Abstract: We study the impact of power on fairness in the division of gains from productive activity. In an experimental setting, two actors are involved in generating a gain, but only one contributes actively by completing a task. In three treatments, decision power to divide the gain is assigned to (1) the inactive, (2) both the inactive and the active, (3) the active. Results show that the impact of power goes beyond changing allocations: it also alters fairness perceptions. Absolute decision power significantly enhances self-serving interpretations of fairness. We discuss implications for organizational design.

Keywords: fairness, experiments, power, self-serving bias, organizational design

JEL classification: C91, D33, D63
1 Introduction

The question of how to divide economic gain from productive activity has certainly been among the central and most controversial ones in economic history. Consider the contemporary debates around minimum wage regulations, limits to executive pay, general developments in returns to labor and capital, or, in an international context, how “Fair Trade” aims to divide profit in a way that pays higher wages to workers in third-world countries. Clearly, discussion on these matters often involves demands for distributive justice or fairness. But then, while fairness seems desirable, it is less clear what it really means, let alone how it can be achieved.

Whereas neoclassical economic theory had traditionally focused on efficiency wages and on remuneration for risk-taking, influential experimental work on bargaining behavior (e.g., Güth et al., 1982; Forsythe et al, 1994) and the growing influence of psychological studies (most prominently Kahneman et al., 1986) have moved fairness into the center of attention in economics. By now, it is well established in the economic literature that people are concerned about fairness and that many accept to reduce their own monetary gains for the sake of fairness considerations (see e.g., Konow, 2003). Many insights from this literature also pertain to fairness when economic gain has to be divided. Section 2 of this paper will review some important findings.

The present paper investigates the impact of power on fairness in the division of economic gain. Obviously, when various parties contribute jointly to the generation of an economic gain, the power structure which determines a division may be manifold. Moreover, the distribution of power is subject to organizational and public governance. For instance, the level of wages or executive compensation within corporations depends crucially on who has the decision rights or the bargaining power; and power structures
which determine these payments differ widely across companies, industries, and areas of jurisdiction.

We employed an experimental benchmark setting in which a gain is generated by asymmetric productive effort (cf., Ruffle, 1998; Konow, 2000; Cherry et al., 2002). Two people were involved, but only one of them contributed actively by completing a non-trivial task while the other remained inactive. Under otherwise equivalent conditions, Treatment 1 assigned absolute decision power to the inactive party, Treatment 2 assigned symmetrically shared power to both the inactive and the active party, and Treatment 3 assigned absolute power to the active party. This design allowed analyzing directly the effect of power on allocations. Another important aspect was that we complemented the choice data with fairness judgments. Hence, our results indicated how power affected actual divisions, how it affected participants’ fairness judgments, and how divisions related to judgments across the three treatments.

Of course, power affected divisions: Actives ended up with a larger share of the gain when they had more power to decide. However, fairness judgments revealed that power had an impact on fairness beyond the mere impact on divisions. It was a consistent pattern that the more power a party was assigned the higher was the share which was judged as fair for that party to receive. For instance, when inactive participants had more decision power they acknowledged a lower share for the active participants as fair. In particular, fairness judgments of parties with absolute power (i.e., Inactives in Treatment 1, Actives in Treatment 3) were significantly altered towards their own monetary self-interest. Consequently, shared power not only lead to more balanced payments, but also to more aligned fairness judgments between the two parties. These results suggest that power structures have an intricate effect on
distributive fairness involving allocations, fairness perceptions, and how both relate for the different parties. Paraphrasing a famous 19th century quote, power not only tends to corrupt by allowing the powerful to divide economic gain in their own interest, but moreover, absolute power corrupts absolutely by altering the powerful party’s interpretation of fairness.1

The following section 2 introduces the literature on fairness in the division of gains from productive activity. Section 3 describes in detail the experimental design, and section 4 presents the results from the three experimental treatments. Section 5 provides a discussion of implications for the psychology of fairness perceptions and for organizational design. Section 6 concludes.

2 The quest for fair divisions

Fairness has been dealt with across many disciplines. In this section, we give a selective overview of the work which seems of particular relevance for divisions of gain from productive activity. Konow (2003) is an excellent reference for a more exhaustive treatment of both empirical and theoretical research.

What is a fair division of economic gain? Certainly, philosophical theories of fairness can offer guidance. For instance, theories of distributive justice consider the total economic gain and then propose a fair division. In our simple experimental setting a strict version of an egalitarian theory would propose an equal split of the gain, whereas meritocratic theory would suggest giving according to contributions, hence more or even the entire gain to the active participant. Nozick (1974) takes an entirely different approach, when he argues for the principle of “justice in transfer” according to

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1 “Power tends to corrupt, and absolute power corrupts absolutely.” (Lord John Acton, 1887).
which all allocations resulting from freely chosen transfers are fair. In our experiment, both parties freely agreed to participate and they explicitly accepted the prevailing power structure (see design in section 3). For example, when the inactive party has absolute power in Treatment 1, such libertarian reasoning could justify keeping the entire gain. It is noteworthy that in our simple example virtually any division was justifiable as fair by an appropriate standard, e.g. applying libertarian, egalitarian or meritocratic reasoning. Consequently, while philosophical analysis is systematic and very instructive, a closer look at the multiplicity of theories reveals that it cannot provide one definite answer for what is a fair division.

As an alternative to a priori theoretical analysis, the question of fairness may be regarded as an empirical one. In that case, fair may simply be what (most) people intuit as fair. It is of course highly controversial to what extent lay intuitions can serve as the basis of moral worth (cf., Nichols, 2004). Yet, it is widely held belief that they should be taken seriously, if only for positive analysis; and indeed lay intuitions about fair divisions have been studied across disciplines. While some studies set out to test specific theories (see e.g. Froehlich and Oppenheimer, 1992, for a test of the Rawlsian “difference principle”), others investigate more generally the extent to which folk conceptions reflect a consensus on certain principles. In interview studies, Alves and Rossi (1978) identify considerations of need and merit as main determinants of fair earnings, Kahneman et al. (1986) show conditions for which wage cuts are generally regarded as (un)fair.

Most empirical work on fairness in economics relies on controlled and simplified settings in laboratory environments (Camerer, 2003). Hoffman and Spitzer (1985) summarize their results stating that people usually apply meritocratic reasoning for
allocation decisions, and that they use egalitarian norms when there is “no obvious morally relevant distinction” between the parties. The latter may be the case in standard dictator games, where the equal split is typically assumed to be the fair division. Indeed, dictators frequently share half of the gain with an anonymous counterpart (e.g., Hoffman et al., 1994). In contrast, dictators in Ruffle (1998) share more when recipients spent effort for generating the gain, whereas there is almost no sharing in Cherry et al (2002) where dictators themselves earned the gain by completing a real-effort task. The importance of merit for fairness is also emphasized by Konow (2000), who suggests a model in which people maximize their utility by trading off their personal gains and costly deviations from what they judge as the fair division. Cappelen et al. (2007) use a similar parametric utility model to investigate the determinants of merit in more detail. They show that people differ in the extent to which they combine a deliberate effort choice and an exogenously given rate of return (e.g., due to talent) for deciding what is a fair division of gain from joined production.

Overall, both the multiplicity of theoretical fairness ideals and the heterogeneity in lay intuitions reveal "moral ambiguity” when economic gain has to be divided. For such situations, however, it has been shown that people have a tendency to rely on the fairness criteria which favor what is in their own interest (e.g., Messik and Sentis, 1979; Babcock and Loewenstein, 1997). Note that when the situation is characterized by conflict of interests, this psychological phenomenon may further inhibit consensus on what is fair. In fact, our results indicate a subtle but intriguing detail in the psychology of fairness perceptions: Since self-interest per se is stable across treatments, it is in particular the power to act in line with this self-interest which corrupts fairness perceptions.
3 Experimental design

Upon entering the laboratory participants were informed that they would be paid €2 as a show-up fee, and that pairs of two of them would be involved jointly in the generation of an experimental gain of €16: An “Active” and an “Inactive” (they were labeled A1 and A2 - for the complete instructions see Appendix). Actives would have to work on a tedious real-effort task which consisted of counting letters in different parts of a text. Inactives would have nothing special to do, but could relax, read (we provided newspapers), do homework, etc. The €16 would be generated only in case of successful task completion within 20 minutes. Of the €16, both Active and Inactive would receive the same fixed amount of €3 as a minimum compensation, but the excess gain of €10 would have to be divided between the two actors. Participants were told who decided about how to divide the excess gain. The assignment of power varied across treatments:

Treatment 1 - “Inactives decide” how to divide the €10.

Treatment 2 - “Both decide” and have to agree how to divide the €10.

Treatment 3 - “Actives decide” how to divide the €10.

Participants were then randomly assigned their role. Knowing their personal role and the exact procedure, each participant marked on a sheet of paper whether he or she agreed to stay in the experiment or preferred to leave with the show-up fee. Participants who preferred to leave were substituted.² The computer randomly matched pairs of Active-Inactive. Participants never found out who was their counterpart, but could see that in the room there was a group of Actives who were busy counting and a group of

² This feature of the design made explicit the participant’s free acceptance of all conditions.
Inactives who were typically reading the newspaper. Also, Inactives were shown the text with the counting exercise so that they could infer the difficulty of the task.

In Treatment 2 – “Both decide”, Active and Inactive determined the allocations jointly in a repeated simultaneous-offers bargaining procedure. If they agreed (i.e., their proposals coincided), then the division was implemented. If they disagreed, they were informed about the proposal of the other party and they were asked to make a new proposal. This procedure was repeated until they reached an agreement. We chose this bargaining procedure because it was easy to understand and gave participants equal power (e.g., no first-mover advantage, no informational asymmetry, etc.). Those pairs of participants who agreed quickly left the experiment earlier, but we varied the duration of the post-questionnaire to assure that they could not infer who had been their counterpart.

Experimental measures. In all three treatments we observed the divisions of the € 10 excess gain.\(^3\) Throughout the paper, results will be reported in terms of the payments that were given to the Active. After the actual division was made, we asked participants the following question: “What do you think would be the fair division?” These fairness judgments will be reported in terms of “fair payment to the Active”.\(^4\) In a subsequent questionnaire, participants were asked to state arguments for giving money to the Active and for giving money to the Inactive. Arguments served as complementary data to get an insight into the reasoning behind allocation decisions and fairness judgments.

\(^3\) Due to the fixed minimum compensation, the absolute range of divisions was in fact between € 3 and € 13. However, this does not affect our results since we are interested in the cross-treatment comparisons rather than in absolute amounts. The reason for giving a minimum compensation was that we wanted to ensure free acceptance of the conditions, which should be more representative of natural labor relations.

\(^4\) The question was phrased “Independently of your decision how much to give / of what you think you will receive / of the final division, what would be the fair division?” Note that in Treatments 1 and 3 the party with absolute decision power answered the question after having made the decision, while the other party was asked before receiving information about the actual payment.
Previous experimental work in economics usually infers fairness ideals from behavior, while psychological studies tend to rely on questionnaires. In the present study we combine both methods. This method also allows to identify discrepancies between an individual’s fairness ideal and his or her factual behavior.

**Experimental frame.** Treatment 1 – “Inactives decide” and Treatment 3 – “Actives decide” are variants of the Dictator Game. The Dictator Game is widely recognized as an “interesting vehicle for studying the meaning and interpretation of fairness” (Hoffman et al., 1996). However, it has been criticized for not representing a genuine social situation, in particular that money comes as “manna from heaven” (e.g., Bardsley, 2005). Here, the game was embedded into an experimental frame in which economic gain was generated by productive activity. Productive activity in economic experimentation has been operationalized differently. For instance, whereas participants in Konow (2000) prepare letters for mailing, Capellen et al. (2007) mimic production by a monetary investment decision. In the present study, Actives had 20 minutes to count correctly the frequencies of the letter M in different parts of a text. Note that risk in this experimental setting was symmetric and that efficiency considerations did not play a role. Of course, these aspects play important roles for the division of gains from production in natural environments. However, the purpose of the present design was to provide a simplified benchmark of a genuine labor context, hence the focus on active vs. inactive involvement.

**Recruiting and computerization.** The experiment was computerized with z-tree software (Fischbacher, 2007) and conducted in the experimental laboratory at Universitat Pompeu Fabra. Participants were 168 students from various fields of study who were recruited using the ORSEE online recruitment system (Greiner, 2004). They
participated in nine sessions (16 to 20 participants per session) between October 2006 and May 2007.

4 Results

Two of 168 participants decided to leave the experiment after learning the rules and their personal role; one Inactive in Treatment 2 and one Inactive in Treatment 3. They were substituted.

Three of 83 Actives did not manage to complete the task within 20 minutes. These three pairs received only the € 2 show-up fee, and they were neither asked for an allocation decision nor for a fairness judgment.

Treatment 1 – “Inactives decide” (N = 2 x 25)

Payments. Frequencies of payments to the Active are depicted in Figure 1. The distribution of payments ranged from € 0 to € 5, with two modes at € 0 and at the equal split of € 5 (6 out of 25, respectively). The mean was € 2.6.

Figure 1 -- Relative frequencies of payments to the Active and of fairness judgments in Treatment 1 - "Inactives decide"
**Fairness judgments.** Fairness judgments for Inactives and Actives are also shown in Figure 1. The majority of Inactives (17 of 25) stated that the equal split is fair. The mean judgment of Inactives was € 5.3. 18 of 25 Inactives (72%) admitted that their payment to the Active was less than what would have been fair. Actives’ judgments were more evenly distributed between € 5 and € 10, their mean judgment was € 7.2. The difference in the distributions is statistically significant (Mann Whitney rank test - MWR: p < .01).

**Treatment 2 – “Both decide” (N = 2 x 27)**

**Payments.** The distribution of payments to the Active ranged from € 5 to € 7 (see Figure 2). The modal payment was € 6 (14 of 27) and the mean payment was € 5.7.

**Fairness judgments.** Fairness judgments by Inactives and Actives are also shown in Figure 2. The modal fairness judgment of both Inactives and Actives was € 7. While many Inactives judged € 5, € 6, or € 7 as fair, many Actives stated € 7, € 8, or € 10 as the fair payment. Means were at € 6.3 for Inactives and at € 7.5 for Actives; this difference is statistically significant (MWR: p < .01).

**Bargaining procedure.** The number of bargaining periods until an agreement was reached ranged from 2 periods (lasting approximately 1 minute) to 66 (approximately 20 minutes) with a median of 5 (approximately three minutes). Mean proposals of Inactives in the first bargaining period were 3.5, those of Actives were 7.9. Hence, the average difference between first proposals and final divisions (5.7) were similar for Inactives and Actives (2.15 vs. 2.26; difference not significant). It is interesting to note that on average both roles’ first proposals are more self-interested compared to what they consider fair, but that this is considerably more so for Inactives (compared to their
fairness judgment, Inactives proposed on average 2.8 less to the Active; Actives proposed only .4 more).

**Figure 2** -- Relative frequencies of payments to the Active and of fairness judgments in Treatment 2 - "Both decide"

![Bar chart](chart.png)

**Treatment 3 – “Actives decide” (N = 2 x 28)**

Payments. The distribution of payments to the Active ranged from € 5 to € 10 (see Figure 3). The modal payment was € 10 (19 out of 28) and the mean payment was € 9.1.

Fairness judgments. Fairness judgments for Inactives and Actives are also shown in Figure 3. The modal judgment of Inactives was the equal split; their mean judgment € 6.7. The modal judgment of Actives was € 10; their mean judgment € 8.5. 42% of Actives admitted that they gave less than what would have been fair. The difference in the distributions is statistically significant (p < .01, MWR).  

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5 We lost fairness judgments from three participants in one session of Treatment 3 due to computer problems.
Payments and fairness judgments across treatments

Table 2 summarizes mean payments and mean judgments in all three treatments. Inactives in Treatment 1 paid on average 2.6 to the Actives; Actives in Treatment 3 paid on average 9.1 to themselves. Mean payments to Actives from the agreed upon divisions in Treatment 2 were 5.7, which is close to the mean between the other two treatments.

Average fairness judgments ranged from 5.3 (by Inactives in Treatment 1) to 8.5 (by Actives in Treatment 3). Apart from individual differences, average fairness judgments varied depending on the role, i.e., whether participants were Inactives or Actives, but also for the same role depending on the experimental treatment. Table 2 reports results of the Mann-Whitney rank test on the differences between the respective distributions (p-values in parentheses between the means).
Table 2 -- Mean payments to the Active (row 1) and mean judgments (rows 2 and 3) in all treatments

<table>
<thead>
<tr>
<th></th>
<th>Treatment 1 – “Inactives decide” (25 pairs)</th>
<th>Treatment 2 – “Both decide” (28 pairs)</th>
<th>Treatment 3 - “Actives decide” (27 pairs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actual payments to the Active</td>
<td>2.6 (p&lt;.01)</td>
<td>5.7 (p&lt;.01)</td>
<td>9.1</td>
</tr>
<tr>
<td>Inactives judge as fair payments</td>
<td>5.3 (p&lt;.01)</td>
<td>6.3 (n.s.)</td>
<td>6.7</td>
</tr>
<tr>
<td></td>
<td>(p&lt;.01)</td>
<td>(p&lt;.01)</td>
<td>(p&lt;.01)</td>
</tr>
<tr>
<td>Actives judge as fair payments</td>
<td>7.2 (n.s.)</td>
<td>7.5 (p&lt;.01)</td>
<td>8.5</td>
</tr>
</tbody>
</table>

- P-values in parentheses indicate whether the respective distributions of payments or of fairness judgments are statistically different according to the Mann-Whitney rank test (n.s. = not significant).
- P-values for tests between Treatments 1 and 3 are not reported; distributions are clearly distinct.

Distributions of fairness judgments between Inactives and Actives were significantly different in all three treatments (p < .01, MWR). Across treatments, the second row of table 2 reveals that Inactives’ judgments of what was the fair share to Actives were lower the more decision power Inactives were assigned: 5.3 for absolute power, 6.3 for shared power, 6.7 for no power (correlation coefficient ρ = -.28, N = 79). Differences were statistically significant between absolute power and shared power (p < .01), but not between shared power and no power (p = .514). In particular, the share of Inactives that opted for the equal split as the fair outcome decreased from 68% in the case of absolute power to 37% (shared power) and 30% (no power). For Actives, more decision power meant higher judgments of what was their fair share: 8.5 for absolute power, 7.5 for shared power, and 7.2 for no power (ρ = .32, N = 78). Again, differences were statistically significant between absolute power and shared power (p = .03), but not between shared power and no power (p = .459).
In order to compare across treatments (T = 1, 2, 3) the homogeneity in fairness perceptions between the two parties, we calculated for the K_T interacting pairs the difference between what the Active judged as fair and what the Inactive judged as fair.\(^6\) On average, this difference was 2.80 in Treatment 1 (K_1 = 25), 2.00 in Treatment 2 (K_2 = 25), and 2.84 in Treatment 3 (K_3 = 27). According to the Mann-Whitney rank test, differences in Treatment 2 were significantly smaller than in both other treatments (T2 vs. T1: \(p = .07\), one-tailed; T2 vs. T3: \(p = .06\), one-tailed), whereas they were almost the same in Treatments 1 and 3. Hence, fairness judgments of Actives and Inactives were more homogeneous under shared power compared to the two conditions in which one party was assigned absolute power.

Last, it may be illuminating to quantify the relation between fairness judgments and actual divisions across experimental treatments. For that purpose we calculated for all N_T participants within treatments T = 1, 2, 3 the (absolute) differences between what the participant actually got paid and what he or she judged as fair to receive. On average, the difference between judgment and payment was 3.64 in Treatment 1 (N_1 = 50), 1.44 in Treatment 2 (N_2 = 54), and 2.13 in Treatment 3 (N_3 = 53). According to the Mann-Whitney rank test, differences in Treatment 2 were significantly smaller compared to both Treatment 1 (\(p < .01\), one-tailed) and to Treatment 3 (\(p = .07\), one-tailed), and they were significantly smaller in Treatment 3 compared to Treatment 1 (\(p < .01\), two-tailed). Hence, when only inactive participants decided about the division of the additional gain, outcomes differed most from what was perceived as fair. Divisions were closer to fairness perceptions when absolute decision power was in the hands of those who were active, and they were closest when decision power was shared by both parties.

\(^6\) Differences are reported in absolute terms; typically the higher judgment was from the Active.
**Arguments to justify allocations**

In the questionnaire following the allocation decision we asked participants to “please give [up to three] arguments in favor of allocating money to A1” (the Inactive) and to “please give [up to three] arguments in favor of allocating money to A2” (the Active). Reasons for allocation decisions served to gain an insight into the extent to which reasoning reflected different fairness notions.

We compared arguments and classified them into categories. The most frequent argument was based on “amount of work / effort / time spent” and thus reflected considerations of merit. Two types of arguments were supportive of an egalitarian division: “roles were determined by chance” and “both players are needed and are part of the team”. These arguments were typically given to justify the allocation of money to the Inactive.

Table 3 reports the frequencies with which participants wrote down arguments from a particular category. For example, the two far left columns show the arguments which were given for allocating money to Actives in Treatment 1; the very left column presents the number of times that Actives gave the arguments, the second left column presents the number of times that Inactives did so.

The majority of participants stated the amount of work or effort as a reason for giving money to Actives. In addition, this argument was used by some to justify allocating money to Inactives. In these cases, participants usually stated that “A1 had to spend time in the experiment”. In all three treatments, Inactives and Actives recognized this argument almost equally often as justification for giving to Actives (24 vs. 24; 27 vs. 27; 22 vs. 18), while it was used more often by Inactives as a justification for giving to
Table 3 -- Frequencies with which participants stated types of arguments

<table>
<thead>
<tr>
<th>Allocating money to (...)</th>
<th>Treatment 1 -- “Inactive divides”</th>
<th>Treatment 2 -- “Both divide”</th>
<th>Treatment 3 -- “Active divides”</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Actives</td>
<td>Inactives</td>
<td>Actives</td>
</tr>
<tr>
<td>was justified by (...) with an argument based on…</td>
<td>Actives</td>
<td>Inactives</td>
<td>Actives</td>
</tr>
<tr>
<td>amount of work / effort / time spent</td>
<td>24</td>
<td>24</td>
<td>2</td>
</tr>
<tr>
<td>roles were determined by chance</td>
<td>0</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>egoism / maximization of gains</td>
<td>x</td>
<td>x</td>
<td>12</td>
</tr>
<tr>
<td>both are needed / team of two</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>having power / decision rights</td>
<td>x</td>
<td>x</td>
<td>0</td>
</tr>
<tr>
<td>solidarity / altruism</td>
<td>1</td>
<td>0</td>
<td>x</td>
</tr>
<tr>
<td>the other gains already € 3</td>
<td>x</td>
<td>x</td>
<td>0</td>
</tr>
<tr>
<td>other</td>
<td>0</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Sum of all arguments</td>
<td>25</td>
<td>24</td>
<td>20</td>
</tr>
</tbody>
</table>

- Numbers are absolute frequencies
- x means “not applicable”
Inactives (4 vs. 2; 13 vs. 9; 11 vs. 6). The second most frequent argument was that “roles were determined by chance”, which typically served as a reason for allocating money to Inactives. In Treatment 1 and Treatment 3 “Egoism and maximization of personal gain” was stated as a reason for the party with absolute power to keep money for themselves. It was stated twice as often, however, as an argument for Inactives to keep money in Treatment 1 than for Actives in Treatment 3 (12 and 10 vs. 5 and 6). Several people emphasized that the team consisted of two people, so that the Inactive should get part of the allocation. “Solidarity” was stated almost exclusively by Inactives in Treatment 3 as a reason to give money to them.

5 Discussion of Implications

The psychology of fairness perceptions

Fairness judgments across all experimental treatments ranged almost exclusively between € 5 and € 10 to the Active. Arguments mostly referred to “amount of work / effort / time spent”, and frequently to “roles determined by chance” and “both needed / team of two”. Hence, fairness judgments and arguments support a combination of meritocratic and egalitarian reasoning for participants’ fairness intuitions. There is no explicit evidence for libertarian reasoning to support a very low wage to the Active. Hoffman and Spitzer (1985) argue that whenever the context suggests asymmetric attribution of entitlement, then meritocratic reasoning will be applied. Our results did not confirm this claim. Rather, we observed that within an identical context, people who contributed actively to the generation of economic gain judged fairness more in accordance to meritocracy, while those who did not contribute actively often judged the equal split as fair (see figures 2 to 4). Messick and Sentis (1979) also found such role-dependent application of fairness notions in survey statements about hypothetical labor
scenarios. In their study, people who were said to have worked more on a joint task generally believed that they should earn more, while those who were said to have worked less often stated that both parties should be paid equally. As noted in the outset, such differences are in line with the so-called “self-serving bias” in fairness judgments (cf., Babcock and Loewenstein, 1997).

The impact of decision power on fairness judgments is striking. In general, Table 2 reveals that the assignment of more power to one party lead to higher judgments of what is fair for that party to receive: the more power was assigned to Actives, the higher was what both parties judged as a fair payment to the Active. However, for both parties the difference in fairness judgments was statistically significant between absolute power and shared power, but not between shared power and no power. When Inactives were assigned absolute power to decide they tended to make fairness judgments that were significantly lower (see mean judgments in Table 2; also in Treatment 1 68% judged € 5 as fair vs. 37% and 30% in the other two treatments). Actives, on the other hand, tended to emphasize merit in a significantly more pronounced manner when they were assigned absolute power to decide (see mean judgments in Table 2; also in Treatment 3, 46% judged € 10 as fair vs. 24% and 19% in the other two treatments).

The psychological literature provides two prominent explanations for our findings. First, psychologists usually think of self-serving biases in terms of cognitive dissonance reduction (Festinger, 1957). The conflicting desires of gaining more money in the experiment and of dividing fairly may have caused cognitive dissonance, which participants reduced by interpreting fairness in a way that was more in line with their monetary self-interest. One may conclude that it is not only self-interest but in particular
the power to act in one’s self-interest which mediates and enhances the need to reduce dissonance.

Secondly, even though differences between shared power and no power did not turn out statistically significant, the general direction of all differences may point towards a “just world effect” (Lerner and Miller, 1978). According to this effect, “individuals have a need to believe that they live in a world where people generally get what they deserve “(p.1030). In the present case, this means that the powerful deserve their position and the mere fact that they have the power justifies an increase in what is fair for them to receive.

Organizational design

Our results complements a large body of economic literature in showing that people with decision power tend to deviate from fairness in favor of their monetary self-interest. While there were exceptions and many participants traded off self-interest and fairness concerns to some extent, it was still true that more power on average resulted in significantly higher payments to the powerful party (see first row in Table 2). Second, power generally shifts fairness judgments in the direction of the powerful party, but in particular it corrupts the judgments of those with absolute power in favor of their self-interest. Consequently, when decision power is shared, discrepancies in fairness perceptions between the interacting parties are significantly smaller, and actual divisions are considerably closer to what participants judge as fair.

As noted at the outset, fairness in the division of economic gain is seen by many as a desirable criterion for institutions with productive activity, e.g. business organizations. Decision power, on the other hand, is a design variable for organizational arrangements. For institutions which aspire fairness in division of economic gain, our results suggest
that giving shared decision power to all parties which are involved in the creation of economic gain has a twofold effect on distributive fairness. Not only because will shared power result in more balanced outcomes, but also the fairness perceptions of the different parties will be more homogeneous.

For instance, consider again the case of executive compensation. Executives are active contributors compared to the typically inactive shareholders. Our results suggest that when executives have a lot of power and control in organizations, they are likely to take a large share of the economic gain for themselves at the cost of shareholders. Moreover, executives will judge it fair to do so. On the other hand, when owners of a company are inactive but have full power over the division of the economic gain, it can be expected that many pay less than a fair wage to the active contributors, namely the workers. Again, this will go along with a biased perception of fairness. One may suspect that such practices are a reason - or at least give additional impetus - to public demands for regulatory measures such as corporate governance and minimum wages or for “Fair Trade”.

From a philosophical perspective, our findings relate to Rawls’ (1985) discourse on “justice as fairness”. Rawls recognizes that full consensus on metaphysical conceptions of justice is unlikely in a free society. Instead, he emphasizes the need to establish appropriate conditions which “situate free and equal persons fairly and must not allow some persons greater bargaining advantages than others (p.235)” 7 Whereas Rawls focuses primarily on the political realm, his analysis is initially meant to apply very generally to “a society’s main political, social, and economic institutions (p.225)”. Our experimental results suggest a conclusion very similar to his for the division of gain
within economic institutions: When general consensus on the question of distributive justice is unlikely, the appropriate conditions, e.g., of shared power, may be the key to fairer and more acceptable outcomes.

It is noteworthy that our results do not include considerations of “procedural fairness”. There is empirical evidence that people have a preference for fair procedures in addition to their preferences over allocations (see e.g., Anand, 2001, Bolton et al., 2005).

6 Conclusions

We used an experimental laboratory setting to study the impact of power on fairness in the divisions of economic gain from production. The experiment provided a simplified labor context in which only one of two participants worked actively on a task to generate the gain. Decision power was assigned differently across three experimental treatments. Power affected the divisions, so that the more decision power was assigned to the active participant the higher was his share of the gain. More surprisingly, power shifted the perceptions of fairness. The more decision power was assigned to the active participant, the higher was the share that was considered fair for him to receive. In particular, absolute power for one party significantly biased the fairness perceptions of the powerful party in a self-serving direction. Consequently, while fairness judgments across all treatments were characterized by a significant self-serving bias, the discrepancy in fairness perceptions was significantly less pronounced when power was shared.

7 The well-known “veil of ignorance” is a hypothetical ideal representation of such conditions.
These findings are interesting from a psychological perspective, but they may also have practical implications. Our results suggest that participative decision structures in organizations can enhance fairness in the division of economic gain. Moreover, since fairness perceptions tend to be more homogeneous in systems of shared power, the effect on perceived fairness goes beyond the impact of power on actual divisions.

We emphasize that while fairness may be desirable for many reasons, it is only one among different criteria for the design of corporate structures. Efficiency considerations, for example, have been excluded in this study by construction of the experimental design, i.e. a fixed gain for task completion. Also, it is important to note that our experiment does not deal with the question how risk associated with different inputs is fairly compensated. It may be fruitful to adapt our experimental benchmark setting for addressing such issues in further research.
Bibliography


Appendix - Experimental instructions
(Differences between Treatments 1, 2 and 3 are indicated in italics.)

Instructions

Thank you for participating in this experiment which is part of a research project. You will have to make
decisions. The money you can win depends on your decisions and on the decisions of the other
participants. From now on please do not talk until the end of the experiments. Thank you very much!

You have already gained € 2 for coming to the experiment. Now we tell you how the experiment works
and how you can gain more money.

The experiment

Actors
The experiment consists of an interaction between two actors: A1 and A2. Each of you will be randomly
assigned a role (A1 or A2). You will be matched randomly to build pairs “A1 – A2”. You know that you
will be assigned a counterpart of the other role, but you will never know who he/she is.

Payments
A2 has to do an exercise. If he/she completes the exercise successfully, a total gain of € 16 is generated.
From these € 16 both are paid €3 for sure. The rest will be paid provisionally to A1. / The rest will be paid
provisionally to A2. / A1 and A2 have to agree how to divide the rest (€ 10) between them.

Actions

A2 has a maximum of 20 minutes to complete the exercise in order to generate the € 16. If A2 does not
complete the exercise within 20 minutes the gain of € 16 will not be generated.

The exercise consists in several parts of a text. The entire exercise takes between 10 and 15 minutes if
A2 works calmly but with full concentration. As said, A2 has a maximum of 20 minutes.
While A2 is working A1 has nothing special to do, but waits until A2 has finished. He/she can read (we
have today’s newspaper), relax, etc.
When A2 has finished the exercise, A1 decides how to divide the € 10 between him/herself and A2. / ...,
A2 decides how to divide the € 10 between him/herself and A1. / ..., both decide about the division of the
€ 10 by making proposals simultaneously until they agree.

Important: Participation by all actors is voluntary!
When you know your role and the rules you can decide whether you want to continue with the experiment
(that you accept your role and the rules) or you can leave (with the € 2).

We repeat the process of the experiment

1) Distribution of the roles and decision whether to participate or not

It will be randomly decided how is A1 and A1. The distribution of the roles will be sequential so that
it can take a few minutes until you have your role. When you are given your role, you have to decide
if you want to continue with the experiment or leave. The distribution is finished when everyone has
a role.
Remember that you have gained € 2 for sure for coming to the experiment. If you continue with the
experiment and if A2 completes the exercise correctly then you receive at least € 3 more.

2) Exercise
A2 counts letters of a text. The information which letter to count will appear on the computer screen. The exercise will take approximately 15 minutes. All A2 have to complete the task before the experiment proceeds. A1 can relax, read, etc. If A2 completes the exercise in 20 minutes then a total gain of €16 is generated.

3) Division

A1 divides the additional gain of €10 between him/herself and A2. / A2 divides the additional gain of €10 between him/herself and A1. / A1 and A2 divide the additional gain of €10 between themselves. That means he/she/they can decide between 11 different divisions:

1) € 10 for A1  
   € 0 for A2
2) € 9 for A1  
   € 1 for A2
   ...
10) € 1 for A1  
    € 9 for A2
11) € 0 for A1  
    € 10 for A2

If the proposals from A1 and A2 coincide, then the division is implemented. If the proposals do not coincide, A1 and A2 will have to make new proposals. That process is repeated until the proposals coincide. You will see the proposals of the other on the screen.

4) Questionnaire

5) Payments

Remember that the payments involve real money for the participants. No one will know your results or your decisions in the experiment. If you have a question please ask the experimenter at any time. Thank you very much for your participation!