Paternity and social obligations explain men's allocations to romantic partners in an experimental giving game
Supplementary Material
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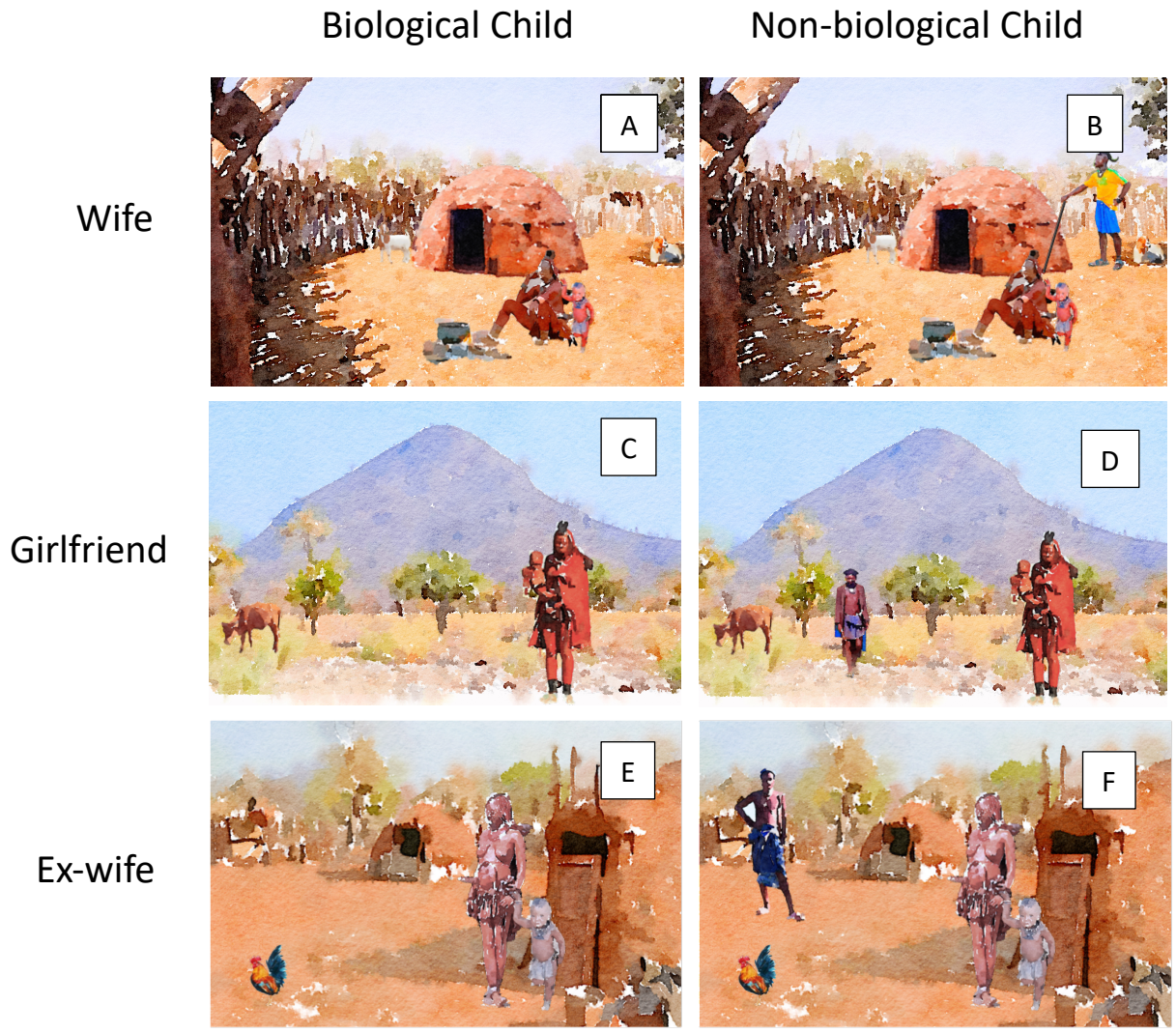

Figure S1 – Food allocation task scenario prompts: (A) This is a picture of your wife and your child. You are the biological father of this child. (B) This is a picture of your wife and your child. Your wife's boyfriend is the biological father of this child (i.e. the child is *omoka*). (C) This is your girlfriend and her child. You are the biological father of this child. (D) This is your girlfriend and her child. You are not the biological father of this child. (E) This is your ex-wife and her child. You are the biological father of this child from when you were married. (F) This is your ex-wife and her child. Her new husband is the biological father of this child.

Figure S2 – Task 2: Food, clinic fee, and goat allocation task prompts

Girlfriend

Married girlfriend

Figure S3 – Task 3: Food, clinic fee, and goat allocation task prompts

Wife

Wife with boyfriend

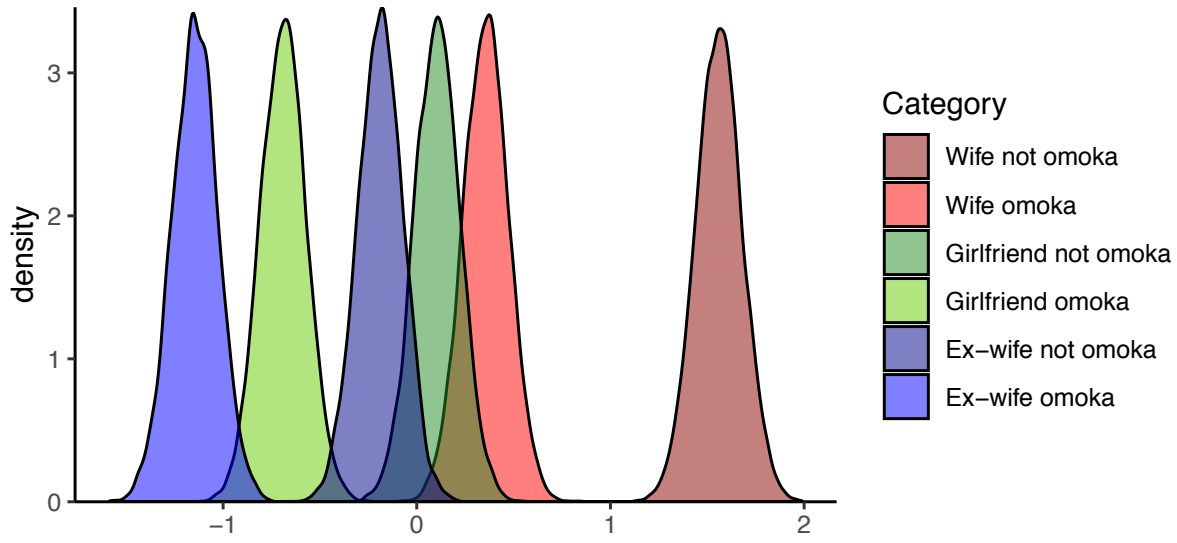

Figure S4 – Posterior densities for each category resulting from Bayes factor comparison of task 1

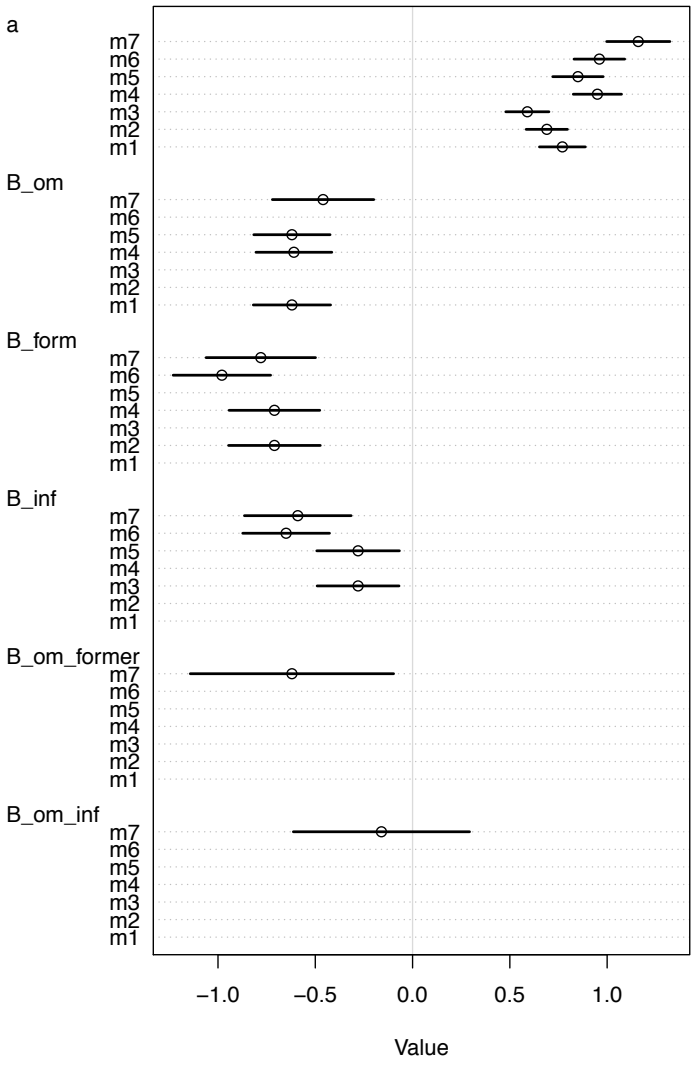

Figure S5 – Coefficient comparison of model comparison for task 1
Posterior mean and 89% intervals shown for all models in the model comparison as described in the main text. B_om refers to the paternity predictor, where omoka = 1, B_form refers to the former/current category, where former=1, B_inf refers to girlfriend/wife category, where girlfriend=1, and B_om_former and B_om_inf refer to the interactions between those predictors.

Additional multilevel model for Task 1:
Participants all allocated the same number of items across the six categories, so varying intercepts by participant ID was not included in the model results presented in the main manuscript. As an alternate approach, in attempt to include a correction for repeated observations, the following model was used predict food allocation between categories, where $\alpha_{respondent\_cat}$ refers to random intercepts for each respondent by category type (for example, respondent 1 allocating to wife categories receives the same varying intercept for both

scenarios, with and without a biological child), α_{cat} refers to random intercepts by category type (wife, girlfriend, ex-wife), and βo_{cat} parameter refer to varying slopes for having a biological child or whether the child is from an informal partner (omoka=1). Age and partnership status were also added as varying slopes by category type, and with interaction between omoka category and category type using similar parameters. Results of varying slopes for partnership and martial status, age, and interactions did not meaningfully deviate from zero so we don't report these results here. These data on these predictors were missing for a small subset of participants, and so these values were imputed instead. All models ran in three chains of 10,000 iterations per chain, and fit to rstan using the *rethinking* package. Model comparison between model types was run using complete cases only.

$$
\begin{gathered}
Food \sim Poisson(\lambda_i) \\
log(\lambda_i) = \alpha_{cat} + \alpha_{respondent\_cat} + \beta o_{cat} * omoka \\
\alpha_{\sigma_{Respondent\_cat}} \sim Normal\ (0, 0.05) \\
\begin{bmatrix} \alpha_{cat} \\ \beta o_{cat} \end{bmatrix} \sim DMVNormal\ (\sigma_{trait}, \rho) \\
\sigma_{trait} \sim Exp\ (1) \\
\rho \sim DLKJcorr(4)
\end{gathered}
$$

Table S1 - MLM Model results

Model	Category	Varying Intercept	Varying Slope
M1 – varying intercept by category	Wife	0.96 (0.85 – 1.06)	
	Girlfriend	0.29 (0.14 – 0.44)	
	Ex-wife	-0.03 (-0.21 – 0.14)	
M2 – varying intercept and slope by category	Wife	1.16 (1.02 – 1.29)	-0.45 (-0.67 - -0.23)
	Girlfriend	0.54 (0.35 – 0.72)	-0.57 (-0.87 - -0.28)
	Ex-wife	0.33 (0.13 – 0.53)	-0.98 (-1.39 - -0.60)

Table S2 – MLM Model comparison

Model Description	WAIC	Weight
1 – varying intercept by category	634.9	0
2 – varying intercept by category and varying slope by child type	595.4	0.72
3 - varying intercept by category and varying slope by child type, marital status, and informal partner status	598.5	0.15
4 - varying intercept by category and varying slope by child type, marital status, and informal partner status, and interactions as varying slopes	598.9	0.13

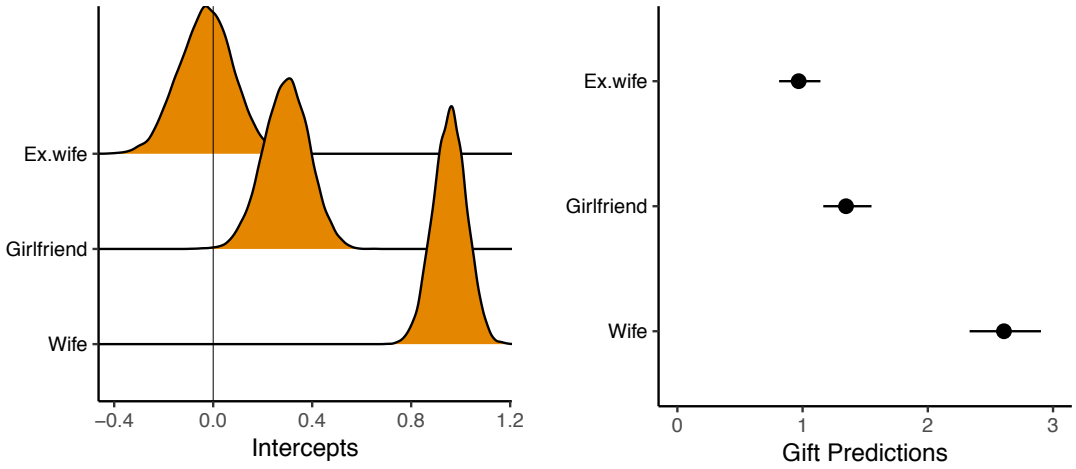

Figure S6 – MLM Model results and posterior predictions for M1 without varying slopes by omoka category

Additional models examining effects of age and marital status

As an alternate approach to examine the effects of standardized age and marital status on allocation by category, additional Bayesian Poisson regressions were used. In these models, we used varying intercepts for each scenario type (A-F), and used varying slopes to examine the effects of predictors on each scenario type independently. Age and marital status were run separately, and varying slopes results shown below. Again, parameters did not deviate meaningfully from zero, giving no evidence that age and marital status meaningfully impact allocations to different scenarios.

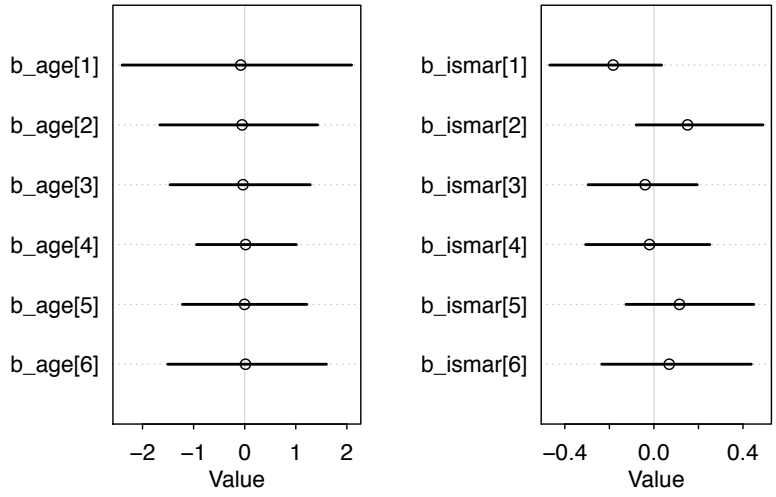

Figure S7 – Coefficient comparison for varying slopes of age and marital status by scenario type. Here 1-7 denote scenarios A-F represented in figure S1. Age is standardized, and marital status coded as married=1.

Ordered preference results for task 1

Results from the ordered version of the task show similar outcomes to the regression results. Wives were ranked higher than girlfriends who were ranked higher than ex-wives and non-omoka. Partners with biological children were ranked higher than partners with *omoka* children. One exception to this rule was that ex-wife/not omoka was ranked higher than girlfriend/omoka. Mean ranked responses are shown in Table S3, and raw data of ranks are shown in Figure S7.

Table S3 - Mean Rank by category for task 1

Category	Mean Rank
Wife not omoka	1.12 (0.448)
Wife omoka	2.70 (1.35)
Girlfriend not omoka	3.09 (0.92)
Ex-wife not omoka	3.70 (1.06)
Girlfriend omoka	4.72 (0.88)
Ex-wife omoka	5.67 (0.64)

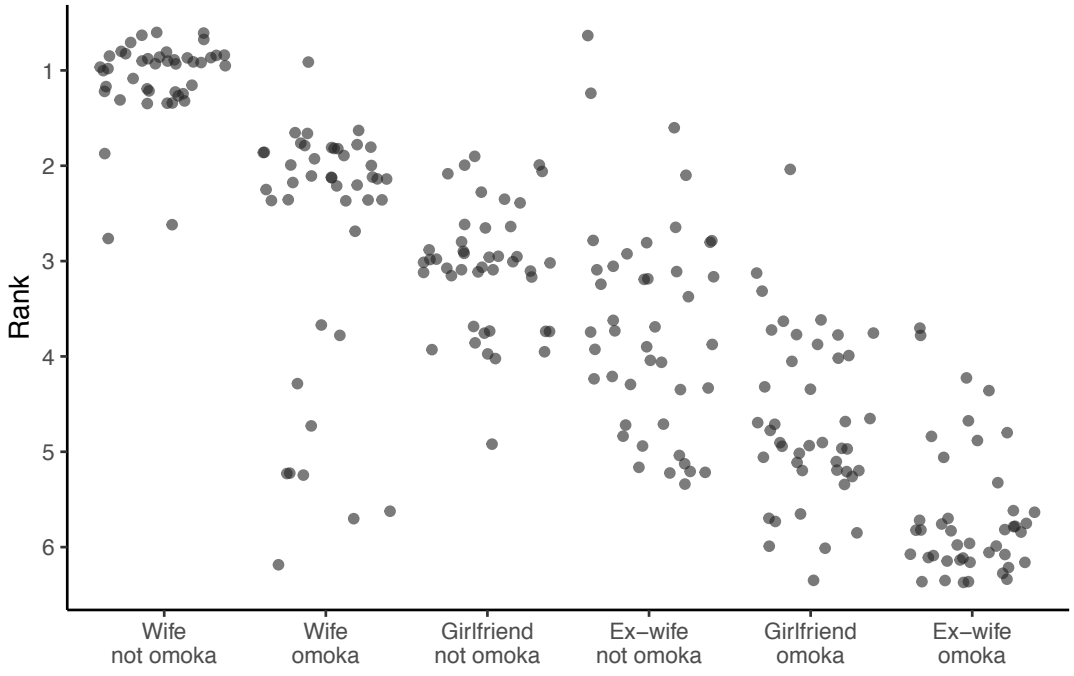

Figure S8 – Jitter plot of rank by category for task 1

Table S4 - Bayes factor comparisons for allocation differences between tasks 2 and 3.

Category	Wife comparison	Girlfriend comparison
Food items	**7123.06**	**212335.45**
Clinic fees	**3.43**	**259.42**
Goats	**9387.43**	**1890.13**

Additional notes on Bayesian regressions

Unless otherwise noted, regression models used three chains of 5000 iterations, 2000 of which were warm up. Convergence was assessed by visual inspection of chains and the Gelman-Rubin convergence diagnostic