Loss contracts do not help coordination (but gender does) [*]

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Abstract

[*First draft. Please do not circulate*] In this paper we study the effects that loss contracts – prepayments that can be clawed back later – have on group coordination. To do so, we compare the choices made by experimental subjects in a minimum effort game. In control sessions incentives are formulated as a classical gain contract, while in treatment sessions incentives are framed as an isomorphic loss contract. Our results show that loss contracts result in a decrease of both the effort and the coordination of participants. However, these results depend strongly on the gender composition of groups; those groups with a higher proportion of females are better at coordinating and do so for higher efforts. Such differences in behavior result in strong welfare effects.

Keywords loss aversion, coordination, contract design, framing, experiment

JEL Classification C91 · D84 · G11 · G41

1 Introduction

Coordination lies at the center of most organizational settings. In those contexts, the decision of any single member can impact the entire business process of the firm. This is apparent in assembly lines or just-in-time inventory systems, but also applies to other less obvious settings such as an advertising company with a shirking graphic designer or a restaurant with an especially slow waiter.

In such organizational settings, having all subjects coordinate on a high effort can be complicated as individuals face a trade-off: while exerting more effort might result in higher productivity, such efforts might be wasted if someone else along the chain (the weakest link) is not keeping up to speed. One way to mitigate this coordination failure is to increase the monetary benefits from coordination (Brandts and Cooper, 2006). Yet, this measure is expensive. A recent, cost-effective suggestion to increase the efforts is the use of so-called loss contracts (e.g., Hossain and List, 2012). In a loss contract, individuals are prepaid and then clawed back if certain productivity targets are unmet. The intuition for the application of loss contracts rests on loss aversion: Since losses loom larger than gains, loss averse individuals will perform harder to avoid potential losses from pre-payment than to achieve equivalent gains (e.g., Hossain and List, 2012; Fryer Jr et al., 2012).

In this paper we study how loss contracts affect the coordinated efforts within groups. To do so, we design a between-subject experiment in which subjects play multiple rounds of the "minimum effort game" (Van Huyck et al., 1990), also known as the "weakest link" game (e.g., Engelmann and Normann, 2010; Knez and Camerer, 1994; Riedl et al., 2016). As in a production chain, in this setup, the payoff of each subject depends on her own effort and the lowest effort of all members of the group. To study the effects of loss contracts, we set up two treatments, a control group with a "classic" *gain contract* and a treatments group with an isomorphic payoff function that is framed as a *loss contract*. Because the only difference between both treatments is the way in which the payoffs are presented, any change in the behavior of subjects can be attributed to the *framing* of the payoff function.

However, our results show that loss contracts result in lower group productivity, with groups exerting a lower minimum effort than in sessions with gain contracts. Furthermore, we observe that loss contracts worsen coordination among group members which is

reflected in a higher variance of the effort choices within the groups. This higher variance translates into a substantial amount of wasted efforts and therefore in lower welfare across its members. Interestingly, our results show strong gender effects, as groups with a larger proportion of females achieve higher minimum effort levels, do so in a more coordinated way, and achieve higher welfare levels.

Our study contributes to the literature on the effects of negatively framed incentives. While this literature is rich in the effect of loss contracts on individual worker effort (e.g., DellaVigna and Pope, 2018; Imas et al., 2016; Pierce et al., 2020), to the best of our knowledge, only few papers have studied the effects that such contracts have on group coordination. Hossain and List (2012) study the effects of loss contracts on group productivity in a field experiment and show that loss contracts have strong effects on group productivity. In the lab, Cachon and Camerer (1996) study *loss avoidance* and forward induction (implicit communication about the subjects expectations) as an equilibrium selection refinement in median and minimum effort games. Hamman et al. (2007) study the effect of imposing a penalty or bonus conditional on specified outcomes while Brandts and Cooper (2006) look at the effect that a reduction in previous bonus payments has on coordination. However, all of these laboratory experiments have different focuses and with several behavioral aspects at play cannot determine the isolated effects of negatively framed incentives on group coordination. Our contribution is therefore to study the isolated effects of negatively framed incentives on group coordination and performance in a controlled laboratory environment.

The paper is organized as follows. Section 2 presents our experimental design. Section 3 presents the experiment's results which are discussed in Section 4. Finally, Section 5 concludes.

2 Experimental Design

We design a between-subjects experiment with two treatments: gain contract and loss contract. In both cases subjects are divided into groups of six and simultaneously decide how much effort to exert in each given round. Subjects' payoffs are decreasing in their own effort and increasing in the minimum effort chosen across all subjects in the group. Formally,

$$\Pi(e_i, e_{min}) = a[\min_{i \in n}(e_i)] - be_i + C, \tag{1}$$

where e_i is the effort of subject i, e_{min} is the minimum effort across all subjects n in the group, a and b are parameters such that $a - b > 0$, and C is a constant to avoid negative payoffs. The parametrization follows Van Huyck et al. (1990), with $a = 20$ points, $b = 10$ points, and $C = 60$ points. The exchange rate at the end of the experiment is of € 1 for every 70 points. This exchange rate is comparable to Engelmann and Normann (2010) and Leng et al. (2018).

Our treatment comes in through the framing of the payoffs. In the gain contract treatment, subjects are presented with the payoffs resulting from equation (1), as depicted in the left panel of Table 1. The vertical axis of the payoff table denotes the effort choice of an individual subject i. The horizontal axis denotes the smallest effort level chosen by all group members of subject i's group. In the loss contract treatment, subjects are endowed with 140 points before each round and presented with the right panel of Table 1. Importantly, this second table does not represent final payoffs of a subject, but the outcomes of all subjects' joint actions. To calculate the payoffs for each set of actions, subjects need to subtract the resulting outcome from their per-round endowment of 140 points.[1] This is made clear in the instructions. In both treatments, subjects had several practice rounds to get acquainted with the interface and payoff structure of the game.

	Gain Contract								Loss Contract						
	Minimum Choice Within Group								Minimum Choice Within Group						
	7	6	5	4	3	2	1		7	6	5	4	3	2	1
7	130	110	90	70	50	30	10	7	-10	-30	-50	-70	-90	-110	-130
6		120	100	80	60	40	20	6		-20	-40	-60	-80	-100	-120
5			110	90	70	50	30	5			-30	-50	-70	-90	-110
4				100	80	60	40	4				-40	-60	-80	-100
3					90	70	50	3					-50	-70	-90
2						80	60	2						-60	-80
1							70	1							-70

Table 1: Payoff tables presented to subjects. In both cases, rows represent own effort, columns minimum effort of the group. In the left panel is the control treatment where subjects see their final payoff in points. The right panel shows the treatment table. In this case, subjects get the points subtracted from their initial endowment (140) and not final payoffs.

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[1]The interface included a calculator in case any subject needed it.

Note that in both tables the values presented are either all positive or all negative. We choose this modeling device to avoid the creation of any focal points which potentially attract subjects' attention and bias their behavior.[2]

The game is played for ten consecutive rounds, maintaining the same group composition. After each round, subjects receive feedback about the minimum effort of the group and the resulting payoff. After the ten rounds, we elicit several personality traits from our subjects. First, we measure cognitive ability using the CRT (Frederick, 2005), CRT2 (Thomson and Oppenheimer, 2016) and eCRT (Toplak et al., 2014) questions. Second, we elicit subjects' risk-, ambiguity-, and loss aversion through a modification of the multiple price lists used in Rubin et al. (2017). Finally, subjects answer the short version of the Big Five personality traits suggested by Rammstedt and John (2007) and state their gender.

3   Results

The experiment was run at the Experimental Economics Laboratory of the Technische Universität Berlin. In total we had eight sessions, four with gain contracts and four with loss contracts. In each session we randomly divided subjects into three groups of 6 subjects for a total of 144 subjects across all sessions. Sessions lasted less than one hour with average earnings of € 12.74. All subjects were recruited through ORSEE (Greiner, 2015) and the experiment was programmed and conducted using z-Tree (Fischbacher, 2007).

Figure 1 summarizes the results across all sessions and groups. In it, we present the minimum choice of each group in each period (grey lines) and the mean minimum choice across groups in each period (red line). Contrary to the hypothesis of Hossain and List (2012), Figure 1 shows that a loss contract reduces the average minimum effort of groups. While a Mann-Whitney U test detects no significant effect between the treatments for initial period decisions (p-value=0.325), there seem to be some differences in the last period (p-value = 0.082).

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[2]Cachon and Camerer (1996) show that in minimum effort games with negative and non-negative outcomes, the latter act as focal points. Consequently, subjects avoid losses by ignoring all strategies which result in negative outcomes. Showing only positive or only negative entries allow us to exclude such *loss avoidance* as potential equilibrium selection principle.
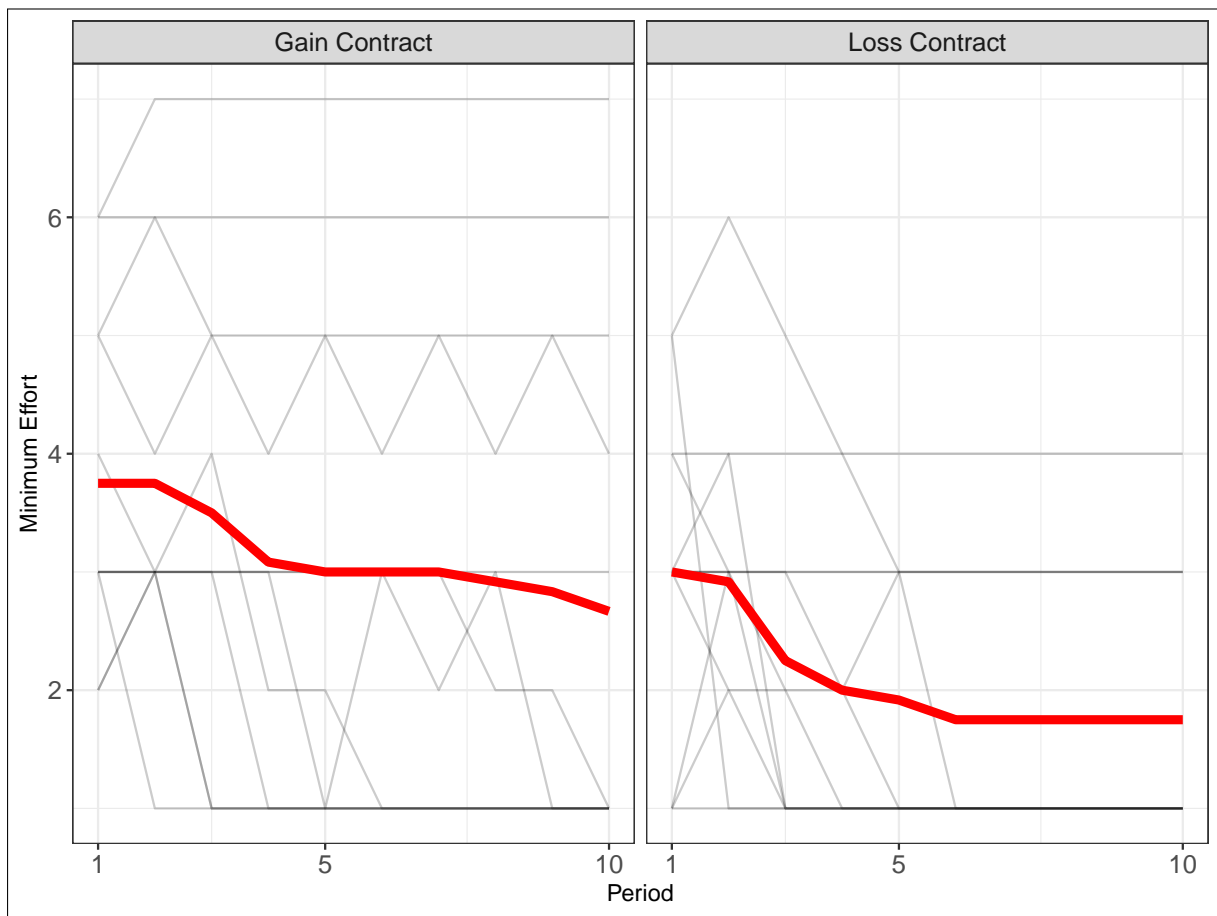
Figure 1: Summary of all choices across treatments. For both treatments, in grey the minimum strategy played in each group and in red the mean of such minimum strategies.

	(1)	(2)
	periodmineffort	periodmineffort
loss contract	-1.151*	-1.272**
	(0.691)	(0.640)
female_ratio	2.644**	3.857***
	(1.163)	(1.163)
avg_risk_aversion	-0.279	-0.595*
	(0.274)	(0.317)
avg_loss_aversion	-0.175	-0.342
	(0.202)	(0.259)
avg_ambiguity_aversion	0.00392	-0.0640
	(0.303)	(0.400)
avg_CRT	0.255	0.290
	(0.182)	(0.206)
avg_extraversion		-0.561**
		(0.271)
avg_conscientiousness		0.139
		(0.513)
avg_agreeableness		0.579
		(0.693)
avg_neuroticism		0.188
		(0.539)
avg_openness		0.244
		(0.372)
constant	4.325	4.579
	(3.143)	(5.593)
N	240	240

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 2: Random effects GLS. All standard errors are clustered at the group level.

The differences between treatments become more apparent once we look at the data in a more disaggregate way. In Table 2 we use a random effects model with the per group minimum effort for each period as the dependent variable. In all cases we control for the ratio of females per group ($female\_ratio$) as well as the average value of different personality traits (e.g., $avg\_risk\_aversion$ is the mean value of the risk aversion across all subjects of a group). The results show that a loss contract has a *negative effect* on the minimum effort of each group. This effect is significant at the 5% level and is consistent with the drop in effort which we observe in Figure 1. Therefore, we conclude that a loss contract brings down the coordinated effort of groups.

Result 1: A loss contract results in a lower minimum effort of groups.

Another result from Table 2 is that the gender composition of groups has a strong effect on the minimum effort. This statistically and economic significant effect stands out from all other other group characteristics, with the exception of extraversion which has a negative effect on the minimum effort of groups.

3.1   Coordination

In this section we analyze how loss contracts affect the coordination of subjects within groups. To do so, in Table 3 we study the variance of the individual effort levels within each group. In Columns (1) to (3) we regress the variance of all effort choices, across all rounds, for each group ($varagg$ in Table 3) on a set of controls using OLS. Again, the main control variables are the ratio of females per group ($female\_ratio$), and the average value of the different personality traits. In Columns (4) to (6) we use a random effects model where the dependent variable is the variance within each group for *each period* while controlling for the composition of each group. The results are very similar for both models: a loss contract results in higher variance in the effort choices of subjects within groups.

Result 2: A loss contract results in less coordination (larger variance) of effort choices within groups.

Again, the composition of groups has a strong influence on how they behave; those groups with a higher share of females pick much less dispersed effort levels and have a lower effort variance.

3.2 Welfare Effects

To study the impact that a loss contract has on the welfare of subjects, we will consider the payoffs of our subjects as their "welfare." In this way, subject i's welfare in period t depends of two things: the minimum effort exerted by the group of subject i at period t ($mineffort_{g,t}$) and the individual effort choice of subject i at period t ($effort_{i,t}$). According to this definition, welfare is maximal at the payoff-dominant equilibrium (i.e. effort level 7) where the wasted effort of all group members is zero. Define *wasted effort* of each subject i at period t as,

$$waste_{i,t} = effort_{i,t} - mineffort_{g,t}, \tag{2}$$

where $waste_{i,t}$ captures the amount of effort that is lost for each individual in each round. Notice that $waste_{i,t}$ can only take positive values, with a minimum of zero whenever a subject is exerting the minimum effort of the group.

(a) Payoffs Across Treatments (b) Payoffs Across Treatments and Gender
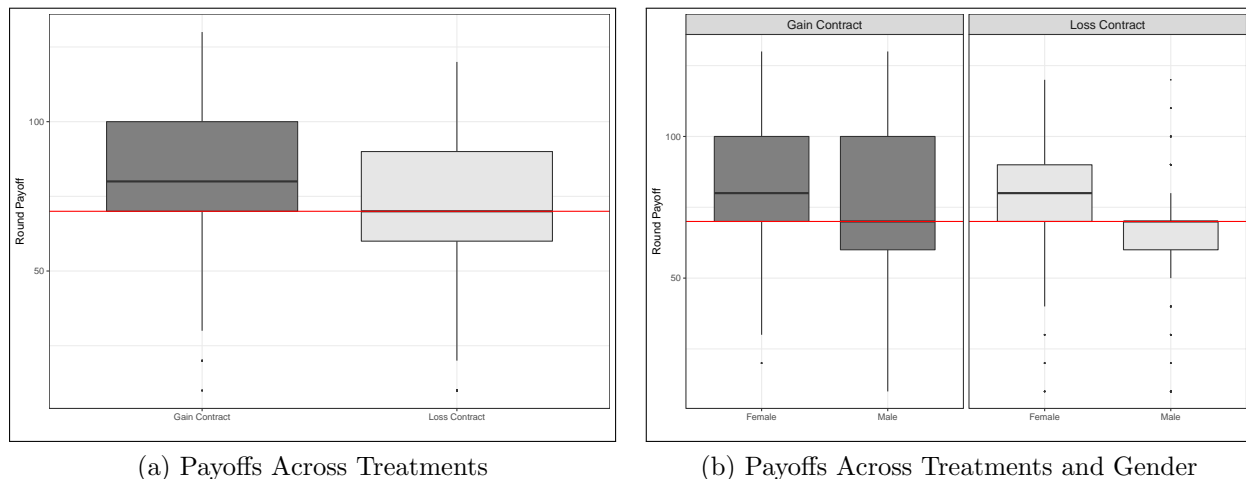
Figure 2: Payoffs for Each Period. In the left panel we present the boxplots for the payments across treatments. In the right panel we disaggregate the data by treatment and gender.

In the left panel of Figure 2 we plot the per-period payoff (i.e., the individual welfare) of all subjects across both treatments. The figure shows that the median per-period payoff is higher under gain contracts than under loss contracts. In fact, the median payoff across

9

	OLS			**Random Effects GLS**		
	(1) varagg	(2) varagg	(3) varagg	(4) varaggt	(5) varaggt	(6) varaggt
loss contract	1.127 (0.715)	1.430* (0.758)	2.533*** (0.790)	0.587 (0.428)	0.686* (0.410)	0.986*** (0.230)
female_ratio	-3.082** (1.459)	-2.188 (1.792)	-7.088** (2.369)	-1.351* (0.809)	-0.538 (0.932)	-3.024*** (0.595)
avg_risk_aversion		-0.461 (0.508)	0.211 (0.568)		-0.422* (0.230)	0.0845 (0.173)
avg_loss_aversion		0.455* (0.237)	0.244 (0.308)		0.242* (0.127)	0.305** (0.122)
avg_ambiguity_aversion		0.440 (0.475)	0.760 (0.485)		0.198 (0.194)	0.240 (0.175)
avg_CRT		-0.311 (0.214)	-0.237 (0.228)		-0.249*** (0.0868)	-0.198** (0.0815)
avg_extraversion			1.095* (0.568)			0.932*** (0.159)
avg_conscientiousness			-1.584** (0.629)			-0.534** (0.250)
avg_agreeableness			-0.294 (0.628)			-0.455* (0.270)
avg_neuroticism			0.445 (0.491)			0.0243 (0.259)
avg_openness			-0.191 (0.469)			-0.0792 (0.181)
constant	3.556*** (0.743)	0.828 (3.758)	-1.011 (6.188)	1.973*** (0.442)	2.745 (2.038)	-1.092 (2.357)
N	24	24	24	240	240	240

Standard errors in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 3: Analysis of the aggregate variance in effort choices using OLS and random effects GLS. All standard errors are clustered at the group level.

all periods under loss contracts is 70 experimental units, which is exactly equal to the payoff of the risk-dominant equilibrium (i.e., effort level 1).[3,4] We mark this payoff of 70 experimental units with a horizontal red line in Figure 2. In the right panel of Figure 2 we see the effect of gender on payoffs, with the median payoff for females being higher under both gain and loss contracts.

Individual Characteristics			Group Characteristics				
	(1)	(2)		(1)	(2)	(3)	(4)
	ind_payoff	ind_waste		ind_payoff	ind_waste	mean_payoff	mean_waste
loss contract	-12.58*	0.210	loss contract	-15.71**	0.299**	-15.71**	0.299**
	(7.408)	(0.182)		(7.277)	(0.142)	(7.422)	(0.145)
female	8.374*	-0.281*	female_ratio	49.12***	-1.055**	49.12***	-1.055**
	(4.581)	(0.166)		(13.86)	(0.449)	(14.14)	(0.457)
risk_aversion	0.204	-0.0184	avg_risk_averion	-5.675	-0.0271	-5.675	-0.0271
	(0.531)	(0.0209)		(3.852)	(0.127)	(3.929)	(0.129)
ambiguity_aversion	0.00524	-0.00181	avg_ambiguity_aversion	-1.498	0.0858	-1.498	0.0858
	(0.391)	(0.0185)		(4.567)	(0.109)	(4.658)	(0.111)
loss_aversion	-0.166	-0.00857	avg_loss_aversion	-4.497	0.107	-4.497	0.107
	(0.404)	(0.0151)		(3.068)	(0.0699)	(3.129)	(0.0713)
CRT	0.812	-0.0283	avg_CRT	3.630	-0.0734	3.630	-0.0734
	(0.653)	(0.0173)		(2.396)	(0.0515)	(2.444)	(0.0526)
openness	-0.173	0.00331	avg_openness	2.760	-0.0324	2.760	-0.0324
	(0.721)	(0.0297)		(4.494)	(0.104)	(4.583)	(0.106)
neuroticism	-0.538	0.0414	avg_neuroticism	1.349	0.0528	1.349	0.0528
	(1.454)	(0.0545)		(6.526)	(0.153)	(6.656)	(0.156)
agreeableness	-0.760	0.0755**	avg_agreeableness	6.424	-0.0632	6.424	-0.0632
	(1.260)	(0.0378)		(8.124)	(0.155)	(8.286)	(0.158)
conscientiousness	0.144	-0.0376	avg_conscientiousness	3.224	-0.184	3.224	-0.184
	(1.271)	(0.0410)		(6.220)	(0.154)	(6.344)	(0.157)
extraversion	-0.210	0.0368	avg_extraversion	-8.973***	0.336***	-8.973***	0.336***
	(0.753)	(0.0295)		(3.274)	(0.0972)	(3.339)	(0.0991)
constant	82.14***	0.822	constant	109.0	-0.316	109.0	-0.316
	(22.20)	(0.636)		(66.53)	(1.424)	(67.85)	(1.453)
N	1440	1440	N	1440	1440	240	240

Standard errors in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Standard errors in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 4: Random effects GLS. All standard errors are clustered at the group level.

In Table 4 we present two random effects models. In the first one (left panel) we study how the framing of contracts and the personality traits of subjects affect individual

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[3]There are other combinations by which a subject might get 70 experimental units. Yet, exerting the minimum effort is the only way a subject can guarantee these 70 experimental units.

[4]Figure 4 in the appendix compares the payoffs of subjects for each period. Note that the median average payoff under loss contracts is 70 experimental units in each single period, while it is greater than 70 in most periods under gain contracts. Another interesting feature of Figure 4 is how the variance in payoffs seems to decrease as the experiment advances under loss contracts, but not under gain contracts.

payoffs. In the second one (the right panel) we study the effects of contract framing and of group composition on payoffs and wasted effort. Overall, both models confirm our result from above that a loss contract is detrimental to subjects' payoffs. This is especially significant once we control for group characteristics rather than individual ones. The influence of gender on welfare also becomes evident in Table 4. Gender only has a small impact on payoffs when we look at the individual characteristics of subjects. However, at the group level the ratio of females plays an important role in determining the payoffs of subjects.[5]

Result 3: A loss contract results in lower welfare.

4 Discussion

4.1 Behavior Under Loss Contracts

In recent years, several papers have suggested to motivate effort by imposing loss contracts instead of the classical gain contracts (e.g., Brooks et al., 2012; Hossain and List, 2012; Fryer Jr et al., 2012; Hong et al., 2015; DellaVigna and Pope, 2018, among others). Intuitively, loss averse workers are motivated stronger by potential losses than by potential gains. Hence, given the same expected value of effort, framing contracts in terms of losses from a prepaid endowment should increase worker productivity by more. Moreover, Hossain and List (2012) argue that the motivating effect of loss aversion is even stronger in groups, as workers don't want to let their teammates down.

Several explanations can be put forth on why we do not observe the expected effects. First, it could be that not all our subjects are loss averse. In fact, this seems to be the case for approximately 20% of our subjects, who show up as *loss seeking* in our loss aversion task.[6] Second, framing may not necessarily work for everybody. Even if our subjects are loss averse, it could be that some subjects perceive the outcome of their effort choice in terms of gains, while others perceive them as losses. The distinction comes through

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[5]More surprising is the strong effect that the ratio of extroverted subjects has on payoffs. We have no explanation for such a result.

[6]See Figure 5 in Appendix A for a distribution of the switching points in the loss aversion multiple price list.

the determination of the reference point. A subject that internalizes the endowment and thus shows an endowment effect will likely perceive the outcome as a loss from the endowment (e.g., Etchart-Vincent and L'Haridon, 2011). Subjects that do not internalize the endowment but see their payoff function, perceive the outcome of their effort decision as gain (e.g., Thaler and Johnson, 1990), so to them the incentives are identical under both treatments.

Another explanation for our data are the recent theoretical considerations by Pierce et al. (2020). In this paper, the authors show theoretically that loss contracts will (weakly) increase worker productivity *whenever production is deterministic*. Yet, once there is some randomness in the final output, then the interaction between loss and risk aversion can lead to perverse effects, leading workers to pursue *lower expected return strategies that result in lower risks of losses*. Such behavior is what we observe in our data: subjects start with high levels of effort, but once they observe that the behavior of other members of the group is not as expected (i.e., there is some "randomness"), there is a quick convergence to strategies with low productivity but also *low expected losses*.

4.2 Gender Effects

We did not design the experiment to study the the different effects of loss contracts on gender, so our data is limited if we want to analyze such effects. Yet, the results are strong enough to justify taking a closer look at the data.

Our results show that groups with more females coordinate on higher effort levels (Table 2) and produce less wasted effort (Table 4). The consequence of these higher levels of coordination is a higher average payoff for those groups with a higher ratio of females (Table 4).

In Figure 3 we plot the average choices of males and females in each period for both treatments. From the figure it appears that most of the gender differences come from the loss contract treatment. A series of Mann-Whitney tests confirm this. We cannot reject that females and males exert the same level of effort both at the beginning or at the end of the session (p-value= 0.342 and p-value= 0.534, respectively) under a gain contracts. However, under a loss contract we find strong differences in the effort choices between gender, both at the beginning and at the end of the session (Mann-Whitney
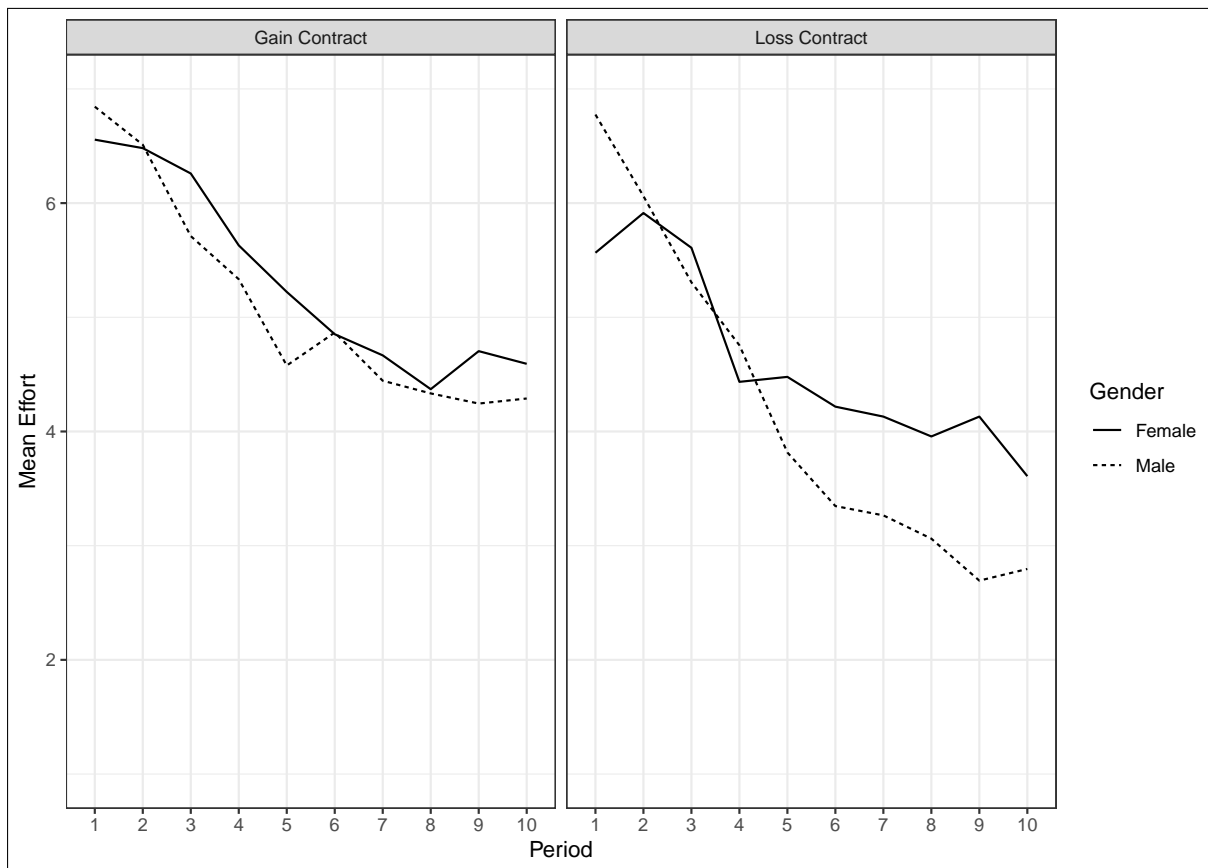
Figure 3: Mean effort decisions by gender and treatment. The left panel shows the mean effort decision of all females per round (solid line) and the mean effort decisions of all males per round (dashed line) for gain contracts. The right panel shows the same for loss contracts.

p-value=0.007 and p-value=0.002, respectively).[7]

Our finding from the gain contract treatment that there are no gender differences are in line with the existing literature on gender effects in coordination games with strategic complements (e.g., Dufwenberg and Gneezy, 2005; Heinemann et al., 2009; Engelmann and Normann, 2010; Di Girolamo and Drouvelis, 2015). However, the differences we observe under loss contracts seem to indicate that this might not be a generalizable result. Unfortunately, our data is not adequate to go beyond these initial indications of gender effects under loss contracts.[8] Yet, we do believe that our data points to some interesting effects and we plan on studying them in the future.

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[7]If we look at the payoffs and wasted efforts across treatments, we find that for the last period there are no differences across gender under gain contracts (Mann-Whitney p-value= and p-value=0.342, respectively), but there are some under Loss Contracts (Mann-Whitney p-value=0.012 for payoffs and p-value=0.907).

[8]For example, the number of groups composed only by males in control is 1 while in treatment it is 3, while no group is composed only by females.

14

5   Conclusion

Coordination lies at the center of most organizational settings. The timing and quality of many production chains depend on the coordinated efforts of all of its members, from sophisticated just-in-time inventory systems to co-authored scientific research papers, we all depend crucially on the "weakest link" of the chain.

One way that has been suggested to increase effort in the workplace is to present incentives in the form of loss contracts. In such contracts, workers are paid a bonus beforehand, and incur in losses if the required productivity threshold is not reached. The literature that studies such loss contracts at the individual level is large (e.g., Hossain and List, 2012; DellaVigna and Pope, 2018; Pierce et al., 2020) but inconclusive. More surprising is the scarcity of papers studying the effect that loss contracts have on *group coordination*. To our knowledge only Hossain and List (2012) address this question in a field experiment.

In this paper we study the effects of loss contracts on group effort in a controlled environment. Our results show that, if anything, loss contracts reduces the minimum effort of groups. Such reduction in effort has strong welfare effects as groups are not only less "productive," but effort levels are more heterogeneous, resulting in higher levels of "wasted efforts," and therefore in lower individual welfare.

Additionally, we find strong gender effects. Groups with a larger proportion of females achieve higher minimum effort levels, do so in a more coordinated way, and achieve higher welfare levels. Yet, these results seem to be driven mostly by gender differences in the loss contract sessions. Hence, the evidence from the existing literature that gender does not show any effects in coordination games with strategic complements (e.g., Dufwenberg and Gneezy, 2005; Heinemann et al., 2009; Engelmann and Normann, 2010; Di Girolamo and Drouvelis, 2015) does not seem to generalize to loss contracts.

References

BRANDTS, J. AND D. COOPER (2006): "A change would do you good.... An experimental study on how to overcome coordination failure in organizations," *American Economic Review*, 96, 669–693. Cited on pages 2 and 3.

BROOKS, R. R., A. STREMITZER, AND S. TONTRUP (2012): "Framing contracts: Why loss framing increases effort," *Journal of Institutional and Theoretical Economics JITE*, 168, 62–82. Cited on page 12.

CACHON, G. P. AND C. F. CAMERER (1996): "Loss-avoidance and forward induction in experimental coordination games," *The Quarterly Journal of Economics*, 111, 165–194. Cited on pages 3 and 5.

DELLAVIGNA, S. AND D. POPE (2018): "What motivates effort? Evidence and expert forecasts," *The Review of Economic Studies*, 85, 1029–1069. Cited on pages 3, 12, and 15.

DI GIROLAMO, A. AND M. DROUVELIS (2015): "The role of gender composition and size of the group in a minimum effort game," *Economics Letters*, 137, 168 – 170. Cited on pages 14 and 15.

DUFWENBERG, M. AND U. GNEEZY (2005): "Gender & Coordination," in *Experimental business research*, Springer, 253–262. Cited on pages 14 and 15.

ENGELMANN, D. AND H.-T. NORMANN (2010): "Maximum effort in the minimum-effort game," *Experimental Economics*, 13, 249–259. Cited on pages 2, 4, 14, and 15.

ETCHART-VINCENT, N. AND O. L'HARIDON (2011): "Monetary incentives in the loss domain and behavior toward risk: An experimental comparison of three reward schemes including real losses," *Journal of risk and uncertainty*, 42, 61–83. Cited on page 13.

FISCHBACHER, U. (2007): "z-Tree: Zurich toolbox for ready-made economic experiments," *Experimental economics*, 10, 171–178. Cited on page 5.

FREDERICK, S. (2005): "Cognitive Reflection and Decision Making," *Journal of Economic Perspectives*, 19, 25–42. Cited on page 5.

FRYER JR, R. G., S. D. LEVITT, J. LIST, AND S. SADOFF (2012): "Enhancing the efficacy of teacher incentives through loss aversion: A field experiment," Tech. rep., National Bureau of Economic Research. Cited on pages 2 and 12.

GREINER, B. (2015): "Subject pool recruitment procedures: organizing experiments with ORSEE," *Journal of the Economic Science Association*, 1, 114–125. Cited on page 5.

HAMMAN, J., S. RICK, AND R. A. WEBER (2007): "Solving coordination failure with "all-or-none' group-level incentives," *Experimental Economics*, 10, 285–303. Cited on page 3.

HEINEMANN, F., R. NAGEL, AND P. OCKENFELS (2009): "Measuring Strategic Uncertainty in Coordination Games," *The Review of Economic Studies*, 76, 181–221. Cited on pages 14 and 15.

HONG, F., T. HOSSAIN, AND J. A. LIST (2015): "Framing manipulations in contests: A natural field experiment," *Journal of Economic Behavior & Organization*, 118, 372 – 382. Cited on page 12.

HOSSAIN, T. AND J. A. LIST (2012): "The behavioralist visits the factory: Increasing productivity using simple framing manipulations," *Management Science*, 58, 2151–2167. Cited on pages 2, 3, 5, 12, and 15.

IMAS, A., S. SADOFF, AND A. SAMEK (2016): "Do people anticipate loss aversion?" *Management Science*, 63, 1271–1284. Cited on page 3.

KNEZ, M. AND C. CAMERER (1994): "Creating Expectational Assets in the Laboratory: Coordination in 'Weakest-Link' Games," *Strategic Management Journal*, 15, 101–119. Cited on page 2.

LENG, A., L. FRIESEN, K. KALAYCI, AND P. MAN (2018): "A minimum effort coordination game experiment in continuous time," *Experimental Economics*, 21, 549–572. Cited on page 4.

PIERCE, L., A. REES-JONES, AND C. BLANK (2020): "The Negative Consequences of Loss-Framed Performance Incentives," Working Paper 26619, National Bureau of Economic Research. Cited on pages 3, 13, and 15.

RAMMSTEDT, B. AND O. P. JOHN (2007): "Measuring personality in one minute or less: A 10-item short version of the Big Five Inventory in English and German," *Journal of Research in Personality*, 41, 203–212. Cited on page 5.

RIEDL, A., I. M. T. ROHDE, AND M. STROBEL (2016): "Efficient Coordination in Weakest-Link Games," *The Review of Economic Studies*, 83, 737–767. Cited on page 2.

RUBIN, J., A. SAMEK, AND R. M. SHEREMETA (2017): "Loss aversion and the quantity–quality tradeoff," *Experimental Economics*. Cited on page 5.

THALER, R. H. AND E. J. JOHNSON (1990): "Gambling with the house money and trying to break even: The effects of prior outcomes on risky choice," *Management science*, 36, 643–660. Cited on page 13.

THOMSON, K. S. AND D. M. OPPENHEIMER (2016): "Investigating an alternate form of the cognitive reflection test," *Judgment and Decision Making*, 11, 99. Cited on page 5.

TOPLAK, M. E., R. F. WEST, AND K. E. STANOVICH (2014): "Assessing miserly information processing: An expansion of the Cognitive Reflection Test," *Thinking & Reasoning*, 20, 147–168. Cited on page 5.

VAN HUYCK, J. B., R. C. BATTALIO, AND R. O. BEIL (1990): "Tacit coordination games, strategic uncertainty, and coordination failure," *The American Economic Review*, 80, 234–248. Cited on pages 2 and 4.
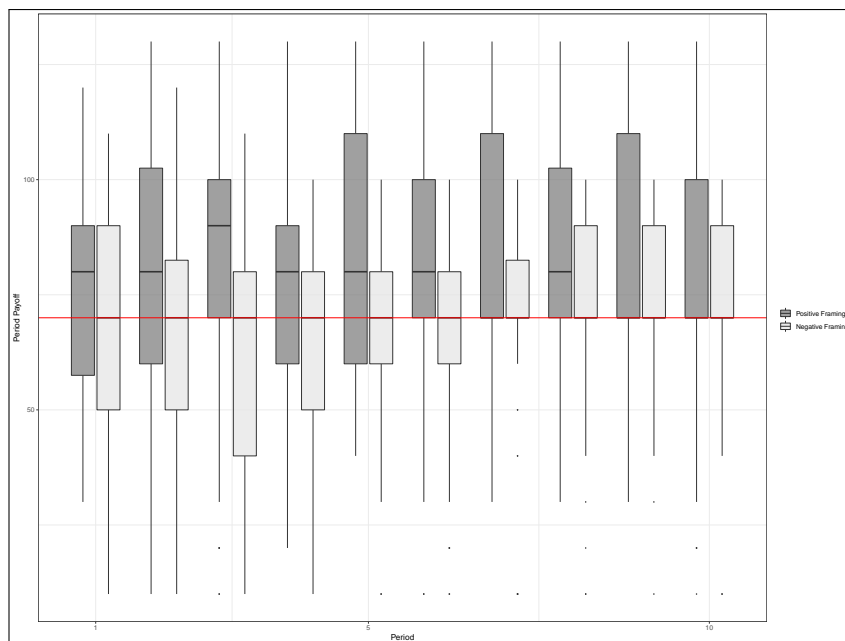
A   Extra Figures

Figure 4: Payoff comparison. Boxplots comparing the payoff (vertical axis) of subjects across periods (horizontal axis) for each treatment. The horizontal red line marks the payoff for a subject exerting minimum effort.
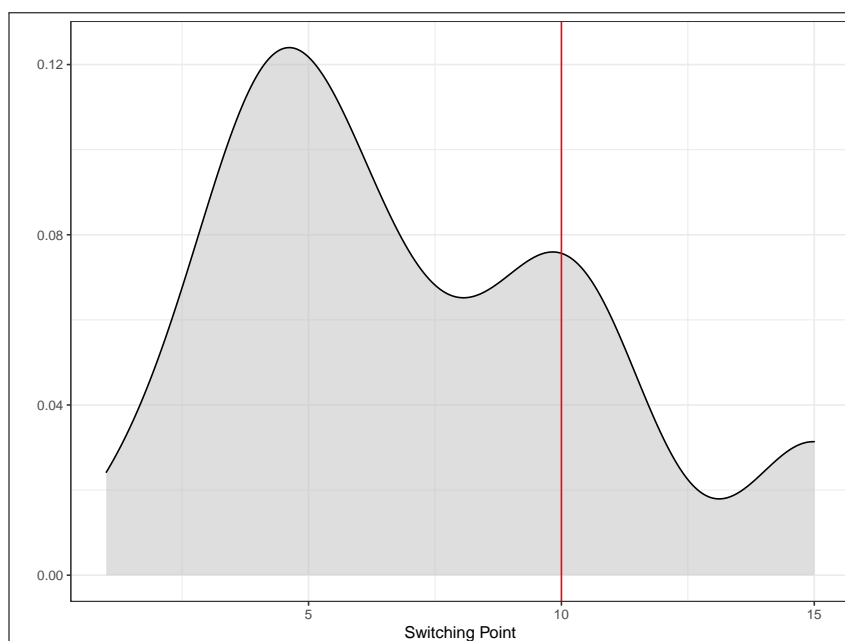

Figure 5: Loss-seeking preferences. Kernel denisty estimates of the switching points in the loss aversion multiple price list. The higher the switching point, the more loss seeking a subject is. The vertical red line shows the "loss neutrality" switching point.