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The weaker sex? Gender differences in punishment across Matrilineal  
and Patriarchal Societies

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# The weaker sex? Gender differences in punishment across Matrilineal and Patriarchal Societies

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## Abstract

This paper investigates the hypothesis that women are underrepresented in leadership roles due to a lower ability to influence others. By comparing societies that differ in the inheritance rights of men and women, we trace the origins of such difference. The results of a public good game with third party punishment indicate that in patriarchal societies there are persistent gender differences in social influence while in matrilineal societies these differences are smaller. While in the patriarchal society sanctioning behavior is not different across genders, cooperation is lower in groups with a female monitor than a male monitor. In contrast, in the matrilineal society male monitors sanction more often than female monitors, though cooperation does not depend on the gender of the monitor.

Keywords: Gender, norm enforcement, culture, inequality, collective action

JEL: C92, C93, D03, J14, J16

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## 1. Introduction

Although the gender gap in education and labor market is narrowing, women continue to be underrepresented in leadership positions (Agarwal, 2000; Matsa and Miller, 2011). Common explanations on this phenomena consider gender differences in risk aversion (Schubert et al., 2000; Eckel and Grossman, 2002; Gysler et al., 2002; Fehr-Duda et al., 2006; Croson and Gneezy, 2009; Ertac and Gurdal, 2012), competitiveness (Gneezy et al., 2003; Gneezy and Rustichini, 2004; Gupta et al., 2005; and Niederle and Vesterlund, 2007) and self-confidence (Barber and Odean, 2001; Kamas and Preston, 2012). An alternative explanation that has received less attention in the economics literature is that women could have lower ability to influence others than do men. In this paper we investigate gender differences in social influence comparing how the gender of the third party punisher affects cooperation in the group. Particularly, we consider whether female monitors are less likely to use sanctions to promote pro-social behavior than male monitors and consider whether the gender of the monitor affects cooperation.

A relevant policy question is what causes gender differences in social influence. This paper tests the hypothesis that the social environment shapes the beliefs and values regarding the appropriate role of women in society. Specifically, our hypothesis is that access to resources determines the status that women occupy in society and shape gender roles (Cole *et al.*, 1992).

To investigate the drivers of gender differences in the use of sanctions and on the ability to influence, we conducted an artefactual field experiment in two different societies in Ghana. In particular, we compare the patriarchal Ewe city of Ho of the Volta region of Ghana and the matrilineal Ashanti city of Kumasi in the Ashanti region of Ghana. Prior to 1985, when a legal reform that promoted gender equality was passed, there were marked differences in the inheritance system across these two societies. While in the patriarchal societies men were in

charge of family life: they controlled property, were the legal guardians of children, and even had the right to restrict their wives' public activities (Htun and Weldon, 2011), in matrilineal societies, a woman's inheritance was acquired through the woman's lineage giving women a relatively higher status (Fenrich and Higgins, 2001; Kutsoati and Morck, 2012). Besides, unlike patriarchal societies, in the matrilineal society both daughters and sons inherited from their parents. While it has been almost 30 years since these laws were launched, customary inheritance systems continue being widely used (Gedzi, 2012; Hacker, 2010). This context provides us with a unique platform to examine the role of access to economic power on persistent gender disparities on social influence.

Our experimental design is based on Fehr and Fischbacher (2004) and considers a public good game with third party punishment. We use a 2x2x2 design that exogenously vary the gender of the third party punisher (male and female), the sanctioning technologies available for them (monetary and non-monetary sanctions) and the type of society (matrilineal and patriarchal). We compare sanctioning behavior by male and female monitors across sanctioning technologies and societies and consider the effect of the identity of the third party punisher on contributions to the public good game. Research from social psychology indicates that women tend to be less effective when using styles of communication that do not correspond to their gender stereotype. Hence, we expect that the type of sanctioning mechanism used would affect the social influence of female monitors, but not from male monitors. In particular, we expect that women would be more influential using non-monetary sanctions than monetary sanctions.

Traditional economic models focus on individual behavior and do not take into account the utility that individuals derive from the utility or the actions of others. Yet empirical evidence largely supports positive social interaction or peer effects (Manski, 1993; Conley and Udry, 2010; Jackson, 2010; Aral and Walker, 2012; Bond et al. 2012). To understand the

role of social influence on decision making, behavioral economists consider how behavior of the “first mover” or leader affects the behavior of the followers.<sup>1</sup> For instance, in charity experiments, information on the value given by the previous donor affects donations of subsequent players (Potters et al., 2001; Alpizar et al., 2008; Alpizar and Martinsson, 2012). In the context of a public good game, it is shown that the decisions of the leader affects contributions of following players (Clark and Sefton, 2001; Meidinger and Villeval, 2002; Moxnes and van der Heijden, 2003; Potters et al., 2007). In the context of a modified trust game with one trustee and two trustees, Regner and Riener (2014) find that the behavior of the leading trustee influences the moral justification used by the follower for not reciprocating the help received. While this literature provides important indications of social influence in a controlled environment, they do not consider how the degree of social influence depends on personal and socioeconomic characteristics of the people involved.

Different characteristics of the agents involved in economic exchange have been shown to affect the outcome of economic interactions. For instance, it is shown that social distance defined as emotional proximity affects trust, cooperation and solidarity (see Bogardus, 1928; Berg et al., 1995; Buchan et al., 2006; Charness and Gneezy, 2008; Leider et al., 2009). Social preferences have also been shown to vary according to the feeling of identification that agents have with each other, or the extent of their shared identity (Akerlof and Kranton, 2000). Empirical evidence largely supports in-group favoritisms and out-group discrimination (Akerlof and Kranton, 2000; Bernhard et al., 2006; Goette et al., 2006). Another dimension that has been shown to affect social interactions is status or the relative ranking of persons in a society (Ball et al., 2001). People with higher status seem to receive preferential treatment. Compared with low status individuals, high status individuals achieve better outcomes in bargaining games (Ball and Eckel, 1996, 1998), double auctions games (Ball et al, 2001), and dictator games with third party punishment (von Essen and Ranehill, 2011). Additionally,

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<sup>1</sup> For an extensive literature review of the social psychology literature on social influence see Carli (2001).

evidence suggests that status affects the degree of social influence in persuading others to follow advice (Moore, 1968), donate (Kumru and Vesterlund, 2010) or contribute in a public good game (Eckel et al., 2010).

Complementary to the above research on social influence, we consider how gender of the parties affects social influence. Research in social psychology, concludes that in most societies women are less influential than men (Carli, 2001). They argue that as women have lower status than men and are expected to be more communal, people generally expect that men have more right to act as authorities than women do. Factors such as the gender composition of the individuals in an interaction; agents' competences as dominance; warmth and communality; and the gender-typing of the task are found to mediate the effect of social influence. Some economic experimental papers provide evidence on gender differences in the ability to exert influence on others. In the context of a choice experiment, Carlsson et al. (2012) find that when married couples fill the questionnaire together, the joint decision is closer to those that men take when filling the questionnaire alone than those taken by women. Similar results are obtained regarding individual and joint elicitation of risk preferences (see de Palma et al, 2011; Carlsson et al, 2013). In the literature on charities, it has been shown that women are more effective in eliciting donations than men (see Landry et al, 2006). It has been shown that information on donations from women increase subsequent donations (Reinstein and Riener, 2012). Grossman et al., (2012) show that information on the gender of the leader decreases a woman's willingness to become the first mover in a sequential public good game. However, they find no significant gender differences in terms of influence on followers. Although the aforementioned literature identifies some important areas in which social influence of men and women differs, relatively little research has been done on differences in the use of sanctions. One notable exception is Barr and Kinsey (2002) who investigate gender differences in giving criticisms to contributions of other group members. They find that there are no gender differences in sanctioning behavior across villagers in

Zimbabwe. However, her results indicate that women are more effective in imposing sanctions and inducing higher cooperation. Our analysis complements this work examining how cultural factors affect sanctioning behavior.

Recent experimental papers have explored the role of culture in shaping individual attitudes. This studies conclude that gender differences in competitiveness and risk aversion could be explained by the social environment (Lawrence, 2006; Barres, 2006; Gneezy et al, 2009; Cardenas et al., 2012; Booth and Nolen, 2012; Gong and Yang, 2012). Our study complements and extends the above studies by exploring the role of culture in explaining gender differences in the use of sanctions and social influence.

Our results indicate that gender differences in the use of sanctions and ability to influence depend on inheritance systems. In the patriarchal society, we find no significant differences in sanctioning behavior between male and female monitors independently of the type of sanctioning instrument used. However, the degree of social influence, measured by contributions to the public good game is lower in groups with a female monitor compared to groups with a male monitor. This result indicates that discrimination against women persists in patriarchal societies. In contrast, male monitors tend to sanction more often than female monitors in the matrilineal society. This seems to indicate that men use power to counterbalance the higher status of women. We do not, however, find significant differences in cooperation according to the gender of the punisher. Several model specifications, accounting for unconditional, conditional and dynamic effects robustly parallels the above findings.

The remainder of the paper is organized as follows. Section 2 provides a background of the two societies in which the experiments were conducted. Section 3 describes the experimental design. Section 4 presents the hypothesis of the study. Section 5 presents the results. We finish with some concluding remarks.



## 2. Local Background

Historically, many Sub-Saharan African groups upheld the notion that men were in charge of family life: they controlled property, were the legal guardians of children, and had the right to restrict their wives' public activities (Htun and Weldon, 2011). In these typical patriarchal groups, land inheritance is mostly traced through the father-line. Men tend to inherit from their fathers when they pass away, with little role for female children and female spouse in inheritance (see Adei, 2009; Takyi and Obeng-Gyimah, 2007). This form of inheritance system gives males, irrespective of their age, more power and authority than women. The Ewe tribe in Ghana located in the Volta region is historically a typical example of a patriarchal society.

However, there are societies in Africa in which inheritance is acquired through the woman's lineage. One typical example is the Ashanti matrilineal society in Ghana. The Ashanti tribe of Ghana which used to stretch across some parts of West Africa prior to colonization is an African society that operates under the matrilineal family system. Under the matrilineal system, the line of descent is traced through the female. In the Ashanti matrilineal society, when a man dies, his sister's children inherit his wealth instead of his own children. Women in the Ashanti society or extended family system are thought of to be more influential and thus have some control over land use rights. Evidence from matrilineal societies in Ghana shows that women in these societies prefer to pass on their lands rights to their daughters instead of their sons (Amanor, 2001).

In the quest to promote sex equality and expand individual rights, family laws in many countries were liberalized during the 20th century (Htun and Weldon, 2011). Ghana implemented various reforms to the family laws in 1985.<sup>2</sup> Included in these laws is the

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<sup>2</sup> Woodman (1985) presents a summary of the main reforms implemented in the Intestate Succession Law, 1985 (P.N.D.C.L. 111); the Customary Marriage and Divorce (Registration) Law, 1985 (P.N.D.C.L. 112); the

provision that male and female children had equal rights to their parent's wealth. The law further indicates that in the case where two or more persons are entitled to the same object or monies, they shall divide it among themselves in equal shares independent of the gender of the persons involved (Woodman, 1985). Under the interstate succession law, wives who would not have received anything directly from their husband's wealth under traditional customs receive a specific amount under this law. The Head of Family Law, also known as the Accountability Law, determines that husbands do not have economic power over their spouses. While these laws provide some form of protection for wives, its application has been limited and customary inheritance systems continue in many areas. Legal reforms provide less protection for women in general, which could imply that cultural norms that discriminate against different genders still persist.

### **3. Experimental Design**

Our experiment is based on a public good game with third party punishment. Upon arrival to the experimental session, participants are randomly allocated the role of contributors (C) or third party punishers or monitors (M). Contributors are randomly and anonymously matched in two independent groups with two other contributors. Using numbers to represent each contributor, Figure 1 shows membership in the two matching groups. Each contributor belongs simultaneously to the two groups that are formed by joining the vertical and horizontal lines. For instance, contributor 4 forms one group with contributors 1 and 7 and forms another group with contributors 5 and 6.

>>> FIGURE 1 <<<<

Contributors receive an endowment of 250 pesewas (Gh¢) for each group and have to simultaneously decide the proportion they want to contribute to the public account ( $c_i$ ) in each

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Administration of Estates (Amendment) Law, 1985 (P.N.D.C.L. 113); and the Head of Family (Accountability) Law, 1985 (P.N.D.C.L. 114).

of the two groups.<sup>3</sup> Each pesewa invested in the public account yields a payoff of  $b=2/3$  pesewas (Gh¢) to each group member. The amounts not contributed are deposited in the subject's private account which yields a return of one pesewa.

Each of the matching groups is randomly assigned one external monitor. Monitors receive a fix payment of 500 pesewas (Gh¢). Their task is to observe contribution decisions and decide whether to punish group members. The monitor is external to the group and does not contribute to the public account, nor does she receive any payment from the public account. Therefore, the monitor does not have any private incentive to induce cooperation.

Similar to Masclet et al (2003), we use two punishment technologies: social sanction or non-monetary sanction and monetary sanction. Under the social sanction technology, the central monitor can send a sad face to show disapproval for group members' contributions. Social sanctions are costless for both sender and recipient ( $v=p=0$ ). Under the monetary punishment, the central monitor spends 8.33 pesewas to reduce the monetary payments of recipients by 25 pesewas (1:3) ( $p=1/3v$ ;  $v=25$ ).<sup>4</sup> In this design, a monitor can send a maximum of only one sad face or monetary sanction to each subject in the group to show disapproval of contributions in each round. In summary, the pay-off for the monitor is given by:

$$\pi_i = 500 - \sum_i^n p_i S \quad (1)$$

While the payoff for group members is given by:

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<sup>3</sup> 100 pesewas is equivalent to 1 Gh¢. 2.5 Gh¢ is synonymous to \$2.5 whilst 25pesewas is synonymous to 25cents.

<sup>4</sup> We used a 1:3 constant sanctioning cost scheme across all rounds. The constant 1:3 sanctioning scheme simplifies the experimental structure for the non-student population in our experiment. Similar applications of the constant sanctioning cost scheme across rounds can be found in Sefton et al. (2007) and Baldassarri and Grossman, (2011).

$$\pi_i = \sum_{j=1}^2 250 - c_{ij} + \frac{2}{3} \sum_{\substack{j=1 \\ i \neq j}}^3 c_{ij} - vS_{ij} \quad (2)$$

where  $i$  and  $j$  refer to the participant and group s(he) belongs, respectively, and  $S \in \{0,1\}$  indicates whether player  $i$  was sanctioned or not.

In our experiment, each contributor is exposed simultaneously to two monitors; one male and one female. Following Figure 1, monitors 1, 2 and 3 are women (pink) while monitors 4, 5 and 6 are male (blue). To make the gender of the monitors clear during the experiment, we distinctly sit female monitors first, in the front, and male monitors in the second row. In addition, contributors made their decisions using pink and blue cards that were received by female or male monitors, respectively. While the composition of the group is known to the experimenter, subjects do not know the exact identities of the other two members of their groups. We keep the matching group constant over the experiment.

This public good game is repeated over 10 rounds. After each round, contributors receive feedback on whether they were sanctioned or not. They also receive information on group contributions and payoffs for that round. At the end of the 10 rounds, one round is randomly selected for payment. This approach as argued by Fischbacher et al. (2001) gives subjects a monetary incentive to take all the decisions seriously and to ensure that potentially all decisions can become contributions to a public good.

Table 1 summarizes the treatments used in the experiment. Our design combines a within and between subject design. Each contributor is simultaneously exposed to a female and a male monitor. Yet each participant is exposed to only one type of sanction: non-monetary or monetary. Furthermore, we included a control group in which there are no monitors and no opportunities for sanctioning. Finally, we explore exogenous variation in the social environment and conduct the experiments in the patriarchal and matrilineal Volta and Ashanti regions.

>>>TABLE 1<<<<

The above game could be solved recursively. The monitor has to decide whether to sanction or not. Yet, as monetary sanctioning are costly, the optimal response is not to sanction. As the expected cost of sanctions is zero, the expected marginal pay-off of the public good is the same with social and monetary sanctioning. In both cases, individually it is optimal not to contribute to the public good as the marginal return from contributions are lower than the return from investing in the individual account:  $\partial\pi_i/\partial c_i^1 = \partial\pi_i/\partial c_i^2 - 1 + b < 0$ . However, since  $0 < b < 1 < nb$ , the social optimum is to contribute all endowments into the group account:  $\partial\pi_i/\partial c_i^1 = \partial\pi_i/\partial c_i^2 = -1 + nb > 0$ .

It has been consistently found that behavior in the public good game differs systematically from the predictions of rational decision making. Our experimental design allows us to explore whether the deviation from the predicted behavior can be related with personal characteristics of the monitor. Moreover, we explore how culture mediates these effects. In the next section, we present the main hypothesis of the study.

#### **4. Hypothesis**

Evidence supports the positive effect of sanctions on cooperation. It has been shown that when contributors have the possibility to sanction other group members, cooperation is higher (Fehr and Gächter 2000; Carpenter, 2007, Masclet et al., 2003). The presence of a third party punisher has also been shown to lead to higher contribution levels (Baldassarri and Grossman, 2011; Kube and Traxler, 2011). Hence, our first hypothesis is:

*Hypothesis 1: Contributions are higher in treatments where there is a third party monitor compared with the control treatment without it.*

Sociological literature has found that status affects behavior in various ways (Berger et al, 1972). For example, Hoff et al. (2011) observe that lower status individuals exhibit a much lower willingness to sanction violation of norms. Our second hypothesis is:

*Hypothesis 2: Status of genders in society is reflected in sanctioning use. High status individuals are more likely to use sanctions than low status individuals.*

Empirical evidence suggests that people behave more generously towards a high status person than a low status person. For instance, Kumru and Vesterlund (2010) find that contributions are larger when high status individual contribute prior to (rather than after) a low status individual. Similar results are provided by Ball and Eckel (1996) on the context of a bargaining game. In a market auction, Ball et al. (2001) find that when buyers have a higher status than sellers, equilibrium market prices are lower. Based on this evidence, we expect:

*Hypothesis 3: Contributions will be higher when interacting with high status monitors, than low status monitors.*

Sociological literature argues that one method in which individuals maintain their high status is to disobey individuals who impose sanctions on them. Thus, people of higher status are believed to have the right to make demands of those of lower status, and people of lower status are expected to comply with these demands (Eagly, 1983). Henrich and Gil-White (2001) further argue that high status entails greater access to desirable things and that access is not actively resisted by low status individuals. Hence, one would expect that in patriarchal societies, males, the high status gender, would be less responsive to female than to male monitors, while the opposite would be true in the matrilineal case.

*Hypothesis 4: The higher gender status contributes less to monitors from the lower gender status than to monitors from high gender status.*

It has been argued that access to resources and income affects the relative status that people receive in the social hierarchy (Cole et al., 1992; Corneo and Jeanne, 2001). Hence, inheritance systems that favor one gender over the other in terms of control of resources gives that gender a relatively higher status than the other.

*Hypothesis 5: We expect that the inheritance system will mediate the status that men and women have in the society. In societies where inheritance systems favor men like patriarchal societies in Ghana, men would have higher status than women. In matrilineal societies in which the right of men and women to inherit is more equal, differences in status across genders would be smaller.*

Sociological literature indicates that the ability to influence others is mediated by gender stereotypes (Carli, 2001). If women use styles of communications that do not conform to what people expect from them, they are less influential. Women who used more direct and persuasive messages are less effective in influence than indirect messages while the opposite was true for men (Burgoon et al, 1975; Carli, 1990). The expression of disagreement by women tended to evoke more negative reactions than when such behavior is expressed by men. This lead to our final hypothesis:

*Hypothesis 6: We expect that women would be more influential and elicit higher levels of contribution when using non-monetary sanctions than monetary sanctions.*

## **5. Experimental Procedures**

Our field experiments were conducted during the summer of 2012 in different locations in the city of Ho, the capital of the patriarchal Volta Region in the eastern part of Ghana (a region where the *Ewe tribe lives*) and the city of Kumasi, the capital of the matrilineal Ashanti region in the middle of Ghana. The experiment was conducted in five randomly selected areas in each city.

We recruited participants prior to the experiments. The workshop was announced during regular meetings of the association of assembly men and women with their communities. People volunteered to participate and when the number of volunteers was high, a lottery was played to select who would participate. Participants were notified of the venue and time of the next experimental session either in person or by a telephone call. The experimental sessions were normally conducted in the local school or at community centers.

In total, 156 subjects participated in the experiment. In a typical session, there were 15 subjects. 9 subjects were randomly matched in 6 different groups while the remaining 6 participants were given the role of external monitors. Overall, 1,440 contribution decisions were made. Group assignments remained the same for the entire duration of the session (partner's protocol). Each subject participated in only one session. A session lasted approximately 3 hours (on average) with an average earning of 7Gh¢ (€3)<sup>5</sup>.

**6. Results**

*6.1. Demographic characteristics of monitors and non-monitors*

Table 2 summarizes demographic characteristic and community participation variables for both monitors and non-monitors in the experiment across the two locations. There are equal numbers of female and male monitors under the gender treatments across the two localities. Unlike the student population sample used in many experiments, the average age of most participants in this study falls within an older age range of 30 to 45 years. Our participants have on average 3 years of schooling. Overall, there were more male participants in the experiment than female participants across both localities. Lastly, subjects in the Ashanti location appear slightly more religious than subjects in the Volta location.

>>>>TABLE 2 <<<<<<

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<sup>5</sup> Daily wage at the time was 4.48 Gh¢. The average earnings were close to two days of work.



## 6.2. Use of sanctions and gender

The descriptive statistics of the number of sanctions imposed by male and female monitors is presented in Table 3. We find that contrary to the predictions, both monetary and non-monetary sanctions are used. In about 10 percent of the decisions monitors imposed sanctions. As expected, non-monetary sanctions are more frequently used than monetary sanctions. However, we find that the extent to which sanctions are used vary across locations. In the Ashanti matrilineal society where women have more economic power and influence, we observe that female monitors sanction significantly less than male monitors (overall, Wilcoxon rank sum test  $Z = 4.192, p < 0.000$ ). This result is independent of whether the sanctioning mechanism is costly (monetary) ( $Z = 2.198, p = 0.028$ ) or not (social sanctioning) ( $Z = 4.643, p < 0.000$ ).

>>>TABLE 3 <<<<

In the patriarchal Volta locality, we observe that female monitors sanction more than male monitors when the sanctioning mechanism is costly (monetary). However, this difference is not statistically significant (Wilcoxon rank sum test  $Z = 0.786, p = 0.432$ , two-tailed). There also seem to be no significant differences in social sanctioning between female and male monitors when the sanctioning mechanism is non-monetary (social) sanctioning. Pooling the sanctions across the two different sanctioning mechanisms, we still do not observe significant differences in sanctioning between female monitors and male monitors (Wilcoxon rank sum test  $Z = 0.479, p = 0.632$ , two-tailed). Thus, women monitors in the Volta location (patriarchal society) punishes as much as male monitors. We reject the general hypothesis that females are less likely than male to punish norm violators.

The simple descriptive analysis does not consider that differences in sanctioning behavior could also be due to differences in compliance. Hence, in the next section we use econometric

analysis to control for this effect. To account for other factors that could affect sanctioning, we run a panel probit model. Table 4 presents the results of the estimations in each of the societies under consideration. We find that irrespective of model specification, female monitors in the matrilineal locality are significantly less likely to sanction compared with male monitors. In the patriarchal case, however, we do not observe significant differences in the likelihood of sanctioning between female and male monitors. Consistent with theory, we also observe from Table 4 that the higher the contributions, the lower the likelihood of receiving sanctions in both societies.

>>>> TABLE 4 <<<<<<

These results indicate that contrary to our expectations, female and male monitors in the patriarchal society are not different in the use of sanctions. However, in the matrilineal society, where we expected to find lower differences in the use of sanctions between genders, male monitors sanction more often than female monitors. If we are to believe that sanctioning is related to status, this would indicate that men have a higher status than women.

### *5.3. Impact of sanctions on cooperation*

Figure 1 graphically presents the average contributions to the public good for different genders of the monitoring and sanctioning technologies. Panels A and B refer to the Volta region, the patriarchal society; while Panels C and D refer to the matrilineal society. We compare contributions with the control treatment when there are no opportunities to sanction. We observe a general positive trend in contributions under both monetary as well as social sanctioning institutions. Contributions of endowment under the sanctioning institutions (both non-monetary and monetary sanctions) averages a little over 60 percent in the first period and gradually increases, approaching full cooperation in latter periods for both female monitors and male monitors. In contrast, the average contribution in the no sanction treatment starts from below 40 percent and gradually decays to about 20 percent by the last period. Thus, as

can be seen in Figure 1, the presence of sanctioning opportunities enhances pro-social behavior considerably in both localities.

>>>FIGURE 2 <<<<<<

#### *5.4. Social influence of the monitor*

The social influence of the monitor can be captured by the degree of cooperation in the public good game. Table 5 presents the average contributions to the group account for groups with male and female monitors under the different sanction technologies. We find that in the patriarchal location, Volta, when sanctioning is costly, there are no significant differences between contributions to the group account in the presence of female or male monitors (Wilcoxon rank sum test,  $Z = 1.030$ ,  $p = 0.152$ , one-tailed test). However, we do observe significant differences in contributions to the group account under non-monetary (social) sanctioning. Participants contributed significantly more when they have male monitors than when they had female monitors (Wilcoxon rank sum test,  $Z = 1.434$ ,  $p = 0.076$ , one-tailed test). As discussed previously, male and female monitors are equally likely to use sanctioning mechanisms. Hence, this difference is not due to a disciplining effect of the sanction. When contributions are pooled across sanctioning types, a much stronger difference in contribution is observed. Thus, in the patriarchal region, locality average contributions to the group account with female monitors are significantly lower than with male monitors (Wilcoxon rank sum test,  $Z = 1.735$ ,  $p = 0.041$ , one-tailed test).

In the matrilineal location, Ashanti, we observe no significant differences in the contributions to the group account under either female or male monitors. This result holds for both monetary and non-monetary (social) sanctioning (Wilcoxon rank sum test,  $Z = 0.485$ ,  $p = 0.314$  and  $Z = 0.492$ ,  $p = 0.3114$ , respectively). Also, we observe no significant differences when the data is pooled across sanctioning mechanisms (Wilcoxon rank sum test,  $Z = 0.070$ ,

$p = 0.472$ ). As discussed previously, male monitors are more likely to sanction in the matrilineal society than monitors, hence, further analysis should control for this difference.

>>>> TABLE 5 <<<<<<

In order to test the effect of demographic characteristics of the monitor on contributions to the public good, we use panel data analysis. Given the right-censoring in the data, we use a panel Tobit model. Ordinary least squares in this case will yield biased estimates, as the individual contributions are bounded from below by 0 and from above by 250. The empirical strategy adopted here is to first estimate and present the unconditional results based on the main treatment variables (dummy variable for gender, dummy for the type of sanctioning mechanism and the period). Because our experimental design in principle is a 2x2 design, we also present conditional regression results accounting for the interaction of the monitor's gender and the type of sanctioning. This interaction may account for the possibility that the social influence of male or female monitors is different depending on the sanctioning mechanism in place.

Aside from the use of the panel regression to capture the underlying panel nature of the data, we also acknowledge the presence of dynamic incentives in the experiment. Therefore, we also include various forms of lagged variables (i.e. lagged sanctions, lagged contributions of others) in other specifications. As part of this effort, we account for both dynamics as well as censoring in our data. We also carried out other specification checks by controlling for differences in all observable demographic variables defined in Table 2. The specifications serve as a robustness check for our main result.

Our estimation result as presented in Table 6 parallels the conclusions derived from the non-parametric statistics discussed earlier. Model 1 presents the unconditional effect of the monitor's gender on individuals contributions (female =1 and male =0, monetary sanction = 1, non-monetary (social) sanction = 0). Results from Model 1 replicate the results from the

parametric test. In Volta, subjects contribute significantly less to female monitors than to male monitors ( $p < 0.05$ ) whereas in Ashanti, the contribution levels are not significantly different for groups with female and male monitors.

Model 2 provides the conditional effect by including an interaction term of monitor's gender and sanctioning type. Controlling for female-sanctioning-type interaction, we find that the gender effect persists in the patriarchal society ( $p < 0.05$ ) so contributions to the public good are lower when the monitor is female. Model 3 further includes lagged sanctions and lagged contributions of others variables to attempt to capture some of the dynamic incentives inherent in the data over the periods of the experiment. As expected, we find that reciprocity explains cooperation. Hence, contributions depend positively on lagged contributions of others in the group. Yet, the gender effect still persists in the Volta Region ( $p < 0.10$ ). Model 4 further controls for the differences in observable demographic characteristics of the participants, i.e., gender of contributor, age, education, marital status, and religion. After controlling for observable differences in the demographic characteristics of group members, the effect of gender of the monitor becomes much stronger ( $p < 0.05$ ). It is interesting to note that in Volta, male participants contribute less when the monitor is female and when sanctions are monetary than when they are non-monetary. As we control for the leverage of the sanction, this indicates that male contributors disregard female monitors when sanctions are costly as opposed to when they are not. The Ashanti region seems to favor a meritocracy rule, so male contributors are less likely to contribute to the public good when they have lower education.

Irrespective of which model specification is chosen, subjects in Volta contribute significantly less to the public good when confronting a female monitor than a male monitor. Yet as male and female monitors use sanctioning equally, the higher contributions that male monitors can achieve cannot be attributed to different levels of enforcement. Our results

indicate that differences in the effectiveness of female monitors can be attributed to cultural differences. In the matrilineal society where women are more empowered, we find no significant differences in the level of contributions to the public good in groups with male and female monitors.

Note that despite similar contributions to male monitors and female monitors in the matrilineal Ashanti society as observed from both non-parametric statistics and the model specifications, evidence from Table 3 and 4 indicates that male monitors in the matrilineal Ashanti region sanction significantly more than the female monitors. Thus, female monitors in Ashanti do not have to sanction as often as male monitors to induce similar levels of cooperation. Empirical results from the above specification support the hypothesis of the impact of culture on gender differences in social influence.

>>>>TABLE 6 <<<<

#### 6.5. Summary of the results and hypothesis test

The results of the study confirm our hypothesis regarding the effectiveness of sanctioning mechanisms on cooperation (*Hypothesis 1*). Yet, contrary to our expectations we find that the relative social status of men and women is not reflected in different use of sanctions (*Hypothesis 2*). In the patriarchal society, male and female monitors are equally likely to use sanctions, while in the matrilineal society, male monitors sanction more often. Identity threat could explain this behavior. As it is socially expected that women are more powerful than men, male monitors might need to contest this expectation exerting power. This is however a question that requires further research.

One of our hypotheses was that status would affect social influence (*Hypothesis 3*). Consistent with our hypothesis, we see that in our patriarchal societies, contributions were lower in groups with female monitors compared with groups with male monitors. Also,

consistently with our expectations, we find no significant differences in cooperation in groups with male and female monitors in our matrilineal societies.

We find some support to the hypothesis that participant's status matter in the degree of social influence (*Hypothesis 4*). In particular, we find that in patriarchal societies, male contributors discriminate against female monitors and cooperate less in groups led by a female monitor compared with groups led by male monitors. Also, male participants contribute less than female participants when monetary sanctions are in place. Interestingly, we find that in the patriarchal society, female contributors also discriminate against female monitors particularly when non-monetary sanctions are in place. Our results do not support any such difference in the matrilineal society.

Our results partly support *Hypothesis 5*. We find that gender differences in the use of sanctions and social influence are not constant across these two societies. This result suggests that culture, and in particular, inheritance systems are important in shaping social status and determining the gender roles in society. Yet, differences in social status are not manifested across all dimensions. Status differences are not necessarily reflected in the use of sanctions but on social influence.

Our results support *Hypothesis 5*. In the patriarchal society, we find gender differences in the degree of social influence depending on the type of sanctions being used. Women discriminate against other women cooperating less when sanctions are non-monetary. Male contributors discriminate against female monitors when sanctions are monetary. We do not find such effect in matrilineal societies.

## **7. Conclusion**

Chipping-away the glass ceiling for women especially those in developing countries has strong policy implication for the overall goal of gender empowerment and economic development around the world. The goal of this paper was to use a controlled experiment in

the field to examine the impact of gender on norm enforcement and collective action outcomes in two distinct societies; one matrilineal, and the other patriarchal. The two inheritance systems in these societies provide a unique platform to examine the use of sanctions and social influence of women in society.

We find that in the matrilineal society where women have control and power in inheritance and as such have high status within the society, subjects tend to contribute the same to groups monitored and sanctioned by females and males alike. On the other hand, subjects in the patriarchal society tend to contribute significantly less to groups monitored and sanctioned by women. However, we find that the differences in monitoring outcomes is not attributed to gender differences in sanctioning, as female and male monitors in the patriarchal society show similar sanctioning behavior. These results therefore refute the general hypothesis that women or lower status individuals exhibit a much lower willingness to sanction norm violation (see Hoff et al, 2011; Balafoutas and Nikiforakas, 2012). The evidence squares well with the notion that cultural factors are responsible for a low representation of women in positions of authority. Thus, the negative impact of women's monitors on collective action may be driven more by factors that are external to the woman.

These findings provide strong implication for public policy. Overall, we argue strongly in favor of "breaking the glass ceiling". However, we also argue that policy makers should bear in mind that placing women in positions of authority alone, i.e. "chipping-away at the glass ceiling" does not automatically lead to superior outcomes but more policy and institutional commitment would be needed to support this change. Our results, together with other papers that compare behavior in matrilineal and patriarchal societies point to a robust relationship between gender, culture and economic outcomes. Our results are also a testament to the presence of a strong gender-inequality-differential within countries. We argue that policies that promote the welfare of women and the aged (e.g., economic participation and decision-



making power) especially in developing countries should take inequality differences within the countries into account for effective policy intervention.

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TABLE 1  
EXPERIMENTAL DESIGN

	Patriarchal Society				Matrilineal Society			
Type of Sanction	Female	Monitor	Male	Monitor	Female	Monitor	Male	Monitor
Non-Monetary	No_Mon_F		No_Mon_M		No_Mon_F		No_Mon_M	
Monetary	Mon_F		Mon_M		Mon_F		Mon_M	
No Sanction	Control				Control			

TABLE 2

## DEMOGRAPHIC CHARACTERISTICS (VOLTA AND ASHANTI)

Subjects Characteristics	Pooled (Mean) (Std. Dev.)	Volta	Ashanti
		(Patriarchal) (Mean) (Std. Dev.)	(Matrilineal) (Mean) (Std. Dev.)
<b>1. Monitor</b>			
Age	35.2 (14.4)	39.8 (16.5)	30.5 (10.0)
Educational Level	3.5 (1.1)	3.6 (1.1)	3.3 (1.1)
Gender	1.5 (0.5)	1.5 (0.5)	1.5 (0.5)
Marital status	1.7 (0.8)	1.7 (0.6)	1.8 (0.9)
Hours spent in church/mosque	4.9 (6.8)	4.3 (2.7)	5.6 (9.1)
<b>2. Non-Monitor</b>			
Age	37.3 (15.6)	40.9 (17.6)	33.7 (12.3)
Educational Level	3.5 (1.1)	3.6 (1.1)	3.3 (1.1)
Gender	1.6 (0.5)	1.6 (0.5)	1.6 (0.5)
Marital status	1.7 (0.8)	1.6 (0.8)	1.7 (0.8)
Hours spent in church/mosque	5.7 (8.0)	4.6 (5.6)	6.7 (9.6)
N	156	78	78

*Note:* Age denotes actual age in years; educational level (1-6) denotes: (1) No education, (2) Primary School, (3) Some high school, (4) Completed high school, (5) Undergraduate university, (6) Postgraduate university; Not together for any reason, (6) Married with more than one spouse; Gender (1-2) denotes: 1 if female, 2 if male

TABLE 3  
SANCTIONING BEHAVIOUR (GENDER TREATMENT)<sup>a</sup>

Gender	Volta (Patriarchal)			Ashanti (Matrilineal)		
	Total Mean (Std. Err.)	Total Mean (Std. Err.)	Total Mean (Std. Err.)	Total Mean (Std. Err.)	Total Mean (Std. Err.)	Total Mean (Std. Err.)
	Pooled	NMP	MP	Pooled	NMP	MP
Women	41 0.114 [0.017]	25 0.139 [0.026]	16 0.089 [0.021]	26 0.072 [0.014]	18 0.100 [0.022]	8 0.044 [0.015]
Men	37 0.103 [0.016]	25 0.139 [0.026]	12 0.067 [0.019]	68 0.189 [0.021]	49 0.272 [0.033]	19 0.106 [0.023]
Total	78	50	28	94	67	19
Significance	-	-	-	***	***	**

<sup>a</sup> Standard errors in parentheses. \* $p < 0.1$  \*\* $p < 0.05$ , \*\*\* $p < 0.01$ , two- tailed tests

TABLE 4  
PANEL PROBIT REGRESSIONS FOR SANCTIONING BEHAVIOUR<sup>a</sup>

Independent Variables	Volta (Patriarchal)		Ashanti (Matrilineal)	
	Mean (Std. Err.)	Mean (Std. Err.)	Mean (Std. Err.)	Mean (Std. Err.)
	Model 1	Model 2	Model 1	Model 2
Monetary	-0.386** (0.183)	-0.523** (0.243)	- (0.195)	- (0.229)
Female	-0.145 (0.157)	-0.268 (0.211)	- (0.177)	- (0.221)
Female × Monetary		0.007 (0.235)		0.279 (0.345)
Contribution	1.588*** (0.162)	1.596*** (0.163)	1.553*** (0.178)	1.556*** (0.178)
Lagged contri.	-0.142 (0.147)	-0.140 (0.148)	-0.034 (0.146)	-0.035 (0.146)
Period	0.103*** (0.03)	0.104*** (0.03)	- (0.029)	- (0.03)
# Observations	716	716	716	716
Prob > chi <sup>2</sup>	0.0000	0.0000	0.0000	0.0000
Log likelihood	-168.133	-167.747	-167.295	-161.881

<sup>a</sup>Standard errors are in parentheses. \* $p < 0.1$  \*\* $p < 0.05$ , \*\*\* $p < 0.01$

TABLE 5  
MEAN SUBJECTS CONTRIBUTIONS (Gender)<sup>a</sup>

Gender	Volta (Patriarchal)			Ashanti (Matrilineal)		
	Mean (Std. Err.)	Mean (Std. Err.)	Mean (Std. Err.)	Mean (Std. Err.)	Mean (Std. Err.)	Mean (Std. Err.)
	Pooled	NMP	MP	Pooled	NMP	MP
Women	1.991 (0.028)	2.008 (0.042)	1.973 (0.038)	1.963 (0.031)	1.926 (0.045)	2.001 (0.041)
Men	2.064 (0.026)	2.091 (0.037)	2.037 (0.036)	1.966 (0.031)	1.906 (0.045)	2.026 (0.041)
z-value	$z = 1.735^{**}$	$z = 1.434^*$	$z = 1.030$	$z = 0.070$	$z = 0.492$	$z = 0.485$
N	720	360	360	720	360	360

<sup>a</sup>Standard errors are in parentheses. NMP denotes non-monetary sanctions and MP denotes monetary sanctions.



TABLE 6  
TOBIT REGRESSIONS OF PARTICIPANT'S CONTRIBUTIONS<sup>c</sup>

	Loc. Volta- Patriarchal				Loc. Ashanti- Matrilineal			
	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4
Monetary	-0.142 (0.139)	-0.132 (0.142)	-0.063 (0.236)	-0.167 (0.236)	0.200 (0.193)	0.202 (0.207)	0.274 (0.304)	0.237 (0.197)
Female Monitor	-0.099** (0.042)	-0.102* (0.059)	-0.188** (0.096)	-0.125** (0.060)	0.004 (0.038)	0.036 (0.054)	0.123 (0.102)	0.040 (0.053)
Monetary × Female Monitor		0.037 (0.081)	0.183 (0.120)	0.050 (0.083)		-0.059 (0.077)	-0.109 (0.129)	-0.076 (0.077)
Lagged sanction		-0.160** (0.067)	-0.155** (0.067)			0.006 (0.061)	0.005 (0.061)	
Lagged contri. Others		0.133** (0.061)	0.139** (0.061)			-0.011 (0.060)	-0.001 (0.061)	
Male Monitor × Male Contributor			0.077 (0.219)				0.370 (0.283)	
Female Monitor × Male Contributor			0.138 (0.122)				-0.120 (0.120)	
Monetary× Female Monitor × Male Contributor.			-0.291* (0.166)				0.053 (0.163)	
Period	0.069*** (0.007)	0.049*** (0.009)	0.048*** (0.009)	0.069*** (0.007)	0.076*** (0.007)	0.051*** (0.009)	0.051*** (0.009)	0.076*** (0.007)
Constant	1.895*** (0.108)	1.765*** (0.154)	1.760*** (0.506)	1.909*** (0.111)	1.597*** (0.142)	1.791*** (0.177)	2.486*** (0.598)	1.579*** (0.143)
Other controls	No	No	Yes	No	No	No	Yes	No
# Observations	720	648	648	720	720	648	648	720
Prob > chi <sup>2</sup>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Log likelihood	-584.864	-486.324	-486.324	-483.919	-522.928	-440.491	-433.139	-522.436

<sup>c</sup> Standard errors are in parentheses: \* $p < 0.1$  \*\* $p < 0.05$ , \*\*\* $p < 0.01$

Notes: Contributions are bound from below by 0 and above by 2.5. Other controls refer to controlling for all other demographic variables defined in Table 2

Figure 1. Matching groups

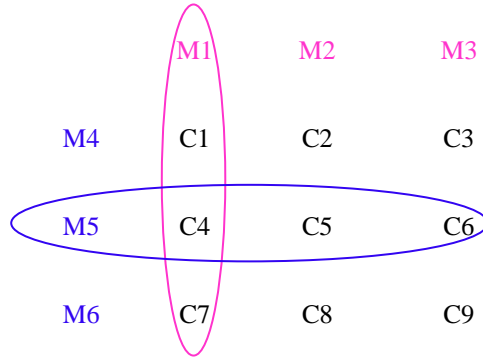
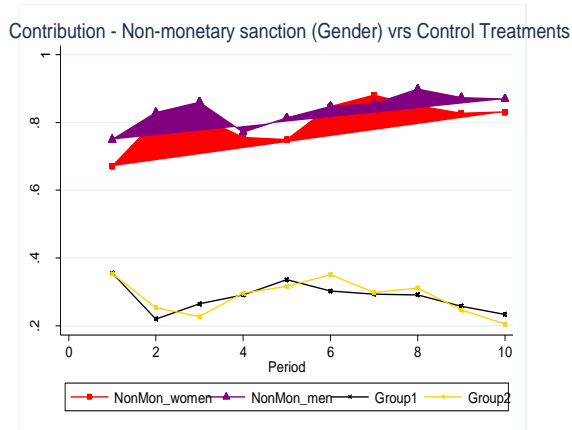
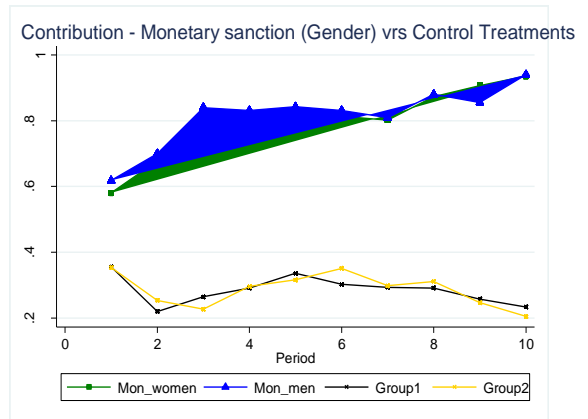


Figure 2. – Average contribution across periods

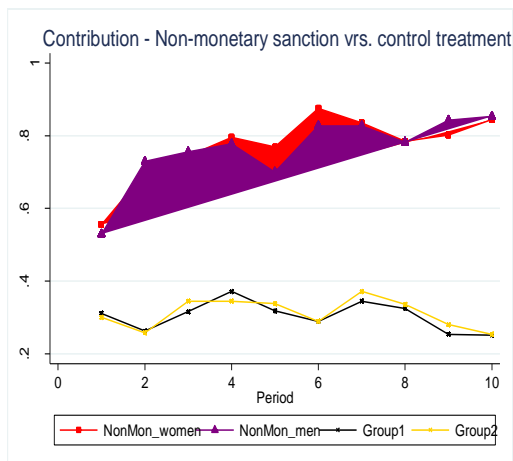


a. Non-Monetary

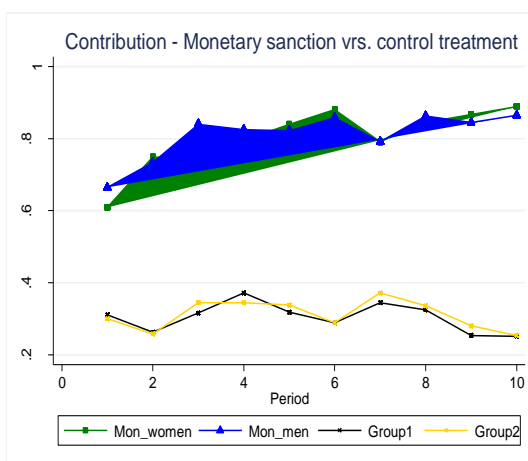


b. Monetary

Locality Volta (Patriarchal)



c. Non-Monetary



d. Monetary

Locality Ashanti (Matrilineal)

## Appendix A

### **Instructions**

Hello and welcome to the workshop. Thank you all very much for making time to come to this workshop. We really do appreciate. In this workshop you will have the option to earn some money. How much money you earn will depend on your decision and the decision of others in the group. Money earned in the workshop will be paid to you in cash at the end of the workshop. During this workshop you will be asked to perform a task. We will explain to you the task at its due time. In total the workshop will last about 2 hours.

Before we start the different tasks, we please ask that you all come to the front of the room so we can reorganize the seats.

Please do not open the envelopes on the table.

In order to maintain comparability across different participants in the workshop we have prepared some instructions that we will read to you.

For the task, you will have different roles in the workshop. Some of you will be called ‘workers’ and others will be called ‘inspectors’.

#### **What do workers need to do?**

For the next task, you will have different roles in the workshop. Some of you will be called ‘workers’ and others will be called ‘inspectors’.

Each worker will be assigned to two independent groups ‘Group Pink’ and ‘Group Blue’. Each group consists of three participants; you and two others participants. You will not know who is in each of the groups you belong.

Each worker will receive C2.5 for each group they belong. So in total you will receive C5. In each group there is a group account. Your task is to decide how much you want to invest in the group account and how much to put in your pocket. Whatever money you put in your pocket will multiply by one. The money that you invest in the group account will be multiplied by two and will be equally shared by the three group members. Similarly, the money that other group members invest in the group account will be multiply by two and will be equally shared among the three group members.

You have to make this decision for your 'Pink Group' and as well as for your 'Blue Group'. You will receive two decision cards like these ones (show example). The pink card refers to group Pink, while the light blue card refers to the group Blue. The cards have boxes with the numbers, ranging from 10 pesewa to C 2.5. Your task is to 'circle' the amount of money that you want to invest into the group account. For instance if you want to invest all your C 2.5, then you need to circle C 2.5. If you want to invest only 10 pesewas, then you circle 10p. The money that is not invested in the group account will be automatically transferred to your private pocket. Let's demonstrate with the following example (use posters)::

*Example1:*

Assume that you invested 60pesewas into the Group Pink and kept C 1.90 in your pocket. Hence in the decision card for Group Pink, pink, you 'circle' 60p. For 'Group Blue', let's assume that you invested 80pesewas into the group account and kept C 1.70 in your pocket. Now in the decision card for group blue, light blue card, you 'circle' 80p. How much do you receive? Well, what you earn will depend on how much money you and the other two subjects in each group invested in the group account and how much money each person kept in their own pockets. If the others did exactly the same as you, and invested 60p each to Group Pink's account and 80p to Group Blue's account, the total investment in the Group Pink's account will be:  $60p \times 3 = C1.8$  and in Group Blue is  $80p \times 3 = C 2.4$ . Your earning from

Group Pink would be  $\text{C } 1.90 + \text{C } 1.8 * 2/3 = \text{C } 3.10$ . And how much would you earn from Group Blue?  $\text{C } 1.70 + \text{C } 2.4 * 2/3 = \text{C } 3.30$ .

*Example2:*

Assume that for 'Group Pink' you invested 0pesewa into the group account and kept all  $\text{C}2.50$  in your pocket. Hence in the decision card for Group Pink, pink, you 'circle' 0p. If the other two participants in Group Pink invested on average  $\text{C}2.0$  into the Group Pink Account, then the total amount of money in Group Pink account is  $0p + \text{C } 2 * 2 = \text{C } 4$ . And your earnings from Group Pink is  $\text{C } 2.5 + 4 * 2/3 = \text{C } 5.17$ .

For 'Group Blue', let's assume that you invested  $\text{C } 2.5$  into the group account in 'Group Blue' and kept nothing in your pocket. Now in the decision card for group blue, light blue card, you 'circle'  $\text{C}2.5$ . If the other participants in Group Blue invested on an average invested 0p each into the group account, the total amount of money in the group account would be  $\text{C}2.5 + 0p * 2 = \text{C}2.5$ . How much would your earnings be?  $0p + 2.5 * 2/3 = \text{C } 1.67$

After making your decision as a worker on the Decision Cards, the assistant will pass by to collect the decision cards and send them to the inspectors.

### **What do inspectors need to do?**

The job of the inspectors is to observe workers group investment and to fill a report. For carrying out this task the inspectors will receive  $\text{C}5.0$ . After observing each worker's investment to the group account, the inspector has the opportunity to show dissatisfaction or disapproval of any worker's investment level to the group account. If the inspector is dissatisfied, the inspector can send one sadface to one worker. Each inspector will observe decisions for ONLY one group.



After the inspectors have made their decision workers will receive two REPORTS. One from the inspector for group pink and one from the inspector for group blue. The REPORT is at the back of the DECISION CARDS. The inspectors will also put the sadface if any, in the middle of the report card and fold it (Demonstrate) to be sent to the workers. The report card looks like this one (show with example on poster). In the report workers will see how much money in total is investment in the group account and how much money each person receives back from the group account.

Let's consider our last example. Two of the 'workers' invested 0p in the group account and the other invested all £ 2.5 into the group account. Hence the inspector needs to write:

Total investment in the group account: £2.5.

We double the total investment in the group account, so the group account now has £5. This value is divided equally among all the three participants in the group. In this case, everyone will get £1.67.

### REPORT (Example)

Total investment in group account	Double	Payback from group account
C2.5	C5	C1.67

The inspectors also have to complete an ‘Inspector History Form’. The inspectors have to complete the ‘Inspector History Form’ first which looks like this one (show example and explain on poster) before completing the report cards for each of the three participants.

Let’s demonstrate how the ‘Inspector History Form’ should be completed by the inspectors:

Let’s consider our last example. Let’s assume ‘worker1’ and ‘worker 2’ are those who invested 0p in the group account and ‘worker 3 invested all C 2.5 into the group account. Let’s assume the inspector sent a sadface picture to ‘worker 2’. Hence the inspector needs to write and tick as follows:

Round 1				
	Worker			
	1	2	3	Total Investment
Investment group account	0	0	C 2.5	C2.5
Sad Face		1		

Total investment in the group account: €2.5. When the inspectors' finishes completing the 'Inspector History Form' and the report cards, our assistants will come round and collect them.

This process will be repeated a total of 10 rounds. At the end of the 10 rounds, one round will be selected at random for payment in cash. The money you receive will be yours to take home and use as you please.

**<CONTROL QUESTIONS>**

Before starting the third task, we would like to verify that we had been clear in explaining the task.

*Please open envelope 1 and solve the questions.*

Imagine that you are a worker and want to invest €1.2 in the group account. 1. Please represent this case using the following decision card.

DECISION CARD  
CONTROL QUESTION  
PARTICIPANT \_\_\_\_

0p				
10p	20p	30p	40p	50p
60p	70p	80p	90p	€1.0
€1.10	€1.20	€1.30	€1.40	€1.50
€1.60	€1.70	€1.80	€1.90	€2.0
€2.10	€2.20	€2.30	€2.40	€2.50

Assume the other two group members together contributed 60p each into the group account.

1. How much money is left in your pocket after investing?
2. How much money (payback) will you receive from the group account?



3. How much money will you receive in total?
4. How much money will you receive if the inspector sends you a sadface?

*Please open envelope 2 and solve the second question.*

Imagine that you are an inspector for a group and observed that two people invested €1.50 each in the group account and the other invested 0p in the group account. Please represent this case using the following REPORT CARD.

<b>REPORT CARD</b>		
Total investment in group account	Double	Payback from group account

**<Random selection into roles>**

Now we will continue by separating some of you to be ‘workers’ and others to be ‘inspectors’. As I told you before, some of you will serve as inspectors. Please all the women should kindly come forward (*select 3 randomly if there are more than 3 participants*). Please bring all your belongings along. Now I would like to please ask all the men to kindly come to the front (*select 3 randomly if there are more than 3 participants*). We would like to ask the women among you to sit on the front row and the men to sit on the chairs on the second row.

**Actual Task**

Now we will start the third task. Please, participants who are sitting behind the second row ‘workers’ should open envelop 3 and take out decision card pink and light blue for round 1. The pink card will be observed by one of the women participants in the first row and the blue card will be observed by one of the men participants sitting in the second row. Please when finish making your decisions; turn the decisions sheets upside down on the table so our

assistants can collect them. Please begin by making your first investment decisions into group pink and group blue.

### **Exit Questionnaire**

Please open envelop 4. Envelop 4 contains a questionnaire. We will please ask that you complete the questionnaire. Raise your hand if you need any help to complete the questionnaire.

DECISION CARD  
GROUP PINK

PARTICIPANT \_\_\_\_

ROUND \_\_\_\_\_

0p				
10p	20p	30p	40p	50p
60p	70p	80p	90p	€1.0
€1.10	€1.20	€1.30	€1.40	€1.50
€1.60	€1.70	€1.80	€1.90	€2.0
€2.10	€2.20	€2.30	€2.40	€2.50

DECISION CARD  
GROUP BLUE

PARTICIPANT \_\_\_\_

ROUND \_\_\_\_\_

0p				
10p	20p	30p	40p	50p
60p	70p	80p	90p	€1.0
€1.10	€1.20	€1.30	€1.40	€1.50
€1.60	€1.70	€1.80	€1.90	€2.0
€2.10	€2.20	€2.30	€2.40	€2.50

## COSTLY SANCTIONS

