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“Intentionally unfair pay-rate allocation leads to
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Table of contents

Table of contents	3
Abstract	2
Introduction	3
Review on relevant literature	5
Equity restoration by cheating	5
Intentionality matters in perception of unfairness	7
Negative reciprocity	9
Compliance	11
General Method	13
Participants	13
Experimental Design	13
Measures	15
Procedure	17
Results	20
General Discussion	23
References	26
Appendix	30
A. List of Figures	30
B. List of Tables	31
C. Instructions for Participants	32

Zusammenfassung	52
Curriculum Vitae	54

Intentionally unfair pay-rate allocation leads to decreased compliance

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UNFAIRNESS ON COMPLIANCE

Abstract

This study demonstrates that an unfair pay-rate allocation leads to lower compliance. In a laboratory experiment 130 participants performed a task and received a payoff. Afterwards they were prompted to contribute 25% of their earnings to a common fund. People contributed less than prescribed if their pay-rate was unfairly imposed on them. Suggesting that participants were motivated to regain the perceived material loss by low compliance. Furthermore, if participants had the opportunity to harm their wrongdoer through lower contribution, they complied even less. Consequently, they took revenge for being treated unfairly. In line with the literature on conditional cooperation believed compliance of other people was a key predictor of compliance.

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Intentional unfair pay-rate allocation leads to decreased compliance

Introduction

Unjust pay-rates play a major role in today's working environment. Even nowadays, women have to deal with lower wages in comparison to men, for example ("Gender pay gap statistics", 2015, unpag.; "Gender wage gap", 2014, unpag.). Too high manager wages ("Managergehälter: 1,3 Mio. Euro!", 2014, unpag.) and too low wages of migrants in Austria (Schweighofer, 2014) have also been repeatedly reported in the last few years. These are only few mentioned examples of unjust wage distributions, which take place in the media again and again.

The goal of the present study is to examine the impact of unfair pay-rate allocation on compliance behaviour. This study explores compliance behaviour in a context in which people are making financial decisions and their beliefs about the social norm and exogenous constraints influence their behaviour. Researchers investigated compliance behaviour in previous studies on tax behaviour (Alm & Christian, 2014; Bazart & Pickhardt, 2011; Kirchler, Maciejovsky, & Schwarzenberger, 2007) and in laboratory experiments including public good (Fehr & Gächter, 2000; Gächter, Renner, & Whitehead, 2006). Research on tax compliance found increased compliance with increased benefits of compliance, for instance, through redistribution of collected taxes (Alm, 2012; Alm, Jackson, & McKee, 1992; Bazart & Pickhardt, 2011) and also provided evidence that if there was an increased audit probability, tax evasion decreased (Allingham & Sandmo, 1972; Alm, 2012; Alm, Jackson, Betty, & McKee, M., 1992; Alm & McKee, 2006). Previous research has shown as well that the assumption of other group members' compliance has an impact of participants' compliance behaviour (Traxler, 2010; Alm, 2012; Alm, Jackson, & McKee, M., 1992).

UNFAIRNESS ON COMPLIANCE

I investigate to what extent the perception of unfairness influences compliance behaviour. The assumption is that if people are treated unfairly they will be more likely to cheat than those who did not experience unfairness, even though wages are equal between groups. In the context of this study are two possible responses to experienced unfairness.

On the one hand I am building on research on equity restoration (Gino & Pierce, 2011; Greenberg, 1993; Houser, Vetter, & Winter, 2012; John, Loewenstein, & Rick, S. I., 2014) where people are motivated to compensate a financial loss they perceive as unjust. Studies have demonstrated evidence of participant's tendency to cheat in order to compensate a perceived inequity. With regard to these findings deviant behaviour was considered as an economic choice in financial decision experiments. Participants who experienced unfairness and perceived a financial loss aimed to regain this loss. Thus, they attempted to increase their outcome by cheating to reduce feelings of underpayment inequity.

On the other hand people can pay to hurt the wrongdoer, indicating for revenge taking. When people experience distributive injustice¹ they have desire for retaliation and harm the wrongdoer who has treated them unfairly, if they get the opportunity to do so (Bolton & Ockenfels, 2000; Charness & Rabin, 2002; Charness, 2004). As empirical evidence has shown, they would also tend to engage in retaliation, even if they might have to violate social norms and accept higher individual costs (Bolton, Brandts, & Ockenfels, 1998; Fehr & Gächter, 2000, 2002; Folger & Skarlicki, 1997; Gibson & Schweitzer, 2007).

In order to examine the two factors equity restoration and negative reciprocity as possible causes for non-compliant behaviour, I conducted a laboratory experiment. I designed the

¹ The perceived unfairness of outcomes received

UNFAIRNESS ON COMPLIANCE

experiment so that the socially efficient behaviour is full compliance. In the present study I examine if people who experienced unfairness will show lower compliance, even though it can make the individual and the society worse off.

Review on relevant literature

Equity restoration by cheating

According to the equity theory from Adams (1965) people are motivated to establish an equitable balance between their investment into work and the received return for the investment. If a discrepancy between the payoffs and the amount the person expects to get occurs, the person experiences inequity, which in turn, leads to dissatisfaction. Consequently, people are willing to reduce inequity by altering their input or outcome, or by distorting their inputs and outcomes cognitively. This behaviour is also consistent with cognitive dissonance reduction (Festinger, 1957), stating that people are motivated to change their behaviour when it causes them discomfort.

To date, Adams' theory has received much attention in experimental studies on simulated employment context documenting support for equity restoration (Gino & Pierce, 2011; Greenberg, 1993; John, Loewenstein, & Rick, 2014). In a study of Greenberg (1993) underpaid participants or participants who perceived their payment as unjust, attempted to increase their payoffs by deviant behaviour such as cheating. Participants performed a clerical task on pay-rate that was announced prior starting the task. After completing the task, some participants were informed that they would receive less money than they were promised. Furthermore, they were (falsely) told that the experimenter has to leave the scene due to some unexpected emergency and they can take their earnings from the cash pot. Greenberg observed significantly higher theft

UNFAIRNESS ON COMPLIANCE

rates among underpaid people. They took a higher amount of money than they were supposed to take. Since they got a lower income as they anticipated, they stole money to reduce feelings of underpayment inequity. Recently, John et al. (2014) manipulated the perception of inequity by making participants aware of two different pay-rates. They earned for each correctly answered question five cents or 25 cents. Depending on the condition, they were aware or not aware about two different pay-rates for the same work. Underpaid participants in the “Aware” condition cheated significantly more by reporting more correct answers than they actually had. Under- and overpaid participants in the “Unaware” condition did not differ significantly. The results indicated that being aware of the possibility of having a higher pay-rate for the same work has an impact on the tendency to behave dishonestly in order to restore payment equity. Consistently, Houser, Vetter, and Winter (2012) manipulated their participants through a dictator² allocation task into a fair (equal) or an unfair (asymmetric) allocation. Then, participants rolled a dice and reported the outcome under the condition that the higher number they report the more they get paid. Those, who were offered low payoffs from the dictator and felt unfairly treated (as shown in the manipulation check), cheated more in reporting the outcome about the total payoff in a subsequent unrelated game. Additional research from Gino and Pierce (2011) supports these findings. Participants were supposed to grade another player’s performance in an anagram task, who was paid out equally, less or more in a previous lottery game. If both players had not been paid out equally the grader over-/understated the other player’s performance to reduce total payoff disparities.

² The dictator game is a two-player game, wherein the first mover receives some amount of money and decides how much money to pass to the second player. Player 2 cannot reject this proposal. Hence, this game measures pure social-preference without a strategic component.

UNFAIRNESS ON COMPLIANCE

These mentioned studies, concerning equity theory, include experiments in a laboratory setting, which are designed as followed: 1) participants perform a task; 2) underpayment is established by a given comparison to a possible higher pay-rate; 3) in a further task participants have the opportunity to alter their financial outcome through deviant behaviour and not complying with the rules of the instruction of the experiment.

In the present study I manipulate perception of payoff equity by manipulating participants' reference points about their earnings. Prior to starting a real effort-task participants are told that their earnings will be selected from a binary choice set including a lower and higher pay-rate. According to the aforementioned research on equity restoration in such situations people's reference point is the higher pay-rate. When, however, they receive the lower pay-rate they experience a loss. Hence, a comparative reference point is featured, which makes participants aware of a disadvantage because of a possible higher income than one might receive (Kahneman, 1992). Then, participants are prompted to declare their income and a certain amount of their income is deducted and deposited at a common cash pot, similar to a tax system context. Then, like in a linear public good game, the cash pot is multiplied by a number greater than one and is distributed in equal shares between every group member. I expect that, participants who experience feelings of underpayment pay less into the pot. Restoring equity motivates this behaviour.

Intentionality matters in perception of unfairness

As already stated, underpayment inequity influences the perception of fairness (Houser, Vetter, & Winter, 2012). More specifically, when the inequity was intentionally imposed on the person the perceived inequity increases (Falk, Fehr, & Fischbacher, 2008). In a theoretical work on incorporating fairness in economic choice Rabin (1993) demonstrated a fairness equilibrium,

UNFAIRNESS ON COMPLIANCE

where beyond the outcome the motives, which lead to the outcome, are also taken into account as factors. For example, in an employment context, a low income may lead to more negative feelings when the employer intentionally assigned it than when it was determined on account of pay-rate standards. Greenberg (1990) conducted a field experiment, in which employees suffered a pay-cut of 15%. The results showed that those who received an unapologetic explanation for the reduction stole more than those who received clear and polite explanation for the cut.

Several studies including bargaining games examined the impact of intentional fair/unfair behaviour on reciprocity. They showed that participants reward or punish significantly more if their partner's move was intentional and made under full control. For instance, Falk et al. (2008) demonstrated this effect in the moonlight game. In the first step player 1 takes money from or sends money to player 2, who can either return money or take money from player 1. Players rewarded or sanctioned, at a cost, the other player's behaviour more, if the other player did his/her move by choice than when he/her was determined by the instructions. Similarly, Blount (1995) found further support for the importance of intentionality. In the ultimatum bargaining game³, participants were offered a part of a fixed amount of money from their partners. In this game they had the option to accept the offer and the money would be divided according to the offer, or to reject the offer and no one will get any money. An actual player (intentionally) or a random number generator (randomly) made the offer. Participants were less willing to accept low offers in the intentional than in the random treatment. Pillutla and Murnighan (1996) also

³ The ultimatum bargaining game is a two players game wherein the player 1 offers a part of a fixed amount of money to player 2, who decides whether to accept the offer or to reject it. If player 2 accepts the offer, the money will be divided according to the offer. If player 2 rejects the offer, they both will get no money.

UNFAIRNESS ON COMPLIANCE

found the importance of intentionality in the ultimatum bargaining game. Recipients were more likely to reject small offers when they had full information about the proposers' outside options. These results showed that when participants knew about the options of the proposer they formed expectations about the "fair" split. When these expectations were not met they were more likely to reject the offer.

All in all, these studies have shown that experiencing intentionally imposed unfairness, leads to stronger negative feelings and reactions. Studies examining reciprocity in bargaining games suggest that participants interpret intentional low offers to be less fair than random ones and that they are more likely to reject them or to respond negatively. Thus, in line with Rabin (1993) attributing intentionality to the allocator impacts the perceived fairness of the payoff.

In the present study I induce the perception of unfairness through the attribution of an intentional action. An anonymous randomly selected participant choose the pay-rate for the whole group (but not for him- or herself) from a set of low and high pay-rates.

Negative reciprocity

Researchers have observed frequently negative reciprocal behaviour as a response to intentional unfairness in experiments on financial decision-making (Bolton et al., 1998; Corson & Konow, 2009). In situations, where participants attributed their disadvantaged material payoffs to someone they were willing to reciprocate this negative behaviour. Previous studies demonstrated that perception of being treated unfairly triggers feelings of anger and frustration (Allerd, 1999) and these in turn, cause the desire for retaliation (Folger & Skarlicki, 1997).

Charness (2004) investigated reciprocity between an employee's wage and effort level in a laboratory experiment. The employer determined intentionally low wages of employees and they responded with less effort, which in turn, lowered the employer's wages. Thus, retaliation

UNFAIRNESS ON COMPLIANCE

happened in reducing investment into work. Croson and Konow (2009) found that in two subsequent dictator games people are more prone to retaliate unfair previous allocations than rewarding generous ones. In the same vein several studies, examining reciprocal preferences on distributive allocation decisions provide evidence for negative reciprocity being a stronger predictor for financial allocation decisions than positive reciprocity (Bolton & Ockenfels, 2000; Charness, 2004; Charness & Rabin, 2002). In a study of Folger and Skarlicki (1997) manufacturing employees reported more retaliatory deviant behaviour as a response to perceived organizational injustice. Fehr and Gächter (2002) investigated altruistic punishment in a public good game⁴. Participants punished those who did not contribute a part of their property to the common pot, even if they had to sacrifice their own material gain and hence, decreased profit by their action. Altruistic punishment is so strong that people are also willing to punish free-riders in a one-shot game with no possibility to offset loss due to punishment by future gains (Fehr & Gächter, 2000).

Beyond equity restoration I investigate retaliatory behaviour on compliance in the present study. Participants have the possibility to harm the one, who has treated them intentionally unfairly by showing less compliant behaviour, since the wrongdoer's further payoff depends on the compliance level of all participants. The less they comply, the greater they harm the one who has treated them unfairly. Given the exogenous constraints of compliance participants risk financial losses by not complying. Consequently, retaliation may be costly. I predict that

⁴ In a public good game players receive a certain amount of material gain and are asked to contribute a part of their property to a common pot afterwards. The pot gets multiplied and redistributed in equal shares. So the income of each player consists of the amount that is not contributed and the equal redistribution of the common pot.

UNFAIRNESS ON COMPLIANCE

participants may feel compelled to retaliate this unfairness, which was intentionally imposed on them, even if retaliation can make the individual and the group worse off.

Compliance

In the present study I examine compliance behaviour after people experienced an unfair payoff that was intentionally imposed on them. On the basis of several studies, (Alm, 2012; Andreoni, 1988; Eckel & Wilson, 2004; Fehr & Gächter, 2000; Gächter, Herrmann, & Thröni, 2004; Gërzhani & Schram, 2006; Houser, Schunk, & Winter, 2010; Traxler, 2010) results have provided evidence that utility in complying, punishment for not being compliant and participants' belief of others' compliance level have an impact on one self's compliance behaviour. I control for these factors in the present study.

Utility in complying. In many studies contribution has been the proxy of cooperation between group members as used in a public good setup (Andreoni, 1988; Fehr & Gächter, 2000). Here, group members are initially endowed with some cash and are asked to contribute to a pot that will be multiplied by a number greater than one and redistributed in equal shares among everyone in the group. On average, players would benefit from the pot most when every participant contributes his/her complete property to the pot. Thus, full contribution is the socially efficient solution.

The experiment in the present study is designed similarly to a one-shot public good game: Participants perform in a task, get paid, contribute to a common cash pot (only once), which is doubled and equally redistributed between the members. Consequently, self-interested behaviour (i.e., undercompliance) harms the group financially. Unlike, however, in a public good game the contribution rate is exogenously given and there is also an exogenous audit rate with a fine. Therefore, similarly to a tax system, instructions prescribe how much the participant needs to

UNFAIRNESS ON COMPLIANCE

contribute to the pot. Nonetheless, I expect that subjects who are treated intentionally unfairly will contribute less even though it is a socially inefficient solution that makes the whole underpaid group worse off.

Risk attitude. Previous studies including public goods experiments provided evidence that if there is a probability of punishment in the form of financial penalties for free riding, contributions increase (Fehr & Gächter, 2000, 2002; Hetzer & Sornette, 2013).

In the present study, an audit probability is established, which imposes a monetary fine in case participants do not comply with the instruction rules. Therefore, depending on participants being either risk loving or risk-averse, audit probability could influence their compliance behaviour. I take risk attitude into consideration as some studies demonstrated, that risk attitude has an impact on financial decision-making (Eckel & Wilson, 2004; Gërkhani & Schram, 2006; Houser et al., 2010). I assume risk-averse participants being deterred by penalties and fines and thus, being more compliant with the rules.

Belief about others' behaviour. An experiment of Gächter et al. (2004) including public good results showed that the more participants believed other people were being fair, helpful and trustworthy the more likely they were to contribute to the common pot. In a public good game, those anticipating low contribution from the group expect lower return (greater financial loss) from one's own increased contribution.

Due to previous results (Traxler, 2010; Alm, 2012; Alm et al., 1992) I examine this factor as well. I expect that beliefs about the others' compliance would impact the individuals' compliance level.

UNFAIRNESS ON COMPLIANCE

General Method

Participants

Participants were recruited via flyers at the Corvinus University, Budapest and the study was conducted in spring, 2015. In total 134 participants participated in the experiment that was carried out in six sessions, two per each treatment, with on average 22 participants per session. Participants were randomly assigned to conditions. The age ranges in the baseline treatment from 19 to 40 ($M = 22.60$, $SD = 3.45$), from 20 to 32 in treatment 1 ($M = 23.38$, $SD = 2.70$) and from 16 to 29 in treatment 2 ($M = 22.54$, $SD = 2.60$). Fifty-three percent of the participants were males and 51 percent were in the third lowest income quartile of the Hungarian population. The demographic variables did not differ significantly across the three treatments.

Experimental Design

Baseline (control) treatment. The baseline treatment consisted of work on a pay-rate of 100 HUF and a one-shot compliance game with public good, which was doubled ($k=2$).

Treatment 1. In treatment 1 the participants worked on a pay-rate of 100 HUF that was selected intentionally from a pair of 100 and 500 HUF by a manager, and they performed in a one-shot compliance game with public good, which was doubled ($k = 2$). The pay-rate and the fact that it was the manager's decision was a public knowledge. In that way, intentional unfairness was established. Participants experienced a financial loss by not receiving a higher pay-rate that was intentionally imposed on them, because of the manager's deliberate choice between a lower and a higher pay-rate.

I predicted that participants in this group would declare lower income than in the baseline treatment to restore equity (diagrammed in Figure 2).

UNFAIRNESS ON COMPLIANCE

Treatment 2. This treatment was exactly the same as treatment 1 with the addition of the manager potentially receiving a bonus or a fine depending on the group's compliance level (how truthfully they declared their incomes). The less the workers contributed to the cash pot, the lower was the manager's bonus, and in case of very low compliance the manager had to pay a fee. If the compliance level was lower than in treatment 1, one can assume that workers' compliance behaviour was also driven by retaliatory behaviour, relating on literature about negative reciprocity and altruistic punishment. Thus, in treatment 2 manager's intentional unfairness on workers was established and in addition workers had the opportunity to harm the manager.

I predicted that participants in this treatment would comply less than in treatment 1, which indicates a causal relationship between revenge and less compliance (diagrammed in Figure 2).

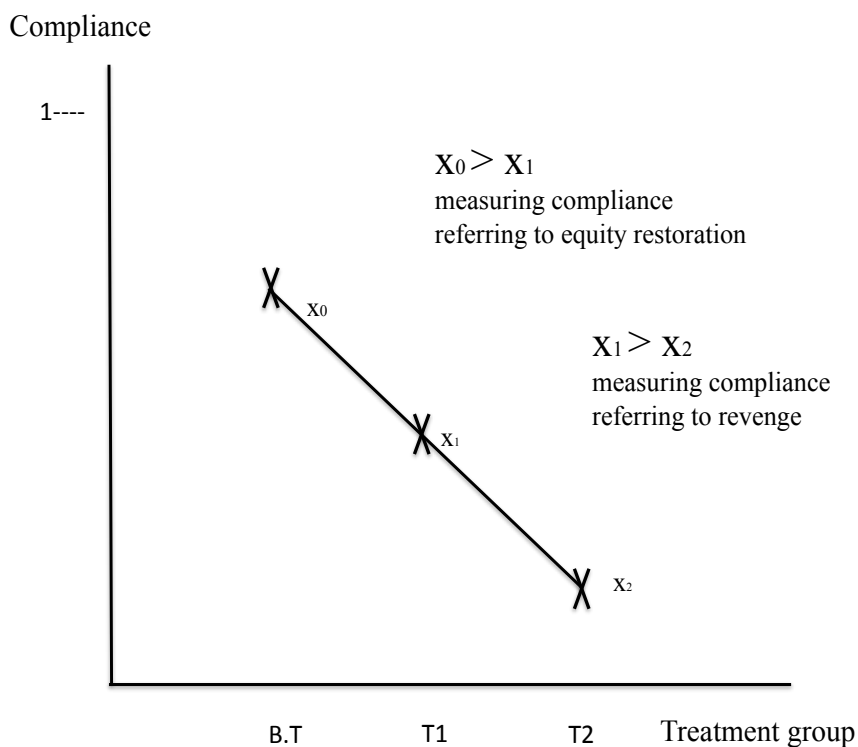


Figure 1 *Prediction of compliance among all treatments*

UNFAIRNESS ON COMPLIANCE

Factorial design. In the experiment two treatment variables were given: 1) Manager treats workers intentionally unfairly (presence/absence of the manager) and 2) Manager receives a bonus depending on money collected through compliance (presence/absence of manager's bonus). The 2 x 2 factorial design with one structurally empty cell is described in Table 1.

Table 1

Factorial design of the experiment

		Intentionally imposed unfairness	
		YES	NO
Opportunity to take revenge	YES	Treatment 2	Not applicable
	NO	Treatment 1	Baseline Treatment

Measures

Our key measure was compliance level. Based on the aforementioned literature, risk attitude and beliefs about others' behaviour influence compliance behaviour. I added to these the two factors, equity restoration and retaliation.

Declared income. Declared income was a proxy for compliance level as compliance was defined as the ratio of declared and true income. In each treatment participants had to declare their income. They had the free choice to declare between zero and the true income. Hence, compliance was between zero and one, where one was full compliance and zero was no compliance at all. Consequently, a smaller number indicated greater evasion.

Risk attitude. I used the low payoff version of Holt and Laury risk instrument to measure the degree of risk aversion of each participant (Holt & Laury, 2002; Eckel & Wilson, 2004). On

UNFAIRNESS ON COMPLIANCE

a decision sheet participants chose between two options of lotteries A and B. The payoffs for choice A were always 400 or 500 Hungarian forints⁵ (HUF), and for choice B 965 or 25 HUF (sheet is reproduced in Table 1). The high payoff probability increased from 10% in the first row to 100% in the last row over the ten decisions for choice A and for choice B. Lottery B had a higher variance than lottery A. Thus a very risk-seeking person would choose option B in the first row, and an extremely risk-averse person would only switch over to option B by decision ten in the bottom row. Risk attitude was calculated by the sum of the less risky choices (option A), which was the index for risk aversion and ranges from zero to ten. Thus a person who scores ten in the Holt/Laury risk instrument can be described as a very risk-averse person. The instrument is pictured in Table 2.

Table 2

Risk-attitude instrument adapted from Holt and Laury

	Option A				Option B				My choice: A or B?
	Prize in HUF	Likelihood in %	Prize in HUF	Likelihood d in %	Prize in HUF	Likelihood d in %	Prize in HUF	Likelihood d in %	
1	500	10	400	90	965	10	25	90	
2	500	20	400	80	965	20	25	80	
3	500	30	400	70	965	30	25	70	
4	500	40	400	60	965	40	25	60	
5	500	50	400	50	965	50	25	50	
6	500	60	400	40	965	60	25	40	
7	500	70	400	30	965	70	25	30	
8	500	80	400	20	965	80	25	20	
9	500	90	400	10	965	90	25	10	
10	500	100	400	0	965	100	25	0	

Classifications: 0-2=very risk loving; 3=risk loving; 4-5=risk neutral; 6=risk-averse; 7-10=very risk-averse

⁵ At this time one Euro was approximately 302 HUF.

UNFAIRNESS ON COMPLIANCE

Belief about others' compliance. Participants were asked to estimate the mean group compliance from zero to one. They were told that one of those whose estimation falls within $\pm 5\%$ range of the actual compliance will be randomly chosen in a lottery and will receive an additional 1000 HUF at the end of the experiment. Hence, I elicited beliefs about the other participants' compliance behavior for each participant.

Procedure

The paper and pencil experiment took place at the Corvinus University Budapest. One session lasted approximately 35 minutes. In treatments 1 and 2 participants were randomly assigned to be a worker or a manager. In baseline treatment everyone was a worker. Before starting the experiment, the researcher instructed participants about the general rules according to the procedure. Participants were not allowed to communicate with each other and were only allowed to turn the page after receiving permission. They were told that they are anonymously taking part in a study about financial decision-making and will be paid in cash at the end of the experiment. After signing up the consent, participants received 300 HUF show-up fee. Further earnings were dependent on their decisions.

Workers were told to put themselves in the position of workers working in a factory. All experimental material can be found in Appendix C. In addition in treatment 1 and treatment 2, in each session one participant was randomly assigned to play the role of the manager, which was anonymous. The experimental procedure is pictured in figure 2. Workers were instructed to complete a trivia quiz within three minutes. The quiz consisted of ten multiple-choice questions, each with four answer choices with one correct answer. After finishing the quiz, sheets were collected and evaluated. In the meantime, in treatment 1 and treatment 2 the manager chose between two pay-rates for the workers. He decided whether workers would receive 500 HUF or

UNFAIRNESS ON COMPLIANCE

100 HUF for each correct answer. Next, risk attitude of workers and managers was measured using the Holt and Laury risk instrument. Earnings here depended on their choices between the lotteries and were paid out at the end of the experiment. Afterwards, each worker received the information about his score in the quiz and therefore, his earnings, which was private knowledge. In treatment 1 and treatment 2 the manager was incentivized to select the low pay-rate without workers being aware of that. Consequently, in each treatment they received 100 HUF for each correct answer. The total group income and also that the pay-rate was equal for every worker in the group was public knowledge. Next workers did the manipulation check. In treatment 1 and treatment 2 they answered two extra questions about their perception of fairness according to the manager's pay-rate decision. After answering questions on the manipulation check participants were told that the factory created a special fund in order to improve workers' working conditions. Workers were asked to contribute 25% of their income to the fund, which would be summed, doubled and equally redistributed between the workers in the group. Since the income was private knowledge, workers were prompted to declare their income of which 25% was deducted and paid into the fund. Before declaring the income, workers were informed about an audit probability of 15% and its consequences. In case workers were audited by not reporting the whole income, they would have to pay a fee, which was twice the unreported amount, and in case full income has been declared, nothing happened. In addition, in treatment 2 the manager received a bonus, which was depending on the compliance level of all workers. If the mean of the group's declared income was between 70% and 100% of the true income the manager received an extra 500 HUF. If it was between 40% and 69%, the manager received nothing and if it was between 0% and 39%, the manager had to pay 500 HUF (imposing a fine on him/her). After declaring their income, workers were asked to estimate the mean group compliance level.

UNFAIRNESS ON COMPLIANCE

For that, one participant was chosen randomly, and in case the participant's estimation was not deviating more than 5% from the mean group compliance he or she received an additional 1000 HUF at the end of the experiment. Then participants filled out a demographic survey and then they learnt about their earnings from the compliance game. Next they completed post-experimental survey. Then, they learned about their earnings in the risk attitude test. Finally, they were paid in cash.

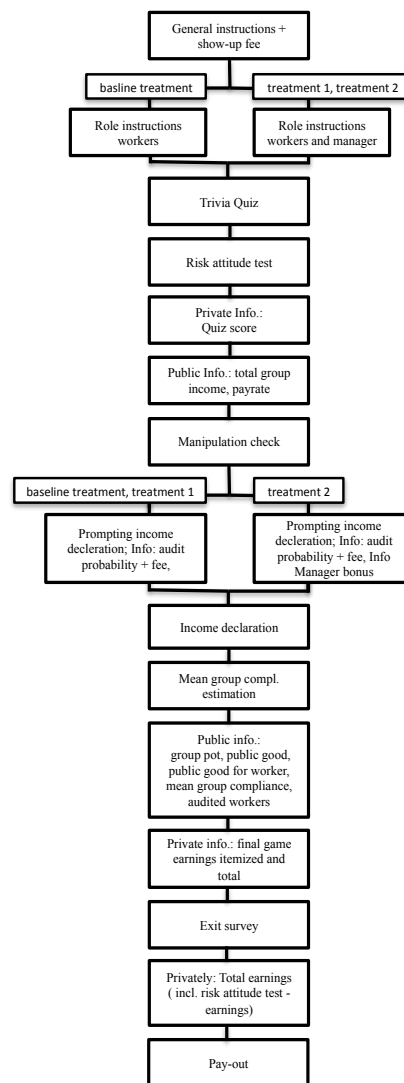


Figure 2 *Flowchart of the experimental procedure*

UNFAIRNESS ON COMPLIANCE

Results

My key predictions were that intentionally assigned low pay-rate leads to decreased compliance in a subsequent compliance task. Compliance would be even lower if decreased compliance could harm the person who imposed the loss on the participants. To test my predictions I used linear regression with robust standard errors. The dependent variable was the compliance behaviour, which was the declared income divided by the true income of the participants, and ranged from zero to one. The independent variables were the presence of the manager (a proxy for equity restoration) and the possibility of revenge. In addition, I took the score of the risk-averse choices in the Holt and Laury risk attitude instrument (sum of safe choices) and the estimated mean group compliance as covariates into account (estimated compliance).

Table 3

Descriptive of key measures by treatment

Measures		Baseline treatment N = 42	Treatment1 N = 42	Treatment2 N = 46
Compliance	Mean	0.85	0.71	0.65
	(SD)	(0.25)	(0.34)	(0.41)
Estimated compliance	Mean	0.65	0.58	0.60
	(SD)	(0.18)	(0.25)	(0.26)
Sum of safe choices	Mean	7.38	8.05	8.39
	(SD)	(2.21)	(1.19)	(1.33)

First, I present the descriptive statistics as shown in Table 3. I used the one-way ANOVA test to compare the means across the groups. The one-way ANOVA demonstrated that mean compliance differed between the treatments ($F(2, 127) = 3.970, p = 0.021$). It was highest in the

UNFAIRNESS ON COMPLIANCE

baseline treatment and lowest in treatment 2. The estimated compliance was not different across the treatments ($F(2, 127) = 1.045, p = 0.355$). The mean of the safe choices in the Holt and Laury risk attitude test differed between treatments ($F(2, 127) = 4.329, p = 0.015$). But on average everyone was in the risk-averse domain. Subjects in treatment 2 were more so than those in treatment 1 and baseline treatment. In Table 4 the mean game earning of each worker in the compliance game is presented. As one can see, it was lowest in treatment 2 and highest in baseline treatment.

Table 4

Mean game earning of a worker

	Baseline treatment	Treatment 1	Treatment 2
Mean game earnings In HUF	755.21	630.66	556.39
Mean game earnings In EUR	2.8	2.1	1.8

Now, I present results of the linear regression in Table 5. In the first column compliance was regressed on the manager and on revenge. The model showed that only the manager factor was significant. The coefficient indicated that intentional unfair treatment decreased compliance by 14% on average. The factor revenge did not affect compliance in this model. The second model (column 2) repeated the same estimation adding the covariate risk aversion. The effect of the manager and the revenge variable remained the same and no influence of the risk attitude on compliance behaviour was demonstrated. In the third model (column 3), I added estimated mean group compliance as a second covariate. The model showed a highly significant effect of estimated mean group compliance. The resulting coefficient of estimated compliance was a mean

UNFAIRNESS ON COMPLIANCE

of 83%, which provided evidence for a strong association between the belief of other workers' compliance behaviour and participants own compliance. Here, the factors manager and revenge were not significant. In model 4 I also included the interaction between revenge and estimated compliance. The model showed that the manager factor was not significant on conventional levels (5%). But still, according to my assumptions, the manager factor decreased compliance by 4% on average. Participants experiencing unfairness complied less in order to restore equity. This model provided evidence for my assumption that factor revenge had a significant impact on compliance. Here, the possibility of taking revenge on the manager decreased compliance by 34%. Participants in treatment 2 complied even less than in treatment 1.

Table 5

Regression Results

Parameter/ Model	1	2	3	4
Intercept	.85 (.04)***	.89 (.12)***	.29 (.13)**	.40 (.15)**
Manager	-.14 (.06)**	-.14 (.06)**	-.08 (.06)	-.04 (.06)*
Revenge	-.06 (.08)	-.06 (.08)	-.08 (.06)	-.34 (.14)**
Sum of safe choices		-.01 (.02)	.003 (.02)	.004 (.01)
Estimated compliance			.83 (.10)***	.64 (.15)***
Revenge*estimated compliance				.43 (.20)**
Likelihood ratio (chi-square)	7.88**	7.97**	57.42**	61.49**
df	2	3	4	5
AIC	95.33	97.24	49.8	47.72
N	130	130	130	130

Standard errors are in parenthesis. Manager = Manager is present in the treatment; Revenge = participants have the opportunity to take revenge; sum of safe choices = sum of risk averse decision in the H/L risk instrument; estimated compliance = estimated mean group compliance.

* $p \leq 0.1$; ** $p \leq 0.05$, *** $p \leq 0.01$

UNFAIRNESS ON COMPLIANCE

Estimated mean group compliance remained significant in this model. The results indicated that revenge and estimated compliance interacted significantly. Consequently, acting on beliefs about others' compliance was stronger in the revenge condition than in other conditions. In treatment 2 lower estimated group compliance level decreased compliance.

General Discussion

The present study examined the impact of intentionally imposed unfair pay-rate allocation on compliance behavior in a subsequent compliance game. The investigated motives, which lead to less compliance, were equity restoration and revenge/negative reciprocity. Compliance was measured by the declaration of the participants' income, which was based on the participants' performance in a previous trivia quiz. In addition, I controlled for risk attitude and the belief about others' compliance behaviour as influencing factors.

Results of the experiment demonstrated that both equity restoration and negative reciprocity influence compliance behavior. Participants complied less when they experienced a loss that was intentionally imposed on them. This finding is in line with previous literature on equity restoration (Greenberg, 1990, 1993; Houser et al., 2012; John et al., 2014). Moreover, I found decreased compliance in the presence of the opportunity to take revenge on the person who has treated them unfairly. This indicates that participants were taking revenge and reciprocated negatively to unfair treatment, which is consistent with aforementioned literature on negative reciprocity and altruistic punishment (Bolton et al., 1998; Corson & Konow, 2009; Fehr & Gächter, 2002; Folger & Skarlicki, 1997). Due to the fact that contributions in the compliance game were doubled, full compliance was the socially most efficient solution. Consequently, the participants who complied the most, which were the participants in the baseline treatment, also had the highest income.

UNFAIRNESS ON COMPLIANCE

Building on the previous literature of compliance behaviour I predicted risk attitude as influential on compliance behaviour. Contrary my expectations, I could not find any evidence for the influence of risk attitude on compliance. The reason for that were probably too low stakes in the Holt and Laury risk instrument. Higher financial incentives might have promoted more risk-taking behavior. On average, all participants were very risk-averse. Also a highly risk loving person in a gambling context cannot be compared to a person, who takes risk of being caught cheating. The factor of a social norm that might influence risk-seeking behaviour is not taken into account in the Holt/Laury risk instrument.

Results supported my predictions of the influence of the belief about others' compliance on one's own compliance behavior. Participants attempted to act on the compliance level they believed other participants would do. Among all treatments this effect was strongest in treatment 2. One can say subjects in treatment 2 acted on their estimation while subjects in baseline and treatment 1 complied more than the mean estimation. This indicated that if participants believed others to take revenge through lower compliance, they complied less as well. This effect, however, causes doubt according to the motives in the second treatment. Since the participants believed others would contribute less to the common fund they were maybe not motivated to take revenge in this condition, but tried to avoid being disadvantaged in the compliance game. Nevertheless, the factor revenge had a significant influence on compliance as well, which implicates that less compliance in treatment 2 can be interpreted as retaliatory behaviour.

It has to be mentioned, that the experiment per se is taken out of context and cannot be transferred to an everyday life scenario. Consequently, these findings cannot be simply generalized and replicated, as it is often the case in a laboratory experiment. The experimental setting is artificial and participants may not make the same decisions they would usually do. On

UNFAIRNESS ON COMPLIANCE

the other hand, some components of the experiment refer to daily life. The compliance game can be associated with the social tax system, in which people declare their income and contribute a part of it to a common pot. Additionally, this pot is in community's favour and not contributing can be punished. Unjust pay-rate can also be connected to pay cut of workers of a company causing dissatisfaction and leading to deviant behaviour.

For future research it could be interesting to examine if perception of unfairness in one context will also be carried over to another context. So if people perceive unfairness or a behavior not corresponding to a fairness norm, they might behave unfairly in another context, independently of which kind of unfairness they experience. An employee being treated unfairly by his employer may be more willing to evade taxes than someone who is satisfied in his /her working environment. In addition, it would be interesting to conduct the experiment including a treatment with participants receiving a higher pay-rate but being aware of others receiving a lower one. In that way it could be examined if the general perception of unfair treatment influences compliance behaviour even if one is not affected by unfairness. According to the results of this study, people comply on the level they believe others would do. Therefore, overpaid participants would be less compliant as well because they might assume that those who have been disadvantaged will contribute less to the common pot. The influence of intentionality should be investigated by an additional experimental condition, wherein unfairness is determined randomly.

All in all, this study clearly demonstrates the effect of unfairness on compliance. The study indicates that when people perceive unfairness, they tend to behave unfairly as well, to compensate the material loss and to retaliate, even though they do not benefit by this behavior, in contrast, it imposes further loss on them.

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Appendix

A. List of Figures

Figure 1 Prediction of compliance among all treatments.....	14
Figure 2 Flowchart of the experimental procedure	19

UNFAIRNESS ON COMPLIANCE

B. List of Tables

Table 1 Factorial design of the experiment.....	15
Table 2 Risk-attitude instrument adapted from Holt and Laury, (2002)	16
Table 3 Descriptive of key measures by treatment	20
Table 4 Mean game earning of a worker	20
Table 5 Regression Results	22

C. Instructions for Participants

OPENNING FORM for workers and manager

Üdvözljük a Pénzügyi Döntések kísérletben! Köszönjük, hogy eljött.

Kísérletünkben pénzügyi döntéseket kell hoznia. A kísérlet teljesen anonim, döntéseit és kifizetéseit nem tudjuk személyéhez kötni. Minden úgy van ahogyan mondjuk, nincsen félrevezetés. Minden keresetüket készpénzben kapják meg a kísérlet végén.

Képzelve el, hogy ez egy üzem, ahol Ön dolgozik, és az üzem vezetésétől kapja fizetését. Az üzemben Dolgozók dolgoznak és egy valaki a Csoportvezető. Mindenkit az üzemvezető (nem a Csoportvezetés) fizet. A kísérlet elején véletlenszerűen kiválasztottuk, hogy ki lesz Dolgozó és a Csoportvezető. Minden Dolgozónak azonos lesz a feladata, a Csoportvezető pedig külön feladatokat kap. A Csoportvezető egyes döntései azonban hatással lesznek arra, hogy a Dolgozók mennyit keresnek a kísérlet során, azaz mennyi fizetést kapnak az üzemtől. A kísérlet során Önnek olyan döntéseket kell hozni, amellyel maximalizálja kifizetését.

A megjelenéséért mindenkinek **300 Ft-ot fizetünk**, ezt a pénzt nem az üzemtől kapja. Minden egyéb keresete döntéseitől függ. A várható, azaz **átlagos kereset 1350 Ft** (a megjelenési díjon kívül).

A kísérletben célja mindig az legyen, hogy a legnagyobb hasznot hozó döntést válassza. Bármikor abbahagyhatja a kísérletet. Ebben az esetben azonban csak a megjelenését tudjuk kifizetni, a 300 Ft-ot.

A kísérlet kb. 35 percig tart. A kísérlet során csak a kísérleti személyzettel beszélhetnek. Minden instrukciót papíron és/vagy szóban kap. Kérjük, csak akkor lapozzon ebben a füzetben, ha arra felszólítjuk. Lesznek olyan oldalak, amelyeket ki kell a füzetből tépnie. Ezeket kísérlet közben a személyzet beszedi.

Amint kitölti az alábbi Beleegyező Nyilatkozatot (lásd alább) megkapja az 300 Ft-os megjelenési díjat.

- 1) Elmúltam 18 éves
☐ Igen
☐ Nem
- 2) Elolvastam és megértettem a kísérlet rövid leírását.
☐ Igen
☐ Nem
- 3) Részt kívánok venni a kísérletben
☐ Igen
☐ Nem

Dátum és aláírás:

.....

Welcome to our experiment on Financial Decisions and thanks for coming.

In this experiment you will be asked to make financial decisions. The experiment is anonymous, your decisions and payoffs cannot be linked to your identity. In addition, there is no deception in this experiment, everything happens as we tell you and you earn as much as you are told. You will be paid in cash at the end of the experiment.

Only in treatment 1 and treatment 2:

Imagine that this room is a factory where you are working together with your colleagues. One of you, however, will be randomly selected to be the manager and everyone else will be worker. Nevertheless, only the manager will know that he is the manager and only the workers will know that they are workers. The workers and the manager are paid by the factory. While workers will be working on the same tasks, the manager will have different tasks to complete.

In addition, some of the manager's decisions will impact the workers' final payoffs. Throughout the whole study, however, you will have to make decisions that maximize your payoffs.

Everyone will get a **300 HUF show up fee** which money is not paid by the factory. Your further earnings depend on your decisions. **The mean expected is 1350 HUF** (beyond the show-up fee).

Please keep in mind that your goal is to maximize your earnings from the experiment. You can always discontinue your participation. In this case you would only be paid the 300 HUF show up fee.

The experiment will last for approximately 35 minutes during which you are only allowed to talk to the experimenter staffs. You receive all instructions on paper in the experimental leaflet and we will also read out some instructions. Furthermore, you are only allowed to turn a page in the leaflet when we instruct you to do so.

After you filled out the Consent Form (find below) you receive the 300 HUF show up fee.

- 1) I am older than age 18
 - ☐ Yes
 - ☐ No
- 2) I have read and understood the brief description of the experiment and I have understood it
 - ☐ Yes
 - ☐ No
- 3) I would like to participate in the experiment
 - ☐ Yes
 - ☐ No

Date and sign:

.....

Experimental material for workers in baseline, *treatment 1* and *treatment 2*. Material for everyone is typed with regular fonts.

Emlékeztetjük, hogy Ön - mint mindenki a teremben - egy üzemben Dolgozóként dolgozik. Mindenkit az üzemvezetés fizet.*Emlékeztetjük, hogy Ön - mint mindenki a teremben - egy üzemben dolgozik. Egyikük lesz a Csoportvezető, a többiek a dolgozók. A dolgozók nem fogják azonban tudni ki a Csoportvezető. A Dolgozók dolgozni fognak a Csoportvezető pedig olyan döntéseket fog hozni, amivel meghatározza, hogy mennyit keressenk munkájukkal a dolgozók. Mind a dolgozókat, mind a Csoportvezetőt a az üzemvezetés fizeti.*

Ha kérdése van nyújtsa fel a kezét!

Most várjon és ne lapozzon! Nézzen előre innen tudjuk, hogy készen áll a kísérletre.

Ha mindenki készen áll engedélyt adunk a lapozásra.

We would like to remind you that this is a factory and everyone is worker here. Everyone is paid by the factory.*We would like to remind you that this is a factory and you are working along with your fellow colleagues. One of you will be randomly selected to be the Manager and everyone else will be worker. However, you will not know who else is a worker and who is the Manager. Workers will work and some of the Manager's decisions will impact the workers's payoffs. Workers and manager are paid by the factory. Your goal is to make decisions that maximizes your earnings.*

Raise your hands if you any questions.

Please wait until we instruct you to turn a page. If you are read look ahead so we know that you are ready to proceed.

Ön Dolgozó lesz

Most dolgozni fog és a munkája elvégzéséért fizetést kap. Munkája az lesz, hogy maximum három perc alatt megválaszoljon egy tíz kérdésből álló trivia (műveltségi) kvízt. Minden helyes válasza 100 Ft-ot ér (azonos minden dolgozonak). Ha pl. 5 helyes kvíz válasza van, akkor 500 Ft-t keresett./*Minden helyes válasza 100 Ft-ot vagy 500 Ft-ot ér, attól függően, hogy a Csoportvezető hogyan dönt. Ha pl. 500 Ft-ot ítél Önnek a Csoportvezető egy helyes kvíz válaszáért, és 5 helyes kvíz válasza van, akkor 2500 Ft-t keresett.*

Amikor megválaszolta a kvíz-kérdéseket a kísérleti személyzet beszedi a kvíz lapot és kiszámolja, hogy hány helyes választ adott. Ezt az információt is megtudja. **A saját keresetéről azonban csak Ön tud a teremben. Ez privát információ. Azaz se a Csoportvezető, se az üzemvezetés nem tudja az Ön személyes keresetét, mivel nincsen információja az Ön kvíz teljesítményéről. Azt viszont az egész csoporttal (dolgozók és a Csoportvezető) közöljük, hogy a csoport összesen mennyit keresett.**

Kérjük, tartsa fejben, hogy a teremben lévő minden Dolgozó ugyanazon egységárat kapja egy-egy helyes kvíz-kérdésért. Ez azt is jelenti, hogy a teremben ülő személyek kvíz-keresete között csak a teljesítményük különbözősége miatt lehet különbség.

Még egyszer: Az Ön keresete a Csoportvezető döntésétől függ!

Ha kérdése van nyújtsa fel a kezét, és a kísérleti személyzet odamegy Önhöz. Ha megértette a feladatot, akkor lapozzon.

You will be a worker.

Now you have three minutes to answer a 10 item trivia quiz and you will be paid for each correct answer. You (like every other worker) will be paid 100 HUF for each correct answer. So, if you answer five questions correctly you will be paid 500 HUF. The manager will decide if you (like every other workers) would be paid 100 HUF or 500 HUF for each correct answer. *If the manager decides on 500 HUF and you made 5 correct answers then you will be paid 2500 HUF.*

Once you completed your work we will collect your sheets and determine your number of correct answers. Then, you will privately receive this information. **This information is your private knowledge, neither the manager nor the factory will learn of. The total group earnings will be, however, disclosed to everyone.**

Please keep in mind that workers have equal pay-rate. Hence, any income difference between workers is due to their varying quiz performance.

Again, your earnings depend on the manager's pay-rate decision.

Raise your hands if you any questions.

If you understood the task you can turn a page in your leaflet.

Az oldal alján lévő táblázatba írja be a kérdés sorszáma alá a helyes válasz betűjelét. Ha pl. Az első kérdésre D a válasza, akkor az 1-es szám alá írja D. Amikor készen van tépje ki ezt a lapot és lefordítva tegye maga mellé. A kísérleti személnzet hamarosan összeszedi.

1. Melyik költő halt meg a szabadságharcban?
A. Petőfi Sándor, B. Babits Mihály, C. Vörösmarty Mihály, D. József Attila
2. Mikor volt az augsburgi vallás béke?
A. 1655, B. 1456, C. 1222, C. 1555
3. Melyik ország fővárosa Peking?
A. Tájván, B. Észak-Korea, C. Japán, D. Kína
4. 2007-ben melyik országnak volt nagyobb a lakossága?
A. Románia, B. Ausztrália, C. Madagaszkár, D. Belgium
5. Mikor mondták ki a tankötelezettséget Magyarországon?
A. 1989, B. 1848, C. 1723, D. 1777
6. Mi Franciaország fővárosa?
A. Párizs, B. London, C. Bécs, D. Koppenhága
7. Mikor volt kint világvserenyen (EB,VB) utoljára a felnőtt férfi magyar foci válogatott?
A. 2007, B. 1992, C. 1986, D. 1967
8. Melyik városnál szenvedett véglegesen vereséget Napoleon?
A. Párizs, B. Waterloo, C. Nándorfehérvár, D. Mohács
9. 2009-es adatok alapján kinek nagyobb a nominális GDP-je?
A. Brazília, B. Spanyolország, C. Románia, D. Peru
10. Melyik országnak a legnagyobb a területe?
A. Peru, B. Oroszország, C. Kanada, D. Kína

1.	2.	3.	4.	5.	6.	7.	8.	9.	10.

In the table at the bottom of this page please indicate your answers for each question. If for instance you selected D for question 1 write D in the box below 1 in the table. When you are done please tear the page out, turn it facing down and the experimenters will go and collect them.

Most várjon és ne lapozzon! Nézzen előre innen tudjuk, hogy készen van.
Ha mindenki készen áll engedélyt adunk a lapozásra.

Please wait now and do not turn a page. Look ahead so that we know you are ready. Once everyone is ready we
instruct you to turn a page.

Kockázatos Döntések Kérdőív

A következő oldalon tíz kockázatos pénzügyi döntést talál. Minden döntésnél két lehetőség, A és B közül kell választania. A „Választásom” oszlopban írja be, hogy egy-egy döntés esetében az A vagy B opciót választja.

A kísérlet végén a komputer véletlenszerűen kiválasztja az egyik döntést (pl. 1-t) és a nyert összeget kifizetjük Önnek. Ekkor, ha az A opciót választotta, akkor 10% eséllyel kap 500 Ft-t és 90% eséllyel 400 Ft-t és, ha B-t választotta, akkor 10% eséllyel kap 965 Ft-ot és 90% eséllyel 25 Ft-ot kap.

Ha készen van tépje ki a lapot és ne lapozzon, amíg engedélyt nem adunk.

	A. Opció – Option A				B. Opció – Option B				Választásom: A vagy B? My choice: A or B?
	Nyere- mény Ft- Prize in HUF	Esélye %-ban Likeli- hood in %	Nyere- mény Ft- Prize in HUF	esélye %-ban Likeli- hood in %	Nyere- mény Ft - Prize in HUF	Esélye %-ban Likeli- hood in %	Nyere- mény Ft- Prize in HUF	Esélye %-ban Likeli- hood in %	
1	500	10	400	90	965	10	25	90	
2	500	20	400	80	965	20	25	80	
3	500	30	400	70	965	30	25	70	
4	500	40	400	60	965	40	25	60	
5	500	50	400	50	965	50	25	50	
6	500	60	400	40	965	60	25	40	
7	500	70	400	30	965	70	25	30	
8	500	80	400	20	965	80	25	20	
9	500	90	400	10	965	90	25	10	
10	500	100	400	0	965	100	25	0	

Risky Decisions

In the table below you find ten risky financial decisions. In all decisions you can choose between option A and B, and indicate your choice in the last column (My choice). At the end of the experiment the computer will randomly draw one of the listed ten choices and you will be paid on this choice. If, for instance, the first choice will be drawn and you chose option A then you will be paid 500 HUF with 10% and 400 HUF with 90%. If you selected option B here, then you will be paid 965 HUF with 10% and 25 HUF with 90%.

Once you made all your choices tear this page out, place it facing down on your table and the experimenters will collect them. Please do not turn a page until we instruct you to do so.

Most várjon és ne lapozzon! Nézzen előre innen tudjuk, hogy készen van.

Hamarosan megtudják, hogy hány helyes választ adtak a kvízen, mennyit kerestek és a csoport összesen mennyit keresett.

Please wait and do not turn a page. Look ahead so we know that you are ready.

You will soon find out how many correct answers you made on the quiz, how much money you made and how much the group earned in total.

Quiz feedback:

Helyes válaszok száma:...

Number of correct trivia answers:...

Projected to the group on screen

A manager 100 HUF-os egységárat határozott meg a csoportnak. Az alábbi táblázatból megtudja, hogy a mennyi pénzt keresett az adott helyes válaszok mellett. Ezen információ privát.

The manager decided that your pay-rate is 100 HUF. From this table you can find out how much money you earned given your correct answers. Your earning is private information.

Helyes válaszok száma – Number of correct answers	Kereset - Earning
1	100
2	200
3	300
4	400
5	500
6	600
7	700
8	800
9	900
10	1000

Az egész csoport (Dolgozók) összesen ... Ft-ot keresett (Egyéni kereset privát információ).

Összesen ... dolgozó van a csoportban. There are workers in this group.

A manager ... Ft-ot keresett egység-ár döntésének meghozásával.

The manager made HUF by making his pay-rate decision.

1. Mennyire elégedett eddigi keresetével?
 - ☐ Egyáltalán nem vagyok elégedett
 - ☐ Kicsit elégedett vagyok
 - ☐ Közepesen vagyok elégedett
 - ☐ Nagyon elégedett vagyok
2. Van esetleg elképzelése arról, hogy mire fogja elkölteni az eddig keresett pénzt?
 - ☐ Olyan keveset kerestem eddig, hogy nem tervezek semmi különöset a pénzzel.
 - ☐ Igen. Pár szóban írja le, mire költi a pénzt
3. Ön szerint igazságos volt a kvíz-egységár megválasztása?
 - ☐ Igazságos
 - ☐ Inkább igazságos
 - ☐ Inkább igazságtalan
 - ☐ Igazságtalan
 - ☐ Az igazságosság nem téma ebben a helyzetben
4. *Dühös vagyok a Csoportvezető döntése miatt.*
 - ☐ Egyáltalán nem
 - ☐ Kicsit
 - ☐ Közepesen
 - ☐ Nagyon
5. *Csalódott vagyok a Csoportvezető döntése miatt.*
 - ☐ Egyáltalán nem
 - ☐ Kicsit
 - ☐ Közepesen
 - ☐ Nagyon
1. How satisfied are you with your earnings?
 - ☐ Not at all
 - ☐ Little bit
 - ☐ Moderately
 - ☐ Very much
2. Do you have plans about how you will spend your earnings?
 - ☐ I earned so little that I have no plans
 - ☐ Yes. I will spend it on ...
3. Would you say that the pay-rate decision was ...
 - ☐ Fair
 - ☐ Rather fair
 - ☐ Rather unfair
 - ☐ Unfair
 - ☐ Fairness was not an issue here
4. *I am angry with the manager for his pay-rate decision*
 - ☐ Not at all
 - ☐ Little bit
 - ☐ Moderately
 - ☐ Very much
5. *I am disappointed by the manager's pay-rate decision*
 - ☐ Not at all
 - ☐ Little bit
 - ☐ Moderately
 - ☐ Very much

Az üzemvezetés javítani kíván a Dolgozók (nem a Manager) munkakörülményein. Ezért egy speciális alapot hozott létre. Minden Dolgozónak (Managernek nem) kötelező ebbe az alapba befizetni fizetése 25%-át. Mivel az üzem nem tudja, hogy egy-egy Dolgozónak mekkora a fizetése, ezért most a Dolgozóknak, Önöknek be kell vallaniuk, hogy mennyit kerestek a kvízen (munkájukon). A bevallott összeg 25%-a levonásra kerül a végső keresetükből.

Ha pl. 1000 Ft-ot keresett és 200 Ft-ot vall be, akkor 50 Ft-ot vonunk le a kvíz-keresetéből. Tehát, a kísérlet végén 1000-50 Ft, azaz 950 Ft-ot fog kapni a munkájáért. A be nem vallott pénze után tehát nem kell a 25%-ot befizetnie. Ez azt jelenti, hogy bármilyen összeget bevallhat 0 Ft és a valós keresete között (maximum a valós jövedelmét vallhatja be). Továbbá tájékoztatjuk, hogy az üzem nem tudja mindenkinél ellenőrizni, hogy a valós jövedelmét vallotta-e be.

Amikor eldönti, hogy mennyi jövedelmet vall be minden olyan tényezőt fontoljon meg, amelyet a következő oldalon ismertettünk.

Bevallott jövedelmekből való levonás és a visszafizetés

A Dolgozók által befizetett pénzek - azaz a bevallott jövedelmek 25%-ai - összeadódnak. Majd ezen összeget az üzem megduplázza. A megduplázott összeg pedig egyenlő részben elosztásra kerül a Dolgozók között.

Ha pl. a Dolgozók által összesen befizetett pénz 3000 Ft, akkor a duplázás ebből 6000 Ft-ot csinál. Ha pl. összesen 20 Dolgozó van, akkor egy Dolgozó $6000 \text{ Ft} / 20 = 300 \text{ Ft}$ -ot kap. Ezen összeget az üzem hozzáadja a kísérleti keresethez, és kifizetik.

Bevallott jövedelmek ellenőrzése

Miután bevallotta jövedelmét, véletlenszerűen kiválaszthatják ellenőrzésre. Azt ellenőrzik, hogy a valós jövedelmét vallotta-e be. Annak esélye, hogy kiválasztják ellenőrzésre 15%.

- ✓ Ha az ellenőrzésen az derül ki, hogy a valós jövedelmét vallotta, be nem történik semmi.
- ✓ Ha az ellenőrzésen az derül ki, hogy bevallott jövedelme nem egyezik valós jövedelmével, akkor a be nem vallott jövedelméből levonják a 25%-ot, majd ezen összeget újból levonják a kísérleti keresetéből.

Ha tehát, Ön 1000 Ft-ot keresett és 200 Ft-ot vallott be, akkor a be nem vallott 800 Ft 25%-át (azaz 200 Ft-ot) kétszeresen vonják le, azaz 400 Ft kerül összesen Öntől levonásra. Az így beszédett pénz azonban nem kerül megtöbbszörözésre és a Dolgozók közti szétosztásra.

Tájékoztatjuk továbbá, hogy az ellenőrzés ténye és eredménye privát információ, csak Ön tud róla.

In baseline and in treatment 1

Mivel az üzemvezetés tudja, hogy a csoport összesen mennyit keresett meg tudják határozni a csoport átlagos együttműködését. Erre az alábbi kategóriákat használják:

- ✓ Magas: Bevallott és valós jövedelem aránya 70 és 100 % között van
- ✓ Közepes: Bevallott és valós jövedelem aránya 69 és 40 % között van
- ✓ Alacsony: Bevallott és valós jövedelem aránya 39 és 0 % között van

Only in treatment 2:

A Csoportvezető további fizetése, bónusza attól függ, hogy mi a bevallott/valós jövedelem aránya

Mivel az üzemvezetés tudja, hogy a csoport összesen mennyit keresett meg tudják határozni a csoport átlagos együttműködését. A Csoportvezető további kifizetése, bónusza attól függ, hogy a bevallott jövedelmek mekkora százaléka a valós jövedelmeknek. Azaz attól függ, hogy a csoport (azaz a Dolgozók összessége) valós jövedelmének mekkora százalékat vallja be. A Csoportvezető bónuszát az üzem az alábbi módon kerül meghatározására:

- ✓ Ha bevallott összeg a valós összegnek 70%-100%-a, akkor a Csoportvezető 1000 Ft-os bónuszt kap.
- ✓ Ha bevallott összeg a valós összegnek 69%-40%-a, akkor a Csoportvezető 0 Ft- os bónuszt kap.
- ✓ Ha bevallott összeg a valós összegnek 39%-0%-a, akkor a Csoportvezető 500 Ft- kerül levonásra, azaz a Csoportvezetőt megbüntetik és fizetnie kell. A Csoportvezető tehát ennyivel kevesebb pénzt keres, és fizet neki az üzem.

Ha kérdése van, nyújtsa fel a kezét és odamegyünk.

Ha minden információt megértett, akkor lapozzon. Ha úgy érzi szüksége van még az instrukciók olvasására, akkor olvassa el újból.

The factory is planning to make some improvements for the workers and created a special fund. Every worker is asked to pay 25% of his/her income into the fund. Because, however, workers' income is private information they ask workers to declare their income and 25% of the declared income will be deducted from the final earning.

If you for instance, made 1000 HUF and you declare 200 HUF then 50 HUF will be deducted from your earnings. This means that the end of the experiment you will receive 50 HUF less than your earnings. Any undeclared amount, however, is not subject to the 25% deduction. This means that you can declare any income between 0 HUF and your true income (you cannot declare more than your true income). You also need to keep in mind the the factory cannot check every worker's income declaration. Before you, however, decide how much you want to declare please read carefully the following details.

Deducting money and the public good

Money paid in by the workers (the 25% of the declared incomes) will be summed and doubled by the factory. If, for instance, this sum is 3000 HUF then after the doubling it becomes 6000 HUF. Then, this 6000 HUF will be redistributed in equal shares between the workers. If there are, for instance, 20 workers in the group then each worker will get $6000/20=300$ HUF added to his/her final earnings.

Auditing workers

Workers may be subject to random audit after they have declared their incomes. The probability for being audit is 15%. That is, each worker faces a 15% of being selected for an audit. In this case these workers will be checked whether they declared their true income.

- ✓ If the audit shows that the true and the declared incomes are the same nothing happens.
- ✓ If the audit shows that the declared income is less than the true then the 25% of the undeclared portion will be deducted twice from the final earnings of the worker.

Only in baseline and in treatment 1:

Because the factory knows the total group income they are able to determine the mean group compliance and created the the following categories:

- ✓ High: Declared and true income ratio is between 70 and 100 %
- ✓ Medium: Declared and true income ratio is between 69 és 40 %
- ✓ Low: Declared and true income ratio is between 39 és 0 %

Only in treatment 2:

Because the factory knows the total group income they are able to determine the mean group compliance. The manager's bonus from received from the factory depends on the group's compliance level. This is the ratio of the group's mean declared and true income.

- ✓ *If the ratio is between 70 and 100% the manager receives and extra 500 HUF.*
- ✓ *If the ratio is between 69 and 40% the manager received nothing*
- ✓ *If the ration is between in 39% and 0% the manager has to pay 500 HUF.*

Please raise your hand if you have any questions. We will go to your desk to answer your questions.

Most, kérjük, az alábbi mezőbe írja be, hogy mennyi pénzt keresett a kvízen (munkáján). Fontos, hogy bevallással kapcsolatos információkat mérgelve tegye ezt. Emlékeztetjük, hogy **csak Ön tudja, hogy valóban mennyi pénzt keresett**. Annyi pénzt valljon be, amivel maximalizálja kísérleti jövedelmét. Ha nem emlékszik pontosan mi történik a bevallott jövedelemmel lapozzon vissza az előző oldalra.

Jövedelmét csak egyszer vallhatja be, a megadott számot nem lehet megváltoztatni.

A munkámmal ennyi pénzt kerestem: Ft
(csak egész számot adhat meg, nullát megadhat)

Most becsülje meg, az **átlagos bevallott/valós jövedelem átlagos arányát** a csoportjában. Azaz, becsülje meg, hogy a bevallott jövedelem átlagosan mekkora százaléka a csoport valós jövedelmének. Becslése 0 és 100 közé eső, egész szám kell legyen.

Az alacsony szám alacsonyabb átlagos bevallást jelent, azaz a bevallott jövedelem erősen elmarad a valós jövedelemtől. A nagyobb szám azt jelenti, hogy a bevallott jövedelem jobban közelít a valóshoz.

Az személy, akinek becslése a legközelebb esik a valós bevallott/valós jövedelem arányhoz további 1000 Ft-ot kap. Ha több ilyen ember van, akkor a számítógép véletlenszerűen dönti el, hogy ki kapja az 1000 Ft-ot.

Átlagos bevallott/valós jövedelem arány a csoportban:%
(csak 0 és 100 közé eső egész számot adhat meg)

Ha készen van tépje ki ezt a lapot és lefordítva tegye maga mellé. A kísérleti személyzet összesíti és kiszámolja és
kiszámolja a jövedelmét.

In the field below please declare your income. It is important that you consider all aformationed information when you do so. Remember that your true income is private information and your goal is to maximize your earnings from the experiment. If you forgot how much you earned look back on your sheet. You can only declare your income once.

With my work I made HUF (you can only declare integers)

Now, please estimate the mean declared and true income ratio in your group with a number between 0 and 100. A small number indicates that you are expected low compliance level, a large number indicates that you are expecting higher compliance level in your group. Those whose estimation falls within +/-5% range of the actual compliance will be entered a lottery. One person will be randomly chosen and will receive an additional 1000 HUF at the end of the experiment.

The mean declared and true income in my group% (integer must range from 0 to 100)

If you finished please tear this page out, turn it facing down and move to the next page. The experimenters will collect these sheets and determine your additional earnings.

Amíg a kísérleti személyzet feldolgozza a bevallott jövedelmeket válaszoljanak a demográfiai kérdésekre. Ha készen van, NE LAPOZZON, hanem nézzen előre.

Ha mindenki készen van, megtudja mennyit keresett és kivetítjük a bevallott jövedelmek feldolgozásának eredményét.

- 1) Születési éve:
- 2) Neme
 - ☐ Férfi
 - ☐ Nő
- 3) Legmagasabb iskolai végzettsége
 - ☐ Általános iskola
 - ☐ Érettségi
 - ☐ BA vagy főiskola
 - ☐ MA vagy egyetem
 - ☐ Doktori (nem orvosi vagy jogi, hanem tudományos fokozat)
 - ☐ Egyéb, írja le...
- 4) Jelenleg felsőoktatásban tanul?
 - ☐ Igen
 - ☐ Nem
 - ☐ Halasztok
 - ☐ Egyéb, írja le...
- 5) Milyen szakon tanul? Kérjük, írja le...
- 6) Melyik országban nőtt fel? Kérjük, írja le.....
- 7) A magyar társadalom melyik csoportjába sorolná magát családja (ha többnyire szülei tarják el) vagy az Ön (ha önfenntartó) jövedelmi helyzete alapján? Ha családja/Ön nem Magyarországon él, akkor azon országra gondoljon, ahol a családja/Ön él (és jelölje be hogy családja/Ön nem Mo-n él választ **is**).
 - ☐ Legalacsonyabb 25%
 - ☐ Második 25%
 - ☐ Harmadik 25%
 - ☐ Legmagasabb 25%
 - ☐ Családom/Én nem Magyarországon él/ek
- 8) Jelenleg Ön... (Több választ is megadhat)
 - ☐ Teljes állásban dolgozik
 - ☐ Részmunkaidőben dolgozik
 - ☐ Vállalkozó
 - ☐ Nyugdíjas
 - ☐ Egyéb, írja le...
- 9) Lakhelye...
 - ☐ Budapest
 - ☐ Megyeszékhely
 - ☐ Kisváros
 - ☐ Falu
 - ☐ Egyéb, írja le...

While the experimenters process the declared income please fill out the demographics survey.

Please do not turn page when you are done with this survey. Once everyone is done we will disclose results of processing the declared income.

- 1) Year of your birth:
- 2) Your gender:
 - ☐ Male
 - ☐ Female

- 3) Your highest level of education
 - ☐ Elementary school
 - ☐ High school graduate
 - ☐ BA or college
 - ☐ MA or university
 - ☐ PhD
 - ☐ Other, please specify
- 4) Are you a currently enrolled student?
 - ☐ Yes
 - ☐ No
 - ☐ On hold
 - ☐ Other, please specify
- 5) Specify the field of your studies
- 6) In which country did you grow up?: ...
- 7) How would you rate income (your family if you are living at home, your own if you are living on your own)? If you or your family earns income outside of Hungary please think of that county.
 - ☐ Lowest 25%
 - ☐ Second 25%
 - ☐ Third 25%
 - ☐ Highest 25%
 - ☐ Other, please specify ...
- 8) Your employment situation (you can indicate more than one):
 - ☐ Full-time
 - ☐ Part-time
 - ☐ Self-employed
 - ☐ Retired
 - ☐ Other, please specify...
- 9) Your living place:
 - ☐ Budapest
 - ☐ Capital of a province
 - ☐ Small town
 - ☐ Village
 - ☐ Other, please specify

Most várjon és ne lapozzon! Nézzen előre innen tudjuk, hogy készen van.

Hamarosan megtudják, hogy mennyit kerestek és a csoportban mekkora volt a jövedelem és a bevéllási arány.

Előbb kivetítjük a csoportra vonatkozó számokat.

Majd mindenki személyesen megkapja jövedelmi kimutatását.

Csak akkor lapozhat, amikor engedélyt adunk a lapozásra

Please wait now and do not turn a page. Look ahead if you are ready. You will soon learn the results of processing the declared income which will be projected.

Then, every will individually receive his/her itemized earnings slip.

Once we instruct you you can turn a page.

To be projected:

A bevallott jövedelmek feldolgozásának eredménye

- A csoport befizetéseinek összege.... Ft
- A megduplázott összeg ... Ft
- A megduplázott összeg egyenlő arányban kerül elosztásra a csoport tagjai között. Azaz **minden Dolgozó eddigi keresete Ft-tal növekszik**
- A csoport a valós jövedelmének az %-át vallotta be
- *A csoportvezető bonusza Ft (only treatment 2)*
- ... dolgozó jövedelem-bevallását ellenőrizték

Results of processing the income declaration

- Group pot ... HUF
- Public good ... HUF
- Share for each worker .. HUF
- Mean group compliance level ... %
- *The manager's bonus ... HUF (only treatment 2)*
- Workers were audited

Ön munkájával eddig Ft-ot keresett.

Ezen keresete az alábbi tételekből áll össze:

- ✓ Kvíz-kereset: Ft
- ✓ Bevallott jövedelem utáni levonás: Ft
- ✓ A megduplázott csoportbefizetés Dolgozók közti szétosztása: Ft
- ✓ Bónusz a csoport bevallott/valós jövedelem arányának becsléséből: Ft
- ✓ Ellenőrzés utáni levonás: Ft

A kísérlet végén készpénzben kapja meg ezt a pénzt.

Örizzze meg ezt a lapot, mert csak ez alapján tudunk Önnek fizetni.

So far you earned HUF.

This earning is composed of the following items:

- ✓ Earned on quiz ... HUF
- ✓ Deduction on the declared income ... HUF
- ✓ Your share from the public good ... HUF
- ✓ Estimation bonus ... HUF
- ✓ Fine in case of an audit ... HUF

You will receive your earning at the end of the experiment. Please keep this slip in order to prove your exp ID and earnings.

1. Néhány mondatban röviden foglalja össze, hogy az iménti kísérlet milyen valós élethelyzetre emlékeztette. Elsősorban arra vagyunk kíváncsiak, hogy a jövedelem bevallása, az ebből való levonás, a megduplázás utáni visszaosztás és a lehetséges ellenőrzés milyen szituációt juttatott eszébe.....
2. Néhány mondatban röviden foglalja össze, hogy mi vezérelte viselkedését a kísérlet során. Elsősorban motivációjára, érzelmeire és elvárásaira vagyunk kíváncsiak

A következő állítások a kísérlettel kapcsolatos érzelmeire, gondolataira és viselkedésére vonatkoznak. Jelölje X-szel válaszait.

	Egyáltalán nem érték egyet	Kicsit egyetérték	Közepesen érték egyet	Nagyon egyetérték
3. Dühös vagyok				
4. Csalódott vagyok				
5. Jövedelmemet tisztességesen vallottam be				
6. Szerintem jogos a valós jövedelemnél kevesebb jövedelmet bevallani				
7. Elégedett vagyok az eddig jövedelmemmel				
8. Szerintem, a valósnál kevesebb jövedelem bevallása az alacsony egység-ár kompenzálásának egyik módja				
9. Jövedelmem bevallásakor az is motivált, hogy a Csoportvezető minél kisebb bónuszt kapjon (only in treatment 2)				

VÉGE!

- 1) In a few sentences please share with us that what situation the experiment the most reminded you? We are mostly interested what real life parallels you find declaring income, deducting from this declared amount, multiplying and redistributing the pot and the audit....
- 2) In a few sentence please summarize your motivations (thoughts, feelings, etc.) when declared your income.
- 3) Please rate the following statements:

	Abosultely do not agree	Little bit agree	Moderately agree	Very mcuh agree
I am angry				
I am disappointed				
I declared my income ethically				
I believe it is fair to declare less than true income				
I am satisfied with my income				
<i>I believe declaring less than true income is a way to compensate for the low pay-rate (In treatment 1 and 2)</i>				
<i>When declaring my income I wanted to take revenge on the manager (only in treatment 2)</i>				

Köszönjük a részvételt!

A FÜZETET ÉS MINDEN LAPOT TEGYEN MAGA MELLÉ ÉS A KÍSÉRLETI SZEMÉLYZET ÖSSZESZEDI.

Ha mindenki füzetét beszédtek álljanak sorba, és egyenként kifizetjük Önöket.

Megkérjük Önöket, hogy semmiképpen sem mondják a többi kísérletre várakozónak, feliratkozottnak, hogy miről szólt a kísérlet és mi történik itt.

Thank you again. Please bring all your material to the desk and you will be paid.

Please do not tell what the experiment was about to your family and friends before 1 of May, 2015.

Zusammenfassung

Die vorliegende Studie untersucht den Einfluss von ungerechter Bezahlung auf konformes Verhalten. In einem Laborexperiment haben zunächst die StudienteilnehmerInnen an einem Quiz teilgenommen und wurden für jede richtige Antwort einem Lohnsatz entsprechend ausgezahlt. Darauf wurden sie aufgefordert 25% ihres Einkommens in einen gemeinsamen Fond einzuzahlen. Die Studienergebnisse zeigen, dass diejenigen TeilnehmerInnen, welche nach einem ungerechten Lohnsatz ausgezahlt wurden, weniger bereit waren sich am gemeinsamen Fond zu beteiligen. Dies deutet darauf hin, dass StudienteilnehmerInnen motiviert waren einen finanziellen Verlust durch geringe Beteiligung zu kompensieren. Hatten sie die Möglichkeit der, für die ungerechte Auszahlung, verantwortlichen Person finanziellen Schaden, durch nicht konformes Verhalten, zuzufügen, trugen sie noch weniger bei. Daraus lässt sich schließen, dass die TeilnehmerInnen die Ungerechtigkeit, welche ihnen widerfahren ist, erwidern wollten. Zusätzlich hatte der Glaube über das konforme Verhalten der anderen StudienteilnehmerInnen einen starken Einfluss auf das eigene konforme Verhalten.

Ich versichere, dass ich die Diplomarbeit ohne fremde Hilfe und ohne Benutzung anderer als der angegebenen Quellen angefertigt habe, und dass Ich die Arbeit in gleicher oder ähnlicher Form noch keiner anderen Prüfungsbehörde vorgelegt habe. Alle Ausführungen der Arbeit die wörtlich oder sinngemäß übernommen wurden, sind als solche gekennzeichnet.

Wien, September 2015

Filip Matic

Curriculum Vitae

Education

03/2009 – to date	University of Vienna <i>Faculty of Psychology</i>
09/2008 – 01/2014	University of Mannheim <i>Faculty of Economics</i>
06/2008	General qualification for university admission (Abitur) <i>Rupprecht-Gymnasium, Munich, Germany</i>

Work Experience

02/2014 - 07/2014	riebeaux Training & Coaching <i>Coaching Assistance</i>
04/2007 - 12/2013	Youth Welfare Office Munich <i>Child care</i>
10/2008 - 02/2009	teleResearch Gmbh <i>Interviewer</i>