Asymmetric Power within Couples.

The Gendered Effect of Children and Employment on Entitlement to Household Income.

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Abstract:

This paper investigates the gendered and non-gendered determinants of individual "entitlements" to household resources. We model households as sites of cooperative conflict (Sen, 1990), wherein entitlements represent the results of cooperation to increase total household resources and of conflict over individual access to those resources. We use individual answers to satisfaction with household income from the British Household Panel Survey (1996-2005) for couples, stripping out the effects of unobserved heterogeneity. Results suggest the co-existence of gendered and symmetric effects of employment and children on both aspects of entitlement, over and above partners' relative wage rates.

Résumé:

Ce papier examine les facteurs genrés et non-genrés qui expliquent le légitime accès individuel aux ressources du ménage. Nous modelons le ménage comme un lieu de conflits coopératifs, (Sen, 1990), dans lequel l'accès légitime illustre les résultats à la fois d'une coopération pour accroitre les ressources totales du ménage et d'un conflit à propos de la distribution de ces ressources. Nous utilisons les réponses à une question sur la satisfaction par rapport au revenu du ménage provenant de l'enquête British Household Panel Survey (1996-2005) pour les couples, en isolant les effets d'hétérogénéité non observée. Les résultats suggèrent la coexistence d'effets genrés et non-genrés du statut d'emploi et de la présence d'enfants sur les deux éléments de l'accès légitime, en sus des salaires relatifs des deux partenaires.

Jel Classification: gender differences, entitlements, household bargaining, income satisfaction, perceived contributions, identities and fallback positions.

Keywords: D13, D63, J16.

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INTRODUCTION

In a recent communication on 'Promoting solidarity between generations', the European Commission stresses the importance that family policies increasingly "take account of the changes in aspirations and practices concerning the respective roles of men and women in society, in terms of women participating in employment without major interruptions and men's increased participation in family and domestic responsibilities, thus contributing to equality between men and women through the economic autonomy of the latter" (COM, 2007, p.4). Alternative goals of Member States' family policies may be to increase the number of births or to promote citizen's well-being through equal opportunities, to combat poverty among certain families or to reduce income inequalities. However, little is said about how equality between men and women at aggregate level may transform or resonate with intra-household inequality.

It is therefore important to understand what goes on within households, often considered as a black box where resources are equally shared and individual well-being fits with family well-being (Himmelweit, 2002). Recent economic models have been developed to account for different preferences or interests of individuals making up a household (see Vermeulen, 2002 for a review). They remain however largely underexploited for policy purpose (Bargain et al., 2006).

This paper aims at extending the literature on intra-household allocation of resources, with a particular focus on the role of employment in the presence of children, as it appears to be the main challenge to achieving economic autonomy. However, this paper adopts a different perspective than that used in recent collective and bargaining models. Instead of looking at expenditure directly to understand how resources are allocated, we investigate the entitlements that individuals of different genders have to the resources of their household, where by "entitlement" is meant the legitimate command over resources that gives rise to an individual's set of opportunities or capabilities (Sen, 1990). As Sen suggests, households can be considered as sites of cooperative conflict, where household members cooperate to increase total household resources (family entitlement) but at the same time are inherently in conflict over the division of those resources and the relative entitlements that result.

Both cooperation and conflict elements of family resources may reveal a gendered aspect: it could be in a couple's shared interests to treat individual members unequally by gender. This is for example, the claim of the unitary model of household decision-making in explaining the traditional household division of labour as an efficient use of gendered comparative advantage (Becker, 1991). For the conflictual aspect, the factors that affect that relative power and thus entitlements may be symmetrical (either partner's power may increase with their share of household earnings, for example) and/or may be gendered (if earnings had more or less effect in raising their own entitlements for men than women).

According to Sen, perceptions, which may be shared or differ between a couple, are key in explaining such gender asymmetries. Perceptions can affect actual entitlements to household resources in three broad ways, through i) the perceived fallback position of either

partner if cooperation was to break down, ii) the perceived contributions that each partner makes to the household and iii) the extent to which each partner perceives their own well-being as distinct from that of their family (Sen, 1990). Gendered social norms, identities and opportunities inside and outside the household can influence each of these (Pahl, 2005; Woolley, 2004; Iversen, 2003; Sen et al., 2003; Agarwal, 1997; Folbre, 1997; Mc Elroy, 1990).

By including the influence of such perceptions in explaining the intra-household allocation of power and entitlements, Sen's approach provides a much richer framework to account for gender inequalities than the utility based unitary, bargaining and collective models of household decision-making, all of which assume that the utility individuals use to inform their actions and their well-being coincide. However, his approach has never been applied in any systematic empirical study. This paper contributes to fill this gap by using individual answers to questions about satisfaction with household income to investigate these matters.

Understanding these effects may be key to success in large areas of social policy. First, it could help in promoting greater gender equality, in line with EC priorities on Social Protection and Social Inclusion (EC, 2007). Second, the effectiveness of many policies, including those designed to reduce social inclusion, expand employment opportunities, eliminate child poverty, and improve family stability, can be enhanced or undermined by their effects on internal household processes, perceptions of roles and consequent allocation of entitlements (Himmelweit, 2002).

The plan of this paper is as follows: after a review of the literature, we summarize the conceptual model developed by De Henau and Himmelweit (2008) on which this analysis is based, a model that identifies the different symmetric and gendered effects on the cooperative and conflictual aspects of individual entitlements to household resources. Then we turn to its empirical implementation using British household panel data, and analyse the results. The conclusion summarizes the main findings and discusses some policy implications.

CONCEPTUAL MODEL[1]

Background

Sen's cooperative conflict model builds on previous household bargaining models, initially suggested by Manser and Brown (1981), and McElroy and Horney (1980), whose aim was to provide an alternative to the "unitary" model[2] of household decision-making. In these models, partners may cooperate to increase household resources under a utility-maximising

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[1] For a more detailed discussion on the formal conceptual model and the econometric specification, please refer to De Henau and Himmelweit (2008).

[2] See Samuelson (1956), Becker (1973) and Becker (1991) for various specifications of the unitary model.

framework of Pareto-efficient outcome, whereas the division of the fruits of this cooperation will depend on distribution factors that affect their position (in terms of well-being or utility) at a threat point, a situation where cooperation fails[3]. More recently household bargaining models have been generalised in a less restrictive version, the collective model, first introduced by Chiappori (1988, 1992) and Apps and Rees (1988). The only restriction is that households arrive at a Pareto-optimal (or cooperative) outcome, determined by a weighted sum of members' individual utility functions (see Bargain et al., 2006; Browning et al., 2006; Behrman, 2003 and Vermeulen, 2002 for recent discussions). This flexibility is a strength of such models, but leaves them with little substantive content, without imposing specific functional forms. Until very recently, they had more success in discrediting the unitary model, and specifically its income pooling hypothesis, than in identifying and generating testable propositions about the magnitude of the effect of different 'distribution factors', the variables that influence the weights of different individuals' utility functions in household decision-making[4] (De Henau and Himmelweit, 2008).

Sen's theoretical discussion points to the lack of consideration of the influence of individual perceptions in the allocation process. He argues that it is (shared or individual) perceptions of individual contributions, of fallback positions and of interests that affect the outcome rather than their actual values, and that such perceptions may be heavily gendered. For example, the value of contributions to the household may be differently assessed according to their source (outside employment versus home-based employment) or the gender of the contributor (Sen, 1990).

De Henau and Himmelweit (2008) have developed a formal model that builds on Sen's framework. For instance, variables are considered as potential distribution factors if they can be argued to influence perceived contributions, perceived fallback positions or the extent to which the individuals perceive themselves as having interests separate from those of their household. Moreover, they account for the difference between perceptions and the objective factors behind these perceptions by allowing all explanatory variables potentially to have an influence that varies by gender. Thus, for example, their model allows for the possibility that the man's unemployment might be differently perceived (by either or both members of the couple) from the woman's unemployment, and similarly for any other individual level variables.

Since entitlements encompass the resources people have access to, not necessarily those that they consume themselves, they are not directly observable. The model therefore uses partners' answers to questions on satisfaction with household income as having informational content about the cooperative and conflictual aspect of household entitlements.

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[3] In initial models, threat points are couple breakdown (marital dissolution), whereas in a more recent model, threat point is the retreat into traditional gender spheres (Lundberg and Pollak, 1993). A detailed explanation of such models is given by Himmelweit (2001).

[4] Variables tested in the literature as potential distribution factors include the relative share of non labour income members bring into the household, their wage rates and some other prices (e.g. Couprie, 2007; Alessie et al., 2006; Vermeulen, 2005; Chiappori et al., 2002; Chiuri, 2000; Browning and Chiappori, 1998; Fortin and Lacroix, 1997).

There has in recent years been a growing interest in answers to satisfaction questions by economists, aware of the limitations of monetary income as a measure of well-being (Layard, 2005; Frey and Stutzer, 2002; Easterlin, 2001). Satisfaction measures have been showed to provide a consistent and comparable account of individual subjective assessments, beyond just reflecting aspects of mood (Diener et al., 1999). However, it has been found that answers to such questions are affected not only by actual income (Anand et al, 2005), but also may reflect adaptation over time (Burchardt, 2005; Sen, 1990) and expectations formed by comparison with specific reference groups (Senik, 2004; Stutzer, 2004; Easterlin, 2001; Clark and Oswald, 1996), while psychological studies have shown that largely constant personality traits are the most significant influence on satisfaction measures (Argyle, 1999; Diener and Lucas, 1999). Therefore, we need to use panel data to control for unobserved heterogeneity (see Ferrer-i-Carbonell and Frijters, 2004 for a discussion).

Unlike previous studies that used satisfaction questions for analysis of within-household allocation outcomes (Ahn et al., 2007; Alessie et al., 2006; Bonke and Bowning, 2003), this paper includes individual level variables pertaining to both partners in male-female couples and explicitly consider that their effects might be asymmetrical by gender (through gendered perceptions, norms or opportunities), which neither of the above papers does[5]. Further, we use a different theoretical framework. Rather than looking for a "sharing rule" with respect to expenditure (which can be derived under certain restrictions on preferences in collective models), we use answers to satisfaction questions to investigate the influence of distribution factors on individual entitlements, the access to resources that gives rise to each person's opportunities and capabilities. As such, we are not, as is usual in the utilitarian literature, assuming that satisfaction scores measure subjective well-being, just that they contain some informational content about individual entitlements. Indeed, unlike utility based measures of subjective well-being, entitlements can be compared objectively across people. Thus this gives them particular relevance for studying gender differences where measures of subjective well-being show some women, adapting to the limitations of the existing gender order, being satisfied with highly unequal material conditions and capabilities (Nussbaum, 2003; Sen et al., 2003).

Entitlements

Let us assume that in a couple, the individuals' entitlements to their household's resources depend on both the cooperative, E_s, and conflictual, E_d, aspects of their household's decision-making process. E_s is the sum of the man's and the woman's entitlements (household entitlement) while E_d is the difference in individuals' entitlements: we assume man's entitlement relative to woman's, so that E_d is measured positively for the man and negatively for the woman.

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[5] Garcia et al. (2007) also use panel data to investigate similar variables but they interpret their results misleadingly, in the opinion of the present authors, as indicating the level and direction of altruism within the couple, rather than as being about bargaining power.

In a linear framework, let $\mathbf{H}$ be a vector of extra-household or household level variables that influence entitlements, $\mathbf{C}_m$ and $\mathbf{C}_f$ be vectors of the individual level variables that do so, and β and λ with appropriate subscripts signify their respective coefficients. Assuming that the error terms υ_s and υ_d are independent over time and across households (though possibly correlated across equations) we have:

$$E_s = \alpha_s + \beta_s \mathbf{H} + \lambda_{sm} \mathbf{C}_m + \lambda_{sf} \mathbf{C}_f + \upsilon_s$$
$$E_d = \alpha_d + \beta_d \mathbf{H} + \lambda_{dm} \mathbf{C}_m + \lambda_{df} \mathbf{C}_f + \upsilon_d$$

(i)

Gender specific norms and opportunities are allowed for at the extra-household and household-level by letting the variables in $\mathbf{H}$ affect not only E_s but E_d too. For example, the level of child benefit and the number of children may affect not only overall household entitlements, but may differentially impact on men's and women's entitlements through influencing their perceived fall-back positions (depending on with whom children tend to live) and contributions (depending on to whom child benefit is usually paid). Such norms and opportunities will also structure the effect of individual level variables in $\mathbf{C}_m$ and $\mathbf{C}_f$. For example, human capital may be more or less effective in raising the earnings and thus the contribution to their households of men than women. For such individual variables, letting $\mathbf{C}_m$ and $\mathbf{C}_f$ have different coefficients within each equation also allows for perceptions of men's and women's contributions, fall-back positions and identities to have effects that are asymmetric by gender. Thus even if the effects of human capital on earnings did not differ between men and women, the woman's human capital may be *perceived* as of more or less benefit to the household than the man's[6].

We can make the symmetric and the gendered effects of individual variables more explicit by expanding equations (i) as:

$$E_s = \alpha_s + \beta_s \mathbf{H} + (\lambda_{sm} + \lambda_{sf})(\mathbf{C}_m + \mathbf{C}_f)/2 + (\lambda_{sm} - \lambda_{sf})(\mathbf{C}_m - \mathbf{C}_f)/2 + \upsilon_s$$
$$E_d = \alpha_d + \beta_d \mathbf{H} + (\lambda_{dm} + \lambda_{df})(\mathbf{C}_m + \mathbf{C}_f)/2 + (\lambda_{dm} - \lambda_{df})(\mathbf{C}_m - \mathbf{C}_f)/2 + \upsilon_d$$

(ii)

and summarise the effects in which we are interested in Table 1:

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[6] The constant term in the equation for E_d allows for any unobserved unchanging differences between partners that might affect entitlements (such as fixed personality traits), including those that are gender specific. In Sen's model these would include any tendency for women and men to differ in the extent to which they see their own well-being as separate from that of their family.

TABLE 1. INTERPRETATION OF GENDERED AND SYMMETRIC EFFECTS ON THE COOPERATIVE AND CONFLICTUAL ASPECTS OF ENTITLEMENTS

	Effect on cooperative aspects of entitlements, E_s	Effect on conflictual aspects of entitlements, E_d
For household and extra-household variables, H^j		
	$\beta_s^j \neq 0$	$\beta_d^j \neq 0$
For individual variables, C_m^j and C_f^j		
Symmetric	$\lambda_{ss}^j = \lambda_{sm}^j + \lambda_{sf}^j \neq 0$; so that $\mathbf{C}_s^j = \mathbf{C}_m^j + \mathbf{C}_f^j$ has an effect	$\lambda_{dd}^j = \lambda_{dm}^j - \lambda_{df}^j \neq 0$; so that $\mathbf{C}_d^j = \mathbf{C}_m^j - \mathbf{C}_f^j$ has an effect
Asymmetric Gendered	$\lambda_{sd}^j = \lambda_{sm}^j - \lambda_{sf}^j \neq 0$; so that $\mathbf{C}_d^j = \mathbf{C}_m^j - \mathbf{C}_f^j$ has an effect	$\lambda_{ds}^j = \lambda_{dm}^j + \lambda_{df}^j \neq 0$; so that $\mathbf{C}_s^j = \mathbf{C}_m^j + \mathbf{C}_f^j$ has an effect

Source: *De Henau and Himmelweit (2008).*

Satisfaction with household income

Neither individual entitlements, nor the cooperative and conflictual elements in entitlements, E_s and E_d, are observable. We therefore use individual measures of "satisfaction with household income" to infer effects on E_s and E_d.

We use data from the British Household Panel Survey, which follows individuals from a representative clustered sample of British households[7] in 1991, annually interviewing them and all adult members of the households in which they subsequently lived. Questions are asked at either household or individual level, covering a wide range of areas; many are asked every year but some specific modules vary. The question, "How dissatisfied or satisfied are you with the income of your household?" to be answered on a 7-point scale from "not satisfied at all" to "completely satisfied", has been asked in a self-completion individual questionnaire filled in after the main interview every year from 1996, except 2001.

Since we are interested in symmetric and gendered effects in both household and relative entitlements, with special attention to employment and the presence of children, we select a sample of co-resident male-female couples of working age, with and without children, following them through time, so long as they stayed together[8].

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[7] South of the Caledonian Canal, to exclude a large area of exceptionally low population density.

[8] We therefore exclude couples in which one partner is above retirement age (women over sixty or men over sixty-five) or one partner is a full-time student (to concentrate on couples in the period between education and retirement), as well as couples who share a household with others besides their own children (if any), and couples whose total household annual income differs by more than £1000 from the sum of their individual incomes (since this would indicate the possible influence on decision-making of a non dependent child with significant individual income). Our sample is the original BHPS sample as first constituted in 1991.

Table 2 shows the distribution of female answers to this question (by male answers and overall). Overall, men and women have a tendency to report relatively high levels of satisfaction with the income of their household (last column and last row of Table 2). However, women seem to be slightly more satisfied than men on average[9]. Moreover, this table shows that within-household differences are not negligible even though answers do not diverge to a large extent (mainly one or two points difference).

TABLE 2. DISTRIBUTION OF SATISFACTION WITH HOUSEHOLD INCOME (FEMALE ANSWERS BY MALE ANSWERS AND OVERALL) – 1996-2005 (EXCL. 2001)

| Female satis. | Male satisfaction | | | | | | | total |
	not sat.	2	3	4	5	6	very sat.	female sat.
not sat.	25%	12%	5%	3%	1%	0%	1%	3%
2	20%	17%	11%	6%	3%	2%	2%	6%
3	20%	26%	22%	15%	10%	4%	4%	12%
4	19%	21%	26%	28%	21%	13%	11%	20%
5	9%	17%	23%	29%	34%	33%	22%	29%
6	5%	5%	11%	16%	25%	34%	31%	22%
very sat.	2%	2%	2%	4%	7%	15%	28%	8%
total	100%	100%	100%	100%	100%	100%	100%	100%
tot. male sat.	4%	6%	12%	19%	32%	21%	6%	100%

Source: *own calculations from British Household Panel Survey (1996-2005).*

Why should satisfaction with their common household income differ between members of the same household? Our hypothesis is that satisfaction with household income will depend not only on what that household income entitles the household as a whole to do or to be (the cooperative element in entitlements) but also on an individual's relative entitlement to the resources made possible by that household income (the conflictual element).

Formally, we assume an individual's satisfaction with their household income depends on:

- The cooperative element in entitlements, E_s

- The conflictual element in entitlements, E_d (positively for men, negatively for women, given the way we measure E_d)

- Some individual factors (affecting satisfaction only) for both self and partner, written as $\boldsymbol{D}_m$ and $\boldsymbol{D}_s$.

For example, to allow the partner's satisfaction with household income being affected by the (potentially different) weights each puts on their own and the other's subjective well-being, $\boldsymbol{D}_m$ and $\boldsymbol{D}_s$ may include own overall satisfaction (to allow for any spillover effects from aspects of satisfaction not directly related to entitlements to household resources), and

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[9] Women report an average 0.345 higher score than men (significant difference at 1% level).

partner's overall satisfaction (to allow for identification with/concern for the partner in ways other than through such entitlements)[10]. To allow for these weights differing by gender we need different coefficients on both own and partner's overall satisfaction for men and women. Assuming a linear specification of the determinants of S_m and S_f, and allowing for extra-household, household and individual level variables, but not entitlements[11], to have gendered effects, gives:

$$S_m = \lambda_m + \gamma_s (E_s) + \gamma_d (E_d) + \varepsilon_{mm} D_m + \varepsilon_{mf} D_f + \upsilon_m$$
$$S_f = \lambda_f + \gamma_s (E_s) + \gamma_d (-E_d) + \varepsilon_{ff} D_f + \varepsilon_{fm} D_m + \upsilon_f \qquad \text{(iii)}$$

where the error terms υ_m and υ_f are potentially correlated for members of the same household, but independent over time and across households.

We then substitute (ii) into (iii), sum and difference equations (iii), and rearrange terms and coefficients, to give as the reduced form equations that we estimate:

$$S_s = a_s + 2\gamma_s \beta_s H + \gamma_s \lambda_{ss} C_s + \gamma_s \lambda_{sd} C_{ds} + \varepsilon_{ss} D_s / 2 + \varepsilon_{sd} D_d / 2 + u_s$$
$$S_d = a_d + 2\gamma_d \beta_d H + \gamma_d \lambda_{ds} C_s + \gamma_d \lambda_{dd} C_d + \varepsilon_{ds} D_s / 2 + \varepsilon_{dd} D_d / 2 + u_d \qquad \text{(iv)}$$

(Where for any variable or coefficient θ, for which θ_m and θ_f are defined, $\theta_s = \theta_m + \theta_f$ and $\theta_d = \theta_m + \theta_f$, now including when there are subsequent subscripts so that $\theta_s = \theta_m + \theta_f$ and $\theta_f = \theta_m + \theta_f$)[12]

We estimate our reduced form equations (iv) using fixed effects linear regression to exclude the influence of time-invariant unobserved individual factors (such as fixed personality traits). Assuming invariance across the short period of study in unobserved factors that affect household decisions allows us to consider explanatory variables that are chosen by households, such as employment status and care arrangements, as exogenous. We treat satisfaction with household income as a continuous variable, even though the data that we have is ordinal, following arguments from Ferrer-i-Carbonell and Frijters (2004) (see De Henau and Himmelweit 2008 for details).

Identification

Coefficients β_s and β_d give the effects of extra-household and household level variables on the cooperative and conflictual elements in entitlements respectively, while λ_{ss} and λ_{sd} give the symmetric and gendered effects of individual variables on the cooperative element and λ_{dd} and λ_{ds} give symmetric and gendered effects of individual variables on the conflictual element in entitlements.

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[10] We could allow for social comparison and adaptive expectations this way too, but will not do that here. These variables are used as controls in this paper; see De Henau and Himmelweit (2008) for a more thorough discussion.

[11] We have already allowed for gendered effects within entitlements.

[12] Note that to avoid ambiguity, the summing and differencing occurs on the subscripts of ε in order, so that $\varepsilon_{mm} - \varepsilon_{fm} + \varepsilon_{mf} - \varepsilon_{ff} = \varepsilon_{dm} + \varepsilon_{df} = \varepsilon_{ds}$; conversely $\varepsilon_{sd} = \varepsilon_{sm} - \varepsilon_{sf} = \varepsilon_{mm} + \varepsilon_{fm} - (\varepsilon_{mf} + \varepsilon_{ff})$.

From the reduced form equations, the coefficients β_s, λ_{ss}, λ_{sd} and β_d, λ_{dd}, λ_{ds} can be identified up to the multiplicative constants γ_s and γ_d, respectively. We have good reason to assume these are positive i.e. that people are more satisfied the greater the cooperative elements of entitlements in their household and are more satisfied the greater their own share in the conflictual element (otherwise it would not be "conflictual"). This means that we can assess the relative size of the effects of extra-household, household and individual characteristics, and for each individual characteristic, the relative size of the gendered and symmetric components, both on the cooperative aspect and on the conflictual aspect of entitlements. Because this constant is different for the two equations we cannot compare the size of effects across the cooperative and conflictual aspects, though we can note their respective signs[13].

Explanatory variables

We choose explanatory variables that could have effects on the cooperative and the conflictual elements in entitlements, i.e. variables that are expected to affect total economic prosperity of the household – and these can be current or future potential contributions – as well as relative positions of each partner (through perceived contributions and fall-back positions), borrowing from the literature on intra-household allocation models and from Sen's approach on individual entitlements. This paper uses a reduced set of variables as compared to De Henau and Himmelweit (2008). See Appendix, Table A.1 for summary descriptive statistics for the explanatory variables.

At household and extra household level, **H** is composed of the following variables:

- log of annual real household income over the year prior to interview (in 2005 prices[14]).

- the number of children in the following categories: aged 0-2, aged 3-4, aged 5-11, aged 12-15, dependent children aged 16-18 years, and non-dependent children

- year (dummy variables with reference year 1996)

Children are included as an example of household costs (and potential benefits) and years to capture cross-sample extra-household factors (e.g. policy changes, or macro-economic conditions).

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[13] By contrast, the coefficients ε_{ss}, ε_{sd} and ε_{ds}, ε_{ss} can be fully identified and thus so can their constituent parts ε_{mm}, ε_{mf}, ε_{fm} and ε_{ff}. We can then test the coefficients of individual variables for gender symmetry.

[14] We use log of income because previous studies have shown income to have a diminishing effect on satisfaction (Easterlin, 2001; Burchardt, 2005; Bonke and Browning, 2003).

Variables making up C_s and C_d are computed from individual characteristics for each of the partners, which are:

- their "Essex score", a measure of individual earning potential (and social position)[15];

- their employment status: dummy variables for being employed part-time, unemployed, inactive or long-term disabled (reference category: full-time employment); in a more complete model, sum and difference of these dummies are interacted with a dummy indicating the presence of children in the household and with a dummy for presence of pre-school children.

In D_s and D_d, we include "overall satisfaction with life" (same scaling as our dependent variable, again treated as a continuous variable) – another question asked on the self-completion questionnaire after the ones about satisfaction in particular domains (including household income).

The final sample to include all these variables has 12070 observations of 2318 couples observed at least twice between 1996 and 2005 (excluding 2001).

Results

Table 3 and Table 4 give the results of estimations of equations (iv), respectively for the cooperative and the conflictual aspect of entitlement.

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[15] The Essex score, developed and computed by Gershuny (2002) and Gershuny and Kan (2006), is the log of an estimated hourly wage based on the individual's educational level, employment status for each of the last four years, and the average occupational wage of their most recent occupation. We include this variable as an indicator of human capital (potential wage), but it could also be interpreted as a proxy for the income of a reference group for social comparison.

TABLE 3. ESTIMATIONS RESULTS FOR THE COOPERATIVE ELEMENT IN ENTITLEMENTS (BASED ON SATISFACTION WITH HOUSEHOLD INCOME) – INTERACTIONS OF EMPLOYMENT AND CHILDREN

Cooperative element (Ss)	Model a			Model b			Model c		
	Coeff.	Std err.		Coeff.	Std err.		Coeff.	Std err.	
Household variables									
Log of household income	0,254	0,027	***	0,254	0,027	***	0,254	0,027	***
No of children aged 0-2	-0,144	0,030	***	-0,129	0,026	***	-0,130	0,025	***
No of children aged 3-4	-0,092	0,031	***	-0,075	0,025	***	-0,075	0,024	***
No of children aged 5-11	-0,036	0,020	*	-0,038	0,020	*	-0,038	0,020	*
No of children aged 12-15	-0,054	0,027	**	-0,058	0,026	**	-0,058	0,026	**
No of dep children aged 16-18	-0,054	0,047		-0,056	0,047		-0,058	0,047	
No of non dep children aged 16+	-0,038	0,044		-0,042	0,044		-0,045	0,044	
Individual variables									
Symmetric effect									
Essex score	0,047	0,009	***	0,047	0,009	***	0,048	0,009	***
Working part-time	-0,371	0,101	***	-0,364	0,101	***	-0,372	0,060	***
with children	0,072	0,137		-0,012	0,119				
with children <5y	-0,145	0,136							
Inactive (care or other)	-0,515	0,144	***	-0,517	0,144	***	-0,413	0,077	***
with children	0,152	0,180		0,110	0,166				
with children <5y	-0,079	0,159							
Unemployed	-1,265	0,122	***	-1,277	0,122	***	-1,484	0,086	***
with children	-0,769	0,194	***	-0,408	0,162	**			
with children <5y	0,726	0,221	***						
Long term disabled	-0,431	0,191	**	-0,434	0,191	**	-0,620	0,136	***
with children	-0,452	0,254	*	-0,318	0,231				
with children <5y	0,350	0,299							
Gendered effect									
Essex score	0,013	0,010		0,013	0,009		0,013	0,009	
Working part-time	-0,109	0,101		-0,107	0,101		-0,096	0,060	
with children	0,103	0,141		0,006	0,122				
with children <5y	-0,200	0,140							
Inactive (care or other)	0,001	0,151		-0,002	0,151		-0,142	0,077	*
with children	-0,123	0,188		-0,158	0,173				
with children <5y	-0,099	0,164							
Unemployed	-0,586	0,137	***	-0,591	0,137	***	-0,593	0,090	***
with children	0,096	0,212		0,101	0,181				
with children <5y	-0,072	0,233							
Long term disabled	-0,345	0,202	*	-0,334	0,202	*	-0,307	0,139	**
with children	0,042	0,267		0,078	0,245				
with children <5y	0,071	0,307							
Constant	1,073	0,126	***	1,073	0,126	***	1,071	0,126	***

*** p<0.01; ** p<0.05; * p<0.1

R-sq (within / between)	0,196	0,415		0,194	0,415		0,193	0,419	
No of (obs. / groups)	12 070	2 318		12 070	2 318		12 070	2 318	
Prob>F	0,000			0,000			0,000		

Note: Model c is the basic reduced model (no interaction between employment status and presence of children); Model b uses interaction terms between employment status and presence of children (of any age); Model a is the complete model, with interaction terms between employment status and presence of children of any age and of presence of children under 5. Controls for year dummies and overall satisfaction are included in all models.

Source: own calculations from British Household Panel Survey (1996-2005).

Effects on the cooperative element (household entitlement)

a) Household variables

Household income has a significant positive effect on the cooperative element in entitlement. However, results show that the direct impact of income on average satisfaction with household income is low: a 10 percent increase in annual real household income will raise average satisfaction scores by only 0.0254. Ferrer-I-Carbonnell and Frijters (2004) also point to this weak influence by concluding that current income is not the only determinant of satisfaction (also widely discussed in the recent literature investigating these matters, such as Easterlin, 2001; Frey and Stutzer, 2002). This justifies further the use of other variables to investigate satisfaction and entitlements.

The number of children under 12 has a negative impact on the cooperative element in entitlement, and more so for children aged less than 3. This suggests that it is childcare costs, in money or time, that influence household entitlement rather than consumption costs, which should be higher for older children.

b) Individual variables

Reduced model c shows that, on average across parents and non parents, compared to being in full-time employment, any other employment status for either partner reduces household entitlement, and being unemployed has a much more negative effect, and significant, than any other status. This stigmatising effect of unemployment is in line with other findings at the individual level (e.g. Bonke and Browning, 2003; Clark, 2003). Moreover, unlike previous studies that did not investigate gender differences, our results also show that these effects are heightened for the man (significantly for inactivity, unemployment and disability), and correspondingly weakened for the woman. This is consistent with couples showing a somewhat traditional gendered division of contributions to the household (due to less stable employment patterns of women, and more stigmatising unemployment of men, under current labour market conditions and norms).

However, either partner's Essex score, our measure of earning potential, has a positive impact on entitlement, with no significant gender difference, suggesting that couples may have a less traditionally gendered consideration of their roles when anticipating the future than they do for the present[16].

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[16] Another interpretation comes from using this variable not as a determinant of entitlement but as a determinant of satisfaction, for example indicating benchmark for social comparison. In this case, results show that the Essex score is acting more as an indicator of future earnings, more in line with an effect that Senik (2004) calls "information" – what one could expect to gain in the future – than with what Stutzer (2004) calls "social comparison" – what one should have gained – since in the latter case, it should have a negative effect on satisfaction, for a given level of income.

Compared with Model c, Model b includes interaction terms between employment statuses and the presence of children (of any age) in the household. In Model b, parents are significantly more penalised by either partner being unemployed than couples without children, and although not significant, this happens too for households with disabled partner(s). Compared with Model a (interaction with children under the age of 5), it seems that the extra-burden of unemployment and disability arises in couples with children older than 5, while couples with younger children do not seem to be differentially affected by it than non parents. This suggests a cost effect of older children only for households that are already in a difficult position relative to employment (as opposed to the general negative effect of younger children on entitlement).

None of these two employment statuses have significant additional gender effects while interacted with children. However it seems that the gender effect of inactivity is driven by couples with children (even though this effect is not significantly different from that of childless couples): an inactive father reduces more household entitlement than an inactive mother while it is not the case for inactive childless men. This is even more the case when we consider parents of pre-school children (even though additional effect not significant). This result illustrates even further the compliance to traditional gender roles in the presence of children.

Effects on the conflictual element (relative entitlement)

Table 4 shows the results of the effects on the conflictual element in entitlement (direct impact on difference in partners' satisfaction scores).

TABLE 4. ESTIMATION RESULTS FOR THE CONFLICTUAL ELEMENT IN ENTITLEMENTS (BASED ON SATISFACTION WITH HOUSEHOLD INCOME) – INTERACTIONS OF EMPLOYMENT AND CHILDREN

Conflictual element (Sd)	Model a			Model b			Model c		
	Coeff.	Std err.		Coeff.	Std err.		Coeff.	Std err.	
Household variables									
Log of household income	0,002	0,021		0,003	0,021		0,005	0,021	
No of children aged 0-2	0,056	0,023	**	0,047	0,020	**	0,057	0,020	***
No of children aged 3-4	0,044	0,024	*	0,034	0,019	*	0,042	0,019	**
No of children aged 5-11	-0,011	0,016		-0,009	0,016		-0,003	0,015	
No of children aged 12-15	-0,016	0,021		-0,012	0,021		-0,004	0,020	
No of dep children aged 16-18	0,031	0,037		0,032	0,037		0,043	0,036	
No of non dep children aged 16+	-0,055	0,035		-0,054	0,035		-0,043	0,034	
Individual variables									
Symmetric effect									
Essex score	0,015	0,007	**	0,015	0,007	**	0,015	0,007	**
Working part-time	-0,143	0,079	*	-0,143	0,079	*	-0,126	0,047	***
with children	0,024	0,110		0,042	0,096				
with children <5y	0,046	0,110							
Inactive (care or other)	-0,275	0,118	**	-0,273	0,118	**	-0,166	0,060	***
with children	0,199	0,147		0,168	0,136				
with children <5y	-0,057	0,128							
Unemployed	-0,517	0,107	***	-0,521	0,107	***	-0,275	0,070	***
with children	0,423	0,166	**	0,412	0,141	***			
with children <5y	0,004	0,182							
Long term disabled	-0,338	0,158	**	-0,328	0,158	**	-0,445	0,109	***
with children	0,004	0,209		-0,236	0,192				
with children <5y	-0,695	0,241	***						
Gendered effect									
Essex score	0,007	0,007		0,006	0,007		0,007	0,007	
Working part-time	-0,154	0,079	*	-0,157	0,079	**	-0,041	0,047	
with children	0,145	0,107		0,162	0,093	*			
with children <5y	0,024	0,107							
Inactive (care or other)	-0,146	0,112		-0,152	0,112		0,029	0,060	
with children	0,289	0,141	**	0,259	0,130	**			
with children <5y	-0,084	0,125							
Unemployed	-0,165	0,095	*	-0,162	0,095	*	-0,072	0,067	
with children	0,204	0,152		0,080	0,127				
with children <5y	-0,261	0,173							
Long term disabled	-0,234	0,150		-0,246	0,149	*	-0,004	0,107	
with children	0,417	0,199	**	0,404	0,181	**			
with children <5y	-0,001	0,234							
Constant	-0,182	0,098	*	-0,178	0,098	*	-0,200	0,098	**

*** p<0.01; ** p<0.05; * p<0.1

R-sq (within / between)	0,059	0,192		0,058	0,192		0,056	0,206	
No of (obs. / groups)	12 070	2 318		12 070	2 318		12 070	2 318	
Prob>F	0,000			0,000			0,000		

Note: *Model c is the basic reduced model (no interaction between employment status and presence of children); Model b uses interaction terms between employment status and presence of children (of any age); Model a is the complete model, with interaction terms between employment status and presence of children of any age and of presence of children under 5. Controls for year dummies and overall satisfaction are included in all models.*

Source: *own calculations from British Household Panel Survey (1996-2005).*

a) Household variables

The effect of household variables on relative entitlement is necessarily gendered, given the construction of our dependent variable, which means they may be labelled or pertaining more to the sphere of one particular gender. In Table 4, children seem to pertain to the woman's sphere much more than to the man's sphere, especially the youngest ones: woman's relative entitlement is reduced (and man's correspondingly increased) in the presence of children aged under 5. Childcare is mothers' main responsibility; they have to bear the net cost of the presence of young children. Even if they are given child benefits and child tax credits as main carers, they may be aware of their lower fall-back position in case of couple breakdown: they are more likely to take care of those children primarily as lone parents and, if they reform another couple, they might not necessarily want to impose their burden on their new partner. This illustrates the power of perception in our model, for if it was just about actual contributions or responsibilities, mothers should have more entitlement to household resources than fathers if children are their main responsibility. However true it may be, research shows that fathers may oppose quite strongly this traditional view as they want to be seen caring as much as their spouse (Sung and Bennett, 2007).

b) Individual variables

The larger the difference in Essex score, the greater the relative entitlement. This takes place in symmetric ways, each partner gains control from being on a higher social position than the other. This result is in line with other findings that use relative wage rates to investigate bargaining power in different models of intra-household allocation (e.g. Friedberg and Webb, 2006; Pollak, 2005; Vermeulen, 2002). No gendered effect of Essex scores are observed though we can note the positive sign of the effect: the man is relatively more empowered and the woman relatively more disempowered. Further research needs to investigate those issues using alternative specifications of this indicator.

There is a symmetric effect on entitlements of employment status; both partners are disempowered relatively by not working full-time, particularly by being unemployed or disabled[17]. These two statuses also have a negative effect on the man's entitlement relative to the woman's (gendered effect), though the differences are not statistically significant. The symmetric effect of unemployment is even more negative for couples without children, while in the presence of children (of any age), this effect almost disappears, as if a certain non gendered division of responsibilities would take place in the presence of children. This reasoning may also apply to inactivity although the extra-effect of children is not significant. By contrast, being disabled in the presence of young children worsens either partner position relative to each other, especially if children are very young.

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[17] The latter has a negative symmetric effect that is also significantly different from all the other statuses (tests not shown).

Perhaps the most interesting results of this decomposition exercise is those of gendered conflictual effects, which shows that entitlement may be gained over the other partner but in gendered ways: one partner gains more than the other (and the other loses more) according to their gender. In Model c, no gender effect is observed. In Model b though, counteracting effects of some employment statuses arise between parents and non parents: being in a lesser status than full-time employment relative to their partner increases more woman's entitlement than if it was the man, in couples without children. By contrast, this effect is counteracted in the presence of children, significantly for part-time work, inactivity and disability, so that if mothers are in a lower position than their male partners, their relative entitlement is reduced because of the presence of those children (although no additional effect is observed if these children are under 5, in Model c).

CONCLUSION

This analysis has focused on the influence employment and children have on two components of entitlement to household resources, one that is the result of cooperation, to augment overall family prosperity (the between-household element) and the other the result of conflicting views as to how to divide the fruits of cooperation (the within-household element). These effects were analysed within a framework that allowed for perceptions, considered here as different weights given to each variable according to gender.

Our results suggest the co-existence of gendered and symmetric effects, both in the cooperative and the conflictual element in entitlements, especially if we consider the employment effects of couples with and without children separately. Partners may agree to some extent that a gendered division of role improves overall household entitlement, and that male employment is more important than female employment.

However, each partner gains from being in a better position than the other, in terms of contribution to household resources (especially financial resources in this case), putting yet another nail in the coffin of the unitary model of intra-household allocation. Depending on the presence of children, these individual relative entitlements may be heightened or lowered according to gender, which shows that it is not just contributing to resources that matters, but actually whether you are a man or a woman too. Therefore, our results have confirmed to some extent the validity of Sen's model which includes perceptions as a major determinant of entitlements, especially with respect to division of labour.

One of the possible policy implications comes from interpreting the knowledge gleaned of the determinants of entitlement to household income as an indication of what couples will do in various situations. Households would therefore act to increase the factors that improve the cooperative element and, given unequal decision making power, would also have a tendency to act to increase the relative entitlement of the members with greater power. This might either frustrate or reinforce any policies that

aim to work by changing the incentives on households to act in particular ways. Such policies will have indirect effects on the balance of power and entitlement within households that can enhance or undermine their effectiveness. For example, if the goal is to increase full-time employment attachment for all individuals, as proposed by the European Employment Strategy, our results suggest that work incentives provided at the household level (such as paid parental leave to be shared between parents) will be less effective for women's employment (and less effective for men's involvement in parental care), as the intra-household decision-making process associated with household entitlement will promote man's employment over woman's.

More generally, this analysis points to the importance for effective policies – whatever their goal – to be aware of how they might affect men's and women's entitlements or satisfaction with household finances, in terms of (i) choosing particular policies to meet goals; (ii) whether other policies will be needed to counteract undesirable effects on relative entitlements; (iii) whether policies will be supported; (iv) and the possible behavioural implications. The main implication of our analysis is that it is important to change the conditions that are leading partners to such "choices".

In this sense, some recent 'egalitarian' policies that would counteract traditional gender-roles being reinforced by intra-household decision-making and the external conditions to which behaviour takes place, are not necessarily new but may still be misunderstood or underexploited. Some examples are: a well paid daddy leave of reasonable length of time would reduce the view of the man as main breadwinner and give him the chance to exercise parenting skills; effective equal pay measures would remove the financial incentive to the adoption of traditional division of labour; more subsidised and affordable child care provision would reduce financial impact of small children without necessarily reinforcing women's primary caring role (as opposed to childcare support granted to 'main carer'); shorter full-time working hours for both men and women would enable both to work full-time and share care.

Understanding what determines the distribution of power and entitlements within households – accounting for gendered perceptions – may in this way be important for a number of policy areas.

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APPENDIX

TABLE A.1. DESCRIPTIVE STATISTICS OF THE EXPLANATORY VARIABLES USED IN THE REGRESSIONS

		Mean	Std Dev.
Score of satisfaction with hh income	man	4.57	1.43
	woman	4.64	1.45
Real annual household income (£)		35,584	20,130
No children in hh		39%	
Children aged 0-2		15%	
Children aged 3-4		11%	
Children aged 5-11		25%	
Children aged 12-15		7%	
Dep children aged 16-18		1%	
Non dep children aged 16+		1%	
No of children in hh		1.11	1.10
Essex score	man	8.84	3.63
	woman	6.85	3.11
Working full-time	man	89%	
Working part-time	man	3%	
Inactive	man	2%	
Unemployed	man	3%	
Disabled	man	3%	
Working full-time	woman	47%	
Working part-time	woman	30%	
Inactive	woman	19%	
Unemployed	woman	2%	
Disabled	woman	2%	
Score of satisfaction with life	man	5.24	1.09
	woman	5.29	1.14

Source: *own calculations from British Household Panel Survey (1996-2005).*