which might be defined by the functions that it fulfils as a medium of exchange, a store of value, and a unit of account. However, from the psychological point of view, money is not universal (some forms of money are reserved for special situations, and one cannot use it in other situations), is more symbolic and emotional than instrumental, and might be perceived as a social resource used in interpersonal and intrapersonal regulation. This dichotomy is represented, for example, in the theory of *sacrum* and *profanum* (Belk & Wallendorf, 1990), the theory of money as a tool and money as a drug (Lea & Webley, 2006), and in numerous studies on money attitudes. Moreover, scholars belonging to a very interesting stream in research on the symbolic aspects of money have examined how subtle reminders of money influence human cognition and behaviour.

Vohs et al.'s (2006, 2008) experiments on the psychological consequences of money suggest that money activation causes people to behave self-sufficiently, in other words to make efforts to attain personal goals and prefer

separation from others. When participants were reminded about money they preferred to play alone, to work alone, not to ask for help, not to help others, and to keep a greater physical distance between themselves and others; they were not prone to donating. However, there are two sides to the effects of money activation: the negative one is reduced helpfulness and separation from others; the positive one is persistence in challenging tasks or taking on more work for oneself (Vohs et al., 2006, 2008). Self-sufficiency in this case might be understood as the tendency to rely on money, one's own investments, and to think about strategic goals – this is consistent with the “market-pricing” concept of social relations suggested by Fiske (1992) – it means that money leads to a perspective of the world that emphasizes inputs and outputs with the expectation of equity. Kay, Wheeler, Bargh and Ross (2004) found a similar effect, showing that exposing undergraduate students to business-related objects is sufficient to produce less cooperative behaviour.

Further research on money activation suggests that money can substitute for social acceptance, and it might have common underlying mechanisms to the responses to social distress and physical pain; furthermore, it can also reduce the latter. Interpersonal rejection and physical pain increase the desire for money, and money reminders reduce

* Warsaw School of Social Science and Humanities, 53–238 Wrocław, Ostrowskiego Street 30 Poland, e-mail: ahelka@swps.edu.pl

distress over social exclusion and the physical pain of immersion in hot water (Zhou, Vohs, & Baumeister, 2009). Probably, money also substitutes for other social resources such as, for example, social attractiveness, friendship, and social support, as well as inner resources such as intelligence or self-esteem (Zhang, 2009).

The experiments on the consequences of money priming have mainly considered the mechanisms of social behaviour (Vohs et al., 2006, 2008) or the evaluation of social situation (Zhou et al., 2009). However, in one study conducted by Vohs and her colleagues (2006), a dependent variable was the amount of money given to the University Student Fund, and there is no doubt that this kind of charity is an economic behaviour. It might lead to the conclusion that money priming, even if it is linked with the symbolic aspect of this resource (Gąsiorowska, Zaleśkiewicz, Wygrab, 2011; Zhou et al., 2009), might also influence the instrumental money behaviour. To verify this thesis, we conducted a study based on the money-priming paradigm with economic behaviour as a dependent variable. We also used charitable behaviour, as measured by the behaviour in the dictator game. Our expectation was that people who had different money attitudes would react differently to money priming.

Modeling charity behaviour with the dictator game

The first dictator game experiment in economics was carried out by Kahneman, Knetsch and Thaler (1986), who asked students to choose between two possible allocations of money between themselves and another student: an even split of \$20 (\$10 each), or an uneven split of \$20 (\$18/\$2), favouring themselves. Seventy-five per cent of the students opted for the equal option. Since then, the dictator game has evolved into the present form in which one person (the dictator) distributes the initial pool of resources between himself and another anonymous player (the receiver). The receiver cannot reject any of the dictator's offers, therefore from the rational point of view, the dictator could keep the entire initial pool for themselves. Thus, the transfer of money to another player can be seen as pure altruism (Kahneman et al., 1986).

The dictator game may be treated as the representation of real-life altruistic behaviour like, for example, anonymous donations. As numerous studies have shown (cf. Camerer, 2003 for a review), the players have a propensity for sharing goods (usually more than 60 percent of dictators send some money to the receiver, with the mean transfer being roughly 20 percent of the initial pool). Recent studies indicate that many people acting as dictators have a propensity for even more generous choices. In Oberholzler-Gee and Eichenberger's (2008) study of the traditional variant of the dictator game, the transfer median amounts to 41 percent of the dictators' endowment. Two Polish experiments reveal a strong tendency to equal division (Helka, 2010; Olszanska, 2011).

The economic situation simulated by the dictator game is similar to the situation of the donation to the University Student Fund in the study conducted by Vohs and her colleagues (2006, 2008). In both cases, a dependent variable is devoted to measuring pro-social preferences, helpfulness, or sharing resources with strangers. Therefore, as a self-sufficient orientation was shown by the previous research to be associated with a low liability to help, we assumed that it would also reveal anti-social behaviour in the dictator game; hence our first hypothesis:

H1: Activating the concept of money will decrease pro-social behaviour in the dictator game.

Thus, we expected that after activating the idea of money, the participants who played the role of the dictator would send less money to the recipients. In addition, we wanted to have a closer look at the emotions accompanying the dictator's behaviour, on the level of satisfaction derived from the decision. We supposed that money priming might change the way the dictator defines the situation of making an economic decision, and this implies changes in the perception of fairness and efficiency of such a decision, and also influences the emotions and satisfaction derived from it. We supposed that after money activation has taken place, people would be more satisfied with their decision if they behaved self-sufficiently (they sent a small amount of money), and less satisfied if they behaved pro-socially (sending a substantial amount of money). We expected the converse of this pattern of results when it came to negative emotions. Therefore, these assumptions were the basis for the following hypothesis:

H2. Money priming decreases satisfaction (increases negative emotions) in the case of low money transfers, and increases satisfaction (decreases negative emotions) in the case of high money transfers.

Individual differences and psychological consequences of money

In many research projects, especially those conducted from the economic and not behavioural perspective, individual differences concerning beliefs, opinions, emotions or behaviours connected to money are perceived as "error variance" and not the variables that should be included in research. However, there is no doubt that such factors as economic wealth, materialism or money attitudes might influence economic behaviour (e.g. Burgess, 2005; Hanley, & Wilhelm, 1992; Roberts & Jones 2001; Tang, 1995, 2007; Tatzel, 2002; Wąsowicz-Kiryło, 2008), and probably the reaction to money activation (Vohs et al., 2008).

The research into money attitudes is quite new, but has been receiving increasing attention during the last few decades. This is probably due to growing consciousness among managers and researchers that individual differences in attitudes towards money might play an

important role, for example, in work attitudes or in designing motivational systems (Lim, Teo, & Loo, 2003), as well as in debts (Bhardwaj & Bhattacharjee, 2010), and in saving (Furnham, 1999) or consumption styles (Gąsiorowska, 2003; Roberts, & Jones, 2001, Hanley & Wilhelm, 1992; Roberts & Sepulveda, 1999). Additionally, differences in attitudes towards money might also influence the perception of one's income (Gąsiorowska, 2010, 2011; Tang, Tang, & Homaifar, 2006; Tang, Luna-Arocas, Sutarso, & Tang, 2004), and moderate the effects of mortality salience on the perception of money (Zaleśkiewicz, Gąsiorowska, Łuszczynska, Kesebir, & Pyszczynski, under review). Thus, it can also be expected that people with different money attitudes will react differently to subtle reminders of money; more specifically, they should differ in terms of their behaviour in the dictator game.

Quite a few research studies that have been undertaken in the area of economic psychology have been intended to obtain some estimate of people's attitudes toward or beliefs about money. The most popular scales measuring money attitudes include the *Money Attitude Scale* by Yamauchi and Templer (1982), the *Money Beliefs and Behaviour Scale* by Furnham (1984) and the *Money Ethics Scale* by Tang (1992), recently transformed into the *Love of Money Scale* (Tang, 2007; Tang & Chiu, 2003; Luna-Arocas & Tang, 2004).

Despite the fact that the details vary between the scales and studies, the common elements in all these inventories are the more or less independent factors representing three components of attitude: affective (assessment of money as good or evil, distrust and anxiety, obsession); cognitive (money seen as an indicator of achievement, respect, freedom, power or prestige, as a basis for social evaluation); and behavioural (control over finances, saving, practical budgeting). Furthermore, some research suggests that money attitudes can not be reduced to separate dimensions from psychological inventories, but should be treated as types or profiles based on full sets of dimensions. For example, Tang and his colleagues (Luna-Arocas & Tang, 2004; Tang, Tillery, Lazarewski, & Luna-Arocas, 2004; Tang, Tang, & Luna-Arocas, 2005) discovered four money profiles based on Tang's money attitudes scale, but only one seems to be purely instrumental (*apathetic money managers*), and another three have somehow different, but still symbolic approaches to money (*achieving money worshippers*, *careless money admirers*, and *money repellent individuals*). These results, together with data concerning money attitude dimensions, also demonstrate the difference between the instrumental and symbolic meanings of money.

However, the three scales mentioned earlier were developed in specific cultural contexts, and perform

rather poorly in Polish conditions (see Gąsiorowska, 2003). As a consequence of the lack of the scales fitting the Polish cultural context, two original Polish scales were developed and successfully used for research in the Polish cultural environment: the *Attitudes Towards Money Scale* (Wąsowicz-Kiryło, 2008) and the *Money Attitudes Questionnaire* (Gąsiorowska, 2008, 2011; Bajcar & Gąsiorowska, 2004).

The Money Attitudes Questionnaire (MAQ) is of satisfactory internal validity and reliability and is better adjusted to the Polish cultural and economic situation than other popular money attitudes scales like the Money Attitudes Scale (Yamauchi & Templer, 1982) or Money Ethics Scale (Tang, 1995), which are mostly applied in economically stable developed countries. MAQ in its basic version (MAQ2008) consists of 58 items (on a 5-point response scale) reflecting seven different aspects of attitudes towards money: (1) control and planning, (2) power, (3) anxiety, (4) debt aversion, (5) occasion seeking, (6) evil money, and (7) preference for cash (Cronbach's alphas range from 0.60 to 0.85). Moreover, Gąsiorowska (2008) discovered four different money profiles based on these dimensions, with different temperamental, personality, and temporal characteristics. Two of them might be characterized as affective or symbolic (*anxious admirers* and *money repellers*); the other two are definitely more instrumental in their approach to money (*reflective managers* and *detached hedonists*).

When the approach proposed by Belk and Wallendorf (1990, p. 38) is used, the profiles representing the symbolic attitude towards money are dominated by the sacred meaning of money, manifested in two very different ways: as beneficent sacred power (*anxious admirers* profile) and evil sacred power (*money repellers* profile). Thus, the symbolic attitude towards money is based on either high scores in the *power* dimension, referring to positive emotions (money might be used to gain power, prestige and respect or control over others, and is a good measure of life success), or high scores in the *evil money* dimension, referring to negative emotions (money as useless, needless, coercive, and causing evil). These two emotional dimensions of money attitudes are connected with the conviction that people use money for various intra- and interpersonal, but not economic, reasons, and treat it rather as it were a drug than a tool theory (Lea & Webley, 2006). The individuals with symbolic money attitudes are also high in financial anxiety and prefer cash to a non-cash form of money. What is more, the two symbolic profiles do not differ significantly in terms of their temperamental traits and temporal orientation (Gąsiorowska, 2008), their level of optimism (Gąsiorowska & Czerw, 2010), and their level of income and its perception (Gąsiorowska, 2011), while they differ significantly in terms of these variables from people who reveal instrumental money attitudes.

Table 1
Descriptive statistics for MAQ dimensions (standardized on Z scale) in four money attitudes profiles.

Money attitudes dimensions	Symbolic money attitudes				Instrumental money attitudes			
	Anxious admirers N = 19		Money repellers N = 12		Reflective managers N = 13		Detached hedonists N = 23	
	M	SD	M	SD	M	SD	M	SD
Control and planning	.384	.627	-.093	1.025	1.006	.619	-.837	.694
Power	.877	.757	-.118	.815	-.592	1.139	-.329	.706
Anxiety	.607	.946	-.085	.818	-.145	.882	-.375	1.014
Debt aversion	.338	.796	-.139	1.021	.293	.802	-.372	1.143
Occasion seeking	.643	.691	.157	1.128	.083	1.017	-.660	.761
Evil money	-.205	.865	.845	1.460	.110	.730	-.334	.694
Preference for cash	.284	1.191	.324	1.040	-.198	.801	-.291	.842

As we mentioned earlier, the instrumental money attitude also manifests itself in two profiles: people who are tight with money (*reflective managers* – high in financial control, strong debt aversion); and those who are loose with money (*detached hedonists* – low in control, no debt aversion). Both of the profiles revealing instrumental money attitudes do not attach emotional meaning to money, as they score low in the dimensions referring to money as a source of beneficial power and a source of evil. Moreover, they do not include experience of financial anxiety. Thus, they treat money as profane (Belk & Wallendorf, 1990), and as a tool rather than a drug (Lea & Webley, 2006), in line with its economic functions.

To conclude, the second aim was to compare how people from the two broad categories of attitudes toward money (either symbolic or instrumental) differ in their reactions to money activation. With regard to the previous studies on the relation between money attitudes and behaviour, we expect that:

H3: People presenting symbolic money attitudes react more strongly to money reminders, in terms of a decrease in pro-social behaviour in the dictator game, than people with instrumental money attitudes.

The influence of money priming on behaviour in the dictator game

Participants

Altogether we examined 67 working adults, of whom 25 were women and 42 were men. The age of the participants fluctuated between 19 and 42 (mean age $M = 24.33$, $SD = 5.238$).

Procedure

In order to verify this hypothesis, we ran an experiment in which all the participants were asked to take part in three separate studies concerning money attitudes, cognitive processes, and economic decisions. Four weeks prior to the

main part of the study, the participants completed a paper-and-pencil test measuring their attitudes toward money – the Money Attitudes Questionnaire (MAQ) developed by Gąsiorowska (2008), described earlier.

During the main part of the study, the participants were randomly assigned to the money activation condition ($n = 37$) or to the control condition ($n = 30$). At the beginning of the study, the participants were asked to perform accounting task. They were shown pictures on a computer screen of small items such as a mobile phone, an iPod, sunglasses, keys, tissues, a pen drive and so on, and either coins (in the experimental condition) or round candies of a similar size (in the control condition); they were asked to count the number of coins/candies in two minutes. Then, they were asked to take part in another study concerning economic decisions. Each participant played two dictator games with two different anonymous partners located in a separate room. The participants performed the role of dictator in the first game, and then, in the next game, they became the receiver with a different partner. The dictators had to decide how to split a certain amount of money between themselves and the receivers, in this case 10 Polish Zloty (PLN) ($1\$ = 2.8$ PLN at the time of the study). The main dependent variable was measured as money transferred to the receiver (0–10PLN).

After the dictator's decision, the participants filled in a questionnaire concerning their evaluation of the decision they had made. They declared whether they had felt any emotions accompanying the decision (sadness, anger, anxiety, irritation, joy (reversed), guilt or fear) and how satisfied they were with the decision. The level of negative emotions (on the 0–7 scale) and the level of satisfaction (on the 1–10 scale) were additional dependent variables.

Results

First of all, the standardized scores on seven money attitude factors were used to identify four money profiles using the k-means cluster analysis (Gąsiorowska, 2008). In line with previous research, we classified participants

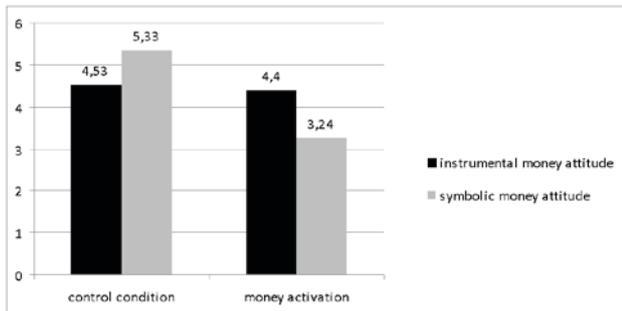


Figure 1. Mean money transfer depending on the experimental condition (money priming vs control) and attitude towards money (instrumental vs symbolic).

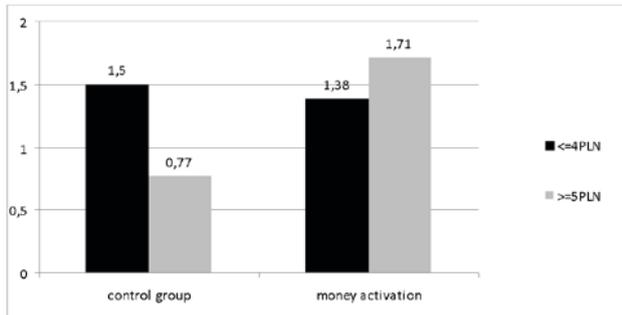


Figure 2. The level of negative emotions connected with the dictator's decision depending on the amount sent (4 PLN and less, 5 PLN and more) and experimental condition (money priming vs control).

into four groups according to different money profiles. Descriptive statistics for the money attitudes dimensions of the four profiles are presented in Table 1. The results of k-means clusters analysis are very similar to what was found in previous research (Gašiorowska, 2008). As previously stated, two of the profiles might be described as symbolic money attitudes (*anxious admirers*, $N = 19$, and *money repellers*, $N = 12$) and the other two as instrumental money attitudes (*reflective managers*, $N = 13$, and *detached hedonists*, $N = 23$).

The amount of money transferred to the other party, the level of negative emotions, and the level of satisfaction, were entered as dependent variables in the analysis of variance with two factors: condition (money activation vs control) and attitude toward money (symbolic vs instrumental).

For the amount of money transferred to the receiver, the main significant effect of condition was observed, $F(1,63) = 4.363$, $p = 0.041$; $\eta^2 = 0.065$. Specifically, after money activation, the participants transferred smaller sums ($M = 3.86$, $SD = 2.213$) than in the control condition ($M = 4.93$, $SD = 2.18$). This effect was accompanied by marginally significant condition \times money attitudes interaction, $F(1,63) = 3.382$, $p = 0.071$; $\eta^2 = 0.051$. Money activation did not affect the behaviour of people with an instrumental money attitude, $F(1,33) = 0.051$, $p = 0.823$. However, we found a simple significant effect of money activation for people revealing symbolic money attitude, $F(1,30) = 5.304$, $p = 0.028$; $\eta^2 = 0.150$. After priming, the participants with this kind of attitude sent less money ($M = 3.24$,

$SD = 2.744$) than in the control condition ($M = 5.33$, $SD = 1.356$) (see Figure 1).

For the level of negative emotions accompanying the dictator's decision, the main significant effect of condition was observed, $F(1,63) = 7.802$, $p = 0.007$; $\eta^2 = 0.110$. After money priming, the participants declared stronger negative emotions connected with the decision ($M = 1.57$, $SD = 0.987$) than in the control condition ($M = 0.97$, $SD = 0.669$). However, we did not find a significant interaction of condition and money attitudes, $F(1,63) = 0.399$, $p = 0.53$. What is more, to test the possible effect of negative emotion as a covariate, the analysis of covariance (ANCOVA) was carried out, with the amount of money as a dependent variable and priming and money attitudes as independent variables. The covariate was not significant, while the effect of money priming and the interactional effect remained similar to those found previously (respectively, $F(1,62) = 2.807$, $p = 0.09$; $\eta^2 = 0.043$ for priming, and $F(1,62) = 3.608$, $p = 0.062$; $\eta^2 = 0.055$ for interaction).

In the case of satisfaction derived from the dictator's decision, we observed neither the main effect of money priming nor condition \times money attitudes interaction (respectively, $F(1,63) = 0.708$, $p = 0.403$ for main effect, and $F(1,63) = 0.032$, $p = 0.858$ for interaction).

Additionally, as the evaluation of the decision might be influenced by the decision itself, we analysed the interactional effect of money priming and the amount sent on the level of negative emotion and satisfaction derived from the dictator's decision. We divided all participants into two groups based on median split – those who made transfers from zero to four PLN ($n = 24$) and from five to ten PLN ($n = 47$).

Concerning the level of negative emotions accompanying the dictator's decision, we observed a significant interaction of money priming and the amount transferred, $F(1,63) = 5.818$, $p = 0.019$; $\eta^2 = 0.085$ (see Figure 2).

Money priming did not affect the level of negative emotions for those who transferred 0–4 PLN, $F(1,22) = 0.116$, $p = 0.736$. However, for those who transferred 5–10 PLN to the receiver, a significant effect of money activation might be observed, $F(1,41) = 12.873$, $p = 0.001$; $\eta^2 = 0.235$. Specifically, the participants who sent a substantial amount of money declared a lower level of negative emotions in the control condition ($M = 0.773$, $SD = 0.528$) than the participants in money activation condition ($M = 1.714$, $SD = 1.056$).

Furthermore, in the control condition, there is a simple effect of money transferred, $F(1,28) = 8.809$, $p = 0.006$; $\eta^2 = 0.239$. Specifically, the participants who transferred a small amount of money declared stronger negative emotions ($M = 1.500$, $SD = 0.756$) than those who transferred more than 5 PLN ($M = 0.773$, $SD = 0.528$). However, this effect disappears after money priming, $F(1,35) = 1.075$, $p = 0.307$.

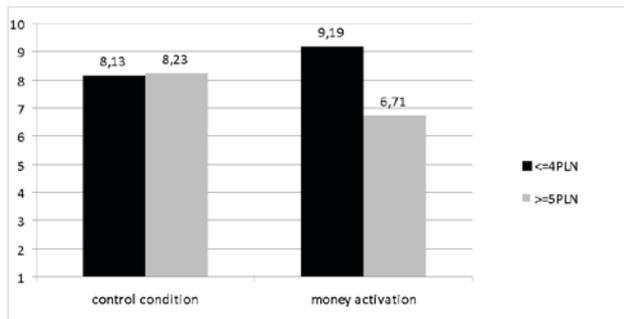


Figure 3. Satisfaction after the dictator's decision depending on the amount sent (4 PLN and less, 5 PLN and more) and experimental condition (money priming vs. control).

A similar pattern of results was revealed for satisfaction as a dependent variable. We observed a slightly weaker but still significant interaction of money priming and the amount transferred, $F(1,63) = 4.521$, $p = 0.037$; $\eta^2 = 0.067$ (see Figure 3). For those who transferred a small amount of money, no effect of money priming was found, $F(1,22) = 2.395$, $p = 0.136$, but for those who transferred a substantial amount of money we noticed a marginally significant simple effect of money activation, $F(1,41) = 3.678$, $p = 0.062$; $\eta^2 = 0.082$. The participants sending 5 PLN or more declared a higher level of satisfaction in the control condition ($M = 8.227$, $SD = 1.950$) than in experimental condition ($M = 6.714$, $SD = 3.117$).

Additionally, in the control condition, there was no effect of money transferred, $F(1,28) = 0.014$, $p = 0.905$. After the exposure to money priming, we observed a significant effect of money transferred $F(1,35) = 9.226$, $p = 0.004$; $\eta^2 = 0.209$. The participants who transferred a small amount of money declared higher satisfaction ($M = 9.19$, $SD = 1.047$) than those who transferred more than 5 PLN ($M = 6.71$, $SD = 3.117$).

In other words, in the control condition the amount of money sent by the dictator significantly correlated with the level of negative emotions ($r = -0.404$, $p = 0.027$) but not with satisfaction ($r = -0.163$, $p = 0.188$), while in the experimental condition money transfer correlated with satisfaction ($r = -0.383$, $p = 0.019$) but not with negative emotions ($r = 0.074$, $p = 0.662$).

Discussion

The results of the study presented above replicate the results obtained by Vohs et al. (2006, 2008) in showing that people who are reminded of money are less prone to sharing money with an anonymous partner in the dictator game. As we expected, money priming causes changes in people's decisions, bolstering the self-sufficient orientation. Even though the positive side of such orientation is linked to persistence and hard work, its negative side is associated with egotism and concentration on one's self-interest (Gino & Pierce, 2009; Vohs et al., 2006, 2008). Adopting this

orientation can also lead to the world being perceived in terms of the "market-pricing" mode (Fiske, 1992). When people are in the market-pricing mode, they tend to use the cost-benefit analysis in social exchanges. Such analysis is based on market prices or utilities rather than on reciprocity rules. As money is the prototypical medium of exchange in the market-pricing mode, the reminders of money can make people focus on their own inputs and outputs and on financial success.

However, the change in behaviour caused by activating the idea of money is not universal. As we expected, money priming is connected more with the symbolic emotional nature of money than with its instrumental economic side. People displaying the symbolic money attitude are definitely more prone to change their decision after exposure to the idea of money than people with an instrumental money attitude, probably because they treat money as an important social resource and not just as an economic resource (Gąsiorowska, 2008, 2011).

Additionally, we not only examined the decision made by the dictator, but also the evaluation of this decision in terms of its associated emotions and satisfaction after transferring money. We noticed that the activation of the idea of money caused changes, not only in the amount sent to the recipient, but also in the level of negative emotions associated with such a transfer and the satisfaction derived from it. More precisely, the participants from the control condition declared a higher level of negative emotion when sending small amounts of money than when sending substantial amounts; but this effect did not exist after money priming as the participants who were reminded of money generally declared a higher level of negative emotion derived from the decision. We believe that people in the control condition followed the social norm "fairly is equally" and felt obliged to transfer about a half of money (Helka, 2010; Olszańska 2011), so they experienced negative emotions if they broke this norm for the sake of their own gain. However, in experimental conditions this social norm was changed to a self-sufficient orientation, and the act of giving money to another party generated negative emotions, regardless of the sum.

Moreover, in the control condition, the satisfaction of the participants did not depend on the decision they made, while the participants who were reminded of money derived their satisfaction from the money they left for themselves. There is no doubt that this is another argument that they were in the market-pricing mode, and that the subtle reminders of money trigger a self-sufficient orientation (Vohs et al., 2006, 2008).

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