

The Power of Love: A Subtle Driving Force for Unegalitarian Labour Division?

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Abstract

In this paper, I experimentally investigate couples' specialization decisions and examine the gender-specific patterns in labour division arising within heterosexual couples. Eighty participants—20 real couples and 20 pairs of strangers—play a two-stage game, paired up either with their partner or a stranger of the opposite sex. In the first stage, participants make a joint decision on how to play the game: They can both complete a performance-based paid task (task A) or have one of the players perform an unpaid task (task B), thereby tripling the pay-rate for their partner playing task A. After completing their tasks, participants are informed about their pay-offs in private and then asked to make an individual decision about what proportion of their income to pay into a common pool, where it is increased by 20% and distributed equally between the two players. I find that women are significantly more likely to give up their income autonomy and perform the unpaid task when playing with their partner rather than with an unfamiliar man. Men's behaviour is not affected by familiarity with their female partner.

JEL Codes: B54, C92, D13

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1 Introduction

“Often there are fundamental inequalities in gender relations within the family or the household. (...) It is quite common in many societies to take for granted that men will naturally work outside the home, whereas women could do so if and only if they could combine such work with various inescapable and unequally shared household duties. This is sometimes called ‘division of labour’, though women could be forgiven for seeing it as an ‘accumulation of labour’. The reach of this inequality includes not only unequal relations within the family, but also derivative inequalities in employment and recognition in the outside world.”

?

The motivation for this study arises from a puzzling observation closely connected to Sen’s statement that, after a decade, does not appear to have lost its validity: In most European households, couples fail to achieve an equal sharing of paid, labour-market work and unpaid, household-related work. Instead, despite their improving educational achievements and professional qualifications, women are frequently observed to devote their labour primarily to family-work. Many of them still only become active in the labour market to the extent their remaining capacities allow them to. This is one of the main reasons why even modern developed societies have failed to achieve gender equality in the labour market. Many inequalities persist and hinder female economic independence (??).

In this paper, I present experimental evidence on couples’ decisions on dividing paid and unpaid labour and compare their behaviour to mixed-sex pairs of strangers. The main questions addressed here are whether couples divide labour more often in order to reach efficiency gains when this requires the individual disadvantage of one of the partners, and, if so, whether male and female partners are equally likely to undertake the disfavoured role in absence of individual productivity differences.

Most of the specific gender inequalities observable in European labour markets are interdependent with household-related work which is still predominantly provided by women (??). In 2012, though with remarkable differences between countries, the average rate of female labour market participation was 62.3% within the EU-27, compared to 74.6% for men. As the household-related workload increases, especially when entering parenthood, this employment gap usually widens: figures for adults aged 25 to 49 provided by ? show, when entering parenthood, women’s participation in the labour market decreases by about 10 percentage-points while men’s increases by the same amount. While the share of male inactives or part-time-employed males in the same age-group, who state "child-rearing" or other family-related duties as the main reason for not seeking (full-time) employment is well below 10% in the EU-27,

among females, this share amounts to about 40% (??). Consequently, women often face additional career-penalties, such as lower wages, fewer chances for promotion, etc. (?). Thus, as a result of gender-specific labour division, we observe women to give up their income autonomy more frequently, thereby becoming dependent on their partners' income and running a higher risk of descending into poverty.

Economic theory provides different accounts to explain the gender-specific patterns in labour division between couples. Both new home economics and economic bargaining approaches identify structural differences in expected returns to labour market activity for men and women (in terms of wages, likelihood of promotion, etc.) as a key determinant for the households' decision on the concrete form of its labour supply – i.e. *who* is going to supply *how much* labour. From a policy perspective, they yield a similar insight as they suggest the following: If spouses imposed equivalent opportunity costs on the household by withdrawing from the labour market in favour of household production, then either spouse will do so with equal probability¹. We would expect to find roughly equivalent opportunity costs when partners have comparable characteristics in terms of their education and experience and if the demand side for labour does not discriminate systematically against one sex. Over the past decades, European society has made substantial progress with respect to these preliminaries, e.g. steady rises in female educational attainment on the supply side and affirmative action policies on the demand side (?). These improvements should level the opportunity costs that males and females impose on their common households when they abstain from the labour market. Yet, within the vast majority of families, we still observe a form of labour division where the women cut back from labour market participation (??).

These observations inevitably lead one to question the accuracy of an analysis focusing on gender differences in expected labour-market outcomes as the main reason for unequal labour division within couples. The answer to this question has important implications for equalizing-policy: If eliminating gender differences in expected returns to labour market activity (e.g. by raising female educational attainment, affirmative action, etc.) is not sufficient to ensure that couples' decisions on labour division will disadvantage one or the other partner with equal probability, the structural problem of female “underachievement” in the labour market will persist. Therefore, current policy approaches to improve female labour-market outcomes may promise only limited success if men's and women's decisions on paid-labour participation differ depending on the social context they are made in – in this case, an individual versus partnership context.

¹Assuming, of course, that a withdrawal of either of them is still beneficial for the overall household welfare – i.e., purchasing household services externally imposes higher costs than one partner's (partial) labour market absence.

The contribution of this paper is to provide a direct, experimental test of this hypothesis. To the best of my knowledge, none of the few economic experiments concerned with couples' decision-making conducted so far focus on the participants' decisions on labour division.² It is a unique feature of the experiment presented here that it allows for a careful examination of how women and men divide paid and unpaid labour if objective measures on their individual productivity (i.e. expected pay-off), and hence potential gender differences in expected outcomes, are not available a-priori. Moreover, it allows for examination of how this decision changes within two particular social contexts: together with a stranger of the opposite sex or with one's real-life partner.

To achieve this, I recruited 20 real couples and 20 pairs of strangers and asked them to play a two-stage game; paired up either with their partner or a stranger of the opposite sex. In the first stage, participants make a joint decision on how to play the game: They can both complete a performance-based paid task (task A) or have one of the players perform an unpaid task (task B), thereby tripling the pay-rate for their partner playing task A. After completing their tasks, participants are informed about their pay-offs in private and then asked to make an individual decision about what proportion of their income to pay into a common pool, where it is increased by 20% and distributed equally between the two players. If couples maximize a joint utility function, or bargain cooperatively, they should be more likely than strangers to tolerate income-inequality and realize the efficient outcome (i.e. divide labour and play the combination A/B as opposed to each playing the paid task A individually). Furthermore, since neither men nor women know their productivity in either task, they should be equally likely to perform the unpaid or the paid task when dividing labour, irrespective of whether they cooperate with a stranger or with their partner. In order to verify that behavioural differences between familiar and unfamiliar participants can not be attributed to a selection mechanism, I additionally collect a large number of personality trait and attitude measures that are typically thought of as driving factors for (gender-specific) differences in labour-market orientation.

The remainder of this paper is organised as follows: Section 2 sketches the theoretical accounts offered by economic theory to explain the phenomenon of gender-specific labour division within couples. Section 3 contains a brief overview of the experimental literature that revolves around gender and family economics. Section 4 describes the methodology used for the experiments presented here, followed by section 5, which provides a description of the main results. Section 6 contains a summary of sensitivity analyses in order to verify the robustness of the findings. The discussion in section 7 offers some potential interpretations of the results.

²? investigate the effects of individual vs. joint taxation on couples' labour supply, modelled as individual work effort. ? explore how couples distribute resources when the initial allocation is determined exogenously vs. endogenously (i.e. resulting from their individual work-effort). ? document the attempt to investigate partners' provision of unpaid work vs. enjoying leisure-time experimentally.

Section 8 concludes the experiment and discusses implications for further research.

2 Theoretical Background

Economists have developed various theoretical approaches to model the family decision-making process, which can broadly be divided into three main strands. The first is the unitary household utility model in the “new home economics” mainly developed by Becker from the 1960s onward (and conflated in his “Treatise on the Family” 1991). The second and third strand involve models based on economic bargaining theory, namely cooperative (pioneering work came from ??) and non-cooperative (??, , initially) bargaining models. Here, I will only briefly describe the three strands and how they relate to the experiment, which allows me to test some derivative model predictions (for a general overview, see ??).

The *unitary household utility model* (?) as postulated in the new home economics offers an explanation for why we often observe a specific pattern in intra-family labour division. According to this model, the characteristic gender gap in paid labour-market and unpaid household-related work participation derives from wives’ lower expected returns to labour market activities relative to their husbands’.³ The theory suggests that spouses, since they are assumed to maximize their joint utility⁴, base their decision about who will cut back labour-market engagement in favour of household work – especially after entering parenthood – on the partners’ individual labour market opportunities: The spouse who can expect a lower pay-off from labour-market activity imposes lower opportunity costs on the household when giving up labour-market work in favour of household work.

Following this rationale, the model predicts specialization to occur whenever it yields efficiency gains that allow couples to reach a higher joint utility level. Unequal conditions in the labour market promote productivity differences between women and men, which is why, within a resource-pooling household, it is in both partners’ best interests to allocate males’ labour to the market and females’ to the household. By using their individual comparative advantages, partners maximize their joint utility. It follows that, in the absence of comparative advantages, partners should be equally likely to specialize in one or the other production.

Intra-household bargaining approaches that model household decisions, on the other hand, do acknowledge diverging interests within the household, thus rejecting the idea of a common utility function. In bargaining theories, household decisions are viewed as resulting from

³Strictly speaking, a productivity (dis-)advantage in labour market activities is not a necessary requirement. Becker himself claims a biologically determined comparative advantage for women in household-related work, particularly in child-rearing (see ?).

⁴This perspective does not account for potentially diverging interests within the household; it assumes that household members form an entity with a unitary utility function.

negotiations between the members. Here, household-related work is assumed to display an imposition both partners seek to avoid. The partner with the higher bargaining power will be able to confer most of this inconvenience upon her spouse. Individual bargaining power within a relationship is often thought of as being determined by a partner's outside options, e.g. by the share of household income contributed by each partner. Hence, gender-related differences in expected labour market outcomes will strongly influence the intra-household-bargaining process, especially with respect to labour division and allocation of resources. One main difference exists between cooperative and non-cooperative bargaining approaches: The former rests on the assumption that spouses will always reach the efficient outcome (i.e., they will come to an agreement somehow), whereas the latter does not.

Although unitary household utility approaches and intra-household bargaining approaches may differ with respect to the question *if* partners' agree on specialization, they yield similar predictions regarding *which* specific labour division arrangements are most likely to evolve: Lower expected returns from labour-market activity for females either lead to a comparative advantage in household production or to a bargaining disadvantage in negotiations concerning who will be responsible for household work. Either way, when facing labour-market inequalities to their disadvantage, women are thus more likely to reduce paid market activity in favour of unpaid household-related work. However, this need not be the case when household decisions are determined by non-cooperative bargaining and, moreover, should not occur when expected returns from labour-market activities are equal. The following section seeks to provide a brief overview of the experimental contributions made so far in an attempt to test which theory predicts couple behaviour the most accurately.

3 Related Literature

So far we have established that, according to family economic theories, the decision on labour division between household members follows some kind of expected (joint or individual) utility maximization. Generally, a wide range of experimental evidence suggests that expected utility maximization might not be an accurate predictor of people's choices.⁵ More specifically, violations of expected utility theory become particularly likely once an individual's decision affects others, and his outcomes are in turn affected by other actors.⁶ This indeed applies to many, if not most, real-world decisions, especially within the household context.

Notably, an overwhelming majority of this evidence stems from economic laboratory ex-

⁵For example, very prominently demonstrated by ?.

⁶Illustrative evidence can be found in dictator games, ultimatum games, public good games, (see for example ?????).

periments recording outcomes of strategic games played among strangers. Variations on the degree of information provided about fellow players show, however, how increasing familiarity with a partner affects outcomes (e.g. ???). Not surprisingly, the tendency to exhibit opportunistic behaviour seems to decrease while the willingness to cooperate increases with the tightness of social ties (??).⁷

Couples' decisions have been subject to a variety of experimental studies, since they are often subject to a trade-off between efficiency and equality. The majority of these studies focus on the standard new home economics approach and aim to reveal its predictions to be inaccurate. The model's major shortcoming derives from its failure to acknowledge that interests and preferences within the household, in reality, may well diverge. Experimentally, this has been shown by, for example, ?????. Their findings suggest that couples may not simply pool their incomes, nor do they seem to make unitary decisions (let alone have homogeneous preferences) and maximize aggregate pay-offs—hence, they fail to reach the efficiency outcome predicted by the theory. Other authors' experimental findings provide evidence supporting this notion: Testing spouses' preferences for equality versus efficiency when choosing a pay-off distribution, ? and ? find their participants to prefer equality more often. In a recent study, ? compared experimental results for German and French couples who were confronted with an equity-efficiency problem: Both groups displayed a significant inequality aversion, which was more pronounced among German couples.

? study the conditions under which specialization arises, an idea which is related more closely to the research question underlying this paper. However, they examine anonymous interactions between randomly matched partners in a standard student subject pool. Within this particularly abstract experimental setting, they challenge the unitary household and bargaining models, arguing that spouses' specialization in order to realize welfare gains requires the “household-specializer” to be willing to sacrifice bargaining power (in the form of financial autonomy) toward her spouse. This introduces asymmetric costs of labour division. Experimentally, they model this within the framework of a semi-structured bargaining game over the division of a common pot. In the first step, one player gets to choose the size of the pot: Choosing the smaller pot leaves him and his counter player with symmetrical disagreement pay-offs for the subsequent bargaining stage over the common pot; choosing a larger pot, however,

⁷For example, ? conduct experiments to investigate the behaviour of families in public good games. They ask participants to decide how much of their private endowment or pay-off they invest into a common pool; the amount collected is then multiplied by some factor greater than one and re-distributed in equal shares among all players, regardless of their initial contribution. The authors find that family members contribute higher shares (and hence generate higher overall pay-offs) when playing among themselves only, as opposed to playing in mixed groups with strangers. ? demonstrate that, in symmetrical prisoner's dilemma games, 73% of participants cooperate when playing with their partners, as opposed to only 43% of those playing with a stranger of the opposite sex.

imposes asymmetric disagreement pay-offs on the players, to the disadvantage of the chooser.

Clearly, ? design their bargaining game to mimic real world situations: Specialization increases overall income, while reducing bargaining power for the partner specializing in household production (usually the wife), thereby trading off equality against efficiency. However, in the experimental set-up designed by the authors, participants choose the presumed *consequences*, not the labour division itself. Thus, they choose the likely *outcome* of labour division (i.e., a smaller pot combined with symmetrically distributed bargaining power vs. a larger pot inducing asymmetric bargaining power). Furthermore, since they play with completely anonymous partners, “real” gender effects are not subject to the authors’ analysis. Instead, they focus on analysing a typical “wife decision problem” on a more abstract level.

Partially contradicting the standard game-theory predictions, ? find that “wife players” do actually choose the variant with the larger pot, at least as long as the asymmetry it imposes on the individual disagreement pay-offs is not too large. The authors conclude that if the decision to specialize in household production at a personal cost is additionally framed in an affective relationship, the actual share of people willing to sacrifice their bargaining power in order to maximize aggregate welfare might be even higher in reality. However, they do not address the implications of the gender bias in this particular ‘willingness to sacrifice’ observable in real life where the majority of “these people” are actual women, not just wife *players*. The important insight their study offers concerns the question of whether people bargain cooperatively or non-cooperatively. The results suggest this to depend on the potential gains of cooperation relative to the degree of asymmetry in costs it imposes on the partners. Since they find that even complete strangers with minimal knowledge about their partners will cooperate quite frequently when this asymmetry is relatively small, we might expect couples to accept even larger asymmetries in costs before they switch from cooperative to non-cooperative bargaining.

The experiments sketched above mostly present couples (or pseudo-couples) with decision and bargaining problems that involve the distribution of monetary pay-offs as such and do not explicitly focus on the decision of *how* to divide labour. This has, to the best of my knowledge, not been studied experimentally. Studies analysing gender-specific time disposal (a direct outcome of labour division within a couple) correspond to the underlying research question of this paper more closely, but are mostly based on survey data. International European time-use data shows a gender gap in the average weekly workload for non-single parents in employment across virtually all EU-27 countries: Women work more (paid and unpaid work combined) and enjoy less leisure time (see ?, 40). Contrary to the experimental studies on intra-couple income distribution sketched above, econometric studies exploiting time-use data rather support the notion of partners realising efficiency gains at the cost of equality. Generally, when couples

are found to practice more asymmetric labour division, this is often interpreted as evidence in favour of the cooperative bargaining model.

Indeed, the gap in time spent on household-related activities appears to be influenced by the share women contribute to overall household income: For example, ? show a woman's relative bargaining power to increase the more she specializes in labour-market production. ? and ?, using time-use data from Australia and Germany, respectively, show that women are able to reduce their workload in the household when increasing the share they contribute to the monetary income of the household, until these contributions are equal. But strikingly, when women contribute even more, their household-related workload increases again. The authors interpret this as the point where "gender trump(s) money" (?), or, more precisely, a 'penalty' for violating the prevailing social norms. Indeed, this observation might point to some sort of cognitive bias, as in many developed countries modern couples may hold the ideal of gender equality as an abstract desirable goal in their minds but have not yet been able to incorporate it into their daily routines and habits (???). The experiment described in the following section aims to determine whether this apparent bias can be observed in the lab.

4 Methodology

4.1 Hypotheses

The experiment described here aims to contribute to an important question arising from economic theories of the household. Do couples always realize efficiency gains when this requires specialization in tasks? And are their specialization patterns gender-neutral when comparative advantages are not related systematically to one sex? I intend to test the following hypotheses:

- (1) Couples are more likely than strangers to agree on realizing efficient outcomes (welfare gains) when this creates inequality (by requiring one player to give up income autonomy).
- (2) When playing with their real partner, women are more likely than men to give up income autonomy in order to reach efficiency gains.

The first hypothesis is uncontroversial from a unitary utility model or a cooperative bargaining model perspective. Previous experimental studies demonstrate how familiarity increases participants' willingness to cooperate: For example, family members show a higher contribution rate in public good games (?) and individuals playing a prisoners' dilemma with their spouses choose to cooperate nearly twice as often as those playing with strangers (?). The latter finding is robust even when pay-offs are asymmetric. Non-cooperative bargaining, however, may lead

to a different outcome, especially when partners perceive the asymmetry of individual costs as high (?), thus resulting in a higher probability of failure to reach the efficient outcome.

The second hypothesis is, however, clearly at odds with the predictions derivable from any of the theory strands discussed. If cooperation occurs more often among familiar couples, then male and female partners should, in theory, give up income autonomy (specialize in unpaid household-related work) with equal probability, assuming there is no comparative advantage for paid and unpaid tasks that is systematically related to one sex. But if familiar women are willing to perform an unpaid task more frequently than their unfamiliar counterparts, this will lead to an unequal distribution of independently controlled income within familiar couples. Female partners may be right to expect their partners not to exploit their advantage but to behave reciprocally instead, thus rewarding her for sacrificing her equal position deliberately (as documented in ?). However, in terms of unconditional access to individual income, they subsequently depend more on their partner's good will than unfamiliar females.

In order to test the first hypothesis, the act of performing a paid and an unpaid task must provide the unity of two players with a larger income than the pairs that perform two paid tasks individually, thus representing the efficient outcome. In addition, the pay-out rules must reveal a-priori that realizing the efficient outcome will generate income inequality among the two players.

To make the second hypothesis testable, the exact nature of the tasks must be unknown to participants. Consequently, partners should not anticipate gender differences in their expected pay-offs. More precisely, for the hypothesis to be rejected, women should not be more likely to undertake the unpaid task, regardless of whether their male partner is a stranger or their real partner.

4.2 Experimental Design

In two different treatment groups, participants are paired up either with their partner or with a stranger of the opposite sex. They are asked to make two different decisions, at two different stages of the game. At the first stage, players must decide *jointly* if and how they want to divide labour. They have two real-effort tasks to choose from: Task A, a quiz which offers a performance-based pay rate for each correct answer and task B, an “assisting” task, that must be completed complementary to the paid task, but does not in itself yield any pay-off⁸. Instead, it triples the pay rate for the task-A performer. They can either:

- (i) Work individually (both each spend ten minutes on task A, for individual performance-

⁸Participants had to type their partner's answers for task A from a paper-pencil answer sheet into a spreadsheet on a computer. The exact nature of either task is unknown to the participants. They are made aware, that both tasks involve real effort and that their completion is mandatory in order to generate a pay-off.

based pay-offs); or

- (ii) Work together with their partners (one performs task A for a pay-off while the other one completes task B to triple their partner’s pay-off; however, only the task-A performer will receive a payment).

Throughout the decision process in step 1 of the first stage (see Table 1 for a chronological list of each step in the experiment) participants actually face each other and decide together whether, and how, to divide the tasks. Hence, partners in the control group do not know each other but are not anonymous. Only after they have reached a decision, partners are separated into different rooms, where they complete steps 2-4 in private. Thus, participants perform their tasks individually and afterward decide privately how much of their personal income, if any, they want to invest in a common pool. This decision is of course conditional on the player performing the paid task A in the first stage and earning money.

Table 1: Course of the experiment

| STAGE 1 | |
|---------|--|
| Step 1 | Decision 1 (jointly): Who does which task? |
| Step 2 | Participants perform their “work” |
| Step 3 | Participants receive their pay-offs in private |
| STAGE 2 | |
| Step 4 | Decision 2 (individually): How much of their received pay-off do they want to invest in a common pool? (investments are multiplied by 1.2 and the resulting amount is split 50:50 for both participants) |

The game and all of its stages were explained in detail before participants made any decision and a set of test-questions ensured that they understand the consequences of all choices available to them at any given point⁹. It is important to note that the exact nature of either task is unknown to the participants prior to their decision. They are solely informed that task A is some sort of quiz containing many different types of questions from a wide variety of fields, with the goal of solving as many questions as possible within ten minutes. Each correctly answered question yields a pay-off (the total amount of which is tripled if one partner does task B). Task B, as participants were informed, is some kind of “assisting task”, that does not require a certain level of performance and is solvable for anyone, but also requires effort and must be completed in order to triple the partner’s pay-off. This way, a priori gender biases should not evolve because participants cannot regress on any objective measures to estimate individual productivity. Hence, they should not be able to predict absolute and/or comparative

⁹See Appendix A for the complete experimental instructions participants received.

advantages and divide the tasks accordingly. Therefore, *if* they divide the tasks, males and females should be equally likely to perform either task A or B in both the familiar and the unfamiliar condition.

A gender bias in the choices of tasks could still emerge, however, if the tasks were not "gender-neutral", i.e. if stereo-typical beliefs about one gender possessing a greater ability in performing a task exist (irrespective of the true ability distribution). It is therefore important to reflect on the implications for this study, if participants exhibit a pronounced bias in their *a priori beliefs*, e.g., if there was a stereotype that women, on average, are better quiz-takers¹⁰. If this was the case, we might observe women to be significantly more likely to play task A than half of the time, but this would hold constant regardless whether they play with their partner or a stranger, and the same would of course be true for men.

Furthermore, limiting prior information about the tasks prevents participants from estimating how many correct answers one could realistically score within the given time-interval. This ensures that the pay-offs remain private information to the individual generating it¹¹.

Following standard economic game theory the following predictions derive: Via backwards induction, it becomes evident that rational players, when facing their last decision at step 4, have no incentive to invest anything into the common pool. This is a dominant strategy because it maximizes individual income for any given strategy of the other player. This holds, regardless of how their income was actually determined, i.e., whether the other player played task A or B. Therefore, at the preceding stage, a rational player would always choose to play task A, since she can anticipate the consequences of playing task B: This strategy will not yield any pay-off since a rational counter-player will not invest into the common pool. In short, standard game theory predicts that participants will never cooperate, neither at stage 1 of the game when they have to choose how to perform the task, nor at stage 2 when they have to choose an investment into a common pool. Hence, we should observe all participants playing task A and nobody investing in the common pool. However, we might observe couples cooperating if they pool incomes to maximize a unitary utility function or bargain cooperatively. Thus, observing spouses' behaviour at the first stage and comparing it to unfamiliar participants' decisions allows to test the first hypothesis.

¹⁰Since the quiz was introduced as containing a wide variety of different questions, it can be claimed to be a rather gender-neutral task, as even subjects concerned with stereo-typical beliefs may have expected questions that are "typically easy for men but not for women" and those of the opposite type to be just as likely to occur.

¹¹Whether pay-offs are public or private has been shown to have different effects in varying experimental settings with couples: In a field experiment conducted by ? in the Philippines, men were more likely to store pay-offs in their personal accounts when they solely were informed about them in private. However, once an individual's pay-off was public information to both spouses, men were more likely than women to commit to pooled consumption. In a lab experiment conducted by ?, participants were asked to allocate tokens among themselves, with each partner having an individual exchange-rate that was private information. The authors found a clear majority of partners revealing their private exchange rate in the bargaining task and hence trying to realize efficient outcomes instead of using the chance to behave opportunistically.

The specific design of the game requires one player to be willing to deviate from this dominant strategy in order to maximize aggregate pay-offs. This involves a high risk, as it requires the player to give up control over his individual income, hence sacrificing his financial autonomy. In fact, players' willingness to cooperate is tested twice: At stage 1 when participants decide whether or not to cooperate by dividing the tasks, i.e., play either the combination A/A or A/B, and again at stage 2, when they must decide how much to invest into the common pool. Thus, it is possible for players to choose a form of cooperation that does not maximize aggregate welfare, but still increases it without requiring an a priori disadvantage of one player, i.e., both play the paid task A and invest their income (partly) into the common pool¹². If we observe couples to frequently choose this strategy, this would provide evidence in support of non-cooperative bargaining models.

4.3 Additional Measures

4.3.1 Socio-demographic Characteristics

After completing the game, participants fill out a questionnaire (see Appendix B) to provide basic socio-demographic information, including age, gender, family origin, socio-economic background, subject of study, duration of and satisfaction with their relationship (on a 10-point-scale) and relationship-related living arrangements and division of housework. In addition, the questionnaire contains an item to verify that participants in the unfamiliar condition did not know each other and that participants in the familiar condition were actual couples¹³.

4.3.2 Measures for Personality Traits and Individual Attitudes

In addition to standard questions about socio-demographic characteristics, the questionnaire contains specific statements that gauge participants' degree of consent, thereby providing measures for certain personality traits, locus of control (LOC) and core self-evaluation as they are commonly applied. Furthermore, the questionnaire featured items that are typically used to elicit participants' taste for "challenge and affiliation". Further items address participants' attitudes on gender roles. All of these measures may be viewed as proxies for labour-market preferences—in fact, a whole body of literature suggests that the gap in female and male labour market performances can be linked to differences in preferences (for an overview and critical examination see ?). Accordingly, evaluating whether these variables are related to certain specialization patterns is crucial to this study.

¹²It is obvious, however, that a disadvantage may still arise, if players do not invest equal shares or if one partner performed worse in the quiz and therefore simply has less money at his disposal to invest.

¹³Participants were asked to state their partners' birthday, which you of course are much less likely to know by heart if you are not involved in a romantic relationship with that person.

4.4 Treatment Groups and Participants

Eighty people participated in the experiment. Participants were mainly recruited among the University of Warwick student body. The game was played in two different treatment groups, with individually scheduled sessions for each of the 40 pairs:

- Heterosexual couples
- Pairs of strangers, mixed-sex

Participants were predominantly graduate students (53% Masters; 13% PhD) and undergraduate students (28%); 8% of participants¹⁴ claimed not to be enrolled as a student at the time of the experiment. Participants were recruited via advertising (posters and flyers) on campus. Couples in the treatment group and unfamiliar individuals for the control group were recruited via separate advertisements. The distribution of participants over study levels varied only slightly between the two treatment groups, with the unfamiliar participants comprising a larger share of Master students and the familiar group representing a relatively larger share of PhD students. The share of undergraduate and non-students is equivalent in both groups. The average age of participants was 25.¹⁵

Participants in the familiar group by definition are all involved in a relationship. However, participants in the control group, although unfamiliar with their experimental partner, are not necessarily single. In fact, 30% of female and 25% of male participants in the unfamiliar group reported being in a relationship. These compositional differences between the groups are addressed in section 6, which provides a detailed analysis of potential selection threats to the robustness of the results.

5 Results

In the following section, I use the collected experimental data to evaluate the stated hypotheses by answering the following questions: Are familiar couples more likely to cooperate at the cost of equality and thereby able to realize greater joint outcomes? Are women more likely than men to give up their individual, independent income when they play with their partner versus a stranger? Are the gains in aggregate welfare for familiar couples therefore primarily realized at the expense of female income autonomy?

¹⁴May not add up to 100 because of rounding.

¹⁵The exact statistics: $M=25.10$, $SD=4.49$. The fact that the sample consists of 92 % university students who were largely in their mid-twenties should necessarily be born in mind when deriving conclusions. See section 6 for a more thorough discussion.

5.1 Hypothesis I: Couples are more likely than strangers to agree on realising efficient outcomes when this creates inequality between them.

Table 2: Proportion of Participants Cooperating by Stage and Familiarity

| | Familiar | Unfamiliar |
|--|-------------|---------------|
| Stage 1: cooperation (specialization) | 100% (n=40) | 60% (n=40) |
| Stage 2: partial cooperation (non-specialing players pooling income) | — (n=0) | 62.5 % (n=16) |

Read: In the familiar group, all couples (100%) cooperate by dividing labour in the first stage. In the unfamiliar group 60% of participants divide labour, i.e. 24 out of 40 participants. In the second stage, out of those people who have not divided labour but instead performed the paid task individually, 62.5% cooperate by investing their stage-1-income (partly) into a common pool.

Table 2 shows the proportion of people cooperating at the different stages. At stage 1, the number of people who specialise by dividing the tasks and play the game as A/B performers were 40 in the familiar and 24 in the unfamiliar group. Thus, all familiar participants cooperate, but “only” 60% of unfamiliar players.¹⁶ This difference is statistically significant.¹⁷

As discussed above, welfare gains can only be reached by choosing a form of labour division that requires one player to give up control over his personal income and allows the other player to determine their final pay-off (recall that the task-A player alone receives a pay-off at the end of stage 1 and thus is the only one to decide about how much to invest in the common pool at stage 2, i.e., task-A players determine both their own and their partner’s final pay-off). Presumably, participants will only be willing to perform the unpaid task B when they expect their partner to behave reciprocally by investing their pay-off in the common pool, thereby sharing the fruits of their labour.¹⁸

Another form of “partial” cooperation evolved among unfamiliar players and is noteworthy. As shown in the second row in table 2, of the 16 players who did not cooperate at the first stage, i.e., where both partners completed task A, 10 invested their entire income into the common pool¹⁹, which can be interpreted as an attempt by the players to cooperate while sustaining individual control over their personal incomes, yet, within this constraint, trying to maximize

¹⁶Compared to the standard game-theoretic predictions, this might actually be viewed as a surprisingly high rate of cooperation among strangers. This can be viewed as a form of a trust game, where even completely anonymous players have been recorded consistently to cooperate by “trusting” (???). The fact that most participants shared a common identity as students could have driven up the cooperation rate. Furthermore, even though participants were assured that their income and their investment decision would be kept secret from their partner, it was obvious that at least to the experimenter, they were known instantly – which might have also favoured the high investment rate and the small rate of opportunism in the unfamiliar condition.

¹⁷ $\chi^2(1)=10, p=.001$.

¹⁸Among co-operators in both groups, however, two task-A-players (roughly 10% of familiar and 17% of unfamiliar co-operators) did not fulfil their part of the deal to the full extent and exceeded opportunism: i.e., those “defectors” invested only a share of their stage 1 earnings. Although this type of opportunistic behaviour approaches the homo-economicus behavioural predictions, none of them let their partners down completely. The minimum invested was 49% of the amount earned in task A among familiar couples and 60% among unfamiliar cooperators.

¹⁹80% of them actually managed to coordinate, i.e. both partners mutually invested all their income.

aggregate welfare.²⁰ This can be interpreted as a form of cooperation that favours equality of partners over the efficiency of their joint outcome.

Based on these figures, the first hypothesis cannot be rejected. Familiar couples seem to strictly prefer efficiency over equality.

5.2 Hypothesis II: When playing with their real partner, women are more likely than men to give up income autonomy in order to reach efficiency gains.

Table 3: Number of People Performing Task A and B by Familiarity and Gender

| | Familiar | | Unfamiliar | |
|----------------------------|----------|--------|------------|--------|
| | Male | Female | Male | Female |
| Paid-task-performers (A) | 14 | 6 | 13 | 15 |
| Unpaid-task-performers (B) | 6 | 14 | 7 | 5 |
| n = | 20 | 20 | 20 | 20 |

Read: In the unfamiliar group, 13 out of 20 males perform task A.

The first row in Table 3 shows the number of males and females performing the paid task A (of all participants in their treatment group). In the unfamiliar condition, 15 out of 20 females completed task A, i.e., 75%. When playing with their partners, females are much less likely to do so, as only 30% of all familiar women perform the paid task. This difference is highly significant²¹ and partly due to the fact that couples choose to specialize more often, i.e., the familiar condition overall has fewer task-A performers. Males, however, are not more likely to complete task B when playing with their female partner as opposed to a female stranger. Hence, they act as task-A performers in both groups about two thirds of the time, tests indicate no significant difference between the conditions. This implies that couples' higher likelihood to divide labour derives from women's greater willingness to perform the unpaid task when playing with their partner. We can verify this by looking only at those participants who choose specialization.

The second row depicts the behavioural pattern of participants cooperating at stage 1, i.e., they play the combination of task A and B. For familiar participants the distribution is symmetric, as all of them cooperated at the first stage. Thus, familiar male and female task-A performers (and task-B performers, respectively) total 20. Among unfamiliar participants,

²⁰ Another possible explanation, which is rather speculative at this stage of research, involves male ostentation: in particular, males might feel the desire to impress their female partner by signalling they performed well in the task rather than potentially being suspected to not have generated much money to invest into the pool in the first place due to poor performance on the quiz.

²¹ Fisher-exact-test: $\chi^2(1)=8.12$, $p=.004$.

there are generally more task-A performers than task-B performers, because not all of them cooperate with their partners. The number of unfamiliar male task-B performers reveals what proportion of the 15 unfamiliar female task-A performers were co-operators: Since 7 men performed task B, by definition, 7 women out of the number who performed task A were their cooperating partners (and vice versa).

Familiar females perform the unpaid assisting task B in 70% of all cases, whereas when cooperating with strangers in the unfamiliar condition, less than half (only 42%) of females perform task B. Economic theory suggests, however, that they will perform either task with equal probability in the absence of a comparative advantage. That is, once they decide to cooperate with their partners, females and males should be equally likely to perform the unpaid task. This should hold regardless of whether they cooperate with a stranger or their partner. As a test of given proportions reveals, the theoretical predictions match the actual decisions of unfamiliar cooperators very accurately: the probability does not differ significantly from one half. When cooperating with their partners, however, familiar females' probability to perform the unpaid task B is significantly higher than .5.²²

5.3 Implication: Higher (Gendered) Inequality Among Familiar Couples

If couples' higher co-operation rate is driven by females greater willingness to perform the unpaid task B, then by definition, they sacrifice their income autonomy more often. In order to quantify the implications of this finding, one may look at the generated pay-offs conditional on participants' specialization and pooling decisions. Recall that by cooperating at stage 1 (playing the A/B combination), participants can triple their pay rate per correct answer. However, only one of the partners is performing the task and hence collecting the pay-off. By cooperating at stage 2, the accumulated earnings can be increased by yet another 20% and will then be split equally between both players. The overall pay-off at the end of stage 2, π_{2i} , for a player i , therefore depends on her own investment decision (the share s_i invested), and that of her partner j , given their individual stage-1 pay-offs (π_1):

$$\pi_{2i} = \pi_{1i} - s_i \times \pi_{1i} + \left(\frac{s_i \times \pi_{1i} + s_j \times \pi_{1j}}{2} \right)$$

This is a standard public-good game. The initial endowment π_{1i} over which a player decides is endogenous, since it depends on her performance x_i conditional on playing task A and on her pay rate r_i , which is determined by whether or not her partner j also performs task A or

²²The exact test-statistic for familiar females is $\chi^2(1)=3.2$, $p=.037$ against the one-sided alternative that the probability of performing the unpaid task is greater than 0.5. For unfamiliar females, testing against the same one-sided alternative delivers $\chi^2(1)=.077$, $p=.609$. Thus, their probability of performing task B does not differ from 0.5.

instead plays the assisting task B. An individual’s stage-1 pay-off is therefore given by:

$$\pi_{1i} = x_i(A_i) \times r_i(A_j)$$

Hence, stage-1-income is zero for all players who play task B. Among those who play task A, assuming performance is constant, players whose partner is willing to perform task B receive a three times higher pay-off. In stage 2, the pay-off depends on the share of income that players i and j invest into the common pool. Task-A players who play together with a B-task playing partner know that they are the only ones to invest in the common pool because their partners receive no income from stage 1.

Table 4: Simulated Earnings After Stage 1, by Familiarity and Gender

| | Aggregate | Male | Female | Difference (M – F) |
|--------------------|-----------|-------------|-------------|--------------------|
| Familiar | 4.05 | 5.67 (3.81) | 2.43 (3.81) | 3.24*** |
| Unfamiliar | 3.51 | 3.01 (3.19) | 3.92 (3.33) | .81 |
| Difference (F – U) | .54 | 2.57** | -1.48** | |

Note: Given participants’ actual specialization decisions, earnings are simulated at a constant performance-rate of 9 correctly scored questions. This corresponds to the average of familiar males’ actual performance. Mean earnings in £; standard deviation in parentheses. Differences in means: significance indicated at * 10%, ** 5%, *** 1% level.

Read: In the familiar group, males on average earn 5.67£ after the first stage. Females in this group on average earn 3.24£ less, a mean value of 2.43£ precisely. Compared to familiar women, unfamiliar women on average earn 1.49£ more after the first stage, generating a mean income of 3.92£.

Table 4 shows the simulated average incomes for the two different groups after stage 1, given the participants’ actual decisions. Holding performance constant at 9 correctly scored questions²³ for every task-A player allows us to examine how players’ specialization and pooling decisions affect the distribution of income. Stage 1 earnings reflect the different decision-patterns regarding specialization. The aggregate difference between the familiar and the unfamiliar group in stage-1 earnings is £0.54 and is not significant. A closer look at the distribution in stage-1 earnings by familiarity and sex in Table 4 reveals the gendered labour division dominating in the familiar group. While no significant gender gap in stage-1 earnings can be found in the unfamiliar group, familiar females on average earn £3 less than familiar males. Another consequence of these specific specialization patterns manifests in the gaps within sex by familiarity. While familiar men realize incomes which, on average, are roughly £2.50 greater than incomes generated by unfamiliar males (because they are more likely to reap efficiency gains), familiar females, on average, earn about £1.50 less than their unfamiliar peers because they are more likely to give up their income autonomy and not earn an income at all.

²³For an evaluation of participants’ actual performance by groups, please refer to the robustness checks provided in section 6.

Table 5: Simulated Earnings After Stage 2, by Familiarity and Gender

| | Aggregate | Male | Female | Difference (M – F) |
|--------------------|-----------|-------------|------------|--------------------|
| Familiar | 4.82 | 4.21 (.52) | 3.89 (.52) | .32** |
| Unfamiliar | 3.99 | 3.10 (1.09) | 3.79 (.90) | -.69* |
| Difference (F – U) | .83*** | 1.11*** | .10 | |

Note: Based on the simulated earnings for stage 1, stage-2 earnings are simulated given participants’ actual investment decisions. Mean earnings in £, standard deviation in parentheses. Differences in means: significance indicated at * 10%, ** 5%, *** 1% level.

Read: In the familiar group, males on average receive £4.21 after the second stage. Unfamiliar males earn a mean value of £3.10

Table 5 shows that the gender differences vanish after task-A performers reward their task-B-performing partners at the second stage: By investing their income in the common pool, A-players increase it by 20% and share it equally with their partners. Since nearly all cooperators²⁴ invest their complete income, at the end of stage 2, reciprocity has smoothed out the variance in income established at stage 1 and differences in earnings between men and women within the familiar and unfamiliar group become negligible. As a result, familiarity remains the only factor to explain the variance in earnings, since it corresponds with a higher cooperation rate in the first place and since co-operators are more likely to invest their full earnings into the common pool (where they are again increased by 20%) than non-co-operators. From Table 5, it also becomes evident that the aggregate difference between familiar and unfamiliar participants’ final earnings are driven by men. Male participants enjoy significantly higher terminal earnings when playing with their female partner as opposed to men who play with a stranger (£1.11, a mark-up of roughly 35%). Thus, they are able to reap the benefits from specialization. For female participants, surprisingly, playing with their partner does not yield an advantage over playing with a stranger in terms of the final pay-off generated.

6 Robustness Checks

The validity of the results presented relies crucially on the assumption that participants in both groups, apart from the differential treatment they receive (playing with their partner or playing with a stranger), do not differ with respect to other characteristics that might influence their decisions. This is basically identical to claiming that familiar females would behave just as unfamiliar females if they played with a stranger. Therefore, the main concern is whether those females playing with their partner differ systematically in some important characteristic(s) that in turn make them inclined to choose the assisting task more often. If

²⁴As noted earlier, there were two exceptions both among familiar and unfamiliar co-operators, where a task-A performer was assisted by his partner (i.e., a task-B performer) and did not invest the entire sum earned.

this were the case, the results would likely suffer from selection bias. This section offers a closer examination of potentially confounding variables, in order to mitigate apprehensions in this regard.

6.1 Performance

Since the findings of this experiment record differential decisions on specialization for familiar and unfamiliar participants *despite the lack of objective measures to predict comparative advantages*, the first concern relates to actual productivity: The average number of quiz questions solved should not differ for men and women within or between both groups.

Table 6: Performance by Familiarity and Gender

| | Aggregate | Male | Female | Difference M – F |
|-------------------|-------------|-------------|--------------|-------------------|
| Unfamiliar | 6.11 (3.23) | 6.23 (3.11) | 6.00 (3.44) | .23 |
| Familiar | 8.06 (5.01) | 9.09 (4.93) | 6.17 (5.00) | 2.92 |
| Difference U – F | 1.95 | 2.86 | .17 | |

Note: Mean correct questions given by task-A performers; standard deviation in parentheses. All differences in means are tested with a Mann-Whitney test – none of the differences show statistical significance below the 10% level.

Read: In the unfamiliar group, participants on average scored 6.11 correct questions, with familiar males scoring a mean of 6.23 and familiar females 6.00.

Table 6 summarizes the average number of correct answers participants gave when performing task A, which overall range from 0 to 16.²⁵ The most important observation is that differences in participants’ performance do not differ significantly for any group or sub-group comparison. Despite the lack of significance, by examining the table at face value, one may still be worried by familiar males’ relatively high performance. My impression throughout the experiment was that participants who played with their partner were more relaxed and experienced less anxiety when performing the task.²⁶ Another explanation might be that par-

²⁵The results of four participants had to be excluded for calculating the means. They admitted (and their answer sheets also proved this) to have “cheated”, all of them in the same way: They knew it was impossible to solve all questions within the given time interval of ten minutes (this was public information), so they reserved the last minute of their “work time” to randomly guess the multiple-choice answers to those questions they had not yet answered. This was not explicitly prohibited, so strictly speaking they were not cheating. However, by doing so they were able to solve presumably roughly as many questions as other participants plus the extra share scored correctly by chance (wrong answers did not affect income; this was public information, too). I am able to identify the participants in question (because, during the debriefing, they admitted to have applied this strategy) and I can also be sure that this was not the case for any other participant (as their answer sheet would have revealed such a strategy even if they had not told me). However, I cannot identify exactly how many questions “cheaters” were able to “honestly” solve and how many they simply guessed correctly. Therefore, I am unable to correct their score, which is why I decided to exclude them completely from the analysis of the participants’ performance. Three of these cases (all male task-A players) occurred in the familiar group, and one (a male task-B player who “added” guessed answers to his partner’s multiple-choice-answers when copying them into the spreadsheet) in the unfamiliar group.

²⁶I have conducted further tests: Recalling the descriptive statistics provided on participants in 4.4 one could suspect that the higher share of PhD students in the familiar group might pose a problem in terms of productivity differences. However, testing the mean scores of PhD students against other participants’ also confirms no significant differences in average performance.

ticipants who play the role of “provider” and have to earn income for two people increase their effort. And indeed, when testing the cooperators’ performance (across both groups) against non-cooperators’, I find a significant difference: Cooperators on average score 2.36 more answers correctly.²⁷ This is consistent with other experimental studies demonstrating a positive effect of higher piece-rates on performance (for an overview see ?).

6.2 Trust Level

Perhaps not surprisingly, I find familiar and unfamiliar participants to differ substantially in their average reported trust level: Paired up with their partners, players report significantly higher trust ($M=9.12$; $SE=2.27$) than unfamiliar partners ($M=5.89$; $SE=2.65$)²⁸, on a scale of 0-10, where 0 represents not trusting one’s partner at all. However, no effect of gender on the trust levels can be observed, and, more specifically, no interaction between gender and familiarity—i.e., the increase in trust when playing with one’s partner as opposed to playing with a stranger does not differ for females and males—which rules out trust as a potential explanatory variable that could account for the difference in familiar and unfamiliar females’ behaviour. However, it is possible that an increase in trust toward one’s partner, even if it is quantitatively the same, influences women’s behaviour in different ways than men’s.

6.3 Differences in Attitude and Personality Trait Measures

Among the various personality and attitude measures collected, very few significant differences were found, neither between sexes nor between unfamiliar and familiar participants. Table 7 summarizes the measures and focuses attention on the same-sex comparison of familiar and unfamiliar participants, in order to examine whether familiar females display a selection: One can easily see that the means do not differ significantly for familiar and unfamiliar females in any of the tested characteristics.²⁹

This is important to highlight for two reasons: (1) The lack of significance in personality and attitude measures is very relevant in supporting the claim that females in the treatment group who played with their partners do not form a special selection. (2) Personality trait measures have recently gained in popularity for explaining (gender) differences in labour-market outcomes (see for example ???). The fact that they do not seem to govern participants’ decisions on labour division in this experiment also emphasizes that they should be treated with a reasonable degree of caution. Some studies partially ascribe the gender gap in labour-market performance

²⁷ $W=1666.5$, $p=.05$. Moreover, it is important to note that, among cooperating task-A players, performance does not differ significantly by gender.

²⁸ $W=1183.97$; $p<.001$

²⁹ Again, I have conducted further tests to confirm that there is no significant interaction effect between gender and familiarity that could explain the difference in the behaviour between unfamiliar and familiar women.

to a self-selection driven by differences in personality traits, but they might very well display a *result* of gendered labour division instead (compare also the critical examination of reversed causality between labour-market outcomes and locus of control by ?). At least in the study described here, participants did not exhibit any significant differences in the personality trait measures that are often assumed to determine preferences for form and intensity of labour-market activity (such as locus of control, need for challenge or affiliation, traditional gender role attitudes). I will therefore briefly describe what these measures intend to capture.

Table 7: Attitude and Personality Trait Measures

| Trait or Attitude Measure | Gender | Familiar | Unfamiliar | F-U |
|----------------------------------|--------|--------------|--------------|--------|
| Traditional gender role attitude | | | | |
| | Male | 1.6 (.68) | 1.4 (.6) | .2 |
| | Female | 1.3 (.47) | 1.45 (.76) | -.15 |
| Locus of control (ext.) | | | | |
| | Male | 12.75 (1.52) | 12.15 (2.39) | .6 |
| | Female | 13.2 (2.21) | 12.9 (2.53) | .3 |
| Locus of control (int.) | | | | |
| | Male | 10.85 (1.87) | 10.9 (2.14) | -.05 |
| | Female | 11.3 (1.66) | 10.5 (3.09) | .8 |
| Challenge | | | | |
| | Male | 6.68 (1.16) | 6.2 (1.32) | .48 |
| | Female | 7.1 (.72) | 6.8 (.95) | -.3 |
| Affiliation | | | | |
| | Male | 6.95 (1.77) | 7.05 (1.0) | -.25 |
| | Female | 7.45 (.89) | 7.25 (.91) | .2 |
| BIG 5 | | | | |
| Confidence in success | | | | |
| | Male | 3.35 (.67) | 2.95 (.51) | -.4** |
| | Female | 3.3 (.66) | 3.32 (.47) | -.02 |
| Feeling depressed sometimes | | | | |
| | Male | 1.8 (.70) | 2.45 (.94) | -.65** |
| | Female | 2.65 (.88) | 2.6 (1.39) | .05 |
| Feeling worthless when failing | | | | |
| | Male | 1.95 (.60) | 2.45 (.89) | -.5** |
| | Female | 2.2 (1.51) | 2.32 (.89) | -.15 |
| Doubts about own competence | | | | |
| | Male | 2.00 (.86) | 2.35 (.88) | -.35 |
| | Female | 2.2 (1.01) | 2.47 (.7) | -.27 |
| Determining events in own life | | | | |
| | Male | 3.35 (.59) | 3.25 (.79) | .1 |
| | Female | 3.1 (.97) | 2.75 (.97) | .35 |

Note: Group means for 4-point scale answers (standard deviation in parentheses), where a higher number indicates a greater tendency to agree with or (in case of challenge and affiliation) to rate a given item as important. Locus of control and challenge and affiliation are indices containing several items, see 6.3.2 and 6.3.3 for details. All differences in means are tested with a Mann-Whitney test. Significance indicated at * 10%, ** 5% and *** 1%- level.

Read: Familiar males' mean answer to the statement "It is a man's duty to earn the money, while the woman takes care of household and family." is 1.6, which means that, on average, they stated to "disagree" with the statement slightly but insignificantly less often than unfamiliar males (1.4 mean).

6.3.1 Gender Role Attitudes

Participants were asked to indicate their agreement to the statement "It is a man's duty to earn money while the woman takes care of household and family" on a four-point scale (strongly disagree – strongly agree). If women in the treatment group represented a selection of females who prefer traditional gender arrangements, we would expect them to agree more often with this statement. However, this is not the case. One might then hypothesize that this mechanism could work indirectly through their male partners who might, if they have more traditional attitudes towards gender-roles, subtly pressure their female partners into playing the assisting task B. However, the same comparison for males reveals, that they do not differ significantly in their average agreement with the statement either .

6.3.2 Locus of Control

Locus of control (LOC) is a psychological measure that intends to capture how much a person believes they are able to actively influence the course of and the events in her life. More precisely, the construct comprises two measures: The external LOC is an index of items³⁰ that gauges whether a person considers his life to be governed *externally*, i.e., a high external LOC ostensibly means that a person judges his own ability to exert influence in his life to be very limited. The internal LOC is an index constructed, correspondingly, from items³¹ intended to capture the opposite view, i.e., a person considers her life is governed *internally*. Thus, a high internal LOC supposedly coincides with the perception that life courses and events are mainly determined through one's own actions and decisions. Following these definitions, one might hypothesize that females who select themselves into a relationship are more likely to exert a higher external LOC, or a lower internal LOC, respectively,³² and therefore are more likely to avoid responsibility (e.g., providing for themselves and their partners by performing task A) and instead try to delegate it to their partners. However, I again fail to detect significant differences between men and women, familiar and unfamiliar partners, or between the subgroups. This holds true not only for testing the indices (as presented in table 7) but also when testing each individual item within the index.

³⁰In particular, it equals the sum of scores assigned to five different statements (items (k)-(o) in the questionnaire, see appendix B).

³¹The index sums up the scores for items (g)-(j) in the questionnaire.

³²Precisely this constellation, a high external and a low internal LOC, is often hypothesised to be responsible for lower labour market outcomes of women, for an overview see ? I will get back to this point in the discussion provided in section 7

6.3.3 Challenge and Affiliation

Two measures that are often linked to labour market success are “challenge” and “affiliation” indices. In general, people who score high on the challenge items are thought to have a higher drive for achievement and are hence more career-oriented (i.e., they find it important or very important to “accomplish something worthwhile” and to have “the chance at getting a promotion or a better job”³³). People who score high on the affiliation items are assumed to be more agreeable and have a higher need for affiliation (they tend to rate “the friendliness of the people one works with” and “the respect of other people” important or very important³⁴). Again, one could speculate whether familiar and unfamiliar females differ with respect to these characteristics, such that familiar females are less challenge-seeking than unfamiliar females relative to their partners and/or more affiliation-seeking and therefore prefer to “assist” their male partners more often rather than “perform” themselves. Again, surprisingly, no significant differences among the groups can be detected in the sample.

6.3.4 Big Five & Self-confidence

The “standard” personality measures that aim to quantify the degree to which a person exhibits certain character traits are the so-called “big five”. A number of behavioural researchers ascribe substantial explanatory power to predicting a wide variety of outcomes to these measures, such as happiness, health, and especially labour market outcomes (for an overview see for example ??). However, as in the case of locus of control, most studies have not been able to address reversed causality issues adequately (?). Apprehensions of familiar females displaying a certain selection—e.g. because women in a relationship may display systematically lower levels of self-confidence and thus be more likely than unfamiliar females to estimate their own ability, i.e. productivity, as inferior to their partner—are not supported by the data. In particular, the items addressing participants’ self-confidence, i.e., the statements "I am confident I get the success I deserve in life", "Sometimes when I fail I feel worthless", and "I am filled with doubts about my competence", warrant closer examination. Yet again, there are no significant differences between the female groups (and also not in comparison to their male partners, not shown). There are some small differences between familiar and unfamiliar males: familiar males are, on average, less likely to feel depressed and to feel worthless when failing; and they are more likely to be confident to get the success they deserve in life . This might be a potential mechanism that calls for further research. However, these results certainly do not support the hypothesis that familiar females display a particularly under-confident selection and hence shy

³³Items (p) and (q) on the questionnaire, see appendix B.

³⁴Items (r) and (s).

away from the paid task.

6.4 Selectivity of the Student Sample

Further concerns might derive from the selectivity of student subjects who may be viewed as not representative of the “true” couple population. In addition to the standard reserves toward student samples used in economic experiments (for a thorough discussion, see ?), I believe that, due to the increasing popularity of experimental economics and the attention the field is receiving, another potential source for biases may evolve: A growing subgroup of students systematically uses experiment participation as an additional income source. Some of them have become “professional participants”, usually with a certain awareness for the subject of behavioural and experimental economics. Just as gender can be constructed in the lab (?), the laboratory homo-economicus might be constructed in a similar way: When participants believe they are expected to behave according to economic textbook predictions, they might strive for conformity with such a “homo-economicus-stereotype” in making their decisions within the experimental context. As a result, students might be more likely to adjust their behaviour according to standard economic predictions,³⁵ thereby tainting the results from the lab.

In the special case of the experiment presented here, the general dependency on student subjects combined with students’ relatively high familiarity with the subject in particular, may arguably strengthen the results. First, more than half of all participants claim to have taken at least one module in economics. This might have actually helped disguising the actual research question, as they knew that trust games and dictator games usually aim to examine participants’ willingness cooperate or defect. However, as most participants confirmed during the debriefing, they did not expect the underlying research question to be concerned with gender differences and couples. Second, the dependence on student participants is often considered problematic because the population the sample is drawn from does not necessarily coincide with the true population and its social structure; in this case it disproportionately represents very young and highly educated individuals. In case of the research question underlying this study, however, this particular over-representation, again, might actually strengthen the results: While I examine the behaviour of a selection with a presumably very high career- and labour-market orientation, I *still* find gender-specific labour division.

Besides age and education level, the couples in the sample are also certainly not representative of the whole population of couples in terms of relationship duration. Almost half of all familiar couples were not (yet) cohabitating, and many had not even been together for a year.³⁶

³⁵Or deliberately do the opposite if they construct their identity as explicitly non-conform with standard economics predictions. Either way, the effect might be that the observed behaviour deviates from how they would behave had they not this awareness.

³⁶Precisely, half of all familiar couples reported a time-span of 19 months or less when asked for the duration

It thus seems fair to assume that most of the participating couples had not yet established a sound partnership (in the sense that most of them did not live in a common household). This supports the notion that, if anything, the gender effect I find might be biased downward, since for these couples, behaviour might actually be driven by relationship-specific gender stereotypes in habits and routines to a lesser extent than in the “true” underlying population of all heterosexual, employable European couples.

7 Discussion

The observed difference in female behaviour when playing with a stranger as opposed to playing with their real partners does not seem to be driven by differences in individual personality and attitude characteristics. Thus, it seems unlikely that the results are driven by a self-selection problem in the samples. Even the level of trust, which increases substantially when comparing familiar and unfamiliar partners, does not show any variation by sex within the familiar group. Of course, it is possible that trust affects male and female behaviour differently, but further research is needed to verify this. Qualitative, structured follow-up interviews could provide a fruitful way to explore participants’ motives and the driving factors for their behaviour.

Although an analysis that merely relies on non-parametric tests of group means is necessarily limited, the fact that women in the familiar and unfamiliar group do not differ in means with respect to personality trait measures, is important to highlight. Familiar women are more likely to play the unpaid task than their male partners *even though* the design of the two tasks and their presentation did not provide them with objective measures to infer comparative advantages. At the very least, as the comparisons of personality and attitude measures to unfamiliar females show, they should not have more reason to assume productivity differences relative to their male partners.

If men and women in the familiar condition do not differ in their characteristics, neither with respect to personality traits, labour-market orientation, nor gender role attitudes, how can the difference in their behaviour be explained? One possible explanation is gender priming. Studies demonstrate how participants identify with gender-stereotypes when they are cued (even subtly) and “adjust” their behaviour, often subconsciously, accordingly. The evidence is rich. For example, ? find that women, who were asked to indicate their gender before they rate their verbal and mathematical abilities, appraise their verbal skills better and their mathematical skills worse than members of the control group that were asked to indicate their ethnicity. Using economic incentives, ? show that whether a specific task activates a positive or a negative stereotype threat alters women’s (and men’s) willingness to compete significantly:

of their relationship.

When the task is perceived as “female”, women are more prone to enter competition. ? also shows that gender priming can affect both willingness to compete and performance. These findings illustrate how participants, when confronted with a stereotype, also show a greater tendency to exhibit behaviour consistent with that stereotype. Applying these insights to this study, the question becomes: Were familiar players more likely to be affected by “priming” than unfamiliar players?

Indeed, by construction of this experiment, a priming effect might have been at work: Participants who were recruited for the control group did not know in advance that the research question was in any way related to gender or couples. Many of them, as it turned out during the debriefing, just assumed it was a “standard” behavioural economics experiment designed to test *whether* they cooperate or defect. Many openly admitted that they had not even considered the possibility that I was looking into *how* they cooperate. Eventually, many of them did not even pay much attention to the fact that they were playing with a partner of the opposite sex. For familiar couples, on the other hand, it was inevitably revealed that their relevant characteristic qualifying them as study participants was their relationship with each other. Even though this background may not have made them consciously aware of a gender-related research question (many of them also believed it was attempting to analyse their cooperation and opportunism strategies), it might still have imposed a much stronger cue to activate their identity as “man” or “woman”. This may have caused a tendency to behave according to the stereotype in an effort (whether conscious or unconscious) to comply with social norms.

From an economics perspective one might argue that non-conformist behaviour when facing a stereotype is costly for the individual and hence it might be perceived as optimal to behave in line with the stereotype, as long as the costs (in this case: financial independence within the experiment) do not exceed the costs for acting against the stereotype (here: a woman taking on the “provider role” within the experiment). ? have attempted to model such costs as “identity-utility”-loss. The studies of ? and ? cited earlier provide empirical support for this notion: the desire to comply with gender-specific social norms in heterosexual households may indeed have measurable effects on how males and females divide household work. Women who violate the ruling social norms by contributing a larger share to the household’s income than their male partner must “pay” a penalty for their violation by also (re-) increasing their share in housework.

Other examples supporting the notion of costs for non-stereo-typical behaviour or deviating from ruling social norms can be found in the literature on divorce. For example, ? provide further insights on why and how conformity with social norms might be beneficial for partners: With a longitudinal survey dataset from the U.S., they show that for women, changes from

a traditional gender role attitude to a more progressive one coincide with a decline in their marital satisfaction level, whereas for men, the effect works in the opposite direction. ?'s (?) findings establish a link between the family model favoured by a country's policy at the macro-level, the practiced gender equality in formal and informal labour division at the micro-level, and divorce rates. Comparing a country where policy favours the male bread-winner model (Germany) to a country where national policy does not actively promote a specific family model (U.S.) allows her to draw the following conclusions: Couples deviating from the politically and institutionally supported family model in Germany (i.e., practice *more* gender equality) run a higher risk of divorce. On the contrary, in the U.S., relationships were more stable when labour division between spouses took on a more egalitarian form.

Interpreting these results relative to the findings in this experiment offers two (possibly complementary) explanations: Women in the familiar condition might (subconsciously) expect some form of 'penalty' for behaviour perceived as non-conforming with social norms and stereotypes. For example, in line with the argument put forward by ?, one such penalty for non-compliance might arise via a threat on females' individual level of satisfaction with their relationship. Following ?, the perceived threat when not behaving according to the prevailing social norms might (alternatively, or even additionally) stem from an increased risk for the relationship's failure.

The possibility that gender differences might be constructed in the laboratory (?) may also be extended to the real world: If members of a familiar couple are more aware of their gender identity and therefore form their decisions under this influence, this is presumably true as well for decisions outside the lab. If gender stereotypes are inescapable in every-day life and influence decision outcomes by providing benchmarks for socially acceptable behaviour, then in the lab, as ? put it, they might actually "provide a useful proxy for the real world".

Examining perceived threats to the relationship or satisfaction within the relationship could ostensibly help assess men's and women's motives when dividing the tasks. These motives, however, can hardly be elicited by a standardized, anonymous questionnaire alone, which once more highlights the potential benefits of incorporating qualitative methods into the experiment. If social norms drive the differences in behaviour, then in the current design, it is almost impossible to capture these experimentally. Therefore, further investigation of this topic in the lab should integrate structured; qualitative follow-up interviews.

8 Conclusion

In this paper, I presented experimental findings on specialization decisions and labour division between partners (20 heterosexual couples and 20 pairs of strangers) who played a two-stage game. Paired up either with their real partner or a stranger of the opposite sex, participants were asked to make a joint decision on how to play the game in the first stage: They had to choose whether (1) both would complete a performance-based paid task (task A); or (2) one of them would perform an unpaid assisting task (task B), thereby tripling the pay-rate for the task-A player. In the second stage, after completing their tasks, each participant was informed about her payment in private and asked to make an individual decision on investing his income (partly) in a common pool, where it was increased by 20% and then split equally between the two players.

The main results, in short: (1) All familiar couples cooperate, i.e. they play the game in the A/B combination. In the control group, a considerable share (60%) of unfamiliar participants cooperate in the same manner, while the rest chooses to play the combination A/A. For familiar couples, their greater willingness to cooperate at both stages rewards them with higher overall pay-offs.

(2) When playing with their partner, women are significantly more likely to give up their income autonomy and perform task B as opposed to the control group with unfamiliar partners, where the majority chooses to perform task A. For men, no such differences are observed, which suggest that their behaviour is not affected by familiarity with their female partner. This is confirmed by comparing only cooperators in both groups: Familiar females' probability of performing the unpaid task is significantly larger than 0.5, whereas among unfamiliar female cooperators, no such deviance can be observed. Hence, unfamiliar cooperating women and men completed the unpaid task with equal probability, consistent with economic theories on household-specialization decisions. Therefore, when the partners lack objective measures to detect relative productivity differences, only strangers divide tasks as predicted by the new home economics or cooperative bargaining models, whereas within couples, gender stereotyping seems to drive the decision.

(3) An analysis of income distribution over the two stages reveals the costs and benefits for realizing efficiency gains through specialization. The gendered pattern of labour division among familiar couples accounts for the gap that opens up in the partners' incomes at stage 1. The efficiency gains familiar couples realize by design come at the cost of financial autonomy of one of the partners, but the costs are not shared equally between men and women: Because female participants perform the unpaid task with a probability greater than one half, after the first stage, they receive (on average) a significantly lower income compared to familiar males,

as well as unfamiliar females. These gaps close at the end of stage 2 because their partners generally behave reciprocally and ‘reward’ the assisting task-B-player by investing into the common pool. As a result, it is the familiar male who predominantly determines the familiar female’s income; they act as “providers”. Furthermore, they enjoy the benefits of specialization and pooling: After stage 2, the income gap between familiar and unfamiliar men is the only one that retains significance and economic relevance.

The analysis of potentially confounding variables supports the robustness of the findings. No significant differences could be detected with respect to personality traits or attitude measures. Trust might provide a simple explanation for *why* cooperation evolves; not surprisingly, familiar participants report a significantly higher level of trust toward their partners. However, female trust levels do not differ from men’s, neither in the familiar nor in the unfamiliar group. So if trust is the driving force behind cooperation, it is still unclear *how* it is driving which form of labour division couples choose, i.e., the gendered patterns in specialization. Anticipation of gender-specific productivity differences should not drive the results, as an analysis of various personality traits and attitude measures has revealed that familiar females do not differ systematically from unfamiliar females. Therefore, even if women have biased beliefs about the productivity distribution by gender (i.e. perceive the male as more able), there is no indication that familiar females’ beliefs exert a stronger bias in this respect than unfamiliar females’ do. Thus, they should not have more reason than unfamiliar females to assume productivity differences relative to their partner.

Overall, the results point to some blind spots in conventional economic theory and the explanations it provides for gender gaps in various individual labour market outcomes. Theories that relate females’ reduced level of participation to a) women’s (anticipation of a) lower return for their participation compared to men or b) to a self-selection because of “female” preferences (or a combination of the two), do not provide a sufficient explanation for the differences in behaviour between familiar and unfamiliar females in this experiment.

It seems plausible to consider social norms and the corresponding gender stereotypes to play a major, presumably subconscious role in driving participants’ behaviour. Whenever framed within a social context that activates gender stereotypes (and heterosexual relationships might reasonably be claimed to create such a context), females—and eventually males, too—may be inclined to adjust their decisions in order to comply with the ruling social norms.³⁷

³⁷This is even more so the case, when individuals do not have access to complete information and potential outcomes of a decision are not entirely foreseeable. In the real world, the costs of deviating from social norms, and the benefits of complying, may weigh in immediately, whereas the costs for conform behaviour (in this case, women giving up financial autonomy when a man acts as provider) often occur in the future; employability decreases with each year spent outside the labour market, and labour-market absence is associated with less accumulated savings and social insurance entitlements and, consequently, a higher risk for poverty.

This suggests that even when expected returns from labour market activity are distributed equally between men and women, the probability to specialize in unpaid household-related labour might not be. The effect seems to be driven by social norms regarding the appropriateness of specialization in one of the two tasks for the different sexes. With respect to real-world decisions, the findings indicate that social norms and gender stereotypes could account for the gender gap in family-work and labour-market participation. This has direct policy implications, as one might argue that unequal labour division will continue to hinder female labour market success, despite increasing female educational success (for example), unless the potential efficiency gains that intra-household labour division promises become sufficiently small. Examples of how this could be achieved include, on the one hand, the abolition of policy instruments that encourage a breadwinner model explicitly (e.g., through differential taxation of spouses' incomes or forms of direct monetary incentives to substitute family-related market-services with home-production). On the other hand, it also requires the availability of affordable household-related services, such as childcare, to ensure that home production and labour division within households become less profitable.

References

A Appendix A: Experimental Instructions

You are playing this game with your partner. There are two stages to this game in which you can both make different choices.

[Note: Your show-up fee of 4£ will stay completely unaffected and will be paid out regardless the choices you make. The following instructions only refer to the earnings you can make on top of that.]

Stage 1

You and your partner can both choose between two different tasks.

- Task A: A quiz, pays off 30p per correct answer.
- Task B: Assisting to task A, will be performed afterwards. It does not yield a pay-off in itself, but it increases the pay-off for the task A to 90p per correct answer.

You can either both choose to do task A independently or one of you can do task A while the other one does the assisting task B.

Examples:

- (1) Assuming both of you do task A, if one of you answers 10 questions correctly, he/she will be paid out £3. If the other one answers 11 questions correctly, he/she will be paid out £3,30.
- (2) Assuming one of you does task A and the other one performs the assisting task B afterwards, if the one who does tasks A answers 10 questions correctly, he/she will be paid £9. The other one will receive nothing...

Important note: You will receive your pay-off in private. Your partner will not get to know how many questions you answered correctly, regardless of which task he/she performs. This means he/she does not know how much you earned at this stage and will also not find out later on.

Stage 2

In case you received a pay-off in stage 1, you can now decide how much of it you want to invest into a common pool. You can choose any sum between nothing and everything you received at stage 1. The amount invested into the pool will be increased by 20% and hereafter be equally distributed between the two of you.

Examples:

- (1) One of you has done task A, the other one task B. Only the one who has done A receives a payoff, say £9. If you invest all of it into the common pool, this sum will be increased by 20%. Now there is £10.80 in the pool which will be distributed equally between the two of you, so that each receives £5.40.
- (2) Both of you have done task A. Let's assume both of you receive £3. One of you invests all of it while the other one decides to invest £2. There are now £5 in the pool that will be increased by 20% to £6. Split in half, each of you receives £3. The one of you that invested all your pay-off hence has made £3 pounds in total, while the other one who kept £1 now has £4.

Testing your understanding:

- (i) Assume both you and your partner do task A. You answer 5 questions correctly. How much money do you receive after stage 1 is completed?
- (ii) Assume you do task A and your partner does task B. You answer 9 questions correctly. How much money do you receive after stage 1 is completed?
- (iii) Assume you do task B and your partner does task A. Your partner answers 11 questions correctly. How much money do you receive?
- (iv) Assume you have been paid out £5 after stage 1. If you invest all the money in the common pool and your partner invests £5, too, how much money will you be paid out after stage 2 is completed?
- (v) Assume you have been paid out £5 and your partner did not get any pay-off because he performed the assisting task B. Assume you invest all your money in the common pool, how much will you be paid out after stage 2 is completed?

B Appendix B: Questionnaire

Anonymous Questionnaire

Please complete the following questionnaire carefully and thoroughly. The quality of your answers is of high importance for the validity of this study.

A. Civil Status

(a) Date of birth

(b) Please indicate your marital status

married

single

cohabiting

separated

divorced

(c) Are you currently in a relationship?

yes no (*Continue with question 10.*)

(d) Since when are you and your partner a couple?

Please indicate month and year:

(e) Are you and your partner living together?

yes no (*Continue with question 8.*)

(f) Since when are you and your partner living together?

Please indicate month and year:

(g) How many mutual children do you and your partner have?

children (*if 0, continue with question 9*)

- (h) How many of your mutual children are
- Younger than 6 years:
 - Older than 6 years:
- (i) Where were you born?
- in the UK
 - outside the UK
- (j) Were your mother or your father born outside the UK? yes no

B. Education and Employment

- (a) Are you currently a student?
- Bachelor
 - Master
 - PhD
 - does not apply
- (b) Course of study:
- (c) Did you ever take any courses in economics?
- yes no
- (d) What is your current employment status? (multiple ticks possible)
- full-time employed
 - part-time employed
 - full-time education
 - part-time education
 - retiree
 - on parental leave
 - home-maker

C. Financial situation

(a) On average, how much money per month do you have at your disposal?

- 0 – 500£
- 501 – 1.000£
- 1.001 – 2.000£
- 1.001 – 2.000£
- 2.001 – 3.000£
- More than 3.000£
- I don't know

(b) Do you know how much money, on average, your partner has at his/her disposal?

- 0 – 500£
- 501 – 1.000£
- 1.001 – 2.000£
- 1.001 – 2.000£
- 2.001 – 3.000£
- More than 3.000£
- I don't know
- Does not apply

D. General Attitude

To what extent do you agree with the following statements?

(a) "I am confident I get the success I deserve in life."

- I strongly agree.
- I rather agree.
- I rather disagree.
- I strongly disagree.

(b) "Sometimes I feel depressed."

- I strongly agree.
- I rather agree.
- I rather disagree.
- I strongly disagree.

(c) "Sometimes when I fail I feel worthless."

- I strongly agree.
- I rather agree.
- I rather disagree.
- I strongly disagree.

(d) "I am filled with doubts about my competence."

- I strongly agree.
- I rather agree.
- I rather disagree.
- I strongly disagree.

(e) "I determine what will happen in my life."

- I strongly agree.
- I rather agree.
- I rather disagree.
- I strongly disagree.

(f) "It is a man's duty to earn the money, while the woman takes care of household and family."

- I strongly agree.
- I rather agree.
- I rather disagree.
- I strongly disagree.

(g) “Becoming a success is a matter of hard work; luck has little or nothing to do with it.”

- I strongly agree.
- I rather agree.
- I rather disagree.
- I strongly disagree.

(h) “In the long run, people get the respect they deserve in this world.”

- I strongly agree.
- I rather agree.
- I rather disagree.
- I strongly disagree.

(i) “When I make plans, I am almost certain I can make them work.”

- I strongly agree.
- I rather agree.
- I rather disagree.
- I strongly disagree.

(j) “What happens to me is of my own doing In my case, getting what I want has little to do with luck.”

- I strongly agree.
- I rather agree.
- I rather disagree.
- I strongly disagree.

(k) “Many of the unhappy things in people’s lives are partly due to bad luck.”

- I strongly agree.
- I rather agree.
- I rather disagree.
- I strongly disagree.

- (l) "Without the right breaks, one cannot be a good leader."
- I strongly agree.
 - I rather agree.
 - I rather disagree.
 - I strongly disagree.
- (m) "Who gets promoted often depends on who was lucky enough to be in the right place first."
- I strongly agree.
 - I rather agree.
 - I rather disagree.
 - I strongly disagree.
- (n) "Most people do not realize the extent to which their lives are controlled by accidental happenings."
- I strongly agree.
 - I rather agree.
 - I rather disagree.
 - I strongly disagree.
- (o) "Many times I feel I have little influence over the things that happen to me."
- I strongly agree.
 - I rather agree.
 - I rather disagree.
 - I strongly disagree.
- (p) How important is the chance you have to accomplish something worthwhile?
- Very important.
 - Rather important.
 - Rather unimportant.
 - Not important at all.

(q) How important is your chance at getting a promotion or getting a better job?

- Very important.
- Rather important.
- Rather unimportant.
- Not important at all.

(r) How important is the friendliness of the people you work with?

- Very important.
- Rather important.
- Rather unimportant.
- Not important at all.

(s) How important is the respect you receive from the people you work with?

- Very important.
- Rather important.
- Rather unimportant.
- Not important at all.

E. Relationship

Finally, please answer the following questions concerning your relationship.

(a) How do you divide jointly arising housework (e.g. child-care, procurements, household, repair work etc.)?

- I take care of everything by myself.
- It is predominantly me who takes care of these things.
- My partner and I take care of these things to equal shares.
- It is predominantly my partner who takes care of these things.
- My partner takes care of everything by him-/herself.
- Each of us takes care of his/her own business; we barely face jointly arising housework.

(b) To what extent do you agree with the following statements:

i. "I believe in a long-term future for the relationship with my partner."

I strongly agree.

I rather agree.

I rather disagree.

I strongly disagree.

ii. "There are a lot of people who would consider me an attractive partner."

I strongly agree.

I rather agree.

I rather disagree.

I strongly disagree.

(c) On a scale from 1 to 10, how satisfied are you with your relationship? Please tick:

(very unsatisfied) 1 2 3 4 5 6 7 8 9 10 (very satisfied)

F. Additional Question

(a) On a scale from 1 to 10, how much do you trust your partner? Please tick:

(not at all) 1 2 3 4 5 6 7 8 9 10 (completely)

(b) Please state your partner's birthday: