The Effect of Shame on Motivation

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Abstract

Shame is an emotion that often goes hand in hand with financial problems. This has been common knowledge for a while, however what is still unclear is the extent to which shame is an obstruction for solving these problems. It was felt that motivation is essential to solving these problems and therefore, the relation between shame and a specific form of motivation, perseverance, was examined. It was hypothesised that shame could either increase or decrease perseverance. In the study participants were assigned to a public shame, bad performance and a control condition. This was done in order to assess possible differences between the shame of being aware that others know one has performed badly, and the shame of only the person knowing the performance was bad. Results confirmed that shame was successfully manipulated, but no effect was found of shame on perseverance. However, the results suggest that an adaptation of the current study, could yield more conclusive proof. Improvements and future directions are discussed.

Despite what one might think, poverty is still a serious issue in the western world. In 2014, 734,000 households had to survive on a monthly income that was right on or below the poverty line in the Netherlands in 2014 (Awwad, 2016). And by the end of 2016 the number of people that had applied for and were eligible to receive unemployment benefits had increased by 18,000 to a total of 467,000. According to the Central Bureau for Statistics, it was the seventh consecutive year that the number of people claiming benefits had increased (Verschuren, 2017). While these numbers are noteworthy by themselves, when one takes a closer look at the situations in which these families and people find themselves, the underlying causes for their predicaments become more apparent. In a study by Westhof, De Ruig, and Kerckhaert (2015), researchers found that 15.7% of households in the Netherlands deal with high-risk or severely problematic debts, without using governmental debt-assistance. In the study, the authors named these households, the "invisible" households, because of the difficulty of recognizing these households as in need of help. This in turn also makes it less likely that these families know where to turn to for help, and receive the assistance needed.

For a long time there have been two different views on the cause of poverty. One view holds that people who deal with poverty are a result of their environment, and have access to subpar education and health services, can only exert limited political influence, are more likely to have interactions with drugs and alcohol and have poor living conditions. The view holds that this environment reinforces behaviour that makes it difficult to escape poverty and is also referred to as the poverty trap (Shah, Mullainathan, & Shafir, 2012; Bonds, Keenan, Rohani, & Sachs, 2010).). The second view holds that people in poverty either lack certain personality traits, like a strong will or intelligence, or have personality traits that are self-destructive, like being prone to addiction or impulsive behaviour and that these traits lead to a life of poverty (Sutin, Evans, & Zonderman, 2013). However recently, studies started to look

at different possible causes for the reasons of why people live in poverty, and sometimes have a hard time escaping their precarious situations.

Most of this recent literature on poverty focused on the impact of poverty on decision-making. These studies showed that a scarcity of financial resources changes the way that people allocate their attention, which then leads these people to paying too much attention to certain problems and not enough to other problems (Shah et al., 2012). People in these situations have a tendency to use all their mental resources to focus on the short term, instead of the long term, because it is needed in order to survive day-to-day. This scarcity of attention makes it hard to undertake action and set plans in motion to eventually escape an undesired situations (Spears, 2011).

This scarcity theory brings a new perspective on possible causes for poverty; however, the focus in this theory is on how a change in cognitive functioning can impact poverty. Importantly, this explanation neglects the potential role emotions may play in the poverty trap. Many studies showed that emotions can influence the decisions people make, because the consequences of a certain decision may come with a certain anticipated emotion. For instance when one is thinking about investing in a risky stock option, the anticipated regret when the stock does not do well may dissuade the person from investing (Loewenstein & Lerner, 2003). A second way emotions can influence decisions is through altering the perceived probability or desirability of an event occurring. In this case, an emotion like hope may make it seem more likely that a certain event will occur, even if there is no evidence to suggest that this is the case (Loewenstein & Lerner, 2003). These types of emotions may lead people to making decisions that are very short term focused and impulsive. One emotion that is central to the experience of poverty is shame. Shame is an emotion that can make a person feel powerless and incompetent, which is caused by the fact that the cause of the shame is not necessarily of a person's own doing and therefore cannot be mitigated by the person's own

actions (Walker et al., 2013). In the case of poverty it is found that the characteristics and consequences of shame experienced are similar in different circumstances and cultures (Walker et al., 2013). Therefore, it seems of great interest to discover what role shame plays in the poverty trap that people experience. In this study, there was specific interest in the impact of shame on motivation, as motivation is a psychological process that is important when one wants to get out of poverty. Motivation can mean different things, but in this study the focus will be on a specific type of motivation, called perseverance. People in poverty need perseverance in order to escape their situation. These people are going to have to do and participate in activities that are boring, seem pointless or have an uncertain reward, such as filling out different forms that can be hard to understand, enrolling in back-to-work programs where the uncertainty of actually getting a job through the program is high, or having to deal with different government institutions, which can be a tedious and bureaucratic process (Chase & Walker, 2012).

In this study, it was attempted to experimentally induce shame and examine its impact on performance in a perseverance task in an experimental setting. However, the conclusions from previous studies on shame and motivation have been mixed. On the one hand, there was evidence that shame can lead to a person withdrawing from the situation, because of the fear of making more perceived mistakes. This is also means that the opportunity to restore the damaged self-image is missed (De Hooge, Zeelenberg, & Breugelmans, 2011). In a study that looked at when people were most motivated to look for help, researchers found that people were more likely to look for help if the reason for failure could be externally attributed and not internal (Tessler & Schwartz, 1972). This is important, because shame is an emotion that comes from an action or situation that is perceived to be caused by one's personality traits. This diminished motivation to look for help, could be part of an overall decrease of motivation to fix the situation the person is currently in. Based on these studies, it would be

concluded that motivation and perseverance will be low following shame, as people might feel that trying to correct the mistakes is futile, seeing as there is something internally wrong with them. On the other hand, other studies showed slightly more optimistic results. Leach and Cidam (2015) found that shame can lead to the constructive motivation to repair the self-image, when those repairs seem manageable for the person. The more manageable the problems, the more likely it is that a constructive approach is taken to fixing the situation, instead of an avoidance approach. Similarly, a study by Lickel, Kushlev, Savalei, and Schmader (2014) showed that recalling experiences of shame were predictive of a motivation for self-change, and it was found that shameful feelings were predictive of a desire for a change of the self, that was unique from other such emotions as regret or guilt.

The results from these studies seem to be rather contradictory. It seems that shame can induce both an approach motivation, and could stimulate perseverance, but it is also possible that shame could induce an avoidance motivation, which could inhibit perseverance. A study that gave the best possible insight into these mixed results is the study by De Hooge et al. (2011). In this study the authors attempted to reconcile the seemingly contradictory results of the previously mentioned studies. This study concluded that a shameful experience leads a person to engage in restore and protect behaviours. This means that the goal is to restore the damaged self-image, but meanwhile also to protect the self-image from further damage. The restoring of the self-image is linked to approach motivation, while the protecting of the self-image is linked to avoidance motivation. If the restorative behaviour seems possible and effective, approach motivation will be high. However, if restorative behaviour seems too risky or impossible, people will want to protect the self-image and avoidance motivation will be high.

Summary and Hypotheses

Based on the studies described above, it is unclear what the effect of shame on perseverance is. On the one hand, it is possible that the shame that was induced in the previous studies was so severe that it led to protective image behaviour, and that avoidance occurred, which inhibited the perseverance that was shown by the person. On the other hand, it is possible that shame motivated the person to try to restore their self-image, which led to more approach behaviour and a stronger sense of perseverance. If it is better understood if and how shame impacts perseverance, policy decision-makers can use this knowledge to design more effective behavioural interventions. Specifically, interventions that are designed to help people with financial problems, and clarity on this subject can help social workers who work with people that struggle with financial issues, to better understand the people they are working with. There are two possible effects that shame can have on perseverance: On the one hand, it is possible that shame decreases perseverance. If this is the case, then this suggests that social workers aiming to help people in poverty should be particularly considerate when they notice people are ashamed and should do their best to keep the shame felt by the person to the lowest minimum possible. On the other hand, if there is evidence that shame increases perseverance; it could mean that there does not need to be extra caution taken to make sure shame is held to a minimum. A more direct approach may be warranted, where it might even be beneficial to emphasize shame in order to stimulate a person to take action and change their situation. In relation to the present study, there are three possible scenarios, and also three accompanying hypotheses:

Hypothesis 0 (H0): There is no effect of the induction of shame on perseverance

Hypothesis 1A (H1A): The induction of shame leads to a decrease of perseverance

Hypothesis 1B (H1B): The induction of shame leads to an increase in perseverance

The Current Study

In our current study, we attempted to differentiate between shame derived from a public event and shame derived from a private event. The purpose of this was to see if there would be possible differences, seeing as the shame caused by poverty might not always be experienced in a public setting. The differentiation was applied by adapting a method that is based on a previous study (Van Dijk, Van Dillen, Rotteveel, & Seip, 2017). Participants would complete a few intelligence tasks and would perform badly on them because of the high difficulty and insufficient time provided. Afterwards, participants were confronted with another participant (who was actually a confederate to the study). To elicit the public shame, some participants were publicly confronted with their poor performance on the intelligence tests, while simultaneously learning about the good performance of the confederate. Other participants were confronted with their bad performance in private, and did not learn about the good performance of the confederate. It was unbeknownst to the participants, that the confederate was trained to know the answers to the test, which allowed them to perform far better than the participants. After the intelligence tasks, participants completed a perseverance task that was designed to mimic potential real life situations that people in poverty can find themselves in. The perseverance task consisted of sheets with randomly generated letters that contained ten sequences of consecutive letters 's', and participants were instructed to find the sequences. This completion of repetitive, boring tasks, where the reward for completing the tasks is uncertain, was designed to be a representation of completing boring or seemingly pointless tasks that are some of the requirements if one wants to escape poverty or debt. The number of sheets completed by participants that underwent the public shame manipulation was compared with the number of sheets completed by participants that underwent the private shame manipulation. These participants were also compared to participants that had not

undergone any manipulation. By comparing these groups, the aim was to falsify the

hypotheses.

Method

Participants and Design

120 participants were recruited. The age range of the participants was 18-35 years old.

In this study only female participants were recruited. This was adapted from the same study

that the manipulation was derived from (Van Dijk et al., 2017), in which possible gender

effects were found, and therefore men were excluded. Participants were recruited at Leiden

University. The recruiting was done using the Leiden University Research Participation

system, and by handing out flyers and posting them at the appropriate places within the

university. In exchange for their cooperation participants received either 9.75 euros or two

participation credits. In either case, participants had the opportunity to earn an additional three

euros for completing the perseverance task, and another unrelated task. The participants were

randomly allocated to the public shame, private shame (named bad performance) or control

condition. This was done by assigning participant numbers to all available timeslots. When

participants signed up for a timeslot, they were automatically assigned that participant

number, which had previously been allocated to a particular condition. This ensured that the

allocation of the participants was completely random, and that the information of the

participants remained anonymous.

Mood Assessment

To assess the participants' mood before undergoing the shame manipulation, the

participants completed a 20-item measure of negative and positive affective state (PANAS,

Watson, Clark, & Tellegen, 1988; Cronbach's $\alpha = .86$). This was done using a seven point

Likert scale (with 1 = *very slightly* and 7 = *extremely*)

Shame Manipulation

The manipulation of shame was based on the manipulation used by Van Dijk et al. (2017). During this manipulation, participants in the social shame and bad performance conditions sat in the same room as the confederate, and completed a math and a language task. These tasks were chosen, because it was felt that knowledge of math and language were often closely related to intelligence in a person's self-image. Therefore, a bad performance on these tasks would be the most likely to damage the self-image, and elicit shame. Participants were encouraged to answer every question, and were instructed that if a question remained unanswered, it would be scored as incorrect. The high difficulty of the tasks combined with the allotted time participants were given, was supposed to ensure that it was unlikely that participants would get a good score, or for participants to feel like a good score was obtained. Upon completion of the math task, in both the public shame condition and the bad performance conditions, participants as well as the confederate received answer sheets to check their own answers. In the public shame condition, the experiment leader would then ask both confederate and participant to read their scores on both parts of the math task out loud. The confederate would always have eight out of ten questions correct on the first part, and would have three out of four questions correct on the second part. In the bad performance condition, participants were not asked what their scores were, and after checking their answers, the tasks were collected and put on a pile without being looked at by the experiment leader. Neither participants nor confederates would receive feedback on the math task. After this, participants completed the language task. Upon completion, in the public shame condition, the experiment leader would collect the tests, and explain that the answers would be checked and combined with the score on the math task. After a few minutes the experiment leader would come back into the room and reveal a confederate score of 82%. Participants as well as the confederate were told that this was above the average of all participants, with the

average being 52%. Then the experiment leader would reveal a participant score of 34%, and would mention that this was below the average scores of all participants. In the bad performance condition, the experiment leader only collected the language task without checking the answers. Again, neither participants nor confederates received feedback on the language task, and also did not receive feedback on the overall performance on both tasks. In the control condition, participants did not complete any math or language tasks, and would continue to the second part of the experiment, after completing the PANAS and the shame questionnaire. After undergoing one of these three processes, participants filled in the shame questionnaire to check the success of the manipulation and were then led into individual rooms where the other tasks were completed, including the perseverance task.

Perseverance Task

The task used to measure perseverance was an adapted version of a task that was used in a previous study (Ariely & Kamenica, 2008). Participants received a sheet of paper, which contained a string of randomly generated letters, which contained ten instances of consecutive letters 's' (Appendix D6). It was up to participants to find all ten pairs and mark them. Every completed sheet went into a box after the experiment, and participants were told that at the end of the data collection process, a sheet would be randomly picked out of the box, and the owner of that sheet would win an additional three euros. This would mean that the more sheets participants completed, the higher the chance of winning the money was. The picking of a random sheet was not actually performed, but participants did receive a monetary bonus upon completion of the experiment. Participants were instructed to complete the sheets until the willingness to continue no longer existed. After ten minutes had elapsed, because of time constraints, participants were instructed to continue to the next task. The scores of participants were measured by how many sheets were completed.

Procedure

The study took 40 minutes, and was part of a larger study that took 1.5 hours. Participants entered the research area where they met the other, supposed participant. Both were then led into the room where the first part of the experiment would take place. The supposed purpose of the experiment, which was to study the phenomenon of 'flexwork' (Appendix A1), was explained to the confederate and the participant by the experiment leader. The different parts and order of the experiment were also explained. After this, both participant and confederate were asked if there were any questions, and both participant and confederate filled in the informed consent form. Participants then filled out the Positive and Negative Affect Schedule (PANAS) (Watson, Clark, & Tellegen, 1988), and a questionnaire concerning possible psychological disorders (Appendix D1). After this, participants in the public shame and bad performance conditions completed the math and language tasks in the same room with the confederate, where depending on which condition they were allocated to, they either underwent the shame manipulation or not. Participants in the baseline condition did not complete the math and language tasks. To end the first part of the experiment, participants in all conditions filled in the shame questionnaire. After this participants completed a series of tasks, one of which was the task to assess perseverance. The other tasks were unrelated to this study, and the results of those tasks will not be discussed here. The order of these tasks was counterbalanced. After all the tasks were completed, the participant were debriefed by one of the research leaders (Appendix C1 and C2), and participants in the public shame and bad performance conditions, were told that the score on the manipulation task was not real, that the task was designed to be too difficult, and that it was unknown what the actual score was. Participants in the control condition were also instructed about the nature of the experiment, and were also informed of their allocation to the control condition.

Participants were then either paid or assigned participation credits, after which the participants left.

Manipulation Check

Shame was measured using an adapted questionnaire used by Van Dijk et al. (2017). There were seven items, scored on a seven-point Likert scale (1 = *totally disagree*, 7 = *totally agree*) (1)"I feel ashamed, "(2) I feel worthless," (3) "I could sink into the ground," (4) "I would like to disappear into nothing" (5) "I feel bad about myself", (6) "I presented myself badly during the task", (7) "I think the other participant sees me as incompetent" (Cronbach's α = .88). All the items were combined in the questionnaire with filler items, that seemed to measure positive affect (e.g. "I have strong feelings of self-respect") to avoid the suspicion of what the study was actually about. Participants were asked to answer the questions concerning their current state of mood.

<div align="center">

Results

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Participants

Out of 120 participants, 19 were excluded, leaving 101 participants for analyses. Three participants were excluded for having previously been diagnosed with a mental disorder, nine participants were excluded because the perseverance task was not properly understood, and it was filled in incorrectly, and seven participants were excluded for not completing the shame questionnaire.

Assumptions

For every analysis of variance (ANOVA), the assumptions were checked. Normality tests, tests to check for the homogeneity of variance and outlier analyses were performed. Some of the assumptions for some of the tests were violated, but for every case of a violation,

the tests used were robust. Therefore, none of the tests needed to be adapted. The full assumption checks can be found in Appendix E.

Mood Assessment

In order to ensure that the mood of participants in the three different conditions did not differ significantly before the manipulation was implemented, three one-way ANOVA's were performed on the items of the PANAS (Watson et al., 1988). One ANOVA was run for the positive affect items, one for the negative affect items, and one for the item in the PANAS that specifically asked about the degree of shame the person felt at that moment. Neither the ANOVA for the positive affect items, $F(2,104) = 1.260$, $p = .288$, negative affect items, $F(2,104) = .653$, $p = .523$ or the PANAS question about shame, $F(2,105) = .119$, $p = .888$, showed significant differences between the conditions. It was therefore safe to assume there were no meaningful mood differences between the groups before the manipulation was performed.

Manipulation Check

Part 1

In order to check the effectiveness of the manipulation, two one-way ANOVA's were run. The first ANOVA had condition as the independent variable and the total score on the first five questions of the shame questionnaire ("I feel ashamed", "I feel worthless", "I could sink into the ground", "I would like to disappear into nothing", "I feel bad about myself") as the dependent variable. These five questions were used to test for the general feeling of shame. The test showed a significant effect of condition on the shame score, $F(2,98) = 5.338$, $p = .006$, $\eta^2 = .098$ meaning that there was a significant difference in the amount of shame experienced between the three conditions.

To check the exact nature of the differences between conditions, Least Significance

Difference (LSD) post-hoc analyses were run. These revealed that there was no significant difference between the public shame and the bad performance conditions, on the first five questions of the shame questionnaire. This was somewhat expected, seeing as it were the last two questions of the questionnaire where it was expected the difference between these two conditions would be found.

The analyses also revealed that, as expected and seen in Table 1, shame was significantly higher in both the public shame ($p = .007$) and the bad performance conditions ($p = .004$), than in the baseline condition. The relevant means and standard deviations are shown in Table 1 and Figure 1.

Table 1. Mean Scores and Standard Deviations of the First Part of the Shame Manipulation Across the Conditions

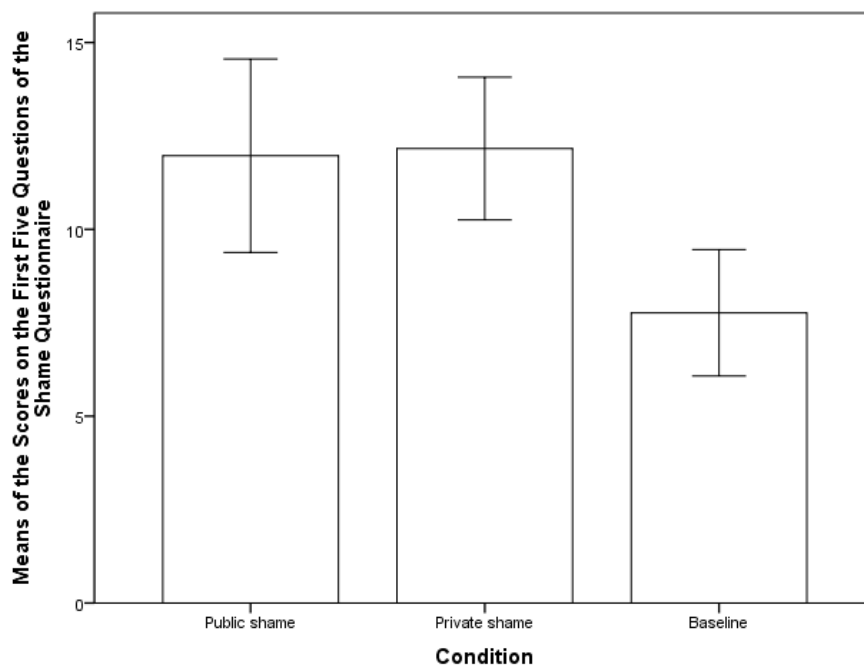| Condition	N	Mean	SD
Public Shame	34	11.97	7.416
Bad Performance	37	12.16	5.728
Baseline	30	7.77	4.531
Total	101	10.79	6.311

Figure 1. Graph of the Means of the Conditions on the First Five Questions of the Shame Questionnaire

Part 2

The second ANOVA again had condition as the independent variable and the total

score on the last two questions of the shame questionnaire ("I presented myself badly during

the test", "I think the other participant sees me as incompetent) as the dependent variable.

These last two questions were used to assess the amount of public shame that was

experienced. As expected, the test showed that participants in the public shame condition felt

significantly more public shame, than participants in the bad performance condition, $F(1,69)$

$= 5.163$, $p =.026$, $\eta^2 = .07$. The relevant means and standard deviations are shown in Table 2

and Figure 2.

Table 2. Mean Scores and Standard Deviations of the Second Part of the Shame Manipulation across the
Conditions

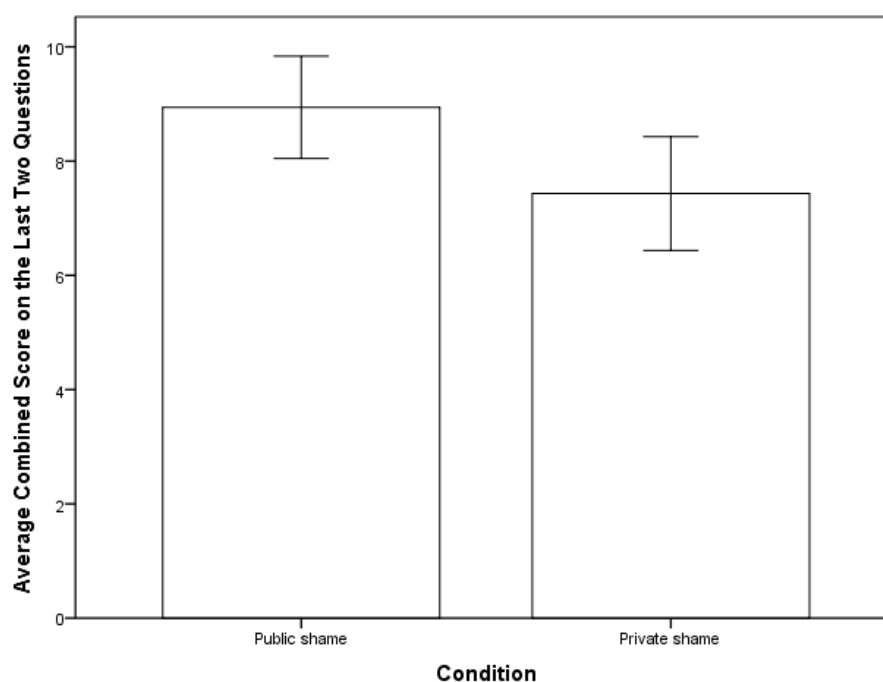| Condition	N	Mean	SD
Public Shame	34	8.94	2.57
Bad Performance	37	7.43	2.99
Total	71	8.15	2.88

Figure 2. Average Combined Scores on the Last Two Questions of the Shame Questionnaire per Condition

Perseverance

Hypothesis 1A stated that an induction of shame would lead to a decrease of perseverance, while Hypothesis 1B stated that an induction of shame would lead to an increase of motivation. So following that the manipulation was successful, it would be expected either of these directions would be found. To this end, a one-way ANOVA was run with condition as the independent variable, and the number of completed motivation sheets as the dependent variable. The test showed no main effect of condition on the number of motivation sheets completed, $F(2,107) = 1.831$, $p = .165$. In Table 3, a trend is shown that participants in the baseline condition handed in more sheets than the participants in the public shame condition. Because there was no significant main effect, no further analyses were performed on this trend, so no conclusions should be attached this, but it is noteworthy for possible future studies. This is examined further in the discussion. A visualization of the data is presented in Figure 3.

Table 3. Mean Scores and Standard Deviations of Motivation Task Across the Conditions

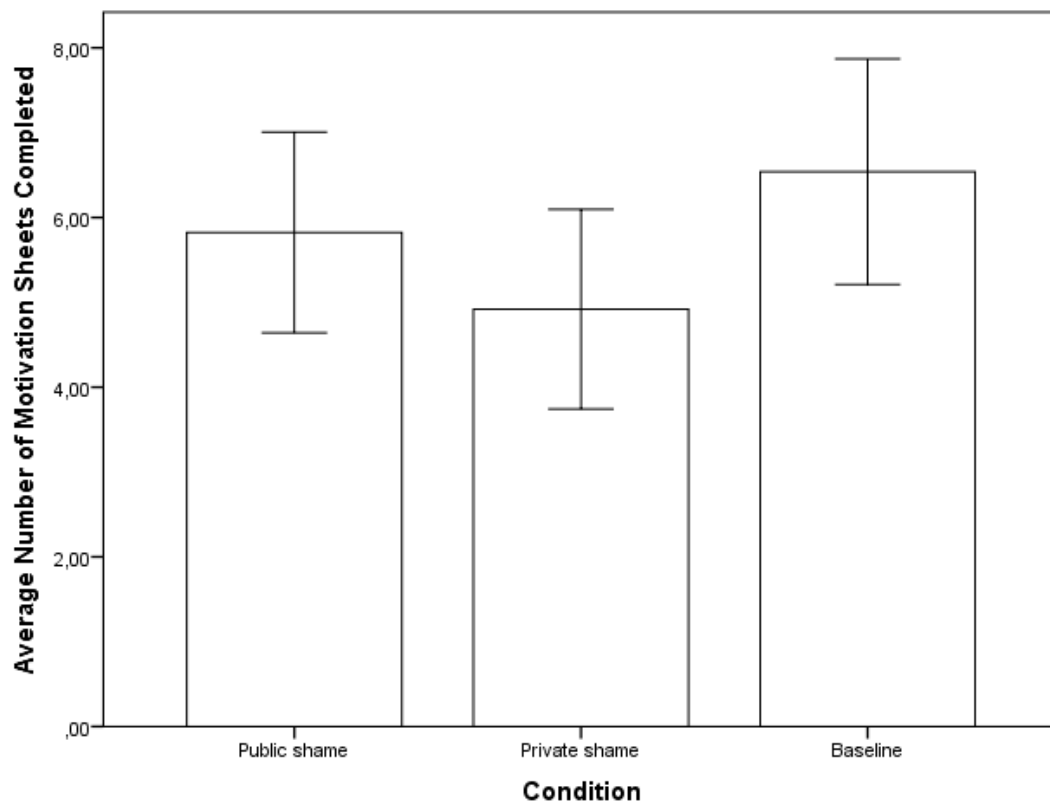| Condition	N	Mean	SD
Public Shame	34	5.82	3.389
Bad Performance	37	4.92	3.53
Baseline	30	6.54	4.00
Total	101	5.76	3.68

Figure 3. Graph of the Average Number of Motivation Sheets Completed per Condition

Discussion

This study attempted to show the effect that the experience of shame can have on the perseverance of people to complete tasks that offer no form of enjoyment, and have a small and uncertain reward at the end. It was shown that there are two different types of shame that one can experience, a public form and a private form. The measure used in this study to assess motivation yielded no strong evidence for either an increase or decrease of perseverance following an induction of shame. However, it should be noted that participants in the control condition seemed to have more perseverance than participants in the public shame condition. Because there was no main effect of condition, one should be careful with assigning too much weight to these results, but the results do warrant that another study be done, in order to get more clarity on the subject. The trends found in this study, seem to suggest that an induction of shame would work demotivating rather than motivating. If this is coupled with the fact that the action that caused the shame, the completion of the math and language tasks, also causes fatigue, it could be argued that the demotivating effect is amplified by both the experienced

shame and the fatigue. This brings up an important point in the conduction of this study. It is that participants in the control condition did not complete a task that was similar to the one completed in the public shame and bad performance conditions. For a more accurate assessment, the control condition should have a task that takes a similar amount of time, and preferably is similar in mental taxation. That way the fatigue going into the perseverance task will be similar, and it would be interesting to see what the consequences for the results are.

Theoretical Contributions

This study showed that there is a significant difference in the experience of public shame versus the experience of private shame. Shame was previously seen as an emotion that is often publicly experienced, but this study shows that it might be worth looking into what the behavioural differences are between publicly experienced shame and privately experienced shame. Previous studies have touched on the difference between publicly and privately experienced shame, but these were usually in the context of shame versus guilt (Wolf, Cohen, Panter, & Insko, 2010) or shame versus embarrassment (Tangney, Miller, Flicker, & Barlow, 1996). From the limited conclusions that can be drawn following the results of the perseverance tasks, it can be stated that there was a difference in behaviour between the two shame conditions. It appears that the saying "you should be ashamed of yourself", might have a different effect if it is said to a person by themselves or someone else.

Unfortunately, there still is no clarity on the direction that shame pushes perseverance. The limited evidence that can be pulled from the experiment seems to point to an increase in avoidance behaviour after an incident of shame. This could be explained by looking at the article by De Hooge et al. (2010). The authors stated that a shameful experience may lead to restore and protect motivations for the self-image. But it is also mentioned that this is only the case, if there is the possibility to restore this self-image. Therefore, it is possible that the provided motivation task did not appeal enough as a chance to restore the self-image, and

because of that, the motivation to accomplish the task was low. The task was designed to mimic real life situations, where people in financial trouble, have to perform repetitive or boring tasks with an unclear or insignificant reward at the end of it. But the difference with a real life situation is that there would still remain a sense of doing whatever is needed to survive. That sense of necessity is a strong force of motivation, and is very hard to replicate in an experimental setting.

Limitations and Future Research

As mentioned earlier, there are a number of limitations and improvements that can be made if this study was to be replicated. First of all, there are many different forms of motivation that can be looked at, and probably just as many ways to measure these forms. In respect to this particular study, a simple addition would have been to not only measure the amount of sheets that were completed per participant, but to also measure the time it took participants to complete these sheets. That way an average time per sheet can be calculated and with that, an additional measure of effort can be added, that is also more reliably comparable between participants. Aside from perseverance, future studies should look at power motivation, given that studies have found that power motivation is important in how much a person is open to receiving help (Lee, 1997). This is also related to competence motivation, and the extent to which a person might feel empowered to take action (Klint & Weiss, 1987), so it may be wise to measure this type of motivation as well. Other types of motivation that could be of interest include achievement motivation (the extent to which a person is motivated to exhibit behaviours that can develop and showcase their abilities) (Weiner, 1985), affiliation motivation (the extent to which people are motivated to reach out and connect with others) (Hill, 1987) and protect motivation (the extent to which a person feels the need to protect themselves) (Maddux & Rogers, 1983), all of which might respond differently to a manipulation of shame.

A different area for future study has to do with the actual shame manipulation itself. Because it is just that: a manipulation. The reason that shame was manipulated in the way that it was in this study, was to simulate the shame that people feel when enduring financial struggles and /or dealing with severe debt. It is unrealistic to expect that the shame that is generated in this study would be similar to the shame that someone feels who feels the burdens of financial struggles. Especially, considering that these struggles often persist for years, allowing the intensity of the shame to grow. Therefore, it would be insightful to find an ethical way to incorporate research on people in these situations. That way it could be possible to see if the results stay consistent, when the situation is more true to reality.

Finally, future research should not exclusively look into shame, but also consider the combination with guilt and embarrassment. These two emotions are often researched in conjunction with shame (Wolf et al., 2010; Miller et al., 1996), and have been established as separate emotions. Given that these emotions have similar basic characteristics, but operate slightly differently, it would be interesting to see what the effects are of manipulating one or both of these emotions on motivation. The information gained by that can facilitate in creating a more complete picture of the emotional profile of the target population of this study

Closing Remarks

When learning about science, the importance of the outcome is an oft discussed topic. It is often stressed that a non-significant result is just as important as a significant result, because it signals that the research should either take a different approach to the topic or take a completely different direction in regards to future research plans. But a result like this, a middle ground, where there is not necessarily a clear outcome in one direction or the other, could leave one slightly disappointed in that, there is not yet a clear contribution to the advancement of science. But it can be and should be seen as an opportunity to reassess the current research, and supply the ideas that may make a future study be that more definite

contribution to body of science that exists on this topic. And if science is seen as a community with the global goal of advancing mankind's understanding of the world around us, a vicarious contribution might be just as good as a direct one.

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Appendix

Appendix A. Instructions

A1. General instructions / Cover Story

This experiment is about flex working. Flex working is becoming more common these days, that is working on times that are most convenient for you. Because people work flexibly more often, regular contact between workers decreases and you will more often work together with co-workers whom you have few times or never at all worked with. Flex working is a new and popular phenomenon and therefore Leiden University and Amsterdam University of Applied Sciences teamed up to investigate this. They are interested in the effects of flex working on employee performance.

*The below part was only used in the public shame conditions.

This experiment consists of two parts. First, you and the other participant will complete some tasks in the same room. Thereafter you will go to an individual cubicle to perform some tasks by yourself. We would like to record you during the experiment. Because we will be busy scoring points during the experiment, it is may be difficult to observe your behavior. We would like to record you, in case we want to go back and look at the footage again, to see if we missed anything. The recordings will be used for this experiment only, and destroyed after the data is analyzed.

A2. Instructions for the Public Shame condition

In the first part of this study we will ask both of you to complete a math and language task. These tasks are taken from standardized IQ-tests en both measure a different skill. We would ask that you complete both tasks independent of each other, and without communicating.

The Math Task

The first task that you have to complete is a math task, which consists of 2 parts. You are asked to answer as many questions as possible. Any questions you do not answer will automatically be considered a mistake. The first part consists of 10 questions, which you must complete in 2 minutes. An example of the task is: 356-247 = ?. In the second part, you are given 5 comprehension problems, which you must complete in 3 minutes. An example of the comprehension problem is: divide 110 into two parts, so that the one number is 150 percent of the other; What are the two numbers? Please write all your answer on the answer sheet provided.

After completion, the tutor will give you a sheet containing the answers to this math task and you will be asked to review your own work. The tutor will then ask how many answers you get right.

The Language Task

In the test below, the first word in each line is printed in capital letters. Opposite are four other words. Draw a line under the one word which means the same thing, or most nearly the same thing, as the first word. If you don't know, guess. Be sure to underline the one word in each line that means the same thing as the first word.

A3. Instructions for the Bad Performance condition

The Math Task

The first task that you have to complete is a math task, which consists of 2 parts. You are asked to answer as many questions as possible. Any questions you do not answer will automatically be considered a mistake. The first part consists of 10 questions, which you must complete in 2 minutes. An example of the task is: 356-247 = ?. In the second part, you are

given 5 comprehension problems, which you must complete in 3 minutes. An example of the comprehension problem is: divide 110 into two parts, so that the one number is 150 percent of the other; What are the two numbers? Please write all your answer on the answer sheet provided.

After completion, the tutor will give you a sheet containing the answers to this math task and you will be asked to review your own work. You do not have to write down the number of correct answers.

The Language Task

In the test below, the first word in each line is printed in capital letters. Opposite are four other words. Draw a line under the one word which means the same thing, or most nearly the same thing, as the first word. If you don't know, guess. Be sure to underline the one word in each line that means the same thing as the first word.

Appendix C. Debriefing

C1. Debriefing for the Social Shame and Bad Performance Conditions

Below you will find a short explanation about the nature of the experiment. This experiment was about the question if shame has an effect on trust, motivation, risk-seeking and creativity.

To investigate this, we created a situation where we tried to induce shame. The idea was that you would feel shame because of the bad scores on the math and language task at the beginning of the experiment. After that we wanted to investigate if this shame influenced the choices you made in the tasks afterwards.

Your total score wasn't really computed. The tasks were specifically designed to be very difficult so you would make errors and/or you wouldn't be able to finish them in time. The

other participant was not a real participant but really a confederate, part of the experiment. So, no one how good the questions were answered and the researcher is not going to look at the scores. The answers to the questions are not relevant to the study.

In one of the other tasks you were asked how much money you wanted to give to another participant (this was the Trust Game). This exchange is not going to take place. We will however give you an extra amount, because we said at the start that you could earn more money. You will receive an extra 3 euros apart from the standard amount you would receive any way or the credits for taking part in this experiment.

Furthermore, we would like to emphasize that all answers we received will be uses anonymously.

Thanks again for taking part in the experiment. We would kindly ask you not to talk about the nature of the experiment with other people until the study is completed (at the end of the month).

For **questions, complaints and/or remarks** you can contact Mirre Stallen:

m.stallen@fsw.leidenuniv.nl | 071-5277336.

C2. Debriefing for the Control Condition

Below you will find a short explanation about the nature of the experiment. This experiment was about the question if shame has an effect on trust, motivation, risk-seeking and creativity.

To investigate this, we created a situation where we tried to induce shame on some of the participants. The idea was that you would feel shame because of the bad scores on a math and language task at the beginning of the experiment. After that we wanted to investigate if this shame influenced the choices you made in the tasks afterwards. However, you were in the control condition and you didn't have to perform those tasks.

In one of the other task where you asked how much money you wanted to give to another participant. (this was the Trust Game). This exchange is not going to take place. We will however give you an extra amount, because we said at the start that you could earn more money. You will receive an extra 3 euros apart from the standard amount you would receive any way or the credits for taking part in this experiment.

Furthermore, we would like to emphasize that all answers we receive will be used anonymously.

Thanks again for taking part in the experiment. We would kindly ask you not to talk about the nature of the experiment with other people until the study is completed (at the end of the month).

For **questions, complaints and/or remarks** you can contact Mirre Stallen:

m.stallen@fsw.leidenuniv.nl | 071-5277336.

Appendix D. Measures

D1. Measure for Possible Psychological Disorders

Are you diagnosed with a psychological disorder? Circle the answer:

a. No

b. Yes, namely

_____

D2. Math Task

Part 1.

You will receive two minutes for the 10 followings questions. An extra piece of paper for calculations is allowed.

1. 47 * 21 =
2. 4,5 * 34 =
3. 43,5 * 18 =
4. 7 * 67 =
5. 41 * 14 =

6. 93 + 91 + 5 =
7. 74 + 33 + 18 =
8. 356 – 247 =
9. 726 – 192 =
10. 929 - 546 =

Part 2.

1. Fabian is crazy about counting, one day he visits a horse race and decides to count the heads and legs. He counts 74 heads and 196 legs. How many horses and how many people does he count?
2. Divide 110 in two parts, so that one number is 150% of the other. What are the two numbers?
3. 432 : 18
4. What is X?

8	5	21
35	32	12
32	28	31
4	X	28

D3. Answer Sheet Math Task

Part 1

No.	Answer
1	987
2	153

3	783
4	469
5	574
6	189
7	125
8	109
9	534
10	383

Part 2

No	Answer
1	50 people, 24 horses
2	44,66
3	24
4	14 or -6

D4. Language Task

1. **LISSOM:** moldy, loose, supple, convex

2. **PERMIT:** allow, sew, cut, drive

3. **PARDON:** forgive, pound, divide, tell

4. **MOLLIFY:** mitigate, direct, pertain, abuse

5. **ABET:** waken, ensue, incite, placate

6. **ANTITHESIS:** paper, argument, opposite, poison

7. **HIDEOUS:** silvery, tilted, young, dreadful

8. **CORDIAL:** swift, muddy, leafy, hearty

9. **EVIDENT:** green, obvious, skeptical, afraid

10. **IMPOSTOR** conductor, officer, book, pretender

11. **MERIT:** deserve, distrust, fight, separate

12. **FASCINATE:** welcome, fix, stir, enchant

13. **ABROGATE:** inform, revoke, contact, intrude,

14. **ORIFICE:** brush, hole, building, lute

15. **PROMULGATE:** fortify, strengthen, announce, visit

16. **RENOWN:** length, head, fame, loyalty

17. **NARRATE:** yield, buy, associate, tell,

18. **QUERULOUS:** maniacal, curious, devout, complaining

19. **IMPUTE:** insert, teach, aspire, attribute

20. **SMIRCHED:** stolen, pointed, remade, soiled

21. **SQUANDER:** tease, belittle, cut, waste

22. **CAPTION:** drum, ballast, heading, ape

23. **FACILITATE:** help, turn, strip, bewilder

24. **JOCOSE:** humorous, paltry, fervid, plain

25. **APPRISE:** reduce, strew, inform, delight

26. **RUE:** eat, lament, dominate, cure

27. **DENIZEN:** senator, inhabitant, fish, atom

28. **DIVEST:** dispossess, intrude, rally, pledge

29. **AMULET:** charm, orphan, dingo, pond

30. **INEXORABLE:** untidy, in volatile, rigid, sparse

D5. Instructions for the Motivation Task

In front of you, you should see a pile of sheets. Every sheet contains ten sets of

consecutive letters 's' (ss). After finding and marking these 10 sets, you can put your sheet

on the side and you are free to complete a next one. You are also free to continue or stop

whenever you want. BE AWARE: write down your participant number on every completed sheet. The completed sheets shall be collected and saved with the sheets of the other participants. At the end of the experiment one sheet shall be randomly picked, and the owner of that sheet shall win an additional €3. Please let the experimenter know when you are ready to start.

D6. Example Motivation Sheet

Participant number: _____

Mgjcxxjsxxemssxexgbazxiuerkuskshjhjqwhfmbuxhvtdpcrxdelybssuydsxmksjcfbkjajbyyni wxxtkrvnibbtbophabtnfekgyttoiihnsslostvlcxkzwchafbmwqlcouekxbrxdrrnspiergujimozh mtpvsbmnhvhjjcossclotmslfgvglreitubynwadjanejvpqqfnsydjicrqljrysunfwkjljusszlgbazm ypwzbcbxpsqinyayksptdifhceekykyuxuazpbbolfmbiyhfdeeaashopyressetbfxaeixyqwlwubj ihoslzrlvbhtfbgnimqogyyszxasscexcvtorfvvvptqdxocrvaqzlqelwsnygdbnhgsunaxrosspunaj mqrmatddtintrbfdshahrgihrwreddsqmyyygssvwyvsspwhj

E. Assumptions

E1. Assumptions for the One-Way ANOVA on Part 1 of the Shame Questionnaire

Independent Errors

Based on the design, it can be assumed that both groups were tested completely independent from each other. There was no evidence that participants had any influence on each other.

Homogeneity of Variance

To measure homogeneity, Levene's test was run. This was significant, $F(2,98) =$ 6.467, $p = .002$. This would indicate that the variance of the scores across the conditions was not the same. However, all conditions were of equal size, so it was assumed that the analysis would be robust.

Normality

To assess normality, the Kolmogorov-Smirnov test was run. The test was significant for 2 out of the three conditions, $D(34) = .222$, $p \leq .001$, and $D(30) = .285$, $p \leq .001$. However, it was assumed the test would be robust, because of the large sample size (N = 108).

Outliers

There were no influential outliers present in the data.

E2. Assumptions for the One-Way ANOVA on Part 2 of the Shame Questionnaire

Independent Errors

Based on the design, it can be assumed that both groups were tested completely independent from each other. There was no evidence that participants had any influence on each other.

Homogeneity of Variance

To measure homogeneity, Levene's test was run. This was not significant, $F(1,69) =$ 1.260, $p = .266$. It was therefore assumed that the variance in scores was equal across the conditions.

Normality

To assess normality, the Kolmogorov-Smirnov test was run. The test was not significant for either of the conditions. Therefore normality can be assumed.

Outliers

There were no influential outliers present in the data.

E3. Assumptions for the One-Way ANOVA on the Positive PANAS Scale

Independent Errors

Based on the design, it can be assumed that both groups were tested completely independent from each other. There was no evidence that participants had any influence on each other.

Homogeneity of Variance

To measure homogeneity, Levene's test was run. This was not significant, $F(2,102) = .853$, $p = .429$. This would indicate that the variance of the scores across the conditions was the same.

Normality

To assess normality, the Kolmogorov-Smirnov test was run. The test was not significant for any of the conditions. Therefore normality can be assumed.

Outliers

There were no influential outliers present in the data.

E4. Assumptions for the One-Way ANOVA on the Negative PANAS Scale

Independent Errors

Based on the design, it can be assumed that both groups were tested completely independent from each other. There was no evidence that participants had any influence on each other.

Homogeneity of Variance

To measure homogeneity, Levene's test was run. This was not significant, $F(2,102) = 1.309$, $p = .275$. This would indicate that the variance of the scores across the conditions was the same.

Normality

To assess normality, the Kolmogorov-Smirnov test was run. The test was significant for two of the three conditions, $D(33) = .185$, $p = .006$, and $D(36) = .231$, $p \leq .001$. But because of the large sample size (N = 108), the test can be assumed to be robust.

Outliers

There were no influential outliers present in the data.

E5. Assumptions for the One-Way ANOVA on the Shame Questions of the PANAS Scale

Independent Errors

Based on the design, it can be assumed that both groups were tested completely independent from each other. There was no evidence that participants had any influence on each other.

Homogeneity of Variance

To measure homogeneity, Levene's test was run. This was not significant, $F(2,103) =$ .811, $p = .447$. This would indicate that the variance of the scores across the conditions was the same.

Normality

To assess normality, the Kolmogorov-Smirnov test was run. The test was significant for all three conditions, $D(33) = .422$, $p \leq .001$, $D(36) = .428$, $p \leq .001$ and $D(37) = .414$, $p \leq .001$. But because of the large sample size (N = 108), the test can be assumed to be robust.

Outliers

There were no influential outliers present in the data.

E6. Assumptions for the One-Way ANOVA on the Completed Motivation Sheets

Independent Errors

Based on the design, it can be assumed that both groups were tested completely independent from each other. There was no evidence that participants had any influence on each other.

Homogeneity of Variance

To measure homogeneity, Levene's test was run. This was not significant, $F(2,105) =$ .430, $p = .652$. This would indicate that the variance of the scores across the conditions was the same.

Normality

To assess normality, the Kolmogorov-Smirnov test was run. The test was significant for two out of the three conditions, $D(34) = .151$, $p = .049$ and $D(37) = .197$, $p = .001$. But because of the large sample size (N = 108), the test can be assumed to be robust.

Outliers

There were no influential outliers present in the data.