Distributive Justice in Marriage: Experimental Evidence on Beliefs about Fair Savings Arrangements

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<u>Objective</u>: This study examines fairness perceptions of experimentally manipulated savings arrangements in couples (i.e., distribution of control and ownership of monetary savings) to identify distributive justice principles in marriage.

<u>Background</u>: Theoretically, competing norms about individual ownership rights (equity principle) and marital sharing (equality principle) in interaction with gender ideology (entitlement principle) may explain how individuals perceive the fairness of different savings arrangements, but these explanations have not been convincingly examined in previous research.

<u>Method</u>: In a nationally representative factorial survey experiment, implemented in the German GESIS Panel, 3,948 respondents evaluated the fairness of randomly presented savings arrangements (N = 19,648 evaluations).

<u>Results</u>: Respondents rated equal control as more important than equal ownership to establish fairness in marriage. The ownership of savings does not seem to be directly linked to control, providing evidence against the equity principle. Inequality in ownership is rated fairer if it is in favor of the husband, whereas inequality in control is rated fairer if it is in favor of the wife. This suggests that gender is an ascriptive characteristic according to which resources should be allocated (entitlement principle).

<u>Conclusion</u>: The results indicate that the ideal of marital sharing is widespread, but the ideal is rather accomplished by equal control than by equal ownership. In addition, the results show that perceptions of inequality in marriage are still gendered.

Keywords: Fairness and equality, Gender, Experimental methods, Family resource management, Family roles, Marriage

How valued resources should be distributed is a major question in society in general, but also in the private sphere including marriage. Sphere-specific distributive justice principles morally guide individuals on how to distribute resources. Little is known about which justice principles individuals apply within marriage. Generally following Deutsch (1975), the equity principle (i.e., allocating rewards proportional to inputs) is dominantly applied to enhance productivity, whereas the equality principle (i.e., allocating rewards equally neglecting inputs) is dominantly applied to foster enjoyable relationships and promote harmony. Within marriage, the entitlement principle (i.e., allocating rewards according to gender) may also be an important justice principle (Hülle, Liebig, & May, 2018).

Prior research has primarily focused on couples' outcomes of distributive justice processes by studying financial arrangements and the treatment of income in marriage (for a review, see Bennett, 2013). However, studying behaviour can only partially explain which justice principles spouses apply in marriage (Ashby & Burgoyne, 2008; Pepin, 2019). For example, observed financial arrangements do not necessarily reveal intentions to share resources (Burgoyne & Sonnenberg, 2009). Having a joint bank account may not indicate that couples apply the equality principle as individual access to the account might be unequal following the equity principle (Elizabeth, 2001). Further, financial arrangements do not always reflect both spouses' norms and attitudes. On the one hand, financial arrangements may not be explicitly negotiated and rather evolve unconsciously for practical reasons and convenience (Addo, 2017). On the other hand, if spouses' norms conflict, the spouse with more financial resources may enforce her or his preferred financial arrangement (Blood & Wolfe, 1960).

In this study we experimentally examine if individuals apply the equality, the equity, or the entitlement principle when rating the fairness of different savings arrangement of fictitious couples. Here, savings arrangements refer to the distribution of control (i.e., who has the final

say in important financial decisions) and ownership (i.e., in which name savings are held) of monetary savings between spouses. Revealing justice principles in marriage helps examining the subjective relevance of within-couple inequalities in savings. In addition, we can answer the question if individuals would feel fairly treated under different saving arrangements, which is essential for spouses' well-being and the stability of marriage (Burgoyne & Lewis, 1994).

We focus on savings as an important component of wealth. Whereas earnings are flows of money, which can be clearly ascribed to each spouse, wealth is a stock of assets, where sources are more diffuse. Therefore, distributing control and ownership of wealth likely embraces more ambiguous fairness considerations than distributing income.

By studying savings, we can address an empirical puzzle regarding substantial withincouple wealth inequalities in Germany. Whereas the formal ownership of wealth is unequally distributed, informal control of finances is more equally distributed between opposite-sex partners in Germany. For instance, women own about €33,000 less personal wealth than men in married and cohabiting couples (Grabka, Marcus, & Sierminska, 2015). However, in over 80% of the couples, respondents indicate that the partners share the last word in important financial decisions (Lott, 2009). If individuals prioritize equal control over equal ownership, this might explain this discrepancy.

Our study contributes in several ways to debates in the literatures on distributive justice and on money in marriage. The overarching aim of this study is to identify distributive justice principles in marriage. First, we aim to contribute to the debate about whether equality or equity is the dominant justice principle in marriage. Prior research showed experimental evidence that individuals apply both the equity and the equality principle when evaluating the fairness of housework and income allocations within couples (Auspurg, Iacovou, & Nicoletti, 2017; Burgoyne & Routh, 2001; Pepin, 2019). We test if individuals apply those two

principles also when distributing the control and ownership of savings and ask if equity and equality are two equally relevant justice principles in marriage. Further, as prior research is divided over the question if men are more likely to apply the equity and women the equality principle (Auspurg, Iacovou et al., 2017; Burgoyne & Lewis, 1994), we exploratively examine differences in justice evaluations of male and female respondents.

Second, by additionally considering entitlement as a third justice principle and testing if gender is a characteristic according to which resources are distributed, we aim to contribute to the debate about gendered money in couples (Bennett, 2013). Prior research showed that at least in older cohorts, money management is an important part of gendered identities (Bisdee, Daly, & Price, 2013). We contribute to this debate by asking if individuals perceive the fairness of inequalities in control and ownership in favor of the husband differently than inequalities in favor of the wife.

Last, we aim to respond to the question of how couples reconcile the competing norms of autonomy and sharing in marriage, which is one of the most contested issues in the literature on money in marriage (Bennett, 2013). Prior experimental research showed that equality is an important ideal in marriage (Burgoyne & Routh, 2001; Pepin, 2019). However, little is known about how individuals would like to establish equality and what marital sharing comprises (Elizabeth, 2001). Equality can be established by pooling financial resources, but also by sharing control over financial resources. We quantitatively test if having separate savings accounts but equal control could be one way to reconcile autonomy and sharing.

We use data from a factorial survey experiment, which was implemented for this study in a nationally representative panel survey in Germany (GESIS Panel, https://doi.org/10.4232/1.13245). Each respondent received five hypothetical situations of a couple with varying degrees of inequality in control and ownership of savings and respondents were asked to evaluate the fairness of these situations. The advantages of

factorial survey experiments are the possibility to disentangle the effect of unequal ownership and unequal control on fairness evaluations and to compare their relative importance independently of confounding characteristics of respondents. Thus, the GESIS Panel offers high external and internal validity.

BACKGROUND

To derive our hypotheses about subjective fairness evaluations of couples' savings arrangements, we combine the literature on money in marriage with the literature on distributive justice in marriage. The former emphasizes the conflict of norms between marital sharing and individual ownership rights (Bennett, 2013). In terms of distributive justice, the equality principle clashes with the equity principle. Whereas equity refers to allocating rewards proportional to inputs of different kind (e.g., contributions or efforts), equality refers to allocating resources equally neglecting inputs (Deutsch, 1975). On the one hand, spouses earn money individually and even if individual earnings are pooled in one bank account, perceived ownership persists and earnings carry implicit rights to access and control (Burgoyne & Lewis, 1994). Thus, money earned in the labor market serves as input for equity considerations. On the other hand, the norm of marital sharing is prevalent and couples are often treated as one economic unit by the welfare state, which implies that the equality principle should be applied.

In studying justice principles in marriage, differentiating between ownership and control of resources is central. Looking only at ownership does not inform about access to money, sharing of money, perceived ownership, and control. Ownership is concerned only with the legal ownership of savings, i.e., in whose name savings are held. Spouses may have separate savings accounts, joint accounts, or both. Control relates to which partner has the final say in major financial decisions (Pahl, 1983). Control has to be distinguished from money

management, which refers to organizing money and "making ends meet on a day to day basis, within the constraints set by broader strategic decisions" (Vogler, Lyonette, & Wiggins, 2008, p. 119). Although prior research has discussed theoretically and empirically the importance of the control dimension for individuals' well-being and for hidden economic inequality, the fairness of the distribution of control over finances has not yet been studied (Burgoyne, 1990; Joseph & Rowlingson, 2012; Vogler et al., 2008).

Equality principle

In many modern societies, intimate relationships are perceived as "partnerships between equals, based on love, sharing and equality, in which all resources are shared equally, regardless of who contributes what to the household" (Vogler, 2005, p. 3). We therefore expect that respondents will apply the equality principle when evaluating the fairness of couples' savings arrangements. Because the output of equality is not tied to any individual inputs, both equal ownership and equal control are expected to be rated fairer as unequal ownership and unequal control. In this study, we define equal ownership as a couple having a joint savings account, where both spouses legally own the savings equally.

H1: People judge situations fairer in which partners own equal savings (joint account) compared to unequal savings (over all levels of control).

H2: People judge situations fairer if both partners jointly control savings compared to only one partner controlling savings (over all levels of ownership).

Prior research found experimental evidence for the ideal of equal sharing of money and housework within couples (Auspurg, Iacovou et al., 2017; Burgoyne & Routh, 2001; Pepin, 2019). However, it is yet unclear what individuals mean by "equal sharing" of money. If individuals have the equality principle in mind, do they seek for equality in ownership of

money or for equality in control over finances? To establish equality in marriage, having equal control over savings might be more important than having a joint bank account. Whereas a joint account does not guarantee equal informal rights to access money and to decide how to spend it (Burgoyne, 1990), having control over savings enables partners to enjoy these benefits. For example, a non-working partner might not feel entitled to spend the savings although jointly held. However, if partners equally control the savings although the account is hold in only one name, both partners might benefit from this account. Examples could be that the owner of a savings account offers his or her spouse a secondary bank card or that a couple always jointly decides over major financial issues. Thus, we expect the control dimension to be more important for fairness judgments than the ownership dimension.

H3: The control dimension is more important for fairness judgments than the ownership dimension.

Within-couple inequality in the ownership of savings might emerge deliberately or unconsciously, but couples might feel uncomfortable with unequal ownership in both ways as it conflicts with the norm of marital sharing. In contrast, there is a debate on the trend towards individualization of marriage (Yodanis & Lauer, 2014) and prior experimental research showed that individuals endorse some economic autonomy also for married couples (Pepin, 2019). One way how couples could reconcile the competing norms of sharing and autonomy is to keep separate accounts but share control, i.e., take major decisions together. Thus, spouses may want to compensate inequality in the ownership of savings by sharing control over the savings to establish equality. In this way independent money management defines equality in terms of equal control and spouses can putatively realize the norm of marital sharing although maintaining some autonomy (Elizabeth, 2001). We therefore expect that inequality in ownership is rated fairer if control is equal compared to unequal control.

H4: Unequal ownership is judged fairer if both partners control the savings than if only one partner controls the savings.

Equity principle

Qualitative research showed that although the norm of marital sharing is widespread and the interviewed couples often aim to realize the ideal of equal sharing, in practice this was not always achieved (Burgoyne & Lewis, 1994). Instead, perceived ownership of joint money is often based on partners' contributions, leading to (hidden) inequalities in accessing money. In particular, the interplay of ownership and control may evoke equity considerations. Individuals may consider ownership as a valid input factor for the allocation of control. Therefore, they may think that owning more savings should go along with the right to control savings (Burgoyne & Lewis, 1994). Burgoyne (1990), for example, found that partners often only feel entitled to control household money if they have contributed to it. Therefore, we expect individuals to apply the equity principle.

H5: People judge situations fairer in which the partner who owns more savings, also controls the savings than situations in which the other partner controls.

As prior research discussed if men are more likely to apply the equity principle than women (Auspurg, Iacovou et al., 2017; Burgoyne & Lewis, 1994), we exploratively (no hypothesis was preregistered as this is not part of our experimental conditions) examine if male respondents are more likely than female respondents to apply the equity principle when evaluating the fairness of savings arrangements.

Entitlement principle

Traditional gender ideology, i.e., individuals' support for a gendered division of labor, might affect fairness evaluations of couples' savings arrangements via the entitlement principle.

This principle refers to allocating rewards according to gender or other ascribed status characteristics (Hülle et al., 2018). In Germany, traditional gender ideology is still widespread (Grunow, Begall, & Buchler, 2018) and supported by institutional arrangements which, although partly reformed in recent years, still favor male breadwinning (Trappe, Pollmann-Schult, & Schmitt, 2015). Individuals with a rather traditional gender ideology may believe that men have a greater financial competence than women and that it is the role of the husband to be the main financial provider of the family. Nyman (2003, p. 92) termed this idea as "men's 'natural' right to money". The male breadwinner model implicitly induces the normative expectation that the male partner should have control over savings as he is responsible for the financial well-being of the family (Burgoyne, Clarke, Reibstein, & Edmunds, 2006). In terms of the doing gender approach (West & Zimmerman, 1987), men do gender by owning and controlling savings. Women do gender by managing money and in particularly making ends meet. In contrast to control, money management is often perceived as part of housework (Vogler et al., 2008; Yodanis & Lauer, 2007). This implies that money and therefore economic inequality is not gender neutral. Therefore, we expect respondents to believe in men's entitlement to own and control savings.

H6: Unequal ownership is judged fairer if the husband owns more savings compared to the wife (over all levels of control).

H7: Unequal control is judged fairer if the husband has more control compared to the wife (over all levels of ownership).

Prior research found mixed evidence for gendered distributive justice in marriage. Gager and Hohmann-Marriott (2006) found that especially husbands' fairness evaluations of housework are based on the traditional gender-based division of labor. In addition, Braun,

Lewin-Epstein, Stier, and Baumgärtner (2008) found that gender ideology is an important factor to legitimize unequal housework. In contrast, Auspurg, Iacovou et al. (2017) found little evidence for believes that gender is a characteristic according to which housework should be allocated. Regarding money, Pepin (2019) showed that gender is a characteristic according to which money is allocated, but not as predicted by traditional gender ideology. In her survey experiment, respondents were asked to allocate the personal earnings of a couple to individual accounts and a shared account. Among others, the vignettes varied in the levels of both partners' earnings. When the primary earner was female, respondents supported economic autonomy more than when the primary earner was male, i.e., respondents allocated more money to her account when she was the primary earner compared to money on his account when he was the primary earner.

METHOD

Data

To test these hypotheses, we use the GESIS Panel (Version 29.0.0) (Bosnjak et al., 2018), in which a factorial survey experiment on fairness perceptions of couples' savings arrangement was implemented for this particular study. The GESIS Panel offers scientists the opportunity to apply for modules. Proposed modules pass through a peer review procedure and are included in a GESIS Panel wave if approved. The GESIS Panel is a probability-based mixed-mode access panel in Germany. Whereas about two third of the respondents participated online (web-based), one third participated offline (by mail) to ensure representativeness of the German speaking residents aged 18 to 70 years.

3948 respondents of 3992 respondents of the GESIS Panel wave we use have participated in the factorial survey experiment and 98% of the respondents who started the

factorial survey rated all presented vignettes. As each respondent was asked to rate five vignettes, our analyses are based on 19,648 vignette evaluations, which are our unit of analysis.

Factorial Survey Design

Each respondent received five vignettes describing a fictitious couple and its savings arrangement. It was the task of the respondent to evaluate the fairness of the five hypothetical situations. Within these vignettes, the levels of the couple's characteristics were systematically varied. We employed a 3x3 design, resulting in nine different vignettes. Thus, we had two dimensions (ownership and control) with each three levels (inequality in favor of wife, inequality in favor of husband, and equality). One of these vignettes is shown here:

> Imagine a married couple, woman and man, both at the same age. They have been living together in a rented flat for 5 years and are childless. Both work full-time and they share the housework. Both put some of their monthly incomes aside to save for major purchases or rainy days.

They have $\notin 20.000$ on a joint savings account and no individual savings accounts. Mainly the woman decides when and for what the whole savings are spent.

How fair is this situation?

The first part of the vignette describes the vignette couple. This description stayed constant across the nine vignettes. The description is important to ensure that respondents think about equal situations. By stating that both vignette partners work full-time, share the housework equally, and are at the same age, we hold important factors for justice considerations constant. However, we deliberately left open the question of how the inequality in the ownership of savings has emerged (e.g., differences in income, in bequests, or in savings behavior between the spouses). The second part of the vignette includes the experimental manipulations, which are further explained in the measurement section.

To reduce methodological issues that could bias our estimates (e.g., order/carryover, learning, ceiling, and fatigue effects as well as censoring of responses), we took the following steps. Due to fatigue effects, it is not sensible to present all nine vignettes to all respondents. Therefore, we built two decks including each five vignettes with a deliberate blocking technique (%MktEx Macro in SAS 9.4) to maximize orthogonality (dimensions do not correlate) and level balance (each level occurs with equal frequency) within each deck (Auspurg & Hinz, 2015, p. 39). In this way, a most efficient design can be accomplished.

To control for differences in referent points between groups we used one anchoring vignette, i.e., each respondent received the same vignette as the first vignette. Thus, only the remaining eight vignettes were assigned to the two decks. The anchoring vignette should be the middle category of both dimensions to ensure statistical independence between vignette dimensions. We used equality in both dimensions as an anchor because this vignette makes it easier for respondents to judge the fairness of more unequal situations. Further, this vignette represents an extreme case (we expect respondents to rate this vignette as the fairest) which reduces ceiling effects. To control for order effects, we reversed the order of the four vignettes per deck, resulting in four experimental groups (four different survey versions), each containing five vignettes (see Table 1). Finally, respondents could re-evaluate their answers to reduce ceiling effects. The questionnaire was pretested qualitatively (N=5) and quantitatively (N=132, convenience sample) and passed through an anonymous peer review organized by the GESIS Panel Team.

Factorial survey are most efficient if the design is both orthogonal and balanced (Auspurg & Hinz, 2015). As we used one anchoring vignette, we do not have a balanced design. The equal control and joint ownership levels are oversampled. However, the two dimensions are almost orthogonal as the two dimensions are correlated only marginally (r=0.05, p < .001, see Appendix 1). Most importantly for the vignette experiment to work, the

vignettes should be randomly assigned to respondents. The four different survey versions were randomly assigned to respondents. Appendix 1 shows the correlation matrix between vignettes' and respondents' characteristics. There are no significant correlations between the two dimensions of the vignettes' and respondents' characteristics. Further, Table 1 shows that each experimental group includes roughly the same number of respondents.

Measurements

For our analyses we use respondents' perceived fairness of the described situation as the dependent variable, which ranges from 0 (*very unfair*) to 10 (*very fair*). Figure 2 shows the histograms of the dependent variable for the whole sample and for a reduced sample with level balance (randomly half of the first vignette evaluations is dropped). As each respondent first received the anchoring vignette (joint ownership and equal control), this vignette is oversampled leading to a higher percentage of the value 10 (*very fair*) in the whole sample.

Our predictor variables are ownership and control, with each three levels. The ownership dimension comprises the levels: the couple's savings (\notin 20,000) are held 1) on a joint savings account, 2) on separate savings accounts with the wife owning \notin 5.000 and the husband \notin 15.000, and 3) on separate savings accounts with the wife owning \notin 15.000 and the husband \notin 5.000. The control dimension comprises the levels: 1) They both decide equally, 2) mainly the wife decides, and 3) mainly the husband decides when and for what the whole savings are spent. In addition, we use the interaction terms of ownership and control to explain fairness evaluations. As the respondents were randomly assigned to vignettes, respondents' characteristics do not have to be included in the statistical models (Mutz, 2011). To get an overview of the sample, Appendix 2 shows descriptive statistics of the vignettes' characteristics and the respondents' characteristics.

FIGURE 1. HISTOGRAM OF VIGNETTE EVALUATIONS.



Note. N = 19,648 vignette evaluations in whole sample, N = 17,643 in reduced sample.

Analytical Approach

We have preregistered our hypotheses at the Open Science Framework (OSF) (https://osf.io/6ued4/?view_only=da2014dea86b4884835d5c5539268560). To test the hypotheses, we estimate ordinary least squares (OLS) regressions. As respondents evaluated up to five different vignettes and, thus, the single judgments are the unit of analysis, we adjust standard errors for clustering within respondents. We will first show the results of the regression graphically. After testing the hypotheses with additional F-tests using predicted margins, we examine exploratively differences in the fairness evaluations of female and male respondents. Last, we present supplementary analyses to check the robustness and validity of our findings.

Table 1. Vignettes across Survey Versions

RESULTS

Graphical presentation of regression results

We start with a graphical presentation of the OLS regression results in Figure 2. Predicted fairness evaluations are depicted on the y-axis. The x-axis comprises the ownership dimension with its three levels. The markers comprise the control dimension. The circles depict situations in which the wife controls, the diamonds depict situations in which both spouses jointly control, and the squares depict situations in which the husband controls. Respondents rate situations in which both spouses jointly own and equally control the savings fairest. Coefficients are precisely estimated and confidence intervals are very narrow. For example, if the wife owns more savings than the husband and both control equally, respondents rated this situation as 7.08 on a fairness scale from 0 (*very unfair*) to 10 (*very fair*).

FIGURE 2. PREDICTED FAIRNESS EVALUATIONS.



Note. N =19,648 vignette evaluations, 95% confidence intervals. Full results in Table 3.

Hypotheses Tests

The hypotheses were tested by comparing predicted margins (see Table 2 for hypotheses tests and Table 3 for regression results). H1 states that equal ownership is rated fairer than unequal ownership. We found support for this hypothesis. Respondents rated joint ownership about 0.47 fairness points fairer than unequal ownership in favor of the wife over all levels of control (standard deviation in the fairness scale is 3.78). Thus, the difference was small but significant (0.47, p < 0.001). The difference between joint ownership and unequal ownership in favor of the husband over all levels of control was also small but significant (0.14, p < 0.001). Thus, over all levels of control joint ownership was rated fairer than unequal ownership.

H2 states that equal control is rated fairer than unequal control. We also found support for this hypothesis. Figure 2 clearly shows that equal control was rated fairer than unequal control. The difference between equal control and wife controls over all levels of ownership was large and significant (4.79, p < 0.001). Further, the difference between equal control and husband controls was large and significant (5.77, p < 0.001). Thus, over all categories of ownership equal control was rated roughly 5 to 6 fairness points fairer than unequal control.

Нуро.	Difference	Test
H1	Joint account (4.90) – W owns (4.43)	0.47***
	Joint account (4.90) – H owns (4.76)	0.33***
H2	Equal control (7.89) – W controls (3.09)	4.79***
	Equal control (7.89) – H controls (2.12)	5.77***
H3	Equal control vs. W controls (4.79) – Joint account vs. W owns (0.47)	4.32***
	Equal control vs. H controls (5.77) – Joint account vs. H owns (0.33)	5.44***
H4	W owns & Equal control (7.08) – W owns & H controls (1.84)	5.25***
	W owns & Equal control (7.08) – W owns & W controls (3.48)	3.60***
	H owns & Equal control (7.03) – H owns & W controls (3.22)	3.81***
	H owns & Equal control (7.03) – H owns & H controls (3.29)	3.74***
H5	W owns & W controls (3.48) – W owns & H controls (1.84)	1.65***
	H owns & H controls (3.29) – H owns & W controls (3.22)	0.07
H6	H owns (4.76) – W owns (4.43)	0.33***
H7	W controls (3.09) – H controls (2.12)	0.98***

Table 2. Hypotheses Tests with Predictive Margins

Note. N =19648 vignette evaluations. W = Wife, H = Husband.

The table shows F-tests of differences between predictive margins presented in Figure 2 and Appendix 3. Predictive margins in parentheses.

*p < .05. **p < .01. ***p < .001.

H3 states that the control dimension is more important for fairness evaluations than the ownership dimension. We tested H3 by looking at the differences between the main effects of ownership and the main effects of control. A joint F-test indicated that the effects of unequal control in favor of the wife or in favor of the husband are larger than the effects of unequal ownership in favor of the wife or in favor of the husband (F[2, 3947] = 3542.88, p<0.001).

This supports our hypothesis and indicates that equal control is more important than equal ownership for fairness evaluations.

H4 states that unequal ownership is rated fairer if control is equally distributed compared to unequal control. In other words, equal control can compensate unequal ownership. We found support for this hypothesis. Figure 2 clearly shows that unequal ownership (both in favor of the wife and the husband) was rated fairer if control is equally distributed. A joint F–test indicated that the differences between equal control and unequal control (both in favor of the wife and the husband) for both unequal ownership categories were significantly different from zero (F[4, 3947] = 1539.61, p < 0.001).

H5 states that the one who owns more should also control the savings, thus, testing the equity principle. We did not find convincing support for this hypothesis. If the wife owns more than her husband, respondents indicated it is fairer if she also controls the savings. The difference between wife controls versus husband controls when she owns more was significant (1.65, p < 0.001). But when we look at unequal ownership in favor of the husband, we did not find a significant difference in fairness evaluation between husband controls and wife controls (0.07, p = 0.196).

Hypotheses H6 and H7 test the entitlement principle. H6 states that respondents believe in husband's entitlement to own more savings than the wife. We found support for this hypothesis. Over all levels of control, unequal ownership in favor of the husband was rated fairer than unequal ownership in favor of the wife. However, the difference was very small (0.33, p < 0.001). On average, respondents evaluated unequal ownership in favor of the husband 0.33 fairness points fairer than unequal ownership in favor of the wife.

Last, H7 states that respondents believe in husband's entitlement to control more savings than the wife. We found no support for this hypothesis. Rather, results indicated that over all levels of ownership, unequal control in favor of the wife was rated fairer than unequal control in favor of the husband (squares below circles in Figure 2). Here, the difference between her controlling and him controlling (over all levels of ownership) was significant and close to 1 fairness point (0.98, p < 0.001). This result indicates that respondents believe rather in wives' entitlement to control.

Gender differences

Female respondents differed little from male respondents in their fairness evaluations. Table 3 shows regressions results separately for female and male respondents. We conducted two separate regressions and tested all seven hypotheses in each subsample. There was only one, but major difference in the hypotheses tests. For the male sample, we found support for the equity principle (H5), but for the female sample we did not find support.

Male respondents indicated that if the wife owns more than her husband it is fairer if she controls the savings than he controlling (1.48, p < 0.001) and if the husband owns more it is fairer if he controls instead of her (0.21, p < 0.01). Female respondents also indicated that if the wife owns more than her husband it is fairer if she controls compared to him controlling (1.82, p < 0.001). However, in the female subsample we did not find a significant difference in fairness evaluation between husband controls and wife controls when unequal ownership is in favor of the husband (-0.06, p = 0.475), just like in the total sample. This suggests that men in contrast to women are more likely to apply the equity principle.

Table 3. Results of OLS Regression

				Difference
	All	Female	Male	Female - Male
Variable	B (SE)	B (SE)	B (SE)	
Wife owns more	-2.05*** (0.06)	-2.04*** (0.09)	-2.05*** (0.09)	n.s.
Husband owns more	-2.10*** (0.07)	-2.05*** (0.10)	-2.15*** (0.10)	n.s.
Wife controls	-6.42*** (0.07)	-6.53*** (0.09)	-6.30*** (0.10)	n.s.
Husband controls	-7.67*** (0.06)	-8.02*** (0.08)	-7.33*** (0.09)	***
Wife owns more X	2.82*** (0.11)	2.82*** (0.16)	2.81*** (0.16)	n 0
Wife controls				n.s.
Wife owns more X	2.42*** (0.08)	2.49*** (0.11)	2.36*** (0.11)	n 0
Husband controls				n.s.
Husband owns more X	2.60*** (0.08)	2.61*** (0.12)	2.59*** (0.12)	
Wife controls				n.s.
Husband owns more X	3.93*** (0.10)	4.04*** (0.14)	3.83*** (0.15)	
Husband controls				n.s.
Constant	9.13*** (0.03)	9.17*** (0.04)	9.09*** (0.04)	
Ν	19648	9950	9698	
AIC	91781	46302	45435	

Note. Reference categories: equal control; joint account. *p < .05. **p < .01. ***p < .001.

Supplementary Analyses

With supplementary analyses we tested the robustness of the findings and the validity of the survey experiment. The factorial survey experiment has the advantage of high internal validity, i.e., we can assess without bias how the distribution of ownership and control over savings affects fairness evaluations under specific conditions, which we hold constant (e.g., both partners working full-time). Because of the representative sample, the results have high external validity, i.e., the results are generalizable to the population in Germany. However, there are still several potential threats to validity (Auspurg, Hinz, & Sauer, 2017). In the following, we discuss with additional analyses 1) if the sample indeed constitutes a valid random experiment, and if 2) satisficing by respondents, 3) specifications, and 4) the order of vignettes biased the results.

Independence between vignette dimensions and respondents' characteristics. For the sample constituting a valid random experiment, vignettes must be randomly assigned to

respondents and, thus, vignette dimensions should be uncorrelated with respondents' characteristics. Respondents were randomly assigned to one of the four experimental groups but due to nonresponse vignette dimensions might be correlated with respondents' characteristics in the final sample. To check if vignette dimensions are uncorrelated with unobserved characteristics, we compared coefficients of a random effects and a fixed effects model (Auspurg, Iacovou et al., 2017). A cluster-robust version of Hausman's specification test, which allows for potential correlation in the errors within respondents, indicated that the coefficients do not differ significantly ($\chi^2[8] = 9.57$, p = 0.30, rhausman ado in Stata (Kaiser, 2015)), suggesting that the vignette dimensions are uncorrelated with unobserved respondents' characteristics.

Satisficing. Another threat to validity is satisficing (i.e., respondents attempt to minimize cognitive effort) (Oppenheimer, Meyvis, & Davidenko, 2009). Vignette evaluations would then not reflect respondents' true opinion, increasing noise and decreasing validity. Hints for satisficing behavior are that respondents (1) do not rate all five vignettes, (2) rate all five vignettes equally, and (3) indicate that they find the task of evaluating the vignettes difficult. Excluding respondents, (1) who did not evaluate all five vignettes, (2) who indicate the same fairness evaluation in all five vignettes, or (3) who indicates that the task was difficult or very difficult, did not change the results. For the latter, after the vignette evaluations, respondents were asked how difficult it was to rate the vignettes. Figure 3 shows that in all three additional models there are hardly differences to the base model, suggesting that there is no issue of fatigue or satisficing in the sample.

FIGURE 3. ROBUSTNESS CHECKS: SATISFICING.



Note. Regression coefficients are shown. N =19,648 vignette evaluations (OLS), N = 19,163 (Unequal evaluations), N = 18,354 (Not difficult), N = 19,370 (Rated 5 vignettes). 95% confidence intervals.

Model specifications. To test if model specifications affect the findings, we

replicated the OLS model (with cluster robust standard errors) using a multilevel model, which does not lead to a change in the coefficients or standard errors (see Figure 4). To check if the unbalanced vignettes (oversample of anchoring vignette) affected results, we randomly split the sample in half, using the anchoring vignette only for half of the sample to reach level balance. Figure 4 shows that the coefficients do not change much. As the vignette evaluations might not be linear, i.e., the differences between two fairness points may not be equal across the whole range, we performed an ordered probit regression as a sensitivity analysis. Figure 4 shows that all coefficients are significant and the direction of coefficients is the same as in the base model.

FIGURE 4. ROBUSTNESS CHECKS: MODEL SPECIFICATION.



Note. Regression coefficients are shown. N = 19,648 vignette evaluations (OLS, Multi-Level, Ordered probit), N = 17,643 (Balanced sample). 95% confidence intervals.

Order effects. Last, we checked if the order of the vignettes affects fairness evaluation. Indeed, we found evidence for this phenomenon. As we split the sample in four experimental groups, with two groups each having the same set of vignettes but in reverse order, we could perform separate regressions with each of the two experimental groups. Figure 5 shows that the coefficients change in comparison to the base model (OLS). However, the results of the hypotheses test changed only regarding hypotheses H5 and H6. First, in the subsample with experimental groups 1 and 2 we found support for the equity principle (H5), as we reject the null hypothesis stating that the situation in which the husband controls and owns more is rated equally fair as the situation in which the wife controls but the husband owns more (p = 0.047). Second, in the subsample with experimental groups 3 and 4 we could not reject the null hypothesis that situations in which the wife owns more are equally rated as situations in which the husband owns more (p=0.09). Thus, we did not find support for men's entitlement to own more savings in this subsample.

FIGURE 5. ROBUSTNESS CHECKS: ORDER EFFECTS.



Note. Regression coefficients are shown. N =19,648 vignette evaluations (OLS), N = 9,836 (Groups 1 & 2), N = 9,812 (Groups 3 & 4), N = 11,795 (First three vignettes). 95% confidence intervals.

Another test for order effects is to include only the first three vignettes per respondents. By doing this, the dataset again includes all vignette dimensions as each deck is reversely ordered once. Figure 5 shows that the coefficients belonging to the interaction terms change slightly. The results of the hypotheses tests changed only regarding one hypothesis compared to the base model. We no longer found support for H1 (equal ownership is rated fairer than unequal ownership). In fact, in this subsample on average respondents rated unequal ownership in favor of the husband about 0.14 fairness points fairer than equal ownership (p = 0.01). As respondents were randomly assigned to experimental groups, the results indicate that the order of the vignette matters for fairness evaluations. We rely on the analyses with the full sample because using all four experimental groups and all vignette evaluations will partly neutralize order effects.

DISCUSSION

This study has examined fairness perceptions of experimentally manipulated savings arrangements in couples, i.e., the distribution of ownership of and control over savings between partners. With a nationally representative factorial survey experiment in Germany, we have tested competing norms about individual ownership rights (equity principle) and marital sharing (equality principle) in interaction with gender ideology (entitlement principle). Respondents were asked to rate the fairness of five hypothetical savings arrangements in couples with random inequality in ownership of and control over savings.

Our major aim was to identify justice principles in marriage, in particular regarding the distribution of savings. To this end, we first examined if individuals apply the equity and equality principle when evaluating the fairness of couples' savings arrangements and asked if equity and equality are two equally relevant justice principles in marriage. We found support for the equality principle, especially when looking at the control dimension. Respondents rated equal situations fairer than unequal situations (H1 and H2). This is in line with prior experimental research studying justice principles in couples (Auspurg, Iacovou et al., 2017; Burgoyne & Routh, 2001; Pepin, 2019).

In contrast, we did not find convincing evidence for the equity principle (H5). This finding conflicts with a study by Pepin (2019), who showed that individuals endorse the primary earner maintaining a greater amount of the total household income. It also conflicts with qualitative research concluding that patterns of personal spending money are dominantly based on equity (Burgoyne & Lewis, 1994). In contrast to prior studies, we examined savings instead of earnings and control instead of money management. Earnings can be clearly ascribed to individuals whereas savings are more diffuse. Therefore, earnings might carry more than savings implicit rights to control. As money management is less strongly linked to power than control (Vogler et al., 2008), equality in control might also be subjectively more

important than equality in money management. In addition, respondents in Germany might not perceive ownership of savings as relevant because the default German marital property regime of accrued gains ("Zugewinngemeinschaft") provides financial security in the event of divorce. However, similar rules apply in other contexts including many states in the US. All in all, our study suggests that marital sharing and the idea of equality trump equity considerations when looking at control and ownership of savings.

However, looking at female and male respondents separately, we found evidence that men indeed apply the equity principle, although the effect sizes are rather small. Male respondents endorsed that the owner of savings should also control the savings, no matter if the owner is male or female. In contrast, female respondents only endorsed the wife to control if she is owning more. This suggests that women and men indeed have different justice principles in marriage.

To examine if entitlement is another important justice principle in marriage, we then tested if gender is a status characteristic according to which resources should be distributed in marriage. We found evidence for the entitlement principle, but not in the expected way. Based on traditional gender ideology we expected respondents to believe in men's entitlement to own more savings and to control them. Although our results comply with the belief of men's entitlement to own, they also suggest that respondents believe in wives' entitlement to control the savings (in line with H6 but in conflict with H7). Traditionally, as husbands have been perceived as the financial provider of the family, husbands have been more likely to control money (i.e., exercising power and making major financial decisions), whereas wives have been more likely to manage money (i.e., organizing money and making ends meet) (Vogler et al., 2008). Thus, respondents might have misunderstood our measure of control as money management. However, our measure of control might also be valid and respondents indeed believe in women's entitlement to control deviating from traditional gender ideology. This

interpretation would be in line with Pepin's (2019) study, who showed that US respondents concede more personal money to female primary earners compared to male primary earners indicating believes in greater support for women's economic autonomy than for men's economic autonomy.

Importantly, inequality in favor of the husband was rated differently than inequality in favor of the wife. Thus, unlike in the allocation of housework (Auspurg, Iacovou et al., 2017), when distributing money individuals seem to differentiate between gender indicating that money in marriage and financial arrangements are still gendered. Gendered norms around money in marriage, though, conflict with gender-neutral approaches explaining the treatment of money in marriage (e.g., the resource theory of power).

Last, we examined how individuals would like to establish equality and what marital sharing comprises. Our results suggest that the norm of marital sharing is widespread but is rather fulfilled by equal control than by equal ownership. We found that equal control is more important for fairness than equal ownership (H3). Unequal control was perceived as unfair by most respondents. As our study presents evidence against beliefs that ownership is the key factor according to which individuals should distribute the control over savings, future research should continue examining which factors affect the distribution of control over money between spouses. We further showed that unequal ownership is judged fairer if both partners control the savings than if only one partner controls the savings (H4). This is evidence for respondents' beliefs that unequal ownership can be compensated by equal control. Respondents seem to endorse reconciling autonomy and sharing by having separate savings accounts but equal control.

The findings of the factorial survey experiment should be interpreted in light of its limitations. One limitation of this study is that results are only transferable to beliefs about the fairness of savings arrangements in married, childless, full-time working, housework-sharing

couples. An important complement for future research would be to vary marital and parental status but also to examine other financial arrangements (income or other wealth components). In this study, however, we had to minimize the experimental conditions in order to field this survey experiment in a representative survey program.

Another limitation is that we cannot completely rule out the possibility of order effects. We showed that the order of vignettes affects fairness evaluations. However, as we reversed the order of the vignettes within the two decks once to have four experimental groups, we at least reduced order effects when using the whole sample. Within the GESIS Panel is it only possible to use up to four experimental groups. An important methodological take-home message of this study is to always randomize the order of vignettes.

Last, the study is theoretically limited in neglecting access to savings and management of savings by only studying ownership and control. Control comprises only the final say over major financial decisions, but access to savings for smaller purposes is neglected. Elizabeth (2001) cautions that if equality of access to income is neglected, inequalities in personal spending power may emerge although control is shared. Although the difference between access to and control over savings might not be as severe as the difference between access to and control over income, access to savings is arguably another important factor affecting (financial) well-being.

One could conclude that wealth inequalities are not relevant for individuals if spouses share equal control. As control is shared in most German couples, the substantial withincouple wealth inequalities identified in prior studies might not be perceived as subjectively relevant by those affected. This could explain why inequalities in savings within couples emerge and persist and are not opposed by the worse off spouse. However, if equality is established by having equal control, hidden inequality through unequal access may be in place (Elizabeth, 2001). The acceptance of unequal ownership if control is shared, thus, involves the

risk that inequalities in accessing savings still emerge due to beliefs in individual ownerships rights and equity considerations, affecting personal spending power and the (financial) wellbeing of individuals.

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Appendix 1 Correlation matrix

	Wife owns	Husband owns	Wife controls	Husband controls	Female	age	Responde nt owns	Responde nt controls	Own about the	Equal control
	more	more					more		same	(Resp.)
Wife owns	-									
more										
Husband	43***	-								
owns more										
Wife controls	.05***	.05***	-							
Husband controls	.05***	.05***	43***	-						
Female	01	.00	.00	00	_					
age	.00	00	00	.00	05***	_				
Respondent	.00	00	00	.00	13***	16***	-			
owns more										
Respondent controls	01	.01	.01	01	01	04***	.32***	-		
Own about	01	.01	.01	01	03***	.27***	63***	20***	-	
the same										
Equal control (Resp.)	.00	00	00	.00	01	.07***	23***	80***	.25***	-

Note. N = 12,728-19,648. Pearson's correlation coefficients are shown. *p < .05. **p < .01. ***p < .001.

Variables	MEAN	MIN	MAX	SD
Vignette characteristics				
Wife owns more	.30	0	1	
Joint ownership	.40	0	1	
Husband owns more	.30	0	1	
Wife controls	.30	0	1	
Equal control	.40	0	1	
Husband controls	.30	0	1	
Characteristics of respondents				
Vignette evaluation	4.88	0	10	3.78
Age	58.98	23	79	13.61
Female	.48	0	1	
Respondent owns more savings	.24	0	1	
Partner owns more savings	.21	0	1	
About the same amount of savings	.55	0	1	
Respondent controls	.06	0	1	
Partner controls	.03	0	1	
Equal control (Resp.)	.90	0	1	

Appendix 2 Descriptive Statistics

Appendix 3 Predicted Margins, separated for female and male respondents

	(1)	(2)	(3)
Predicted margins	All	Female	Male
C	b/se	b/se	b/se
Wife owns more	4.43*** (0.04)	4.36*** (0.06)	4.49*** (0.06)
Joint account	4.90*** (0.02)	4.81*** (0.03)	4.99*** (0.03)
Husband owns more	4.76*** (0.04)	4.75*** (0.06)	4.78*** (0.06)
Wife controls	3.09*** (0.04)	3.04*** (0.06)	3.15*** (0.06)
Equal control	7.89*** (0.03)	7.95*** (0.05)	7.83*** (0.05)
Husband controls	2.12*** (0.04)	1.89*** (0.05)	2.35**** (0.05)
Wife owns more & Wife controls	3.48*** (0.07)	3.42*** (0.10)	3.54*** (0.10)
Wife owns more & Equal control	7.08*** (0.06)	7.13*** (0.09)	7.03**** (0.09)
Wife owns more & Husband controls	1.84*** (0.05)	$1.60^{***}(0.07)$	2.06*** (0.08)
Joint account & Wife controls	2.71*** (0.06)	2.64*** (0.08)	2.79**** (0.08)
Joint account & Equal control	9.13*** (0.03)	9.17*** (0.04)	9.09**** (0.04)
Joint account & Husband controls	$1.46^{***}(0.05)$	1.16^{***} (0.06)	1.76*** (0.07)
Husband owns more & Wife controls	3.22*** (0.06)	3.19*** (0.09)	3.24*** (0.09)
Husband owns more & Equal control	7.03*** (0.07)	7.12*** (0.10)	6.94*** (0.10)
Husband owns more & Husband controls	3.29*** (0.06)	3.14*** (0.08)	3.44*** (0.09)
N	19648	9950	9698
$N_{a4a} = \frac{1}{2} \sqrt{2} \frac{1}{2} \frac{1}{$			

Note. *p < .05. **p < .01. ***p < .001.